Milva Finnegan

User-centered design

A key to contract simplification

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Käyttäjälähtöinen muotoilu: Tie sopimusten yksinkertaistamiseen

Tiivistelmä

Sopimukset ovat keskeinen osa yritysten liikesuhteita. Sopimukset ohjaavat liiketoimintaa ja määrittelevät sen ehdot. Sopimusten monimutkaisuus on yrityksille haasteellista. Perinteiset sopimukset ovat mustavalkoista tekstiä, niissä ei ole selviä otsikoita tai kappalejakoa, ja ne ovat vaikeita lukea ja ymmärtää. Sopimukset eivät ole käyttäjäystävällisiä. Tästä seuraa, että yritykset kuluttavat paljon aikaa ja resursseja sopimusten neuvottelemiseen, laatimiseen ja arviointiin.

Yritysten välisiä sopimuksia käyttävät useat eri käyttäjät ja toiminnot. Sopimusten rooli on tukea liiketoiminnallisten ja oikeudellisten tavoitteiden saavuttamista. Jotta sopimukset toimivat tehokkaina viestintävälineinä, niiden muotoilussa tulisi huomioida kaikki käyttäjät.

Tämän väitöskirjan tavoitteena on löytää ratkaisuja siihen, miten muotoiluajattelua voidaan hyödyntää vähentämään monimutkaisuutta ja tuottamaan käyttäjäystävällisempiä sopimuksia. Tutkimuksen teoreettisena viitekehyksenä toimivat relationaalinen sopimusteoria, ennakoiva sopiminen, sekä käyttäjälähtöinen muotoilututkimus. Tässä työssä tutkitaan sopimustoimintoja osana liiketoimintaa ja yhteiskuntaa. Tutkimus yhdistää sekä laadullisia että määrällisiä tutkimusmenetelmiä. Käyttäjäkeskeinen sopimusmuotoiluprosessi esitetään lähtökohtana luvuissa 1 ja 2, joissa on valittu tutkimuksen pääkohteiksi kolme asiakirjamuotoilun osa-aluetta: rakenne, kieli ja visualisointi. Luku 3 käsittelee rakenteen yksinkertaistamista, joka keskittyy siihen, miten tietoa voidaan luokitella, järjestää ja kerrostaa. Johtopäätöksenä esitetään käyttäjäpohjaista luokittelua ja sopimuksen rakentamista osina. Luku 4 keskittyy sopimusten kirjoitettuun kieleen ehdottaen, että sopimuksille luotaisiin oma kontrolloitu kieli. Luku 5 tarkastelee visualisointia keinona vähentää monimutkaisen sopimussisällön käsittelyyn liittyvää lukijan kognitiivista kuormitusta. Väitöskirjan kokonaistavoitteena on tuottaa sekä teoriaa että käytäntöä palvelevia tuloksia yksinkertaisempien sopimusasiakirjojen tuottamiseen.

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Abstract
Contracts are a vital part of business-to-business (B2B) exchanges. They guide the exchange relationship and define its terms. A challenge that companies face is the complexity of contract documents. Traditional documents, consisting of black and white text without clear headings or paragraph breaks are difficult to read and comprehend. Contracts are not user friendly. Consequently, businesses spend extensive time and resources on contract negotiations, drafting and reviewing.

In B2B transactions, contracts are multi-user and cross-functional documents supporting both business and legal objectives. In order for contracts to serve as effective communication tools, their design needs to consider all users.

This dissertation aims to find solutions for how design thinking can be leveraged to reduce complexity and make contracts more user friendly. The research is based on relational contract theory, proactive contracting, and user-centered design research. The work studies contract operations as part of business and society, using a mixed-method approach comprised of both qualitative and quantitative research.

A user-centered design process for contract development is presented as a framework in Chapters 1 and 2, and three distinct document design categories—structure, language, and visualization—are selected as the primary focus areas for the research. Chapter 3 discusses structure simplification that focuses on how to categorize, layer, and organize information. I propose a user-based categorization and a contract building blocks approach as part of the solution. Chapter 4 focuses on the written language of contracts, presenting the idea of a Controlled Contract Language (CCL). Chapter 5 examines how visualization can reduce the reader's cognitive load of processing complex contract information. The overall aim of the dissertation is to provide both a theoretical and a practical contribution toward creating simplified contract documents.

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Writing a dissertation is a lonely journey that consumes you. Friends by your side help you escape, and without them, I might have lost my mind. Thank you Angie, Sarah, and Heather for the weekly bike rides during COVID-19 isolation when I completed writing this dissertation.

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On this day, March 31st, 2021, I set down my pen and I feel nothing but gratitude.

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Abbreviations

AI	Artificial Intelligence
AECMA	European Association of Aerospace Industry
API	Application Programming Interface
ANSI	American National Standards Institution
ASD-100STE	ASD Simplified Technical English
B2B	Business-to-Business
CCL	Controlled Contract Language
CCM	Commercial & Contract Management
CISG	The United Nations Convention on Contracts for the International Sale of Goods
CLM	Contract Lifecycle Management
CLOUT	Controlled Language Optimized for Uniform Translation
CLT	Cognitive Load Theory
CM	Contract Management
CMBOK	Contract Management Body of Knowledge
CMS	Contract Management Software
CNL	Controlled Natural Language
CRM	Contract Relationship Management
ECLM	Enterprise Contract Lifecycle Management
ERP	Enterprise Resource Planning
EU	European Union
FAR	Federal Acquisition Regulations
FAS	Free Alongside Ship
FOB	Free on Board
CFR	Cost and Freight

CIF	Cost, Insurance, and Freight
GDPR	General Data Protection Regulations
IACCM	International Association for Contract and Commercial Managers
ICC	International Chamber of Commerce
INCOTERMS®2020	International Commercial Terms 2020
ICT	Information and Communication Technology
IoT	Internet of Things
ISO	International Organization for Standardization
IT	Information Technology
IT Law	Information Technology Law
KCON XIII	13th Annual International Conference on Contracts
NCMA	National Contract Management Association
NDA	Non-Disclosure Agreement
PLAIN	Plain Language Association International
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-analyses
STE	Simplified Technical English
STEMG	Simplified Technical English Maintenance Group
SLR	Systematic Literature Review
T&Cs	Terms and Conditions
TCBOK	Technical Communication Body of Knowledge
UI	User Interface
US	United States
UX	User Experience
UCC	Uniform Commercial Code
WorldCC	World Commerce & Contracting Association

1 INTRODUCTION

1.1 The Problem of Contract Complexity

Written contracts have always been a central and vital part of producing economic value in business-to-business (B2B) transactions. Still, the role of contracts is not monolithic. Traditionally, a contract is considered above all a legal document; however, a contract can serve many critical managerial functions as well. Macaulay (1963)[1], a leading scholar of the law-in-action approach[2], defined a contract as having two functions; to create an exchange relationship and to solve problems that can occur during the course of such a relationship. To function, commerce requires contracts to guide the relationship and to memorialize the agreed-to business deal. In essence, a contract [3] outlines the economic transaction that companies expect to derive from the relationship.

The principle of "freedom of contract"[4] enables business actors to draft documents that differ in countless ways. The traditional contract drafting approach most prevalent today is legally focused and is mainly text-filled pages with technical terminology, causing the text to be complex and often difficult to read. Users outside of the legal function are not considered the primary audience, creating challenges in readability and comprehension for those not trained in legal writing. Different legal jurisdictions, parties with different backgrounds, and language barriers create readability and comprehension challenges, even for those trained in legal writing. Furthermore, in the global environment, the number of actors involved and reliant on the contract document is multiplying.

Moreover, even though business contracts have always been complicated because the market changes in unforeseeable ways (Lester et al., 1998), the complexity has escalated globally over the past two decades. As an example, in an analysis done by Siegel and Eztkorn (2013) on the length of a typical credit card contract in the

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[1] Stewart Macaulay is a professor emeritus at the University of Wisconsin Law School and a pioneer in the law-in-action approach to contracts. .
https://law.wisc.edu/facstaff/macaulay/.
[2] The law-in-action approach questions the overemphasis on legal rules in both contract law education and contract documents.
[3] The term "contract" can have several meanings; in this dissertation, it refers to the document that is the final artifact memorializing the business transaction between the parties.
[44] Within this dissertation, the concept of "freedom of contract" is considered within the framework that businesses globally are free to enter into agreements in most jurisdictions. The legal parameters differ and are excluded from the scope of the analysis in this dissertation.

United States (US), they found that in 1980 the typical contract was about a page and a half long, whereas by 2003, the average length was thirty-one pages. The increasing length of the document impacts readability.

The trend toward growing complexity is the result of several factors. One main reason is the environment in which business contracts operate (Eggleston et al., 2000). Today, it is common to have long-term contracts with both products and services included in the same transaction. Longer terms and increased scope add more risk elements and drive an increased focus on adding legal protections. In addition, there is an increasing number of regulatory and compliance requirements that require additional contract provisions to be part of the contract, causing the contract language to become more technical.

As the content of a contract is becoming more complex, usability is not always optimal because contracts function in a multi-user environment. Readability and accuracy are the central areas which deteriorate as contractual complexity increases, which causes challenges to both contracting parties. The research undertaken indicates that contracts have reached a point where only experts and trained professionals can fully understand the writing. One problematic consequence of the complexity is that people no longer read the contract (Siegel & Etzkorn, 2013) or use it to manage contract obligations. With too much length and detail, the contract stops serving its intended operational management purpose. The research aims to uncover the drivers of the complexities and their effect on readability and usability. It also aims to find solutions for designing user-friendly contract documents.

The exploratory research focuses on contract design and determining if a user-centered focus on contract development can reduce complexity. A review of contract redesign literature provides critical insight to build the research on. The idea of contracts as value creators for businesses is foundational to produce both conceptual and practical solutions to compel a universal change in how businesses develop and design contract documents.

The reason for the increased contractual complexity and the problems with readability is not that companies consider the role of contracts secondary. In fact, according to the most recent benchmark study[5] conducted by the International

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[5] The IACCM produced report is based on input from 759 organizations and provides insights into the current state of contract and commercial management from both a buy-side and sell-side perspective. Available at: https://www.iaccm.com/resources

Association for Contract & Commercial Management (IACCM, 2019)[6], companies spend on average 16.7% of their total contract management time on drafting and developing contracts. Businesses recognize that contracts are an essential part of business transactions.

The challenge is that the document design has not evolved to address the increasing challenges users face when trying to understand and make use of contracts[7]. Continued focus on contracts as legal instruments is perpetuating the problems. Furthermore, for non-native speakers, when a contract is written in a foreign language, the problem is magnified. These issues make it necessary for users who are not trained in legal writing to seek expensive expert advice when engaging with contracts.

Instead, contracts, the essence of a business deal, should be growth engines and value creators throughout the entire contract's lifecycle. However, the practice of adding detail, additional provisions, and more text do not necessarily translate into improved mutual understanding or less money spent on misunderstandings and disputes. A better approach would be in line with Nobel Economic Laureate Oliver Hart's expanded theory of contracts, which considers contracts to be *reference points* that offer flexibility when expectations change, unanticipated events occur, and parties' needs evolve over time (Frydlinger et al., 2019). Focusing more on documenting the parties' intended business relationship and how the parties will successfully complete the desired outcomes shifts the focus to the contract document users and how the document best serves their needs.

Contract simplification and redesign of the traditional contract document for improved usability is not a new phenomenon. Existing research and literature provide solutions to the most common reoccurring contract problems of readability, legal language, comprehension, poor information layout, complex contract content, and so forth. However, a standardized approach across contract types or globally is not evident; instead, the available solutions are designed around a specific contract type, company, or software application. One standard framework does not exist.

When contracts are viewed as enablers of unification and roadmaps during the term of the relationship, it shifts the focus on how the contract document is developed. Focusing on who the audience of the specific information is establishes a new user-centered framework in the contract development process. Design

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[6] IACCM changed its name in September 2020 to the World Commerce & Contracting Association. It is the leading global professional organization in contract and commercial management, with over 60,000 members in 183 countries.
[7] It is often said that contracts tend to be written "for lawyers by lawyers."

thinking is an integral part of the process to produce usable contract documents that support successful business outcomes.

1.2 Research Question and Objective

This research focuses on contract drafting methods that solve the problem of increased complexity and considers who the users and stakeholders of a contract are. The research focuses on ways in which contracts can be designed to produce clearer, easier to read, more comprehensible, and user-friendly documents. These objectives translate into the following primary research question:

RQ: *How can user-centered design be applied in a contract design context to produce clearer and more simplified contract documents?*

The objective of the research is to explore further the user-centered design approach in contract development in a multi-user environment, advancing the research on the purpose of contracts, who the contract users are, how to communicate contract information effectively, and what a user-friendly contract looks like. It focuses on contract simplification and how it can promote successful business outcomes and bring operational efficiencies.

The research will challenge the mindset that contracts are an inherent cost of doing business. On the contrary, it builds on the theory that a competitive advantage accrues from leveraging contract design capabilities (Argyres & Mayer, 2007). Today, contract design research encompasses both the process of designing contracts and the various design methods that improve usability by redesigning contract document content, structure, layout, and language, and incorporating visualization (Haapio, 2013; Waller et al., 2016; Berger-Wallisser et al., 2017, Passera, 2017). Furthering the multi-disciplinary approach to contract design, this dissertation seeks to build on the current contract design research. It explores new solutions to how redesigning business contracts through a user-centered design process can further improve readability and usability to produce contracts that are economic value creators in B2B transactions.

The user-centered design process is analyzed as the framework to be applied in the contract document crafting and development process. The user-centered framework is inherently interdisciplinary and impacts several elements of the contract, such as language, structure, and overall contract design. Although each aspect is unique, the various design approaches are considered interdependent, as they are all interrelated. The research seeks solutions to what a multi-disciplinary

contract development and design process can be to ensure all users and stakeholders can effectively extract and use the information.

While the work was conducted and is presented within the framework of *business law*, it does not view contracts only through the lens of the law. Contracts and the law serve as economic engines to provide businesses with a competitive advantage (Siedel & Haapio, 2010). Therefore, instead of contracts in court, the research examined *contracts in business* and the economic benefit that contracts can bring by preserving and generating value throughout the transaction.

The research explores what types of construction and design in contracts can better meet today's business needs with a goal to advance contract design theory. A second goal is to deliver B2B contracting efficiencies by introducing new contract design approaches that yield contract management efficiencies throughout the contract's lifecycle.

Contract document development is the focus of the research because the time and cost companies spend on the drafting and negotiation of contracts have risen to astronomical sums. A global study conducted by IACCM (2018, October) [8] indicates that the amount a business spends reviewing and negotiating a standard, low-risk procurement ,or sales contract has increased by 38% in the past six years to an average of USD 6,900. The costs associated with a mid-complexity contract with more risks have risen by 11% to USD 21,300, and high-complexity procurement contracts, with "unique" risk factors, to an average of USD 49,000, with some businesses spending significantly more. This research strives to address these increasing costs by finding more efficient solutions for contract crafting by integrating design thinking in order to decrease the time and money spent on contract development and management within a company.

Design thinking is the foundation for the user-centered contract design objective. Design thinking is a problem-solving process used to create and test real-world solutions to problems (Kolko, 2015). Design thinking aims to develop new solutions by leveraging design to produce an outcome that is better than the existing one (Prefontaine, 2017). The idea of design thinking in contracts is about duplicating how other disciplines incorporate design thinking to communicate complex information effectively to the intended audience.

One key challenge to be overcome in contract document design is finding a balance between text and visually improving the user interface (UI) within the boundaries of contract law. Simplified contracts are not simple (Figure 1). Rather, the interplay

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[8] IACCM study analyzed the activities and expenditures of more than 700 major organizations operating in various industries across the globe.

between the legal and managerial functions and each user type plays an integral role in contract simplification. The research explores this relationship to determine any conflicts that shifting from traditional contract document design to a simplified contract document design exposes.

CONTRACT SIMPLIFICATION
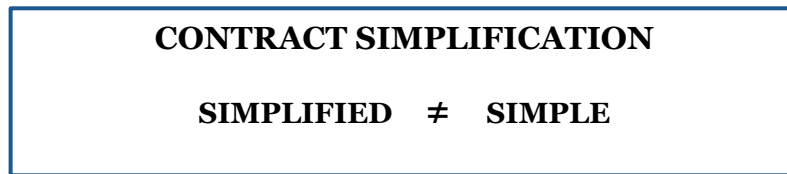
SIMPLIFIED   ≠   SIMPLE

Figure 1.   Simplified Does Not Equal Simple

This dissertation aims to understand how user-centered design methods can be leveraged within the framework of both contract law and contract management to produce usable documents in a multi-user and cross-functional environment. Examining contract law, contract users, and user-interface design as complementary, in areas with limited empirical research, is envisioned to connect contracts as legal instruments and as managerial roadmaps throughout execution.

Unlike the legally focused traditional contract design, the user-centered design process focuses on how contract information can be communicated and memorialized with a "reader-first" mindset. A reader-first mindset focuses on each user type who relies on the contract document at any point during the contract's life cycle to perform their jobs. The research builds on current research, focusing on shifting away from drafting documents that are intended to win a legal argument to drafting documents that promote trust between contracting parties, achieve the expected business goals, and prevent problems and disputes (Nystèn-Haarala et al., 2010; Haapio, 2013; Haapio et al., 2018).

In business relationships, many misunderstandings are minor at the onset; however, minor misunderstandings can grow into major disputes without a good relationship and a clear understanding of the agreement. A good contract design can provide clarity for the parties when the document language and content are understood and interpreted the same by all involved parties, at the time of signature as well as throughout execution. The belief is that enhancing the readability and comprehension of a contract document will help prevent misunderstandings or deviations from planned implementation. To achieve this, the contract document's content should be easy to find, the language readable for all audiences, and the information presented so that the intended users can comprehend and perform the obligations.

1.3 Theoretical Base and Research Pathway

Two key areas of contract theory that support the framework that contracts should be developed and designed with a focus on improving exchange relations and avoiding disputes are relational contract theory and the proactive contracting approach. While different in research objectives, both share the same ideology that contracts serve many more purposes than to safeguard against disputes.

The relational contract theory is founded on the concept that contract exchanges are formed and shaped by the parties' interactions and social relations (Macneil, 1974). B2B exchanges, especially in global transactions, can be extraordinarily complex due to the longevity of the relationship and the intricacies of the exchange. In such long-term relationships, flexibility, shared risk, and trust become essential (Nystèn-Haarala et al., 2010). The relational contract theory supports the notion that contracts serve multiple purposes and establish a framework of trust, and that collaboration supports successful contract outcomes (Nystèn-Haarala, 1998).

Another theoretical idea that the research builds on is the proactive law approach that combines a forward-looking legal framework of avoiding disputes and at the same time builds a collaborative business relationship that supports meeting expected contract goals (Rekola & Haapio, 2011). The idea of a proactive law approach to contract construction was first introduced in the Nordic countries, initiated by a small team of Finnish researchers[9]. Proactive law is a future-oriented approach to applying legal knowledge before things go wrong, emphasizing forward thinking to avoid disputes and create value by building a solid foundation for a successful business relationship (Haapio, 1999–200). Within the context of contracting, proactive law merges quality and risk management principles with preventive measures (Siedel & Haapio, 2010; Haapio, 2013). It proposes "that companies should improve their contracting capabilities and corporate lawyers should serve business objectives instead of preparing for possible litigation" (Nuottila et al., 2016, p.150). The idea that contracts are roadmaps for successful execution requires a proactive view of *when* the contract document is developed. Contracts can be business *value creators* when the focus shifts during the document drafting process to how to successfully execute a contract without resorting to "legal provisions" and expensive dispute resolution measures.

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[9] The Proactive Law movement began in Finland with a 1998 conference paper by Helena Haapio entitled "Quality Improvement through Proactive Contracting: Contracts are too important to be left to lawyers!". The Proactive Law movement continues to grow in Europe and today the Nordic School of Proactive Law continues as forums for both practitioners and researchers to further the methods and legal theories of Proactive law.

The Proactive Law approach has its origins in Preventive Law, first introduced by Louis M. Brown in the 1950s; in his book "Manual of Preventive Law" he focused on how the law can be used to support business operations and to avoid disputes (Brown, 1950). Preventive law strives to apply various legal and practical principles to plan for successful execution (Gruner, 1998). Business contracts support an economic transaction, with a goal to gain an economic benefit. Accepting that the business environment will change over time adds a preventive dimension to contract drafting.

The relational dimension of the proactive law approach integrates the concept that contracts are value creators to the preventive law approach, as it considers the law an enabler to create economic value and successful relationships (Berger-Walliser, 2012). The focus is on preventing misunderstandings and disputes during the contract development phase, along with outlining the relationship and how the parties will work together through the life of the agreement to achieve the expected economic returns (Rekola & Haapio, 2011). Defining upfront how the parties intend to work together as the environment changes and execution does not go as planned is different from focusing solely on how to prevent disputes.

Coalescing the relational contracting theory and proactive law approach establishes a new dimension to contract document development that places utmost importance on producing contracts that are collaborative and designed with a proactive mindset that focuses on contracts as part of creating economic value. Ultimately, this approach strives to eliminate the baseline that contracts are purely intended to safeguard the parties when things go wrong or to resolve disputes. Rather this viewpoint provides a framework for a user-centered contract theory, which believes contracts are communication tools in a multi-disciplinary environment supporting positive relationships that avoid disputes and provide companies a competitive advantage.

The multi-disciplinary research crosses into the field of design theory and cognitive load theory. Design thinking as a theoretical framework is a problem-solving approach where design principles are applied to produce new and more effective solutions (Brown, 2019). Cognitive load theory (CLT) relates to the working memory, analysis of information processing, and causes of cognitive overload (Sweller, 1988). While neither theory is the subject of the research, they form a theoretical base of user-centered design and visualization as part of contract design.

In a complex business environment, the idea is to improve existing products to be simple, intuitive, and pleasurable for the user (Kolko, 2015). Design thinking places a primary focus on the user experience as a measurement of the

effectiveness of the solutions. In contract design, design thinking applies to developing contract documents that the user can use, comprehend, and take the intended action.

When the user is the central subject, the approach no longer focuses on the contract content as much as it does on how to communicate the information most effectively to the intended audience. In the same ways as in human-centered design, the users' natural behavior is considered the baseline to design interfaces that are easy to use, intuitive, and avoid performance errors (Oviatt, 2006). Furthermore, the intrinsic cognitive load, the interactivity of elements (Paas et al., 2003) is fundamental to simplifying the structure and aids users in understanding complex contract information.

In contract design, the anticipated effort a user determines when taking an initial look at the document must be considered. A judgment task, in essence anticipation of effort, is the prediction a user makes of the mental workload and performance capabilities needed to tackle the task (Fennema & Kelainmuntz, 1995). The human mind is sensitive to visual cues and processes different types of visual display in different ways. B2B contracts are complex because of the multitude of concepts related to the transaction, placing utmost importance on the user-interface design. Consideration of reducing the cognitive load and a users' perception of the anticipated effort to read a contract is part of the baseline throughout the research.

The research pathway was a three-phase process, spanning five years, as outlined in Figure 2. The sequential research process consisted of multiple objects of study employing various research methods. The contract document and the complexities were analyzed throughout.

Purpose of a Contract
•Law
•Business

Contract Document
•Contract Clauses
•Stakeholders and End-users

Redesign & Simplification
•Structure
•Language
•Visualization
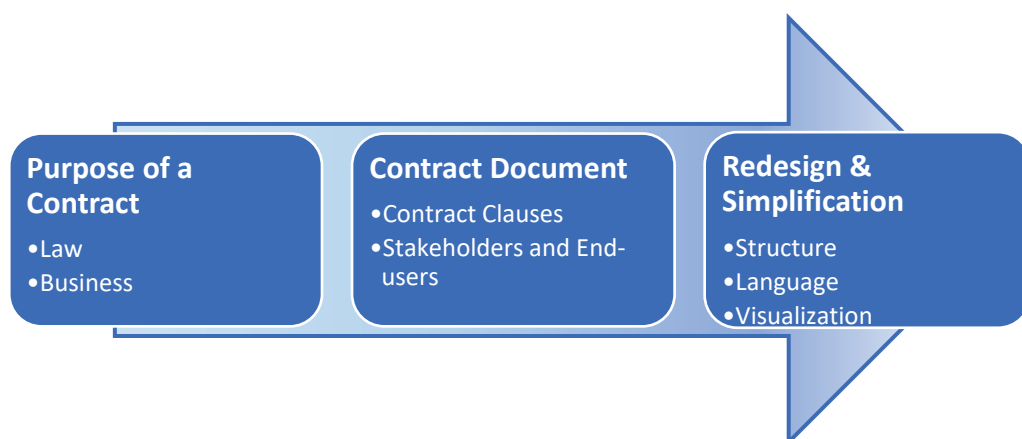
Figure 2.   Research Pathway

The initial step involved examining the purpose of a contract, from both a legal and managerial perspective. Step two consisted of analyzing and identifying contract document content and users. In step three, new ideas were explored and tested within the framework of a user-centered contract design approach. From the research, three main contract simplification research areas were selected: structure, language, and visualization.

At the start of the research, the definition of the functions of a contract was explored. The founding in both legal and managerial literature varied. The author defines the purpose uniquely as follows: "to serve as the road map during contract execution to achieve the expected (or greater) economic returns and to provide legal protections in case a dispute arises." This definition took shape during phase one of the research path.

The initial area examined in detail was contract law. The evolution of law in the US dates to the time at which the English settlers brought the common law system to the US (Friedman, 2011; Hurst, 1956; Gilmore, 1995). This history offers essential insight into how contract language and content have evolved over time and provides answers to why contracts continue to be written and designed mainly in the traditional format[10]. Many other countries' contract laws have roots dating back to Roman times and share the same challenges with traditionally written, complex contract documents.

Contract law and legal theory is the foundational base from which contracts operate (Bussel, 2016); in contrast, economic theory focuses on how an economic advantage can be gained from contracts. Both are considered equally important in the context of this research. However, contract law is considered as given, a fixed variable; doctrinal principles are not analyzed nor is what specific contract content should be included or excluded. Instead, the contract document design is the variable that can be altered. This dissertation assumes that the law itself does not require a contract document to mirror the prevalent traditional document format.

The legally centric contract form is often caused by the drafter's focus on the inclusion of legally founded contract content. Consequently, the intended business relationship and operational content tend to take on a similar legalese form of writing. In a legally centric approach, prior contract language tested and proved in court is duplicated to ensure legal protections are included if a dispute arises. This approach neglects to ensure that the document writing can be comprehended by

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[10] US law was chosen as the primary subject for contract law analysis because the contract documents analyzed in the research are mainly US B2B contracts. Globalization has caused contracts written under US law to also be used globally in cross-border transactions.

the intended users. The legally founded approach to limiting risk might produce a contract that looks good on paper but lacks the relationship aspect essential for avoiding disputes and successfully executing the contract obligations (Siedel & Haapio, 2010).

When focusing on the purpose of a contract, contract law is not the only area that produces inherently inefficient documents; managerial complexity is a significant contributor as well (Haapio, 2013). The difference, in general terms, is that legal inefficiencies arise from the existence of ambiguity, causing disputes and misunderstandings. In contrast, managerial inefficiencies arise from a lack of users clearly understanding the contractual obligations or the failure to use the document during contract performance, which causes profit degradation. Focusing on contracts as dynamic documents serving as managerial communication tools strives to reduce managerial complexity and improve business operations.

The conclusion drawn from phase one is that when a contract document is designed to capture the parties' business relationship, it is not merely a document but rather a document that supports an ongoing process. It is essential to recognize when developing and drafting contracts that contracts are not static documents; they live in a dynamic state (Annola, 2003). Many tasks such as negotiations, contract document finalization, and performance are integral parts of the business relationship that the contract document supports; in essence, a contract is a "living document" within the contract management lifecycle.

Throughout the contract's lifecycle, various types of contract tasks occur that individuals from different functions perform. It is essential to understand each contract user's and stakeholder's part in the contract life cycle from initiation of the contract relationship throughout the execution of the agreement. Recognizing that contracts operate in a multi-user environment is essential. Furthermore, understanding inter-dependencies in a multi-user environment drives how the contract design process can be streamlined.

In phase two, the physical contract document was analyzed in detail and de-compiled to determine the concepts and elements that form a contract, referred to as the "building blocks" of a contract. Building blocks are derived from breaking down each individual concept[11] of a contract into individual elements (Finnegan, 2016). This notion that contract documents are composed of several distinct

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[11] A contract concept is referred to by different names, most commonly; a "clause", "term", and "section". Throughout the dissertation, each concept is referred to as a building block or clause.

concepts rather than one continued writing is an essential assumption throughout the research.

In phase two, the contract content identified by distinct building blocks followed the theory of "contractual structuralism". A modular contract approach considers contract clauses as separate elements that are independent yet can be combined or integrated (Hwang & Jennejohn, 2017). Building on contractual structuralism, the research focused on how to manage contract obligations and content by grouping clauses into categories based on the closeness of the conceptual relationships to a set user group. An evaluation of the different approaches to contract content categorization was analyzed and defined. A comparative analysis was conducted to derive a user-based categorization and to determine how it differs from or aligns with other existing categorizations of contract content.

Each contract clause or concept serves a specific intent. The intent and correlation to users can be divided into multiple layers, from high-level groupings to specific individuals. Defining and outlining these relationships are part of the analysis and development of the user-based categorization of contract clauses.

In phase three, researching specific design solutions and simplification methods entailed analyzing how design thinking[12] is applied to improve user experience. The key to applying design thinking to improving usability is the notion that design thinking is a multi-step process involving many steps rather than one or more large steps (Brown & Martin, 2015). Comparing and contrasting design processes to contract document development provides the baseline for how design thinking can be applied in contracts.

Integration of design thinking by other disciplines is evolving faster than in the legal field (Berger-Walliser et al., 2017). Analyzing other disciplines' integration of design thinking is essential to explore a solution for contract design. Industries, such as technology, have standardized processes that are universal to the entire field. In contrast, current contract design solutions are fragmented and are not universally adopted. Therefore, solutions are sought that are neutral to contract type, industry, or country. The aim is to develop solutions that drive a paradigm shift in contract document development to be a universal contract design process.

Phase three is broken into three different research topics. Contract simplification is the overarching goal that frames the selected design areas of contract structure, language, and visualization. First, structure simplification is evaluated, and a user-

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[12] "Design thinking" according to Tim Brown, is a process mindset, that evolved from considering design not purely as a process but as a way of thinking to solve complex problems.

based four-category grouping of contract content is developed. A user-based structure outline aims to improve the process of developing content and assembling clauses in a logical flow. The goal is to create a structure that easily guides users to navigate a complicated long document and locate the desired information.

In language simplification, the natural language of contracts, often referred to as legalese, is the subject of the analysis. Analyzing contracts at the word and sentence level, the terminology and grammar influencing the natural language of contracts were identified. Part of the analysis was to identify the technical legally centric terminology and style prevalent in today's contracts. Plain English [13] principles were selected as the comparative language and writing style that promotes writing for the audience. The term "plain English" is integral to contract simplification and is used throughout the research. Annetta Cheek (2000) from the Center for Plain Language, outlined the following definition in the November 2000 issue of Clarity Journal:

> *"A communication is in plain language if it meets the needs of its audience – by using language, structure and design so clearly and effectively that the audience has the best possible chance of readily finding what they need, understanding it, and using it." (p. 5)*

From there, existing standardization of terminology and language in other professional disciplines was reviewed and evaluated in the context of contract language to develop a framework for a controlled contract language.

The third topic category in contract design is contract visualization. Information, communication, and graphic design theory and techniques are evaluated. Various approaches to integrating images and graphic depictions within the contract document are analyzed. Visualization is a key area that can help solve the issues of ambiguity, misinterpretation, and challenges caused by language barriers. Recent studies show that the inclusion of visuals has a significant impact on both user comprehension and user-experience (Passera, 2017). The research explores what visual design is and examines techniques to identify when adding or supplementing text with images improves comprehension and reduces cognitive load.

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[13] Standard English is the form of the English language widely accepted today as the natural English in use. Plain English is standard English, however, plain English principles consider the communication to meet the users' needs versus purely a word choice.

To test the conceptual ideas in practice and to evaluate how businesses can integrate different design methods into their document development processes, a traditional contract was redesigned. Following the user-centered design process, the traditional contract was simplified.

On a practical level there is a need, and businesses are exploring new methods and approaches to find efficiencies and reduce the cost of contract document development and negotiations. With the help of technology, shifting contract document development to be a document design process is possible. The presented design methods and contract development design process coded into a software application is envisioned to offer the future baseline to shift contract drafting from a manual to a streamlined, automated contract design approach.

 To summarize, this dissertation presents a contract design solution that is based on employing a user-centered design process. Three specific areas were selected for analysis, structure, language, and visualization. Three distinct contract design ideas are proposed within each design area; they are, first, structure simplification via categorization of user types and breaking the contract into individual building blocks. Second is language simplification by reducing legalese by implementing plain English principles as a baseline to develop a Controlled Contract Language (CCL). The third area is the inclusion of visuals and information design techniques to improve contract readability and comprehension. Various information design techniques can be leveraged as part of improving all areas of contract design. Focusing on reducing the cognitive load of reading a contract visualization of inter-related terms and pre-award and post-award visualization was analyzed. A holistic simplified contract can be produced when integrating a user-centered design process with defined design goals as part of the contract development process, as shown in Figure 3.
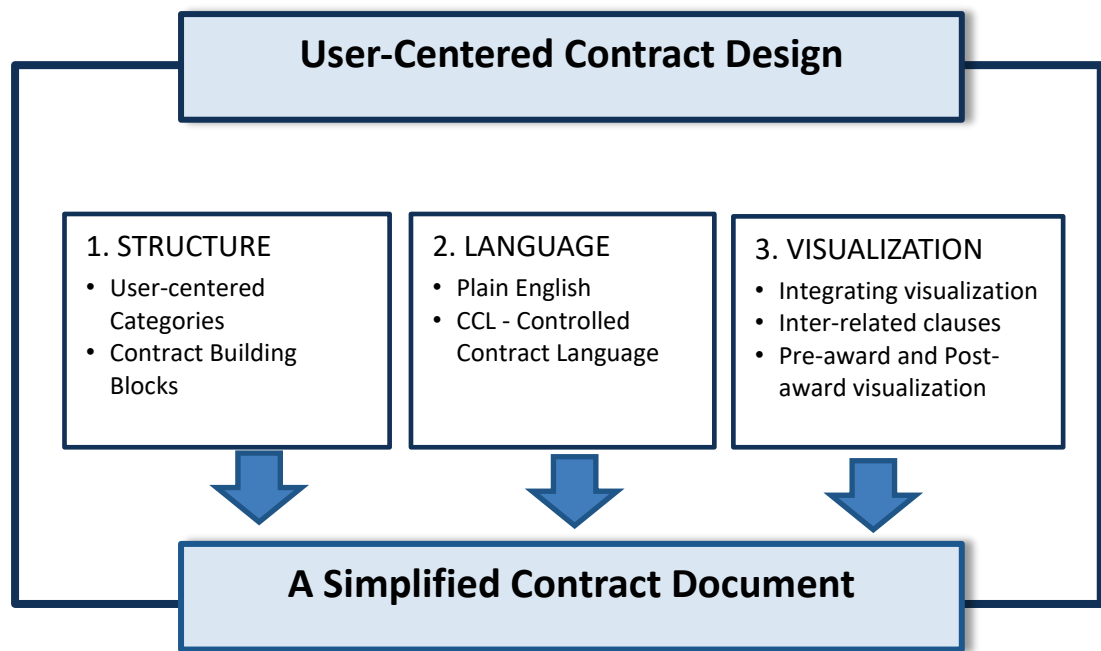
Image by Milva Finnegan©

Figure 3.   User-centered Design Framework

1.4 Research Methodology

The research method employed followed primarily a social sciences research method versus traditional legal dogmatics, common in traditional legal research, where the object of study is the law itself. Legal dogmatics or the doctrinal study of law focuses solely on interpreting legal norms (Peczenik, 1969). Because the judicial perspective is founded on interpreting legal norms that are derived from judicial decisions and disputes resolved by courts, it ignores the societal impact the environment has on contractual operations (Struiksma, 2013).

A social sciences research method, as a research method, analyzes the relationships between individuals and societies and how society operates (Liberto, 2019). Legal science "studies law as it is and the workings of society" (p. 202), referred to as *law and society* in the US and *law in the society* in the United Kingdom (Christiani, 2015). Relating to contract research, the social sciences method considers contracts as part of society and the relationship to the evolution of contracts (White & Mansfield, 2002). Because contracts are legal artifacts used in society to engage in business relations, the research is interested in observing how business users employ and engage with contract documents. In particular, the impact that contract document design has on contract usability in a multi-user

environment is explored. Applying a non-doctrinal research method shifts the focus to studying how contracts function as a part of society.

Focusing specifically on the contract document, it can be noted that while society and the types of business disputes settled in court have changed over time, the contract document itself has not changed in form nor design. Researching the phenomenon of the stagnancy of the contract document design and contract document evolution overlaps legal dogmatics research when analyzing the root cause of the phenomena.

The research path taken is multi-disciplinary, utilizing a mixed-method approach, where both theoretical and methodological research methods are employed. Within the framework of multi-disciplinary research, both qualitative and quantitative research was conducted. Mostly qualitative in nature, the research includes two literary reviews, ethnography as a participant observer, and concept relationship analysis. The quantitative research includes a readability test and a collection of existing empirical studies. While limited in number and scope, existing empirical studies and benchmark reports offer key evidence of the impact on effectiveness and usability that different approaches to contract development and design can have from a user perspective.

Analyzing the causes of contract complexity, disfunction, and the challenges users experience rather than results from disputes provides a different approach to research within contract law. Because contract law doctrine is derived from real-world disputes, it involves the natural progression of "high-level" concepts that mirror society's evolution. Exploring the interaction of law and society is considered exploratory versus explanatory research. The difference between the two is that explanatory research focuses on accumulating theoretical knowledge of an existing phenomenon, while exploratory seeks to uncover the phenomenon and seeks solutions to solve the problem (Haapio, 2013).

Guided by the proactive contracting approach, the analysis of how well contracts promote achieving business objectives required the research method to be multi-disciplinary, utilizing several research methods (Nystèn-Haarala, 2017). If contracts serve a vital role as business enablers and serve to prevent disputes, it emphasizes how contracts can be designed to prevent disputes.

Furthermore, how well a contract functions or serves its intended purpose is not always determined by the law but by the humans using the contract. The research method employed resembles the field of law and sociology research, where the goal is to assure that the parties' interpretation of the obligations are aligned and to prevent disputes, applied to varying degrees by legal scholars Stewart Macaulay

(1963) and Ian Macneil (2000). Within this sociologically focused framework, real-life data collection and observations are essential elements (Cimino, 2015). Observing the functioning of contracts, as a participant observer in B2B transactions, over an extended period, suggests that contract documents impact exchange relations and economic gains or losses.

The author started the formal academic research on the topic in 2011 with a co-authored presentation and subsequent article on the topic of contract simplification with Helena Haapio, presented at the IACCM Global Forum for Contracting & Commercial Excellence held in Phoenix, Arizona (Finnegan & Haapio, 2011, October 27–28). Prior to this, the researcher had interactively engaged in observing contracts as part of business transactions for twelve years[14]. Integrated as a practitioner, this involved working in a multi-disciplinary environment for an extended period, experiencing every aspect of a contract's lifecycle. The involvement afforded direct and indirect engagement with a magnitude of different users, functions, and business partners[15] by engaging both as a participant and as an observing bystander. This type of research method transferred to formal academic research provides the exploratory baseline to identify a phenomenon to study and the problem to be solved.

A participant observer research method is also called ethnography or a field study method and involves spending an extensive amount of time with a specific group, observing, asking questions, thinking, and seeking to understand how they consider the world (Delamont, 2004). Direct engagement with contract stakeholders and users from various functions, disciplines, and companies, identifying, documenting, and developing new contract design ideas are part of the ethnography research method.

Ethnography is common in sociological research; the unique elements of the participant observer are the direct engagement with people in their natural environment for an extended period (UCSF Library, 2020). Anthropology and sociology were the first fields to employ this distinctive research method, but over time it has been gradually accepted as a formal research method and spread to

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[14] The author has continued as a part time practitioner working as a consultant to various companies to improve contracting and business processes, including redesigning contracts and transforming contract management practices by integrating multiple users as part of the process.

[15] The researcher's engagement commenced in 2000 as a contract specialist and has continued to the present day in various finance manager and contracts consultant roles. The direct engagement involved participating in the development, negotiations, drafting, management and extensive financial analysis and performance tracking on international B2B contracts[15] ranging from USD 5,000 to USD multi-billion-dollar contracts. The engagement involved every phase of the contract lifecycle and the researcher worked with cross-functional teams analyzing approximately 4,000 contracts.

other fields of human studies (Jorgensen, 2015). In contract research, this is still a new research method.

Ethnographers take field notes during their observation that vary in form. The distinct characteristic of the participant observer field notes, systematically written over an extended period of time, is that they focus on the "significant" observations and forms the deepening of knowledge of the observer; this in turn, presents the framework and develops the initial interpretations of the events (Emerson et al., 2011). These field notes form the basis for parts of the presented research and illustrations.

Ethnographic research in business is evolving to support strategic direction by observing customers' behavior in their own settings (Anderson, 2009). The methods of research are significantly different in an academic environment than for a practitioner in the field. Practitioners are solely focused on finding a solution to a problem, while a researcher must first answer the question of "why" or "if" a problem exists. Only discovering the root causes can yield a scientific definition, cause and effect, and solution to the problem. During the Ph.D. studies, the theoretical research was conducted to advance the field of contract design and analyze the phenomenon of contracts as economic value creators in business operations. In addition, the theoretical ideas were applied to real-world contracts.

A secondary participant observer study was conducted through participation in a contract law class at Saint Louis University School of Law during the 2018 fall semester. Fully integrating and participating as a student to document [16] the contract teachings in law school established the baseline for how law students (future lawyers) are taught and trained to analyze and develop contract documents. How future lawyers are trained is an important part of the research as lawyers tend to be the primary drafters of contract documents. Understanding the underlying philosophy taught in law school contract law class, provides critical evidence to support the root cause analysis and identification of how business users experience contracts.

To form the theoretical basis, an extensive literature review was conducted. This type of textual analysis of literature is most common in a field of study where limited quantitative empirical studies exist. The law and economic literature related to designing contracts, as related to the content, is exponential; however, literature specific to optimal contract document design, user-centered contract design, and contract simplification is limited. The literature review process,

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[16] Detailed journal entries were made weekly to document the class material and class objective. Comparative analysis was conducted to compare the law school class contract law teaching method to how contracts function and are drafted practice.

spanning the entire research timeframe, was a comprehensive review of existing literature across a multi-disciplinary spectrum.

Searching for literature online, the initial search terms were, "contract design," "contract simplification," and "contract drafting." The research extended to cover "relational contract theory" and "proactive law approach." The research terms used to analyze design in contracts included, but were not limed to, "information design," "communication design," "legal design," "user-centered design," "contract users" and "cognitive load theory." In support of each specific contract redesign ideas search terms such as "contract visualization," "plain English," "contract structure," "contract automation," and "contract lifecycle management" were also relevant. The primary sources for literature originated online from academic search engines, such as SSRN, ScienceDirect, Scopus, google scholar, and research gate. Additional journal articles were found via searches in journal databases, such as Sage, Elsevier, Journal of Strategic Contracts (JSCAN), Harvard Business Review, Management journals, and several Law School Journals. Conferences and academic symposiums were another source for the latest research on the topic.

To validate and ensure the latest research articles and presentations were considered, a secondary literature review was conducted prior to finalizing the dissertation. The goal of the secondary research review was to synthesize the literature and sources by the main topics presented and to meet the academic research criteria of replicability of the study.

The secondary literature review was completed following the initial three steps of a Systematic Literature Review (SLR), consisting of selecting search terms, identifying articles, and screening search results following established criteria. Common as a standalone research method and approach, SLRs systematically follow a set process to review all available sources of literature on a selected topic based on selected search terms (Moher et al., 2009). Following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) model, the extensive search, review and collection of articles helped ensure the same identification and selection process was consistently used. One benefit of the PRISMA model it that once the relevant articles are selected, data is extracted and analyzed in a systematic manner to support the specific research topic (Moher et al., 2009). The final step of the standard PRISMA approach was not performed, because the goal of the secondary SLA conducted was to synthesize the most relevant literature in support of this dissertation, not to produce a standalone literature review on the topic.

In addition to ensuring the review of the latest research is considered, the PRISMA checklist helps identify any gaps in the research. The PRISMA checklist identifies

in detail the applicable steps and data gathering process to be followed. A detailed process flow chart of the articles identified and selected via the criteria is included in Appendix 2. The flowchart summarizes the number of search records, the number of articles meeting criteria used for selecting articles, the number of articles related to additional relevant search terms, and the final number of articles identified.

The outcome of the secondary literature review was the validation of the relevance of the included articles and to assure any recently published articles were reviewed. It is to be noted the secondary literature review only used the SLA as a guide and did not follow or intend to produce a standalone literature review on the topic; rather it was conducted as an audit and validation of the literature relied on in the research.

A summary of the relevant literature on the topic is outlined in Table 1. To replicate and to continue the research presented in this dissertation the identified authors and organizations are important contributors to the topic. While several other researchers, scholars, and business organizations are referenced in this work, the authors and organizations identified below are instrumental sources used to build the research. Many of the works of the authors are published books.

Table 1. Summary of Main Literature

Concepts	Relevant Authors Organizations	Dissertation Section
Contracts & Society Relational Contract Theory	Friedman (2011) Gilmore (1995) Macneil (1974, 1975, 2000, 2001) Cap & Lumina (2005)	Chapter 1 - Contract Complexity and Background & Theory
Proactive Law	Helena Haapio (2011, 2013) Berger-Walliser (2012 Nysten-Haarala (1998, 2010) The Nordic School of Proactive Law	Chapter 1 – Background & Theory
Design Thinking User-centered Design User Experience (UX)	Tim Brown (2019) Don Norman (2013) Passera (2017) Hagan (2018)	Chapter 2 - User-centered Design
Contract Drafting	Stark (2014) Burnham (2016) Adams (2013)	Chapter 3 and Chapter 4 - Structure and Language Simplification
Plain English	Garner (2013) Butt (2013) PLAIN Clarity Center for Plain English	Chapter 4 - Language Simplification
Contract Document Design Visualization Contract Simplification	Haapio (2013) Passera (2015, 2017) Waller (2011, 2015) Simplification Center	Chapter 5 - Contract Visualization
Contract Automation	Clack (2020) Roach (2016) ContractStandars.com WorldCC (formerly IACCM)	Chapter 2 - Technology in the Field of Law & Contracts Chapter 4 – Controlled Contract Language

Latest research and empirical studies on commercial and contract management were obtained at conferences and academic symposiums, for example the WorldCC conferences, Annual International Conference on Contracts, XIII, and NCMA conferences. WorldCC conferences include presentations, extensive global benchmark studies, company case studies, and scholarly research by experts in the field. The limited number of empirical studies on the topic are predominantly obtained from conference proceeding literature.

A research method called relational concept analysis was employed when aligning the traditionally designed and simplified contract design document content. Concept relation models in research define concepts in visual form and systematically align relationships (Nuopponen, 2011); furthermore, relation models are employed to analyze the causes and effects of phenomenon (Nuopponen, 2016). The model supports a systematic approach to draw conclusions about similarities and differences between concepts. In particular, the structure simplification solutions presented in Chapter 3 were developed using visual satellite maps[17] to identify terminology and relationships between users and contract clauses.

An empirical readability test was performed to assess contract readability between traditional legalese framed contract documents and documents that were redesigned with an aim to reduce text and writing complexity. The hypothesis tested in the research is the impact that altering the written text by following standard English and simplifying the writing has on improving contract document readability, usability, and comprehension. The two quantitative readability tests comparing traditional versus simplified contract documents utilized two different established readability tests Gunning Fog Index and the Flesch-Kincaid reading ease test. The baseline readability test employed the Gunning Fog Index and the second readability test used the Flesch-Kincaid reading ease test.[18] Both formulas and test results are explained in detail in Chapter 2.

The quantitative readability results show in quantifiable measures the education level required to comprehend and read the specified text. The test measures the impact on the equivalent years of education, altering the language and sentence structure yields. The readability tests are used as part of the analysis in Chapter 4.

Altering contract document design beyond the text crossed into the field of information design, user-interface design, and graphic design. The research methodology is focused on the users of the end product and the user's perceived experience when interacting with a product. When varying the contract document design, measurable user-experience results are identified from existing research results that were collected via quantitative and interview-based results conducted

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[17] Satellite maps are visual depictions of relationships between different concepts.

[18] Flesch-Kincaid reading ease test was specifically selected to support Chapter 3 contract language simplification ideas. The comparative model used to support the Controlled Contract Language presented is the aerospace industry's ASD-STE100 standard. The readability of the manuals relied also on the Flesch-Kincaid reading ease test. All aerospace and defense industry maintenance manual writing must adhere to ASD-STE100, which falls under S1000D, that is, the ISO specification for the procurement and production of technical publications.

by current scholars and researchers in the field. These empirical studies support the research finding in Chapter 5.

Studying user-centered design and user-interface improvements, the method used aligns with information design research that is a problem-solving process involving sequential steps. Exploratory in nature, the process begins with developing an understanding of the user needs, the context, and the actions expected by the user to take, with a goal to develop usable and accessible products (Interaction Design Foundation, n.d.). Because usability of the contract document is central to the research conducted, design thinking as an approach to exploring user-centered contract design evolved. The research tested various information, communication, and legal design theories as solutions to the problem statement.

Quantitative research produced by professional associations on the economic impact, inefficiencies, and problems users experience in reading and comprehending complex contract documents is invaluable benchmark information. Directly related to contract management, these published quantitative benchmark and survey reports are an important part of validating and determining the relevance of the research. World Commerce & Contracting (WorldCC), formerly International Organization for Contract & Commercial Management (IACCM) [19], benchmark and research reports form the baseline for the quantitative research on the impact of various phenomena observed within the field of contract management. With more than 60,000 members in more than 183 countries, the WorldCC organization conducts the most extensive quantitative surveys in the field of contract management available today. The existing research results chosen are classified as significant based on the number of participants and the structure of the studies.

In the field of contract management, document simplification and legal design, are rapidly increasing as topics of both academic research and practical solutions. New contract design ideas are developed and employed by companies via the use of technology. The approach to contract document initiation, negotiations, development, review, and execution by various software applications provides valuable insight into the current trends and innovations in contract design. Technology in general, but particularly technology for Contract Lifecycle Management (CLM), is one of the most significant contributors to the rapid evolution of technology-driven efficiencies in the field of contract management. While not the focus of the research, technology cannot be ignored because the

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[19] In September 2020, IACCM changed its name to WorldCC. Because the case studies, articles and benchmark reports included were published under the IACCM name it will occur frequently throughout this dissertation.

contract document is part of and central to all phases of the contract lifecycle and business operations.

The final experiment conducted was to leverage the presented user-centered design process to redesign a traditional contract document. Focusing on each of the three identified redesign areas; structure, language and visualization, a phased iterative design process was applied on a clause basis to develop the optimal design solution. Simulating the theoretical ideas on a B2B contract aims to pave a path to testing the theoretical ideas in practice. Resembling action research, the specific ideas are implemented and then evaluated.

1.5 Structure

This dissertation consists of seven chapters. Chapter 1 outlines the current environment of B2B contracts and why the research is relevant. After that, the research problem and objective of the research is defined. Next, the theoretical base and research path is explained along with the research methodology employed.

Chapter 2 provides an overview of the critical foundational assumptions relied on in Chapters 3, 4, and 5. The chapter is divided into four main sections. The first section discusses the legal foundation of contracts and its influence on contract complexity. Section two outlines the idea of design thinking and introduces a user-centered design process. The third section examines contract simplification and its relationship with users and the contract lifecycle. The fourth section examines the intersection of law, technology, and design. The chapter is concluded with a short summary of technology in the field of law and contracts.

Chapter 3 presents the idea of structure simplification. The traditional contract document is analyzed by breaking down the content into individual concepts and clauses, the "building blocks" of a contract. A user-based categorization is presented as a model for grouping contract clauses. Each building block is analyzed and aligned within the user-centered design framework to establish a process for developing a simplified view of contract content.

Chapter 4 analyzes the natural "legalese" language of contracts prevalent today. By comparing the technical language of contracts to plain English principles, a framework for language simplification is defined. Thereafter, exploratory analysis is conducted on how complexity can be reduced by documenting a standard set of contract vocabulary and grammar rules in a controlled environment. A controlled

language used in civilian and aerospace industries for writing maintenance manuals, called ASD-100STE, is used as a model to develop the idea of a CCL.

Chapter 5 examines visualization and information design techniques as the third element to improve contract design and advance contract simplification. Contract visualization is a natural extension of contract language and contract structure simplification when focusing on improving contract comprehension in a multi-user and multi-disciplinary environment.

How complex information can be presented by other than purely textual means is the focus. Various visualization techniques are applied to contract building blocks to test how readability, comprehension, and usability can be improved by considering visualization as one part of contract simplification. The user-centered design process is central to analyzing what characteristics of a contract clause render it conducive or not conducive to visualization. Furthermore, applying criteria such as humans' natural way of processing data, elements that cause cognitive overload and how visualization can be initiated in contract documents provides a new perspective to the existing research.

Chapter 6 illustrates the user-centered design process simulated in the real world. To test the theoretical ideas, a traditional contract document, a purchase agreement between Nordic Birdhouses Ltd and Timo, Inc., referred to as the "Birdhouse contract" is simplified by following the proposed user-centered design ideas. The design areas of structure, language and visualization that is the focus of the research conducted is applied to simplify the document. A readability test is conducted to compare the readability level prior to and after the redesign.

Chapter 7 provides a summary of the dissertation objective, results, and scientific contributions. The hope of the author is 1) to add to the literature in the field of contract design and contract simplification; 2) to initiate further exploration of standardizing contract language in conjunction with the Plain English movement and developing a Controlled Contract Language; 3) to spur the adoption of a user-centered design approach to contract development and drafting; 4) to adopt visualization as part of contract document design; and 5) to provide practical tools and methods for businesses and technology companies to shift contract development to a contract design process.

2 TOWARD A USER-CENTERED DESIGN IN CONTRACTS

2.1 The Legal Foundation of Contract Documents

A contract is a central part of a business transaction. Lawyers know how to read contracts, but individuals not trained in legal writing often experience contracts difficult to read and understand (White & Mansfield, 20020). To better understand why contract writing style differs from other business documents, contract law and its influence on the contract document are examined. The legal foundation of contracts and its influence on traditional contract writing style and form is a central area of the research.

Contract law, particularly in the US, has evolved over time, alongside the country's socio-economic evolution versus a written rule applied as a branch of liberal economics (Friedman, 2011). The result is that progressively, contract law has become the legal reflection of the free market, and those characteristics are reflected in the content of contract documents. Overtime contract disputes decided on in courts have shaped the future application and addition of provisions in transaction documents.

Universally, contract law is based on the principle of "pacta sunt servanda"[20], which dates back to 533BCE from Roman law (Cartwright, 2013), when it was established to deter opportunistic behaviors in exchange relations (Posner, 2014). In the US, this principle is manifested in the Restatement (Second) of contracts §1, that states that a contract "is a promise or a set of promises for the breach of which the law gives a remedy, or the performance of which the law in some way recognizes as a duty" (Am. Law Inst. 1981). This principle forms the core of the free market economy as companies can rely on formal enforcement of obligations. This framework that contracts are legally binding documents that are enforceable by law is universal across most legal systems.

There is no question that contract law and its application has shaped the prevailing traditional contract writing style. However, there is no descriptive theory defining what the law is, nor a complete normative theory explaining what the law should be (Schwartz & Scott, 2003). Today, a divide exists between scholars on what legal theory is; the legal positivist primarily considers the law a type of social institution, while the natural law theorists consider the law primarily a facet of practical reasoning (Bix, 2010). The non-economic contract theories tend to focus on how rules can be applied to reach the most just outcome when resolving a dispute (Bix,

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[20] Contracts are legally binding documents, enforceable under the law.

2013); in contracts the law and economics theorists examine how the law can be leveraged to minimize transaction cost and to create value in exchange transactions (Posner, 2014). Contracts as economic value creators, as argued in this dissertation, follow the law and economics' view.

For example, in the US, the application of contract law is guided by two main judicial documents that courts apply or supplement when making decisions on certain types of contract transactions (Bussel D. J., 2016). These are the rules in Article 2 of the Uniform Commercial Code (UCC)[21] and the provisions of the Restatement (Second) of Contracts applicable to business transactions. Due to their controlled nature, both serve as an integral part and often primary source for the application of contract law by the courts.

The UCC regulations have been ratified into law by 50 US states, except Louisiana[22], serving as law within the particular scope it covers (Uniform Law Commission, 2020). The UCC, by the virtue that it is documented and provides rules governing contractual transactions between businesses is, in essence, code law (Weiss, 2000). As evidenced by court decisions, the UCC provides essential legal protections when a dispute arises. The documented set of rules can be viewed as giving more flexibility to contract drafters because it provides definitions for technical terms and guidance on the different parties' responsibilities. Precedence from prior court decision provides a framework for how courts have interpreted and applied the rules.

On the other hand, there are some flaws to the reliance on UCC by reference versus tailoring contract language for each transaction. First, UCC applies only to the sale of goods and not services (Uniform Law Commission, 2020). Secondly, the UCC is interpreted and ratified differently in different states. Knowledge of how each state has ratified the UCC is required in order to fully understand how judges will interpret and apply UCC regulations in court. This creates legal risk if parties copy and paste prior agreements or assume a template agreement can be used across different states.

Furthermore, when a contract is applied globally across different countries, UCC provisions do not provide the same or consistent protections, and the differences in national and international transactional law must be considered (DiMatteo,

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[21] UCC was first introduced in 1952 with a general goal to harmonize sales transaction across the US. It is key to note that the interpretation of the code varies by state. Good collection of the articles and states adoption can be found at:
https://www.law.cornell.edu/ucc
[22] Louisiana has ratified only parts of the UCC into law.

2016). In cross-border transactions, the International Sale of Goods[23] (CISG, also known as the Vienna Convention) and Related Transactions treaty, established in 1980, provides guidance and common principles which are international in nature. In cross-border exchange transactions, the CISG provides modern, uniform, and fair legislation for the sale of goods (United Nations, 1988). Today the CISG has been ratified by 93 countries, applying to a significant share of global trade relations, and is the most successful uniform international trade law (United Nations, n.d.). Because the CISG is not applicable to all nations or applied consistently across all jurisdictions, a review of applicability should be done for each transaction.

Because of the varying application and interpretation of UCC and CISG, the parties need to be clear whether to include UCC or CISG as part of their contract and to what extent. Especially in cross-border agreements, courts can apply varying regulations if they determine them to be applicable to the transaction, even if not considered by the parties at the time of contract execution.

To further complicate what laws and regulations apply to individual contract actions, there are regulatory and government oversights of business transactions that add implied laws. Examples of governmental rules and regulations governing business transactions are labor law, antitrust law, insurance law, business regulations and social welfare regulation, which add to the complexity of contract law application (Friedman, 2011). In addition, courts often decide contract disputes based on facts beyond the contract document.

While common law and civil law systems are different, there are many similarities. In the US, UCC is treated similarly to European code law (Weiss, 2000). The similarities are often regarded as striving for conformity in exchange relations and importing the European code law system of countries such as Germany, France, Italy, or Finland, would not be a completely novel idea (Weiss, 2000). However, the similarities do not necessarily simplify cross-border contract transactions because of how private international law allocates jurisdiction (Linarelli, 2003). Contract law drives complexity in contracts that cannot be disregarded.

To find universal solutions, regardless of country, contract law is fundamental to all contracts because it directs how and when society uses the authority of law to enforce private agreements (Bussel, 2016). The exact elements required to constitute a legally binding agreement vary by legal jurisdiction requiring contract

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[23] CISG is a uniform international sales law and has been ratified by 91 countries as of 30 April 2019 (United Nations, 1988).

professionals with knowledge of how contract law is applied globally to be part of the document development process.

Differing interpretations, usage of trade, ambiguity, or lack of terms are some common reasons that cause misunderstanding or disputes. In these types of cases, courts focus on "what was the intent of the parties", driving the transaction and details of the exchange to become the key elements when interpreting what the agreement was. Defining the agreed-upon terms of the business deal is not derived from contract law rather from the negotiations and relationship the parties have agreed to. Clearly defining the transaction-specific details is imperative to be included to ensure both parties understood and interpreted the agreement in the same way. Herein lies the challenge traditional contract documents pose, if users cannot read nor comprehend the agreement, then determining what the parties' intent was when executing the final written document is difficult to do.

The traditional contract document today tends to be legal centric language in black and white text. Furthermore, especially in common law countries, the writing is filled with archaic words and language dates back centuries. One driving factor for this is the view that the essential purpose of a contract document is to resolve disputes in court. In addition, legal doctrine and regulations affecting exchange relations continue to be presented in legalese form. The complex technical legal writing and lengthy sentences remain the standard practice in contract writing, disregarding the other functions a contract serves.

There are, however, valid reasons why contracts should be written in their current traditional form. Legal is its own discipline, with its own technical language. Examining the common law system, it is evident that the contract writing style and terminology have their roots dating back to nineteenth-century judgments by English courts (Bussel, 2016). Litigated cases, some centuries-old, established the standard language and terminology in use today. Because of this long-standing tradition, some will argue that duplicating prior clause language verbatim ensures the expected protections under the law are attained.

In the US, one of the key court cases that have established the principles behind contract clauses and the terminology commonly used is the Hadley v. Baxendale, an 1854 case, which established the principle of remedies[24]. Including language for remedies in case of non-performance is an essential risk mitigator in business contracts. Other, age-old appellate court cases governing the application of contract law are Wood v. Lucy, Lady Duff-Gordon, a 1917 case, establishing a

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[24] 9 Exch. 341, 156 Eng.Rep. 145. (1854)

principle of promises that lack commitment[25]; and Webb vs. McGowin, a 1935 case, defining past consideration[26] principles. Among others, these historical cases have set the foundation for contract law doctrine and standard clause language frequently found in contract documents. They are also part of the law school's contract law teaching curriculum.

There are benefits to duplicating the same contract language at times to instill consistency in contract language. The reason is that many believe when a dispute arises that following precedence will ensure the law is applied by the judge similarly as in prior court decisions. Consistency and using language proven in courts are key arguments among those against shifting away from traditional contract form.

However, every transaction is different; there is a risk when language is copied from another agreement. Furthermore, it is not always optimal to copy language from a prior litigated case. Only certain concepts or clauses in a contract are directly derived from legal precedence; the remaining clauses relate to the business relationship and transaction-specific agreement. Only when combined are the agreed-upon term and the law governing such arrangement complete to support the exchange relationships essential for the economy to function (Hermalin et al., 2007). In essence, the content and design should consider both the business and legal users to ensure the document serves all intended purposes.

Tailoring each contract is supported by contract law, which provides flexibility regarding the form and content of the contract. Founded on the principle of "Freedom of Contract," anyone (with legal capacity) can execute a contract. The law does not prescribe the exact form, language nor content businesses must follow when entering into contractual relationships. In fact, verbal agreements are valid in many jurisdictions. Many businesses, especially small and medium-sized businesses, execute contracts on their own behalf, never consulting a lawyer. Freedom of contract principle fuels the free-market economy because it allows free engagement of commerce between individuals, companies, and government institutions.

In B2B transactions, some specific contract clauses, regulations, or usage of trade have become an essential part of how courts interpret contract law and are therefore important to know. Examples are contract law principles, such as freedom of contract, sufficient terms, offer and acceptance, rules of interpretation, and fair and reasonable dealings (Bussel, 2016), which are fundamental elements

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[25] 222N.Y 88, 118 N.E 214 (1917)
[26] 27 Ala.App. 82, 168 so. 196 (1935)

assuring the intended legal protections are part of the contract. Legally founded content is important, but so is transaction-specific information. Legally founded clauses should be tailored for each transaction, not duplicated from one to another.

One reason why the legal ideology keeps influencing the primary baseline in how contracts are written is the practice of copy-pasting a prior document as the initial document, which is then edited with the new business terms without changing the writing of the legal terms (Espenschied, 2019). Continuing to duplicate prior contracts is "perpetuating the poor drafting habits from one generation of lawyers to the next" (Espenchied, 2019, pg.2). Without a shift in how a new contract document is initiated, it will be a challenge to shift away from the traditional contract form as the baseline.

While assuring legal protections are included is important, it should be noted that enforcing an agreement in court and performing contract obligations are two different objectives. Both objectives are essential foundational pillars of a contract document and not in question. Rather, the process of developing the document, the design, who should be part of the process and in what order is the focus of the analysis.

As a participant observer in the field, I have witnessed the negative impact poor contract management and non-use of contracts during execution have on company profits and business relationships. The missed delivery date, scope creep, and missed payments are examples of areas that drain company profits. One root cause observed for when performance and contract management deviates from the agreement is that users and stakeholders implementing the contract do not read or reference the actual contract document to guide their performance.

Contracting parties intend to document the agreed-to relationship and the bargained for deal in the contract and to serve as the reference point during the life of the engagement. When the parties define and negotiate the transaction, the business deal-specific terms are the primary topic. However, when the actual document is drafted, the legal centric approach and duplicating extensive lengthy legal protections and "standard" language from prior contracts tend to be the focus. This causes the contract to be written primarily in the standard legalese writing style and form. The result is that even the transaction-specific details, the business terms, are also written in legal-centric language.

Furthermore, the writing style does not just impact business operations when users do not use or comprehend the information. It also can be detrimental in the case of a dispute. Especially in international law, courts give consideration to whether the parties understood the obligations they agreed to when executing the

contract. For example, the CISG includes a provision supporting universal uniformity across different jurisdictions and parties with differing backgrounds. Article 7 (1) – *"requires when interpreting the CISG regard is to be had to its international character and to the need to promote uniformity in its application and the observance of good faith in international trade"* (United Nations, 1988).

These principles of freedom of contract and CISG Article 7 (1) strive to establish a critical requirement that all parties to the transaction should comprehend the document content. Intent and understanding by each party, what the obligations and rights they agreed to are, can be considered to bear equal weight in contract law. The importance is placed on both parties understanding what they agreed to when signing the contract. Was there a "meeting of the minds?" Without reading or understanding the contract content, it can be argued that it is impossible to achieve a meeting of the minds between the parties.

Another argument by traditionalists is that replacing archaic words with standard English words, simplifying the document form, or including images renders the agreement not legally binding [27]. This dissertation's argument is simplified contract documents that promote clarity, readability, and comprehension, in fact, provide more legal protection.

When discussing interpretation, subjectivity becomes an element to consider because different people interpret things differently. However, aiming to reduce ambiguity and improve clarity in the writing can improve comprehension and mutual understanding. CISG Article 7(1) supports the notion that consideration must be given to clarity and comprehension across various users in contract documents.

In addition, uniformity in the area of contract management is becoming essential with the emergence of a global economy. People do business together but do not share the same linguistic and cultural tradition or legal regime (Bussel, 2016), and different business customs can drive different definitions and applications of legal rules (Linarelli, 2003). Establishing standard defined terminology, instilling grammar rules to improve readability, and integrating visualization can help establish consistency and aid common interpretation across different users.

Contract law should be leveraged as a unifier rather than a divider that requires those not trained in legal writing to have to seek help when engaging with contract documents. One approach to unification is language standardization: by establishing rules that require the writing to be predicated on reducing ambiguity,

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[27] The researcher found no legal rulings which rendered a judgement that a simplified non-traditional designed contract is invalid solely based on the document design.

promoting clarity, and promoting comprehension. The content, choice of words, and writing style all affect comprehension, depending on who the audience is. Tailoring the content and writing at the clause level based on the intended reader can have legal benefits and reduce contract risk if misinterpretations and disputes are avoided.

2.2 User-centered Design as the Framework for Simplification

2.2.1 Design Thinking and User-centered Design

Businesses employ design thinking[28] to develop solutions that better meet the user's needs and preferences to gain economic value (Brown, 2008). This is a design thinking mindset that Tim Brown[29] (2008) defines in business as:

> *"Put simply, it is a discipline that uses the designer's sensibility and methods to match people's needs with what is technologically feasible and what a viable business strategy can convert into customer value and market opportunity." (p. 2)*

Design thinking is a term which changed the term design from purely defined as developing "beautiful solutions" (Antúnez, 2013) to employing design to develop products for improved customer experience (Spool, 2017). Design thinking focuses on producing products that are user friendly, usable, and useful.

Design thinking in business is emerging in operational management, especially, with a goal to improve and optimize user experience for economic gains. The flexibility design thinking brings is that it can be integrated into any type of activity, both in society and business. Design thinking opens the door to explore how to best meet people's needs. In design, focusing on meeting the user's needs is a human-centered design philosophy based on a mindset that aims to understand the user and then assure the products are usable for the intended audience (Norman, 2013).

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[28] The timeframe when "design thinking" entered the business environment is not quite clear, however, Tim Brown and David Kelley, founders of IDEO, have popularized the term in the past decade.

[29] Tim Brown is the chair for IDEO and he is a member of the Board of Advisors for the World Economic Forum Center for the Fourth Industrial Revolution and writes for the Harvard Business Review, The Economist, and other prominent publications. Learn more see: https://www.ideo.com/people/tim-brown

Design thinking is a fundamental tool for simplifying and humanizing products (Kolko, 2015). Reducing the distractions, elements of confusion, and removing unnecessary visual cues aim to help the user find, comprehend, and use the information. Integrating design thinking is essentially focusing on producing functional products.

Another significant contribution design thinking has brought to businesses is the mindset that all individuals involved are designers (Brown, 2019). One does not have to be a trained designer to initiate design thinking to enhance existing solutions. Today non-designers are integrated into business operations as integral members of redesigning various areas of business operations. Entire organizations are collaboratively applying design solutions tailored around human interactions to resolve various problems rather than only designers working in silos.

Striving for communicating the information in the clearest and most effective way entails developing the design and evaluating if it is functional for the intended audience. Design thinking is a problem-solving process, and part of the process is to test if the solutions work (Norman, 2013). If the new design does not improve the interface, then the old design should be left as is.

Designing functional products requires applying design principles mirroring people's natural behavior (Kolko, 2015). The benefits of mirroring human's natural behavior are that it frees up memory to give mental capacity to perform the task at hand (Oviatt, 2006). An overwhelming design that causes confusion at first glance, can reduce productivity.

Steve Jobs, one of the founders of Apple, Inc., was the twenty-first-century pioneer of designing user-centered products, whose design focused on simplifying user interfaces by anticipating the needs of his users (Isaacson, 2012). Streamlining and removing buttons, icons and any "unnecessary" steps was his approach to designing visually aesthetic products that were functional (Isaacson, 2012). Functionality is directly tied to the user's ability to use the product as intended, easily, and efficiently. Applying design principles is a key area that contract design leverages.

Understanding the target user is the primary focus in user-centered design methodology (Hagan, 2018). Whether the design produces a usable product is measured by assessing if the intended audience can understand the purpose of the information and take the intended actions (Siegel & Etzkorn, 2013). Because people comprehend and interpret information differently, the task to align the perceived action with the intended action can be tricky.

One fundamental aspect of design thinking is that it is a *process* AND a *mindset* (Hasso-Plattner-Insitut, n.d.). Understanding the user and the interaction is important because it takes the design thinking one step further by evaluating the user experience. A user-centered design process places importance on assuring the product or system is useful, accessible, intuitive to use, easy to learn, attractive, and a positive experience, not only ornamental in value (Norman, 2013). By focusing on the product's usability, the user experience is the ultimate determinant if the design is optimal.

Design thinking is intended to improve engagement and user-interface experience when interacting with a product. When the design yields an improved user interface it translates directly into efficiencies. Relating back to contract design, these efficiencies come from reduced errors or omissions, shorter cycle times, reduced misunderstandings or disputes, and other operational efficiencies. Design principles can be used to measure the effectiveness of implementing a user-centered design process in contract development.

User-centered design and user-interface design are often discussed as two distinct disciplines; the fact the user is the focus makes them "two sides of the same coin" (Knemeyer, 2015). This means the end product needs to be usable for the intended audience and easy to navigate to induce the desired action. In this dissertation, the user's experience when using the document is the essential evaluation criteria when determining if the design solution is effective.

Legal design is an emerging field of study. In the field of law, the human-centered design principles encompass the same principles as the user-centered design proposed here. Human-centered design is an approach to making the law accessible for all (Hagan, 2018). Human-centered design is part of legal design, applies the principles of design thinking, has a fundamental focus on the use experience, and employs a process of testing solutions in an iterative process (Hagan, 2018). Both human-centered design and user-centered design aim to improve user experience by integrating design thinking as a process. However, there is one notable difference, human-centered legal design focuses on making the law accessible to *everyone*, while user-centered contract design focuses on *the users* of the specific contract and content.

The Stanford University Legal Design Lab[30] is one of the leading research groups in the field of human-centered legal design. The Design Lab defines itself as "an

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[30] Stanford University's Legal design lab focuses their work on human-centered design, their mission is to improve access to justice by focusing on improving the user experience of the legal system. https://law.stanford.edu/organizations/pages/legal-design-lab/.For

interdisciplinary team, working at the intersection of human-centered design, technology and law, Figure 4, to build a new generation of legal products and services" (Legal Design Lab, n.d.). The three legal design factors can directly be related to contract design. The law relates to a contract as a legally binding document; design relates to improving contract usability; and technology is the enabler for implementing contract redesign effectively. These three factors connect contract design to legal design.
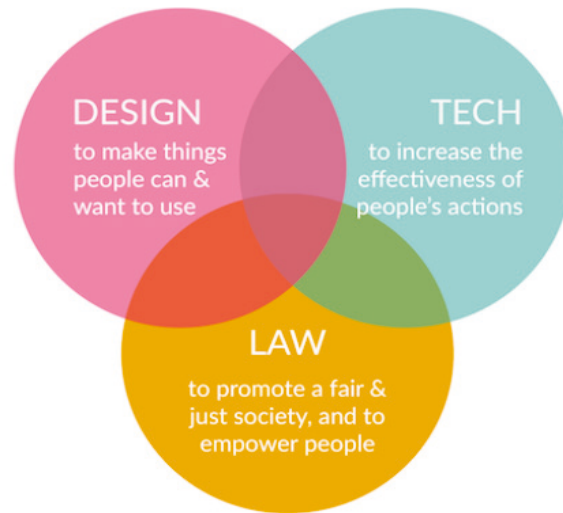
The Legal Design Lab©. Used with permission.

Figure 4.　　Legal Design Factors

In both legal and contract design, the user is the central element; this changes the approach to how the information is presented from a purely legal perspective to a user perspective (Hagan, 2018). Also, both the human-centered design and user-centered design approach is focused on *"looking through the lens of the users"* rather than the law. The design then shifts to a focus on the user-experience to ensure the document is usable for the intended audience.

Both human-centered and user-centered design aim to decode complex legal text and concepts to redesign current legal documents so those who use them can understand them. Both approaches recognize the users as the central element the design needs to effectively communicate to. The approach is to integrate design with the law and ultimately with technology.

In sum, integrating design thinking into business processes is transforming both the strategy and process of how companies develop products. This changes business operations by integrating design as part of projects from the onset (Spool,

For further information about the Stanford Legal Design Lab go to:
http://www.legaltechdesign.com/

2019). Integrating design thinking across the organization from the start of any project develops a design process that is multi-disciplinary and iterative. Collaboration to define users' needs and expectations from multiple perspectives provides valuable information for developing a product that meets the end-user's needs.

2.2.2 User-centered Design Thinking in Contracts

A good contract drafter can make complex ideas easy to understand. How the communication is formulated can instill simplicity in the communication; however, there is nothing simple about simplicity (Siegel & Etzkorn, 2013). Because humans are complicated and perceive information differently it makes the task of clearly communicating complex contracts a challenge.

Integrating design thinking principles is proposed as the framework to reduce complexity in contract documents. This means shifting away from the notion that a contract is drafted by taking a prior agreement and editing it to instilling the idea of designing a contract document following a user-centered process.

When employing design thinking to improve an existing solution, such as poor contract design (or lack thereof), the "secret to success is to understand what the real problem is" (Norman, 2013, p. 217). Analyzing and identifying the root cause of the problem is different from focusing on solving the problem. Identifying the causes of contract non-use first will help guide the process of finding new design solutions for contracts.

Contract simplification is focused on developing a contract design that produces a contract document that functions as a communication tool for all contract users dependent on the information. As discussed, the readability and usability of traditional contract documents are a challenge for many individuals outside and also within the legal field. The aim is to maximize information exchange through better contract design.

Because contract documents are inherently complex, many factors must be considered when identifying how to simplify the document. Contract content and users vary greatly depending on contract type, industry, jurisdiction, to name a few; these facts infuse several dimensions to the analysis. Careful consideration should be given to ensuring that the business and legal functions of the agreement are depicted accurately while at the same time designing a user-friendly document.

As an analogy, contract document design can be related to the field of architecture, where the aim of the design is to fulfill both practical and expressive requirements (Gowans & Ackerman, 2018). In the same way as a house blueprint, commercial contracts can be seen as the blueprints for a business transaction (Haapio, 2013). The relationship between the function of the document and the audience of the communication is part of the analysis to determine how to develop a functional and well-designed contract.

Contracts are first and foremost communication tools; they contain information important for several purposes and different users. Integrating design thinking and a user-centered design approach by applying information design principles in contract document development is evaluated to assess optimal ways to communicate contract information and simplify the overall document. Particularly when complex information is conveyed, information design can improve comprehension (Society for Experimental Graphic Design [SEGD], n.d.).

Information design is a multi-disciplinary field as it incorporates communication design, graphic design, interface design, linguistics, cognitive psychology, among other disciplines, to anticipate the clearest way to depict information for the intended audience to accurately comprehend the information (Waller, 2011). Within this context, information design is considered in this dissertation as the overarching field that user-centered design falls within.

In order for the parties to connect and interpret the information in the same way, the drafter has to understand and speak the users' language (Siegel & Etzkorn, 2013). An important part of the information design domain is understanding how cognitive, psychological, and linguistics play a role (Waller, 2011). Furthermore, integrating the idea of cognitive load theory CLT[31], which aims to improve human interfaces to reduce the required cognitive load to process information (Paas et al., 2003), is essential. In contract simplification, reducing the cognitive load can help with user engagement, comprehension, and time to process the information. Considering CLT in contract design can help overcome the current challenge of users not engaging with the contract purely due to the initial perception of the document.

Applying the various information design techniques can reduce the cognitive load, for example, by depicting clause interdependencies, relationships, and timeframes via one visual depiction (Mitchell, 2019). Simplifying the presentation of complex information via the use of design techniques that visually align with how people

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[31] Cognitive Load Theory (CLT) has its origins in a 1980s study on problem solving by John Sweller and has been further developed since then by scholars across the globe.

process information is the essence of user-centered design; striving to communicate the information based on how human's process information contract design can be applied to a single clause and inter-related clauses. Inter-related clauses contain related information that is often located in various sections of the document or sometimes in different documents.

Multiple users are part of defining and performing contract information. During negotiations, the interaction and verbal exchange of information leads to a common understanding. Afterwards documenting the agreement in the contract document can be a challenge because the relationship and transaction details might have involved different functions, users, and stakeholders. Addressing the complexities of developing a document that will be one single reference point throughout execution brings forth the dimension of how various functions or individual parts of negotiating and defining the deal can document their respective agreements in the contract document directly.

When developing the user-centered design process in contract document development, the initial observation is the need for an adaptive, flexible, and differentiated method because contract design must work within the framework that contracts have multiple users from different functions. Contracts are cross-functional documents within an organization, and there are both internal and external users. Also, users can be from different countries and cultures, creating both comprehension difference and language barriers.

Because design thinking is a problem-solving process that promotes innovation (Lin & Yi, 2018), it can be leveraged to address how contract design can be optimized for various users from varying backgrounds that might speak different languages. Developing a new innovative process that considers the way contracts are communicated and designed should first and foremost consider the many users and differences in background, expertise, language, etc.

Based on the traditional contract document creation process that tends to be a one-time action by duplicating a prior contract that is then edited for the specific transaction details, lacks an iterative process that focuses on designing a functional contract document. Furthermore, there is no consideration for what users or user groups have the knowledge of the specific transaction, the specific relationship of the parties, and the audience who will rely on the document to perform the agreed-to obligations. In essence, the current approach ignores the essential element of *who are the stakeholders and users* of the information.

Leveraging design thinking and user-centered design ideas, a user-centered design (UCD) process is proposed as a framework for contract document development.

Implementing a phased design process aimed at supporting the tasks of "building" a document breaks the process into phases where the content, users and most effective design solutions can be considered for each building block of the contract.

Shifting away from simply *drafting a document* to *designing contract documents* can benefit from implementing a standardized iterative process similar to what other disciplines utilize. In any design process, one must understand the user, the context of actions, and outline solutions to create usable and accessible products (Interaction Design Foundation, n.d.). Tailored to achieving a user-centered contract design, a UCD process tailored to contract document development is proposed as the framework to apply in contract development (Figure 4). Adopted from the Interaction Design Foundations design process, the four-phased user-centered design process is tailored to support optimal contract tailoring during the design process.

The four phases involve: first, understanding the context of use; second, identifying the users and stakeholders; and third, developing design solutions. The fourth and last phase is reviewing and evaluating the outcome. It is the same as in any design process, it is an iterative problem-solving process with different steps that can repeat in any sequence (Norman, 2013). Once design solutions are developed, they are tested and evaluated against the requirements to determine if the product meets the end-user's goals.
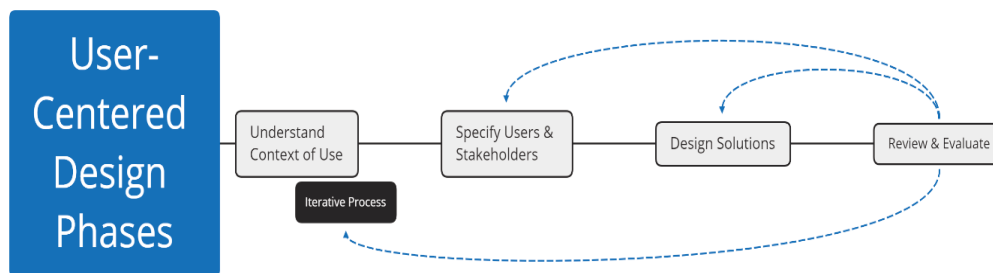
Image by Milva Finnegan©

Figure 5.   User-centered Design Phases

The four phases, context, users, design solutions, and evaluation, applied to contract document design are each part of designing contract interfaces with the end-user in mind. Contract drafting today tends to be a start-to-finish process lacking any iterative process. Design methodology as a process integrates phases of actions. One distinct element is "trial and error", which is an integral part of

user-interface design. The process seeks to test and evaluate solutions to find the one that best meets the end-user's need. The design process is considered a multi-step iterative process, and if the evaluation and testing of the solution did not improve the user interface or experience, then the design process is started over.

In the initial phase, it is critical to understanding the various user groups' capabilities and their function. Drawing a relationship to the contract content based on the user's knowledge and expertise produces the differentiation of types of terms aligned to the capabilities of different types of users (Argyres & Mayer, 2007). Correlating the users and the contract content is the initial step in breaking contract content into building blocks categorized by user groups.

There are several benefits to integrating a phased UCD process. First is eliminating the copy-pasting of prior contracts as the starting point of contract drafting. Second, complete template contracts are replaced with a modular contract building approach. A user-centered contract design process is intended to instill the notion that every contract is designed one clause at a time.

Contract document development utilizing a user-centered design as the framework is not prevalent in how businesses develop contracts today. There are existing contract redesign approaches that focuses on the users; however, many are not commonly used by companies (Kaur, 2018). One reason for the lack of generally adopted universal solutions is due to the current design process that starts from an existing contract. When applying a user-centered contract drafting process, an integrated strategy is required upfront (Maeda, 2006). This means a contract design process should be integrated as a standard process within the contract management process.

Another reason why a user-centered approach in contract document development is not universally adopted is the limited number of individuals drafting the actual contract document. Contracts are mostly drafted by legal or contract professionals after negotiations are completed, and the users responsible for performing the contract tasks have limited involvement (Finnegan, 2013). By introducing design thinking early into the process, various individuals and functions can be brought into the document development process at the start of the project. This will help overcome the practice of lawyers or contract specialists drafting the document after parties have finalized the transaction details.

Integrating a formal multi-step design process changes the entire process of contract management, not just contract development. Organizational processes and governance, structure, decision-making authority, among other activities, are key influencers to how a company develops its contracts. The integration of design

thinking and a design process is only a process change, not an overhaul of company structure. It is an integrating of multiple functions from various disciplines in a streamlined process of collaboration.

Acceptance of a design mindset is one approach to standardizing contract development. By establishing the fundamental assumption, users determine how contracts function, and measuring outcomes by the usability, comprehension and user experience initiates the shift away from the traditional contract design. Contracts are not "one size fits all" documents, therefore the design should be tailored to ensure the information is clear to the users and align with how the document will be used in practice.

In sum, the proposed user-centered design process for contract development is envisioned to produce the following four benefits:

> 1) users are the central element during the entire contract development process,
>
> 2) integrates design thinking early in the process,
>
> 3) makes contract drafting a multi-disciplinary task, and
>
> 4) opens the door for standardization.

Defining a framework approach allows the various contract design and simplification methods to be integrated as part of the contract document building process.

Within this new mindset, the most essential part of user-centered contract design is understanding who the contract users are and their specific role. Different users have different needs, and it is essential to understand the type of activities users are expected to do when interacting with the products (Rogers et al., 2002). Next, an analysis of contract users, the contract lifecycle, and a business-first contract development approach are presented.

2.2.3   Selecting Contract Design Methods

Usability refers to whether the reader can comprehend the information and take the intended action. The goal of redesigning the traditional contract is to make it easier to read and more user friendly. Therefore, it is essential to present the information clearly to ensure that the correct action is taken. In addition, the

design should support value creation by bringing efficiencies to the contract management process.

Extensive research and practical examples for contract simplification have been developed and documented by many scholars and practitioners in the field. In particular, the Simplification Center in the United Kingdom focuses on how to make complex information clear in order to improve readability and usability (Simplification Centre, n.d.). In addition, to plain English, structure simplification, page layout, and integrating design techniques are key elements to simplify contract documents.

Language simplification and the implementation of plain English or standard English to reduce legalese and technical language is emerging and evident across many different contract types and model contracts. In particular, the International Organization for Standardization Technical Group 37 (ISO/TC 37) is developing a standardized framework for language simplification that is an important advancement in support of improving legal documents.

Furthermore, in the area to make contracts more user friendly, by integrating information design techniques such as visualization, there are two notable scholars whose work is foundational to the research, Helena Haapio and Stefania Passera. Both considered pioneers in contract and legal design. Haapio's dissertation on the topic, "Next Generation Contracts: A Paradigm Shift", was published in 2013; it is one of the first works examining contracts though both a legal and business lens. Details of her work are presented throughout the dissertation.

Passera's Ph.D. dissertation, "Beyond the Wall of Text" (2017), examines contract design from an information designer's perspective, arguing visualization improves user interface to produce more user-friendly contracts. Passera's work has influenced the field of contract design and has set the foundations for innovation and a user-centered approach to contract design.

A vast amount of current research was part of analyzing how contract design can improve readability, comprehension, and making contracts more user friendly. Both quantitative and qualitative published research on contract document design revealed a pattern of current types of design categories, summarized under five general categories: content, layout, language, writing, and visualization, column one in Table 2. The approach taken was to divide specific design methods related to a topic (middle column) for example, typography and white space under page layout, and grammar and sentence structure under writing. The conclusion that can be drawn from the summary is that contract redesign can be done in multiple ways, focusing on different aspects of the document. The defined five general

categories each have distinct design techniques. Each tend to focus on solving a single or a few problems that cause contract readability and usability challenges.

Table 2.   Document Design, Methods and Relationship to Proposed Design Categories

Current Document Design	Methods	Proposed Design Categories
Content **Page Layout**	Organization Structure Standard Clauses Typography White space Headings	**Structure**
Language **Writing**	Standard English Plain English Dictionary Grammar Sentence structure Punctuation etc.	**Language**
Visualization	Graphics – lines, shapes, colors, flowcharts, Pictures Grouping	**Visualization**

After further analysis, an additional summary of the design categories was completed. The third column in Table 2 contains the selected three design categories: structure, language, and visualization, for in-depth analysis, each presented in Chapters 3, 4, and 5, respectively. The reason for three distinct design categories versus one is to combine similar design approaches. For example, content and page layout are considered part of structure simplification. Language and writing both relate to language. Visualization encompasses all the visualization methods introduced for simplifying the communication and it can be related to all aspects of contract information.

The three proposed high-level categories: structure, language, and visualization, Figure 6, are analyzed in detail to develop three distinct theories and tools how each design method can contribute to contract simplification. In the context of contract design, where the aim is to simplify a contract document, integrating multiple different techniques is essential to produce a complete redesigned document. By analyzing the various approaches systematically, three distinct

design areas are presented as the solution to produce one holistic simplified contract. The benefits of identifying three distinct, high-level design categories is that it allows grouping similar design methods together. Also, grouping various methods together makes it easier to develop specific tools to streamline the contract building process.

Contract Re-Design

STRUCTURE
Building blocks
User-based
clause categories

LANGUAGE
Plain English
Controlled
Contract Language

VISUALIZATION
Information
design
Visualizing Inter-
related clauses
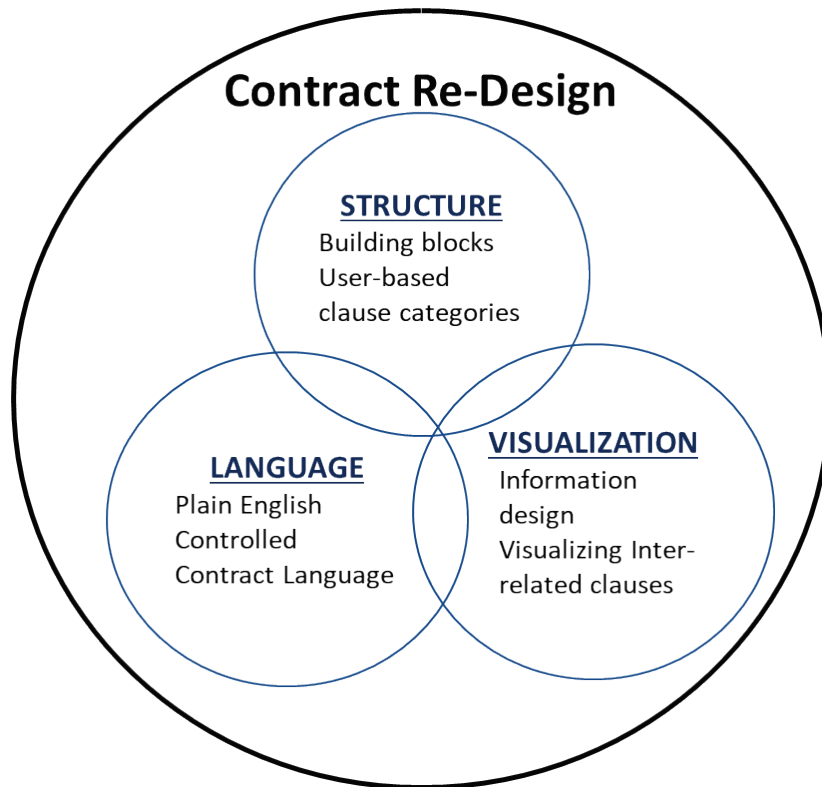
Image by Milva Finnegan©

Figure 6.   Contract Design Categories

The three redesign categories, *Structure, Language* and *Visualization,* each have distinct characteristics. The language encompasses the writing, terminology, and grammar. The structure is how the content is assembled and presented in a multi-disciplinary collaborative environment. Visualization focuses on what information design is, the criteria for inclusion of visual design to enhance comprehension, and how inter-related clause visualization reduces the cognitive load of processing complex contract information.

Because many factors contribute to the complexities in contract documents, developing a simplified contract document should be a multi-step process. A balance between what should be left as is and what should be redesigned is an

essential part of assuring that a tailored contract document is developed. The user-centered design process is proposed as the framework to help guide the optimal design approach selection.

When determining what design solutions are optimal, the cost and effort of the redesign tasks should be considered. During the design process it is crucial to identify the areas of contract complexity that directly contribute to inefficiencies or negatively affect economic goals. A redesign might not be value-added in all cases, and the traditional form of text-only, legal language, might be the best value proposition.

In addition, the timing of integrating design thinking into contract documents impacts the cost of developing simplified documents. All too often, a contract is "translated" either after negotiations or post-signature into summaries or shortened versions of the original document, adding additional resources to communicate the contract content. Also, post-contract execution simplification has an inherent risk if the new version or summary contradicts the original document. Exploring specific simplification methods integrated into the initial phase of contract document creation can bring efficiencies and eliminate producing secondary documents later.

In contract design, the main decision factor when choosing the optimal design approach should be on determining if the redesign creates value. If the redesigned clause does not improve comprehension for the intended audience, then the original form should be left, even if it is in complex text form. Design thinking, which searches for optimal value, has been referred to as Abduction-1, often correlated to conventional problem-solving (Dorst, 2011); the end goal is to derive value from the selected design. Figure 7 is an outline of the equation. The *what* is the contract clause and the *how* is the design choice selected, resulting in ultimately creating *value*.

WHAT + **HOW** = leads to **VALUE**
(thing)   (working principle)   (aspired)

Based on Kees Dorst (2011).

Figure 7.   Abduction-1 Theory to Design Thinking

The law and economics theory assumes contracts are value creators; hence, the measurement of the contract redesign's effectiveness is imperative. Redesigning with a mindset of shifting entirely away from the traditional design is not always optimal nor realistic. Evaluating if the new design is more effective than the original design is critical before implementing a new design.

Redesigned contracts, particularly those integrating visualization, improved usability and user experience, as well as cross-functional communication (Haapio et a., 2012). The use of visuals can be the key to bridging the gap between complex contract documents and simplified documents that is easy to comprehend in a multi-user environment. By identifying the relationship between the context and users for the various contract clauses, the drafter has an initial guide to evaluate which design approach is optimal.

Those users familiar with and trained in traditional contracts are not always used to visuals or information design applied to the document. Assessing how replacing or supplementing legal text or clauses with visuals can be more difficult compared to visualizing business terms. Today simplified documents of complex regulatory, privacy terms, and other technical legal documents exist, and a growing number of legal practitioners and scholars are driving the development of visualized contracts. Simplifying complex legal documents has evolved directly from the need for the user of the document to be able to understand what they are agreeing to and to make the law accessible to all users (Hagan, 2018). It is imperative that those signing or executing the contract understand what the document means and what they are agreeing to.

2.3 Contract Users and the Contract Lifecycle

2.3.1 Contracts as Multi-user Documents

The essential and fundamental assumption of contract design is recognizing who the users and stakeholders are throughout the entire contract lifecycle. Throughout the contract lifecycle the contract document, when developed or used for execution, needs to support an optimal user interface. Because contracts cross many departments and disciplines, analyzing the definition of a contract user(s) is an essential part of the research.

In practice, different users and stakeholders work together as a team. For example, the technical team interacts with the program management team when producing the products. The business team interacts with the program management team for

budgets and delivery timelines for cashflow purposes. The subcontract team must interact with the technical team to order necessary materials. The interconnectivity of contract users requires different departments and functions to operate collaboratively together.

Building on the inter-disciplinary collaborative environment that contracts operate in makes it logical to explore contract users from a functional perspective. Defined user groups, such as technical, program management, finance, and legal, provide a first-level summary of types of functions that are part of contract management. Haapio and Siedel (2011) developed the contracting puzzle visual to depict a functional view and the inter-related relationship (Figure 8).

George Siedel & Helena Haapio: Proactive Law for Managers –   A Hidden Source of Competitive Advantage (Gower 2011). Used with permission.

Figure 8.   The Contracting Puzzle

The contracting puzzle provides a critical insight into two essential aspects to consider when developing a contract. First, several disciplines have a stake and are integral to achieving a successful contract outcome. Second, different disciplines are interrelated and do not operate in isolation, even though each function has specific responsibilities. Considering this inter-relationship between multiple functions when the contract document is drafted supports a proactive approach that can help avoid misunderstandings later (Siedel & Haapio, 2011). Furthermore, it supports the division of contract content into elements or building blocks by user group or function.

Developing a contract document that can communicate the entire business transaction and the inter-relationships, both internally and externally, necessitates an examination of contract users and stakeholders. Similar to how the

contracting puzzle depicts how various functions must operate harmoniously, the contract document development process needs to support collaboration and the involvement of multiple users.

A user-centered contract design mindset starts from the assumption contracts are both multi-disciplinary and multi-user documents. Those involved in developing the contract document should always consider the audience they are writing for, answering the question – who will read the document? Writing contracts *for the audience* is a mindset and it is time to abolish the practice of drafting contracts without regard for the audience that has persisted for a long time (Dickerson, 1965).

The audience is the reader. The definition of a "reader" can be found in the proposed ISO standard proposal for plain language, which states the reader is the user or stakeholder that is the audience for the document (International Plain language Federation, n.d.). As a statement, the task to identify the users and stakeholders may sound easy; however, a contract document supports numerous activities that can span over an extended timeframe, making it a complicated task.

Furthermore, the differences in companies, transaction details, and scope of the business deal further impede developing an exact universal definition for the term "contract users". This challenge can be overcome by adding a step within the contract design process. Integrating a step to define contract users and stakeholders in the user-centered design process assures the specific transaction content is aligned with the users. This step to identify those involved and those who are expected to be involved in the future is considered a critical step before choosing the design approach.

On a macro-level, to help guide the task of identifying the contract users and stakeholders, anyone who can impact whether the business deal is a success or failure is considered a stakeholder or contract user. This includes each individual involved from the initiation of a business deal to contract close-out. In sum, contract stakeholders include individuals and groups directly involved with the contract document to perform their jobs. It also includes indirect individuals and groups, those who perform their jobs driven by contract obligations and requirements in support of company operations.

As discussed, defining contract users and stakeholders is not an absolute; rather, each specific transaction drives the definition of users and stakeholders. One good general definition of users to adopt is "they are the audience for the document." In contracts, this comprises the individuals who need the document to know what they are expected to do and what they can expect from others (Macneil, 1975).

Certain functions and disciplines in business organizations have specific expertise identified by title, function, or discipline. Figure 9 is an example of one way to define contract users by company functions. Depending on the size of the company, the number of distinct functions and disciplines will vary.
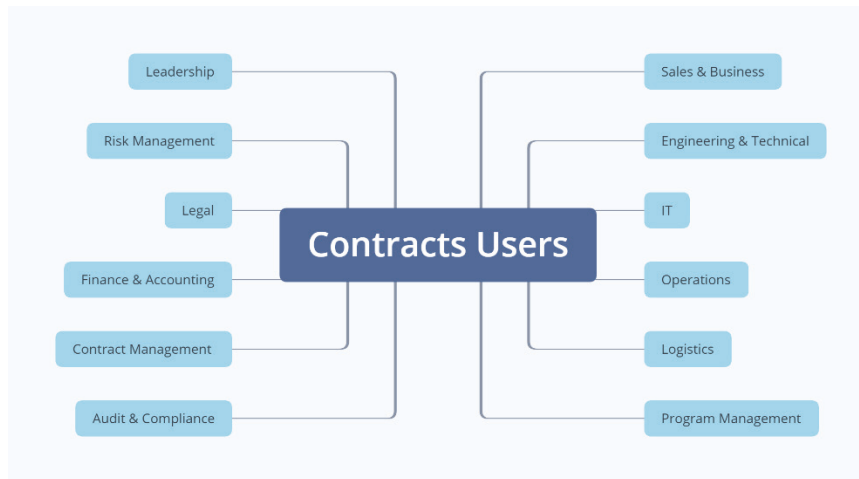
Image by Milva Finnegan©

Figure 9.   Contract Users

In the user-centered design process, once the users are identified, the contract content is aligned to the users. One method to help identify and align contract users and the contract content is to develop a concept analysis map between the user types and related tasks. To accomplish this, one approach is to develop a satellite model by identifying the terminological concept, in this case by the function, and then drawing relationships by asking who are responsible for what tasks. A terminological analysis is a research method where specific terms are evaluated, and concepts are formed to define and align the terms within a concept system (Nuopponen, 2005). Figure 10 is an example of a satellite model developed using the functions as the defined terminology per the contracting puzzle illustrated in Figure 8. Based on the identified functions, initial questions are provided to guide the process of identifying what contract clauses are generally aligned to the specific function and what users are part of the functions. Relational concept analysis and the satellite model approach are part of the research method used in Chapter 3.
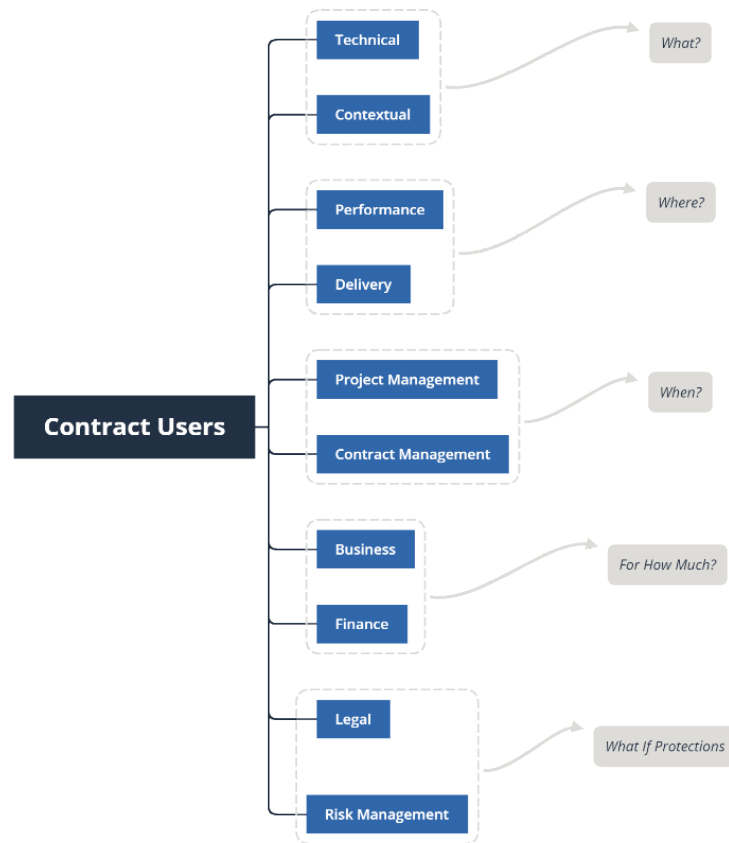
Image by Milva Finnegan©

Figure 10. Satellite Model by Function

In sum, contract redesign is predicated on who the users of the contract document are. There is no universal definition of contract users; rather it is dependent on the specific transaction and company. As such, the user-centered design process starts with defining who the contract users and stakeholders are. The user-centered design process is built on the framework that once users and stakeholders are defined, contract content can be aligned and grouped with specific users or user groups. A tool to help guide the process is using a satellite map to help align users with the main functions that are part of contract management. The relationship analysis should consider the tasks, contract content, and the users and stakeholders who are integral to the successful performance of the contract obligations.

2.3.2   Contracts as Living Documents – Defining the Contract Lifecycle

The "life" of a B2B contract can span over multiple years and involves numerous different stakeholders. Identifying and evaluating the tasks and users from initiation of a contract until all contract obligations are fulfilled is referred to herein as the "contract lifecycle". The contract document is the central artifact throughout the contract lifecycle that guides the user and stakeholder's actions.

Because of the multiple tasks a contract supports, it does not communicate a one-time action; rather it is a living document "operating" at the center of all contract management actions. This cycle of tasks is an ongoing process that can repeat or re-start until contract close-out (Finnegan, 2014). In general, the document's life goes through an evolution, a pre-award phase defining tasks that can later change or repeat throughout the post-award phase (Roach, 2016). Because each task from the identification of a need until all contract obligations are completed can affect the value a contract yields for a business, the contract document cannot be considered a static document.

Within the contract's lifecycle, distinct phases can be identified. While some stakeholders are part of the entire lifecycle, others only engage in one or a few phases. In general, the contract lifecycle mirrors the general sequential contract management process. The phases within a contract's life cycle are relatable to most businesses' operations.

While contract documents ultimately have a start and end point, the tasks and length of each task vary and change within the various phases. Because of this, the dynamic environment contracts function in should be considered during contract development (Annola, 2003). Defining the phases and types of tasks provides a guide for specific users to see how they fit into the contract lifecycle. For all users to understand the multiple purposes a contract serves is essential for effective contract management.

Today, many companies recognize Contract Management (CM) as a standalone discipline where contract actions are managed systematically throughout the contract's lifecycle (Hirvonen-Ere, 2019). CM's function in a company involves assuring that company contracts are managed cost effectively, while promoting a relational approach to achieving successful contract outcomes. The National Contract Management Association (NCMA) [32] has defined a CM professional standard that is published and recognized by practitioners and scholars in the

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[32] Founded in 1959 and made up of nearly 20,000 members, NCMA is a leading professional resource for contract managers https://www.ncmahq.org/

field. Contract Management is defined in the NCMA Contract Management Book of Knowledge® (CMBOK® 6th ed., 2019), as:

> *"Contract Management is the process of managing contracts by a contract manager to develop solicitations, develop offers, form contracts, perform contracts, and close contracts. It is a specialized profession with broad responsibilities that include managing contract features such as deliverables, deadlines, and contract terms and conditions"* (p. 3).

The NCMA approaches the division of tasks in three lifecycle phases, per the published NCMA CMBOK® (2019), are Pre-Award, Award, and Post-Award. The NCMA-defined three lifecycle stages follow closely the US government's contracting process and division outlined in the Federal Acquisition Regulations (FAR)[33].

Today, a formal American National Standards Institute (ANSI) accredited standard exists to standardize the CMBOK principles further, referred to as the Contract Management Standards™ (CMS) publication (2nd ed.) or ANSI/NCMA ASD 1-2019 standards document (ANSI & NCMA, 2019). It defines key contract management concepts and processes and serves as the foundation and framework for defining contract management as a discipline. The purpose of the standards document is to define contract management in terms of the processes, the interaction of job tasks and competencies, and the purposes they serve. "The common and repeated use of this standard will improve productivity, increase efficiency, and reduce costs" (ANSI & NCMA, 2019, p. 2).

A strength of the ANSI/NCMA ASD 1-2019 is the detailed breakdown of each of the overarching three phases of a contract's lifecycle into five domains (Figure 11). The five domains, divided by lifecycle phase, represent the competencies and associated tasks, referred to as the contract management process (ANSI & NCMA, 2019).

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[33] The FAR is the primary regulation for use by all executive agencies in their acquisition of supplies and services with appropriated funds. It became effective on April 1, 1984 and is issued within applicable laws under the joint authorities of the Administrator of General Services, the Secretary of Defense, and the Administrator for the National Aeronautics and Space Administration, under the broad policy guidelines of the Administrator, Office of Federal Procurement Policy, Office of Management and Budget." Source: https://www.acquisition.gov/sites/default/files/current/far/pdf/FAR.pdf
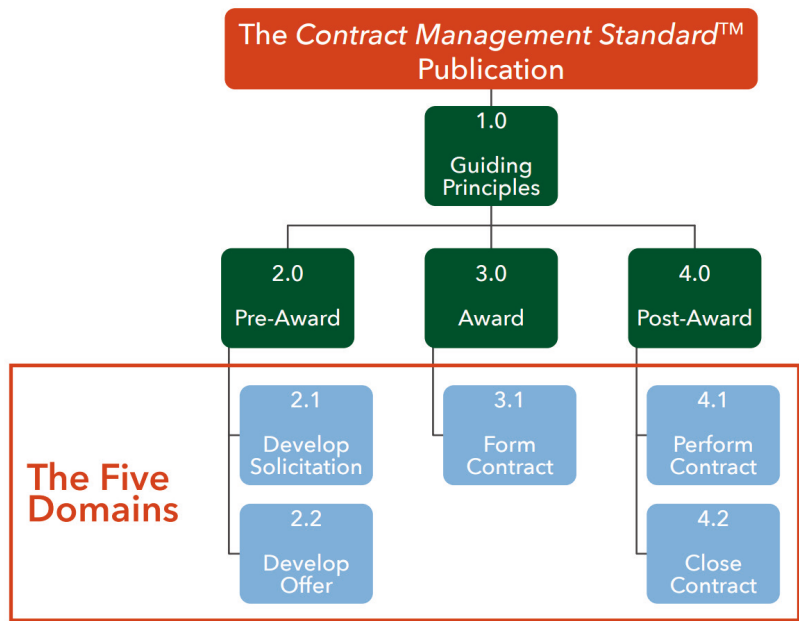
NCMA©. Used with permission.

Figure 11.   Contract Lifecycle Phases with Associated Domains

Depending on the company's size, the products or services part of the transaction and number of individual tasks included in the domain structure will vary. The common denominator in the domains is each phase has a specific output. These are: a solicitation, an offer, a contract, contract performance, and contract close-out (Figure 12). Knowing the outputs of each domain is essential to evaluate a user-centered contract design where the audience of the information and actions intended must be defined while the contract document is developed. Defining outcomes is beneficial because it identifies specific, relatable goals that occur within business operations.
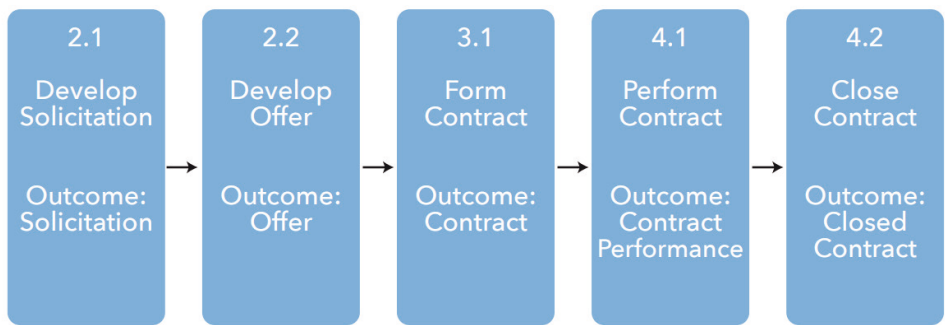
NCMA©. Used with permission.

Figure 12.   Contract Management Domains and their Outcomes

Managing company contracts is a task within all companies, even if a dedicated CM function is not identified. This is one reason why the process and defined phases within the contract lifecycle are fragmented and lack a standardized definition. To support implementing a user-centered design process, a five-phase contract lifecycle (Figure 13) is proposed in this dissertation as the framework to define the tasks and align the individuals responsible within the contract lifecycle.

The five-phase division is an extension of the ANSI- and NCMA-defined three-phase division: pre-award, award, and post-award. However, because ANSI/NCMA ASD 1-2019 was developed around FAR, there is a lack of inclusion of the full spectrum of activities that take place in commercial operations and contracts. Moreover, the proposed 5-phase division considered the independent tasks within each phase where the contract is often "passed on" to another individual or department (Finnegan, 2016).

In a user-centered design process, the content and users are aligned. To support this activity, a multi-user process divided into phases by tasks provides a clearer view of the functions involved. In addition, it provides a guide to understand the many various activities and products that are related to the contract document.

Contract Administration
- Contract Reviews & Compliance
- Management – Amendments
- Dispute Management
- Audits and Renewals

Phase 5

Proposals & Sales
- Request for Proposals (RFP) / Request for Information (RFI)
- Proposals
- Initial Business Terms

Phase 1

Multiple Contract Users

Contract Execution
- Contract Performance
- Contract Tracking
- Reporting

Phase 4

Document Creation & Negotiations
- Requirements Gathering
- Contract Drafting
- Negotiations
- Contract Revisions

Phase 2

Phase 3

Review and Approval
- Internal Reviews and Approvals
- Approvals & Signature

Image by Milva Finnegan©

Figure 13.   Contract Management Lifecycle Five Phases

Each phase can be further broken into specific tasks. Phase one, proposals and sales, can be considered to start when business information is shared between two or more parties; this can be in the form of proposals, offer documents, discussions,

and the like. The sales material and product or service descriptions and pricing and other business information are usually developed by functions outside of legal and contain minimal legal language. Sales documents tend to be written in standard English, and information design techniques are integrated to ensure that the reader understands the information. Types of users and stakeholders involved during this phase are those responsible for defining the business transaction, for example, sales, procurement, technical, logistics, and business management.

During phase two, document creation and negotiations, the transaction details are finalized, along with the relational aspects of how communication will be exchanged, how risk is divided, what is the process when things change, how disputes will be resolved and the like. During phase two, a greater number and often different functions are involved. It is during this phase that the contract document is finalized. While the verbal negotiations and discussion take the form of standard English, the contract document does not usually follow the same language or writing style. The information gained from the sales and operations teams is often re-written to conform and flow with the traditional legalese form to produce the final contract document. The primary user groups are initially business and technical teams; however, finance, legal, risk management, human resources, logistics, and other discipline play a key role. At the end of phase 2, after the final negotiations are completed, legal usually plays a lead role in completing the final contract document for signature.

During phase two, it is essential to note that various experts are part of the team even if they do not directly engage with the contract document. For example, engineering might lead the product specification negotiations while business management may negotiate the price. During phase two, business development and program managers often play a central leading role, while engineers, IT specialist, logistics, and other technical functions are engaged when specific subject areas are discussed. Legal tends to take on a lead role when the contract document itself becomes part of the process; unfortunately, this is often toward the end of phase two (IACCM, 2018c)[34]. The idea of developing and initiating the actual contract documenting in phase one and early in phase two is to engage users outside of legal to participate in the contract document development process.

In phase three, contract review and approval, the agreement is reviewed within an organization to gain approval and signatures to formalize the legally binding agreement between the parties. During this time, the contract document goes

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[34] These data are obtained from the interim report that contains data extracted from IACCM's 2018 benchmark survey which gathered input from 742 organizations.

through reviews for final approval to be signed. Depending on the size of the business, the review process can entail numerous different departments and individuals, determined by the internal company policies and processes. Involvement of both the business and legal focals is beneficial to ensure the document depicts both the business relationship contemplated and the legal protections sought after.

Phase four, contract execution, include tasks related to the post-award phase when the agreed-to obligations are to be performed and managed. Parties to the agreement must execute and deliver the outlined economic exchange in accordance with the contract document. Phase four involves participation by many individuals and departments. In addition to those directly involved in the execution of the contract, other company stakeholders are reliant on the contract document information to perform their jobs. For example, the accounting department needs the payment schedule to send out invoices for accounts receivable.

After the contract is signed, the opportunity for significant value creation or degradation takes place, depending on how the actual performance aligns with the planned performance. The ability to execute contract obligations and maintain performance within the priced parameters is a challenge every business faces. Because the future cannot be predicted, the only certainty is that the environment and execution plan will change. It is how the changes and unexpected events are managed that will influence if the expected profits are achieved.

The change management process is a critical part of phase four because changes to the agreed-to transaction are inherent and the process by which changes are handled can have a significant economic impact. The contract document can aid in how effectively changes to the original plan are made. If a formal amendment to the agreement is necessary, then phases one and two are repeated. Trust and flexibility play a significant role in how efficiently the parties can adapt to the changes.

Because amendments and modifications to a contract are unavoidable in the long term in B2B transactions, the contract life cycle is depicted as a circle. Contract modifications can be a simple change, for example, in what material is used, to complex changes where scope or schedule are changed, requiring multiple functions to engage. The more flexible and collaborative the contract management process is, the less likely that a dispute arises.

Phase five, contract administration, involves tasks similar to phase four that require active management. Phase five includes tasks such as compliance and

audits, contract renewal prior to contract expiration, dispute management and so on. Once all contract obligations are completed and the parties are not renewing the contract, contract close-out occurs and the contract is dissolved.

Contracts are operational guides for achieving the intended outcome. Unexpected factors and changes in the environment inevitably create circumstances where the contract document becomes a critical reference point. Hundreds of events can trigger a contract action. Managing these actions as they occur is the central function of contract management.

In sum, one coherent document can connect the various tasks within a company that multiple departments and functions rely on to perform their jobs. Expanding the lifecycle phases into five phases with subcategories of general tasks helps identify the many functions and users involved with the contract document. Based on the proposed contract lifecycle depiction, there are five levels of general tasks (Table 3) that occur throughout a contract's lifecycle.

Table 3.   Macro View - Contract Lifecycle Tasks

Five Levels of Contract Lifecycle Tasks
1. Proposals & Sales
2. Document Creation & Negotiations
3. Document Review & Approval
4. Contract Execution
5. Contract Management

Within the process flow, it is important to determine the individuals or departments responsible for each output. In phase three, where the contract document is developed, a common fallacy is that contract drafting is a legal function and only lawyers should write contracts. Rather, it is dependent on the company structure.

While the contract management process established within a company will vary, the key is to have a process defined. Because the document itself does not protect against all future events, the individual's part of managing the tasks are the risk mitigators. CLM is about managing all phases of a contract's lifecycle, focusing on all stages of the process (Mack, 2020). When integrating all the tasks, a centralized communication flow can be established.

Understanding the contract lifecycle guides drafters to determine who should be part of the process. This should be a data driven systematic process: answering questions such as, what functions is responsible for each task, who are the stakeholders during each phase and who are the end-users relying on the document?

One challenge is that contract actions are tied to the contract document, independent of who the responsible stakeholders are. Employees come and go, but the contract obligations do not change. With many different users representing different disciplines, departments, and functions, a documented process by task can avoid errors when personnel changes take place.

The more transparency and alignment throughout each phase and task, the more efficient the various tasks become because information can be leveraged and reused. For example, proposal document information, such as product specification, can be directly integrated into the contract document by the technical focal, if integrated into the contract development process. In the same way, payment schedules, delivery schedules, and process flows can be duplicated and directly included by the people who are part of negotiating the transaction in the specific sections of the contract document. The benefits are two-fold; first, individuals with expertise develop the contract information, supporting alignment with the intended audience, i.e., engineers develop the specifications that engineers will use to execute the contract tasks. Second, information can be leveraged from other documents that will eliminate re-writing information, reducing the risk of misinterpretations.

In sum, contracts are living documents that play a role throughout the entire lifecycle of an exchange relation. The various contract-related tasks, from the initiation of a contract until close-out, provide an outline for defining the users and stakeholders who will engage with the contract document. Each of the five phases, as defined, influence the operational effectiveness of a transaction.

2.3.3 Alternative Way to Draft Contracts: Business Relationship First, Legal Second

The persistent traditional, legally centric contract documents often come across as "scary" for those not trained in legal writing. Even when users outside of legal try, in good faith, to review the contract, their comprehension of the content is lacking, mainly due to the complexity of the writing (White & Mansfield, 2002). To address how to reduce complexity in legal documents, evaluating the user's literacy and document readability is essential. Considering the source of the initial contract

draft reveals that when documents are considered purely legal documents, the legalese technical language tends to dominate.

Today, businesses recognize that contracts are more than just legal documents, "contracts and even the law are managerial instruments that businesses can use to shape, organize and guide their economic activities" (Haapio, 2013, p. 3). However, the current drafting processes do not focus on the users or the business role contracts serve. This brings forth the discussion of who is the primary audience that will use the contract document; lawyers or the operations teams executing the obligations?

Tina Stark's book (2014), "Drafting Contracts: How and Why Lawyers Do What They Do"[35], used for teaching law school students how to draft contracts, considers contracts, first and foremost, as business enablers. Stark considers that the primary function in contract drafting is to establish the terms of the parties' relationship. This dissertation builds on Stark's teachings, in particular the teaching objective of: "learning how to think about writing a contract will require you to learn how business people and their lawyers think about a transaction and the contract that memorialize it" (Stark, 2014, p. 6). It is an approach that places the intended business relationship and transaction details as the primary focus when initiating a contract draft while still operating within the framework that contracts are legally binding documents.

Contracting parties intend to maintain a good relationship throughout and to avoid disputes. When defaults, remedies, and limitations of liability are documented in exhausting detail, the perception might become a relationship of mistrust versus a relationship of trust. In addition, excessive "what if" clauses, based on prior litigated cases, just in case something goes wrong, add a dimension of length and complexity to contract documents.

While many believe legal protections should be the primary focus because of costly litigation and dispute resolution, research shows the contrary. A study conducted in the US shows that the number of contract disputes brought to court is declining. In 1992, 9,744 contract trials occurred in the 75 largest counties in the US, while the number was 3,474 in 2005, of which only 1,250 cases were adjudicated (Bussel, 2016). Most contracts do not go to court; rather, misunderstanding and disputes are settled between the parties.

Support for this is evident in a study that follows the most disputed terms. The most disputed terms are, in fact, not legal terms; rather the three most frequent

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[35] The book is used across the US in law schools' transactional law classes.

disputed terms are price and price change, invoices and late payments, and delivery and acceptance (IACCM, 2018a). These can be considered business terms rather than legal terms. This support Stark's view that the transaction and performance details should be the primary focus. Furthermore, the study highlights the importance of assuring the business terms are clearly defined and understood by both contracting parties to avoid disputes.

In addition, in most large-scale B2B contracts, many functions outside of legal are integral to providing the details of the transaction (Haapio & Hagan, 2016). This includes functions such as program managers, schedulers, engineers, contract administrators, accountants, and others. These are often the same functions that have direct responsibilities during the execution phase. Tailoring the contract document development process to support a multi-user environment where the most disputed terms are aligned with the functions that are responsible for implementation can further reduce future misunderstandings.

Focusing on the business terms first is part of the user-centered design process and aims to clearly document the intended relationship of the parties in a way that those executing the obligations can easily find, read, and understand the contract. Compared to a legal framework that tends to favor the traditional legal principal framework, a relational perspective sees the law of contracts from the point of view of the stakeholders and users in the process (Swain, 2099). A user-centered framework integrates the contract users along with the relational perspective. The benefit is that those with firsthand knowledge and expertise of the agreed-to exchange relation and transaction details are part of the process.

Approaching contracts as a central reference point and roadmap during execution places communication between the parties at the fore front. Defining up front how the parties will communicate and work together as unexpected changes or issues arise is part of defining the business relationship. By avoiding re-work due to misunderstandings, efficiencies can be gained. In addition, limiting the necessity to involve legal each time an issue arises saves time and money.

Because each B2B transaction is unique, it requires each contract term to be included based on the transaction at hand versus copied from a prior transaction. A contract which is designed to be flexible and outlines the processes for how future changes will be handled supports effective contract management. This can be achieved by tailoring the contract to the specific transaction.

A benefit of focusing on documenting the business terms first is that the deal-specific information that is discussed and negotiated early on in the business transaction is documented first. This also changes the drafting process from a

purely legal function to a collaborative task. Individuals with expertise are involved in documenting the agreed-to terms, producing a more accurate depiction of the agreement versus a lawyer later drafting the document without firsthand knowledge of the parties' negotiated business arrangement.

The specifics of the business deal guide how the business relationship will proceed and each parties' obligations. Understanding the contract's lifecycle provides insight into how a contract document functions in real life from the beginning to the end. All-in-all a contract depicts the business cycle of a company's business arrangement. Aligning the contract document to support the business cycle is a business first approach to contract drafting.

When performing a contract, I argue, a clear understanding of the business deal-specific information is the most important factor in achieving a successful outcome. Focusing on how the contract will be used throughout the contract's life reveals the need of those executing the contract obligations to be able to easily read and comprehend the main contract obligations, the *"what"*, *"when"*, *"where"* and *"for how much"* (Finnegan, 2014). Assuring these elements are understood by the end-users is imperative.

One reason there can be a disconnect between the agreed-to deal and execution of the obligation is that the two activities are performed by different people. When the users are different from the drafters of the document, the usability and readability of the contract document might not align. Timing of when the contract document development is started also creates challenges in aligning the design around the users. For example, when memorializing the business deal after negotiations are completed, the contract document is sometimes seen more as a formality and not as a roadmap for execution.

In a multi-disciplinary environment with one central document it is important to ensure there is one focal. The distinction between a focal and the developer of a document is that the focal is responsible for gathering and coordinating the inputs from other functions. A contract focal is the "glue" that holds it all together. In many companies this function is performed by a dedicated contract specialist. The CM function is becoming, more and more, a recognized discipline within companies where the individual's assigned responsibility is to manage contracting activities throughout the entire contract lifecycle.

The CM function focuses on the success of business operations responsible for managing contracting activities throughout the contract's lifecycle. It is important to distinguish that the CM function is not responsible for performing the specified tasks, rather, the coordination of tasks across multiple functions. It is responsible

for the contract document and for ensuring that responsibilities and obligations are completed on time and on budget. The CM function is an essential part of driving the multi-user collaboration essential for assuring contracts create value throughout the entire lifecycle.

Another benefit of documenting the business deal details first is that the legal function is provided the transaction-specific details when starting to review the document. This can aid in better tailored legal provisions, for example, knowing the specific delivery terms provides a foundation for a tailored termination for default provision. Applying contract law provisions "on top" of the business terms aligns key legal protections and risk mitigation directly to the specific transaction.

In sum, integrating users with knowledge and expertise to document the relationship and business terms early in the process when the document is developed supports a user-centered contract development process. Furthermore, documenting the business terms first provides the key information for legal protections to be tailored to the specific transaction. The initial focus to avoid future misunderstanding and disputes is on assuring the performance obligations for successful execution are documented in the contract and are understood and interpreted by both parties *in the same way*.

2.4 Technology in the Field of Law & Contracts

2.4.1   Technology and User-Experience

Today, user-centered design and user experience in technology are something we experience and interact with each day. Most notably, we rely on our computers and smartphones to perform many tasks. The main deciding factor for many users when selecting and continuing to use a product is its design, ease of use, and how intuitive it is to navigate. To develop an effective design that produces the desired outcomes, one must consider the interplay of technology and psychology (Norman, 2013). Users' needs and perceptions, as they engage with a product, should influence the design process, and ultimately how the information is optimally presented.

To be useful, products need to be intuitive and simple to interact with (Kolko, 2015). The user interface should guide the user to take the intended action. Steve Jobs, one of the founders of Apple, can be considered the pioneer for simplicity in design, his passion for designing beautiful products also extended to functionality (Isaacson, 2012). Designing a product that is aesthetically appealing and

functional is the goal of contract simplification and technology enables doing this efficiently.

Technology enables streamlining of the user-centered contract design process in a controlled environment. Integrating the entire contract lifecycle allows controlling inputs, coding design parameters, and providing guided instructions to those involved in the process. Using technology to define a process helps eliminate deviations from a process.

Leveraging the multitude of dynamic features that technology offers provides easy-to-use tools when creating documents (Lin & Yi, 2018). Technology can replace many tasks that are performed manually today. Furthermore, technology affords opportunities for controlled process standardization, reuse of information, and multiple users to engage with one document simultaneously.

Technology is an unavoidable part of developing a new contract development process. Today, contract development and drafting utilize some form of technology; no one takes out a blank piece of paper and pen when starting to draft a contract. However, today's legal drafting process primarily relies on unstructured natural language, which is difficult to adopt for computer coding (Roach, 2016). There is an opportunity for much greater use of technology if lawyers and contract drafters integrate machine readable structure into their document development process (Roach, 2016). Controlled language and design models would support taking machine learning to the next level.

Because technology enables the ability to control and guide the actions of users, implementing technology applications allows setting parameters and limitations for user actions. Configuration control is important when engaging multiple users into one collaborative process. An environment where one single document guides multiple users and stakeholders' actions requires a robust configuration control process.

Furthermore, technology can be leveraged to aid in adherence to regulatory requirements and rules by "technological management" integrated into contract-specific technology (Brownsword, 2019). The ability to run reports in seconds enables efficient audit compliance. In addition, the ability to incorporate compliance requirements that are automatically applied to applicable contracts reduces human error.

In the legal field specifically, the availability of legal aids on technology platforms are numerous. General legal assistance via the help of technology are extensive, as

those seeking legal help on various topics can access it easily via the internet. Online legal aids related to contracts are also readily available.

Online legal services are used by consumers and businesses alike to obtain assistance with government and legal documents. Online legal document "drafting" technology allows anyone to produce a legal document that resembles official legal documents. These tools are often provided in a "do-it-yourself" format with question/answer dialogs, perhaps laced with reference material, and automated system assembly (Lauritsen, 2007). While the services help produce a document, they provide little guidance on what the information asked for or sought means. In addition, the document created tends to be in the traditional legal document form, still difficult for the average person to read and comprehend.

The question to ask is if the available online legal self-help services actually "help" in addressing the consumers' and businesses' legal challenges? If it is still necessary to seek a legal professional's assistance to comprehend the information, then engaging online legal help is in essence the same as hiring expensive legal services. To truly leverage technology to make regulatory and legal documents more comprehensible and usable for those not trained in legal writing, the process and language should instruct the user and clarify information so that the user can complete the intended action independently.

When testing the available legal aid technology, one problem that becomes evident is that it is passive aids rather than active aid, meaning that it is not an interactive process. Rather users provide information but do not receive any communication back to ensure they comprehended or properly filled in the form. A dynamic environment builds on two-way interaction to promote comprehension. Examples of two-way communication are links or pop-up windows to guidance documents, indicators when information is entered correctly, and explanation of what information means. Helping the user understand the context, obligations, and meaning of the technical terms they are accepting should be integral to the aids, otherwise the problem of people executing documents they do not comprehend is perpetuated.

One research group addressing this problem is the visual Law Lab at Stanford University which focuses on researching electronic user-interface tools to make technological aids more active versus passive tools. In her article, *A Human-Centered Design Approach to Access to Justice: Generating New Prototypes and Hypotheses for Invention to make Courts User-Friendly,* Margaret Hagan (2018) discusses how new technology innovations can be leveraged to improve accessibility to legal services, especially for people without access to a lawyer. It is

becoming evident that technology is an essential part of making the law and legal support accessible to everyone.

In this sense, technology can be an aid when the output supports and enhances the business relationship and performance outcomes; on the contrary, technology can hinder business outcomes if not properly aligned with the business practices or users do not understand the output. The technology available varies greatly, and to evaluate how technology can be leveraged for contract simplification requires a breakdown of the process of user-centered contract development and how technology can be a value-added tool.

For most contract-specific technology, the goal is to connect all phases of a contract's lifecycle and information flow into one integrated process. Carolyn E. C. Paris, in her 2012 thesis, evaluated the intersection of Information and Communication Technology (ICT)[36] and Contract Management Software (CMS)[37]. Her thesis depicts the contracting environment as a circular one that bridges the gap between the organizational function's technology part of contracts, such as enterprise resource planning (ERP) and contract relationship management systems (CRM) (Paris, 2012). Her distinction that the contracting function crosses with other organizational functions emphasizes the importance of integrating the entire contract lifecycle into one process.

While computers are becoming smarter, the truth remains that human cognitive decision-making is still required. This dissertation is not focused on analyzing the differences between technology or its impact on contract law; instead, technology is examined to indicate what contract automation is and what it can be. It examines how technology can support the move away from contract design and contract simplification taking place, ex-ante, after the contract document is executed, to produce well-designed documents each time a new contract is created. Such a transformation and shift in how companies construct contracts can be one answer to how a paradigm shift in contract document design can be achieved.

How to integrate technology is complicated, and regulatory rules further complicate the environment. One good example of a challenge facing many companies today is compliance with the European General Data Protection Regulations, EU GDPR 2016/679, which regulates the processing of personal data

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[36] Information and communication technology (ICT), refers to technologies that provide access to information through telecommunications. Like Information Technology (IT), ICT primarily focuses on communication technologies used today such as the Internet, wireless networks, cell phones, and other communication mediums" (Christensson, 2010).

[37] Contract Management software (CMS) has been replaced with the term Contract Lifecycle Management (CLM) software.

(EU Commission, 2016). The regulation is complicated and extends beyond just the protection of individual's personal information; it also includes rules about processing, storage, and usage of personal data. When using technology and cloud computing, where data is housed and how it is treated when crossing international boarders makes the EU GDPR very complex.

Within IT Law, another emerging technology is "Big Data", which can be immensely useful for better decision-making and risk and yield efficiencies; however, it can create challenges of legal implications (Corrales et al., 2017). Other examples of technological advances where legal effects are not yet understood is the emergence of cloud computing, Artificial Intelligence (AI), the Internet of Things (IoT), and cryptocurrency. Most of these new technologies are penetrating the field of contracts and will continue to shape how contract actions are automated.

In addition, two other technologies are emerging, smart contracts and blockchain contracts. Many see these as vital elements in integrating technology into the contracting field. Especially in the field of financial transactions where more transparent standard processes exist, smart contract and blockchain transactions are used to automate contract actions. Beneficial for individual contract actions or contract types, there still seems to be a need for overall standardization in order to codify and train machines to perform contract document development or management independently.

Technology is transforming the business landscape and is reshaping the contract management field in several aspects. The efficiencies of integrating technology in the contract document development process are evident. Embracing technology when integrating new contract management and document development processes further supports achieving operational efficiencies.

2.4.2 Contract Lifecycle Management (CLM) Applications

The most deployed technology to manage contracts in businesses is CLM systems (Cummins & Clack, 2020). It is explicitly developed for contract management automation, with over 250 various solutions out in the market today (Capterra, n.d.). New vendors are entering the market with new features for managing contract tasks from the "cradle" to the "grave," many with automated integration to other company technology, such as accounting systems and ERP systems.

New vendors entering the market with new technology can be considered a positive trend. However, without standardization across the field of contract management

each company is introducing unique approaches to every aspect of contract management, from contract assembly to contract document design to implementation aids. Without standardization, new system features are introduced with different approaches, we are in a period that has been referred to as the "Wild West" of CLM system evolution (IACCM and Capgemini, 2018).

Compared to 10 years ago, today's CLM systems are far more than just a contract repository or electronic file cabinets. Each year more robust features and capabilities are introduced to drive further efficiencies. For example, in the short time between 2016 and 2018, the percentage of companies using robust CLM systems to author contracts grew by 5% (Bartels, 2019). CLM, as a contract management tool, supports an extensive amount of company contract-related tasks, especially when integrated with sibling applications [38], such as order management and invoicing (Bartels, 2019). The technology trends are to add features that automate the entire contract lifecycle.

Furthermore, automation and integration into sibling applications allow triggering contract actions automatically. One typical example is the use of electronic signature software that can be coded to automatically initiate the process of approvals and signatures both internally and externally. Another example is automatic payment processing, such as the accounting ledger or accounts receivable system, used for invoicing and payment processing. These are all positive developments that are bringing efficiencies to the contract management process.

Despite the extensive system availability, a recent study[39] indicates that those who have deployed a system (just under 60% of respondents) are mostly dissatisfied and have only been able to deploy limited functionality (IACCM, 2019). Complexities inherent in contract management with multiple users, fragmented processes, and many sources of information contribute to the limited use of technology to support contract management. These challenges need to be considered in order to fully leverage the benefits that technology can bring.

We know technology has and is the key to superior efficiencies in business transactions, from internal accounting software to external sales software, many tasks completed manually before are automated today. For companies not yet using a CLM system or even contract drafting software, the integration of technology of some type into the process is the first step in standardizing processes and gaining efficiencies.

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[38] Systems that connect to a CLM system to execute contract-related tasks are often referred to as "sibling applications".

[39] Over 750 organizations participated in the IACCM 2019 study.

Using a standard or template contract document as the starting point is still prevalent in contract drafting, with 89% of respondents, in the *IACCM 2019 Benchmark Report* (2019) study indicating their company prefers to use standard terms and templates, and that 42% are still transacted using a standard or template contract without adjustments (IACCM, 2019). While the trend to move away from fixed templates to flexible clause libraries allows building contracts by clause, data shows that astonishingly only 13% of respondents indicated that their company has set clause libraries (IACCM, 2019). Company approved clause libraries, and flexible contract development features are both key to shifting away from standard template contracts.

The user-centered design framework and a contract development method that is a building process (examined in Chapter 3), considers clause libraries a fundamental structure to create flexibility for the drafters while instilling control and compliance with company standards. However, in order for companies to use clause libraries and system guided contract development some type of automated system is required that allows adding, removing and editing individual clauses easily within the system (IACCM, 2019). Aligning the system setup and flow with a multi-user framework can be the key to automating the user-centered contract development process.

The idea of clause libraries was already introduced in 2012 by a community of developers, technicians, and power users that developed a feature allowing users to select a clause and, by using an "insert" function, add a clause to an existing document (HotDocs Wiki, 2012). The HotDocs Application Programming Interface (API) was published for anyone to access. While software companies did not integrate the exact model of API, in-house developed clause libraries, and insert functions are part of the unique features each CLM provider offers.

From a process perspective, clause libraries provide the drafter greater flexibility within pre-determined parameters. Allowing for clauses to be added and modified within the contract document as the relationship is defined breaks the contract into individual elements. The contract development becomes a modular process.

Technology offers features to integrate configuration control by granting and restricting access to specific information within the system when multiple users are part of the process. Specific clauses can be available to specific users that they can add directly into the draft document. This produces a tailored document that is initiated and developed while the business transaction is negotiated and is the first step in instilling a collaborative inter-disciplinary process for contract development.

Within the system or part of system integration, guidance documents and instructions, commonly referred to as playbooks, can be added. Playbooks help ensure all company contracts are developed in a unified way when multiple individuals work within the same document.

Furthermore, CLM applications have robust reporting functions and tracking to avoid missed due dates, contract expiration, milestone deliverables and so on. They also support audit and compliance tracking to be streamlined by the integration of internal audit processes into the contract cycle; these are crucial elements to ensure compliance with contract obligations, government regulations, and financial rules (Contractlogix, n.d.). This type of automation is conducive for AI and provides further efficiencies as less human interaction is required.

With the introduction of CLM systems, other benefits are that paper copies and e-mail attachments are replaced with a dynamic system with version control and access control to allow multiple users to engage simultaneously. Any size company, small, medium, or large, can track and automate every single step within the contract lifecycle (Contractlogix, n.d.). Processes housed in a controlled environment allows streamlining contract management tasks by standardized and guided workflows. The result is that contracting activities are centralized within an organization.

Considering hypothetically how a CLM system can be configured to align with the user-centered design process, the various functional touch points of users and stakeholders' part of the business process must be addressed. Throughout the various tasks, such as negotiations, contract drafting, review, approvals, and signatures, notifications via the system could be sent to desired people to elicit actions. Technology companies support the multi-disciplinary contract development process by introducing user-friendly interfaces.

Standardization of functions by user types and the notion that contracts are living documents is part of most CLM system designs. In addition, the requirement that contract information is used for different purposes by different functions is evident by system features that divide and summarize information. Even though the number of phases and naming convention varies, the flow of a contract document and information within CLM systems is in general similar. Figure 14 is an example of a common outline by software providers of the task division within the system.

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Figure 14. Contract Document Flow

The typical CLM document flow—create, approve, distribute, and archive—does not consider the users or types of tasks that various functions perform. The only universal assumption is that the document is the central artifact in the contract lifecycle. Users are the actors who rely on the contract document (or ignore it). Knowing user's actions have the most significant impact on the management of business operations, it might be value added to frame the system process around functions and user groups.

In sum, there are many benefits a CLM system can provide when managing company contracts. Efficiencies can be gained and errors avoided during each phase of the contract lifecycle, Table 4 provides a summary of contract automation benefits. Implementing technology and automation to manage contracts at any scale translates into value creation.

Table 4. Benefits of Contract Automation Technology

Benefits of Contract Automation
1. Provides contract drafting specific tools—e.g. questionnaire inputs, clause libraries and flexible assembly features
2. Enables cross-functional collaboration in a multi-user environment
3. Integration of all phases and tasks in the contract lifecycle
4. Assigned roles and responsibilities
5. Document configuration control
6. Automated workflows
7. Standardized dictionaries and clause libraries
8. Integrated guidance documents
9. Provides a baseline for standardization, smart contracts, coding, AI
10. Supports auditing, reporting and adherence to laws and regulations

A CLM system also provides data to support machine learning capabilities that can be leveraged to automate contract output via algorithms. This philosophy relies on the interconnectivity of information and 360° visibility of all contract-related information. The most important consideration for machine learnings is that the contract information entered into the system is what "trains" the system algorithms; this source data is produced by human. Therefore, the exact contract structure, language, and design are directly related to how future automated contracts will be designed. Next is a brief overview of the different automated technologies that are expediting automatic contract document development.

2.4.3   Machine Learning, Smart Contracts and Artificial Intelligence

Technology is entering the contract and legal field rapidly. Beyond implementing an internal CLM system to manage contract actions, there are different types of technology that use data analytics and code to automate contract actions. New technologies will replace many manual tasks performed by humans today to gain efficiencies. Some of the current technologies are machine learning, smart contract, law as code, blockchain, and Artificial Intelligence (AI). It is important to remember that an automated system replacing a human is only as good as the data used to train or code it – the challenge we face is avoiding the "garbage in, garbage out" phenomenon (Haapio & Linna, 2020).

The unstructured nature of contracts and the natural language of contracts complicate contract automation. The essence of any automation is to have a set of coded instructions (Cumming & Clack, 2020). To support codification, a form of standardization and language rules are a fundamental element. Part of structure simplification, integrating plain English principles and visualization are envisioned to support the trend and developments in contract automation and artificial intelligence.

Next is a short overview of some of the automation applications and AI in existence today. This overview is intended to inform the reader of the power computer automation can have to streamline contract development. As such, it is not intended to be an argument for or against the various technologies.

First discussed is machine learning, which is the phenomenon by which existing contracts are compiled by computers. The process for computers to be able to compile contracts is predicated on hundreds of data inputs fed into the system; in essence, the computer is duplicating the inputs loaded into the system. Machine learning is about getting computers to program themselves to perform human tasks (Mitchell, 2006). The information added to the computer data set trains the

computer to refine its capabilities to "think" like a human. Machine learning is a set of computer algorithms that "learns" or starts to predict how to perform human tasks (Flasch, 2012). The benefit that technology provides is the massive amount of data a computer can process in seconds, well beyond what any human can.

Computers analyze thousands of data points in seconds to draw data patterns. These patterns set the foundation for "training" the machine to compile contracts similar to how prior contracts were compiled. Having thousands of contract documents uploaded into computer systems has enabled machine learning capabilities in the field of contracts. The problem in contract machine learning is that the original data used to "train" the system is the existing legally founded contracts; we are now training machines to perpetuate the problem identified with traditional contract documents.

When leveraging machine learning, the human interface can be considered the most critical factor in establishing a new user-friendly baseline for contracts. To abolish the traditional legal writing style and contract document design, the system needs to be trained based on simplified contract documents. Structured versus unstructured data is a concept directly tied to machine learning and automating contract document creation. Codification of defined structured data sets in contracts is where the opportunity for simplified contract automation lies.

Redesigned and simplified contracts are just an emerging phenomenon; this is why today's computer-generated contracts primarily resemble traditional-looking and written contract documents. Until a new baseline on a universal scale is established, technology will continue to produce traditional complex contracts.

Second, the technology discussed is "Smart contracts", which is rapidly entering the contracting world. Smart contracts are not in themselves legally binding contracts, rather they are self-executing contract actions programmed (coded) into contract software based on an existing contract. Smart contract coding usually takes place after contract execution. The reality is that the technology must be leveraged in the field of contracts to gain efficiencies; specific contract actions coded to self-execute based on pre-defined parameters removes a human interface. These types of streamlined self-executing contracts are in use today on a smaller scale related to specific fields and contract types.

To further streamline on a larger scale requires further standardization of contract terms. While standardizing and coding contract terms has many positive outcomes it only works when defined terminology, processes or specifications are documented. In B2B contracts, which require tailoring at the clause and word-level, standard contract terms cause challenges. Companies have been striving for

standardized language by implementing template contracts that are then duplicated from one business transaction to the next with limited editing.

The move toward company-specific contract templates to gain efficiencies has been steady in the past 30 years. The latest benchmark report indicates the 85% of companies have a standard template (IACCM, 2019). The problem with contract templates is that they offer minimal flexibility. The terms are often a compilation of years of contract knowledge, most often created by lawyers approved for duplication from business deal to business deal, causing the contract not to capture the specific transaction contemplated. On the other hand, a benefit is that templates bring efficiencies and minimize risk by assuring company-approved protections are included, and by cutting down time spent on drafting.

Other issues and risks arise because the contract is developed by one company, not negotiated between the parties, causing the risk-sharing to not be balanced. Also, without input from the other party, the "battle of forms" argument, and relative power of the parties along with potential inclusion of terms which are not relevant and unnecessary can become an issue. One study by IACCM indicated that the use of templates might in fact be costing companies more because relationship tensions add negotiation time and changes in organization behavior due to misaligned power (IACCM, 2019).

Because of this, companies strive to move away from set templates to provide more flexibility. Contract clause libraries and playbooks are becoming more prevalent because they allow easy customization for each transaction. Especially in companies with robust CLM systems or electronic contract compilation systems technology could be used to aid those not trained in contract drafting to participate in the process.

Another technology aiming to automate legal reasoning is the "law as code" or computational law movement, which focuses on reducing complexity by developing different types of "legal user interfaces" (Ruhl, 2015). Computational Law is defined as "the branch of legal informatics concerned with automation and mechanization of legal analysis" (Stanford Computational Law, n.d.). It focuses on how technology can improve and bring efficiencies to various legal actions. Whether it is to simplify the tax code or contracts, the underlying driver is to reduce complexity and produce automated legal tools for everyone, not just legal professionals.

One key distinction to note with computation law is that it is not the same as current legal systems such as WestLaw, LexisNexis, and RocketLawyer, which house information and templates for easy access and use. Rather Computational

Law develops solutions for the codification of regulations in a precise, computable form (Genesereth, 2015). Contract law and the legal environment create challenges to standardize because the interpretation of rules and laws are often subjective. In civil law systems, computational law theory can be applied easier because specific rules are documented and defined. Some argue that increased regulatory requirements and contract law application from existing court rulings supports contract codification even in common law systems.

Open-source codes in the field of contracts such as the CommonTerms project[40] strive to reduce the lengthy and challenging online terms and conditions many individuals, including myself, agree to without ever reading the agreement. Started in 2010, the project has continued and in the latest discussion, there is a focus on five categories: user, protection, standardization of part of contracts, trust, improving readability, and empowering users (Commonterms, n.d.). Similar ongoing research and development is taking place in other projects, for example, by think tank Fores, called "Plattformssamhället" in Sweden.

Blockchain is another technological advancement affecting contracts today. A smart contract lives in the blockchain. The Merriam-Webster dictionary defines the blockchain as: "*a digital database containing information (such as records of financial transactions) that can be simultaneously used and shared within a large decentralized, publicly accessible network*" (Merriam-Webster, n.d.). In simplified terms, there are three critical digital pieces of information stored in the "Blocks," 1) transaction-specific information, for example, date and dollar amount of the transaction, 2) contracting parties, and 3) a unique identifier, referred to as "hash" and time stamp. The various blocks are strung together, hence the term blockchain. A verification of the block must take place prior to the link being made; this is a verification within the system to ensure there is "proof of link" for a party to connect to the network (Reiff, 2020).

Option contracts on the blockchain are self-executing contracts requiring no human interface to execute. To illustrate, below is an example of one type of smart contract flow. Figure 15 shows how a self-executing contract housed in the blockchain works. This type of automation leaves the individual involved anonymous; however, the ledger is public. Only select contract types are currently executed on the blockchain.

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[40] CommonTerms project aims to solve the "Biggest Lie problem", the lie individuals state when clicking "yes we read the terms" which when in fact they did not.
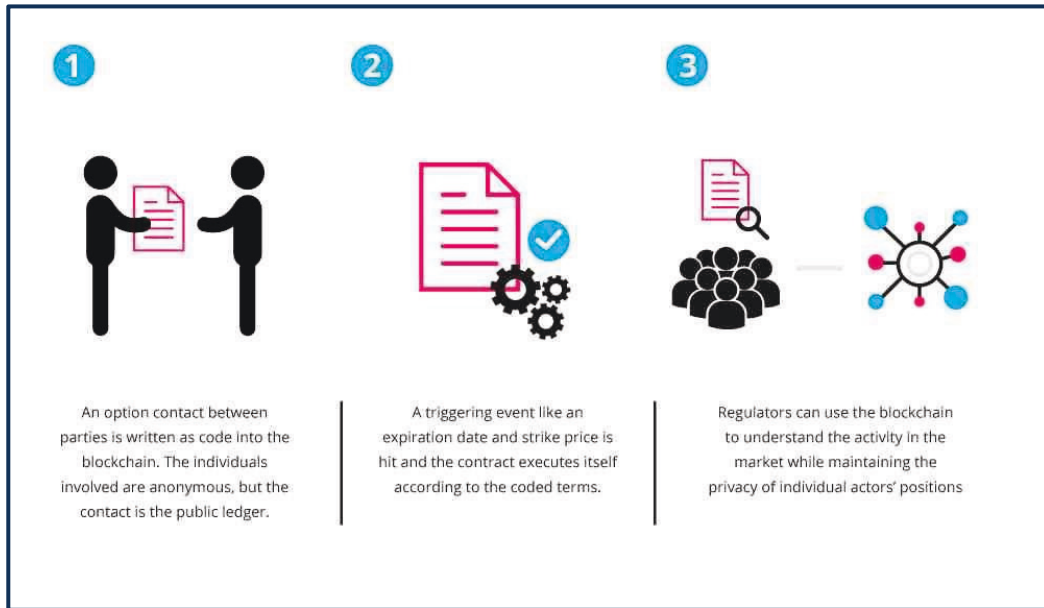
Figure 15.   Smart Contract Flow in the Blockchain

Blockchain features have emerged in smart contracts as well, in areas such as automated payment. This is made possible because "smart contracts are digital contracts allowing terms contingent on a decentralized consensus that is tamper-proof and typically self-enforcing through automated execution." (Cong & He, 2018, pg. 8). A hypothetical example, Figure 16, illustrates the flow of a contract within the blockchain. Interdependent events are triggered; the information flow is illustrated via arrows. When consensus is received, a new block is added to the chain (see bottom of Figure 16).
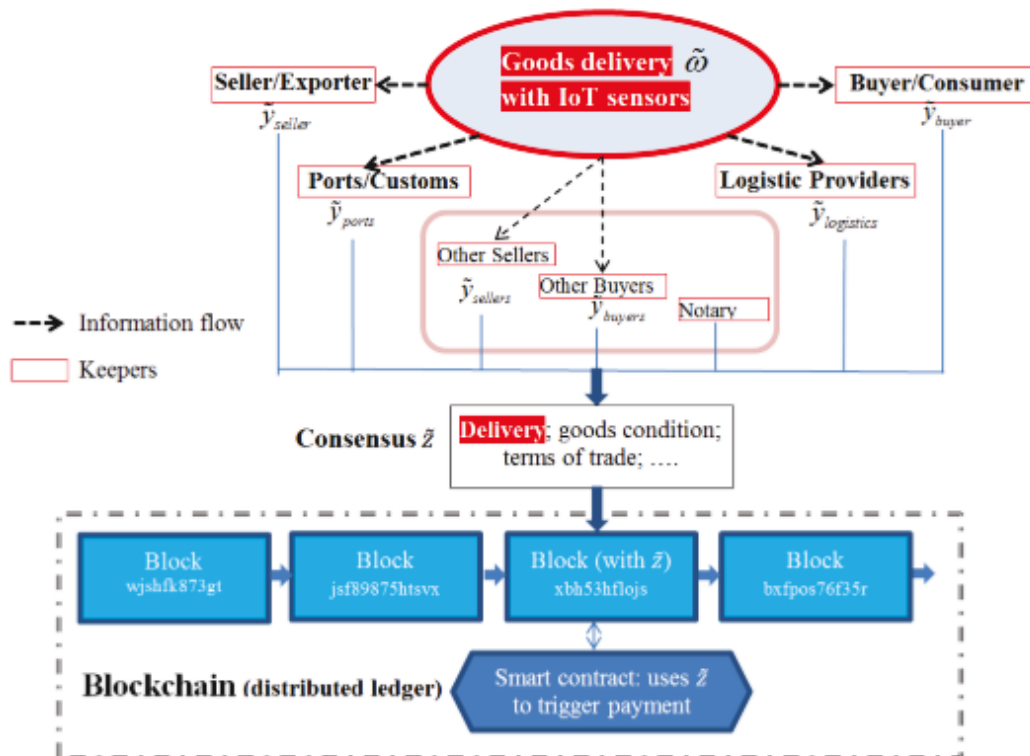
Developed by Lin William Cong and Zhiguo He©, 2018. Used with permission.

Figure 16. An Example Diagram of the Trade-Finance Blockchain Contract

Another key element of the blockchain information flow, as depicted in Figure 16, is the identification of the information keepers. Third parties are involved in contract execution and the flow of information through such third parties is critical for successful contract execution. The order of the sequence of information and contract actions is also critical. Blockchain operates in a sequential world; this is where contract execution benefits can be realized. The picture depicts a future state where the third-party information does not come from human interaction, rather from the Internet of Things ("IoT") consisting of sensors within the product to detect trigger events. An example sensor is a sensor detecting location for delivery.

Beyond smart contract and blockchain, AI will transform the world of contracts. In the context of B2B contracts, artificial intelligence is still in its early stages. The essence of AI is contract analytics providing contract outcome and performance automation. AI is part of the self-executing contract actions starting to emerge in certain contracting relationships and contract types.

How to pave the path for AI in the contracts field and how automation can be leveraged to enhance contract activities is emerging and relatively unknown to

contract practitioners. The term "augmented" intelligence might be better suited when thinking of AI in contracts. Augmented intelligence aligns with how we can improve products and services, rather than how to replace the human interface altogether. A human interface is still essential in contract actions, and I argue, will be required to some degree in the foreseeable future.

When considering augmented intelligence in contract design, the element of using large data sets for decisions is closely related to the raw data entered by humans. The computer output is only as good as the data it relies on. With thousands of data sets available, computers produce similarity statistics and patterns in seconds. This type of information is the essence to establish streamlined contract content. New contract patterns, clauses, and language in simplified form are fundamental to transform how contracts are designed.
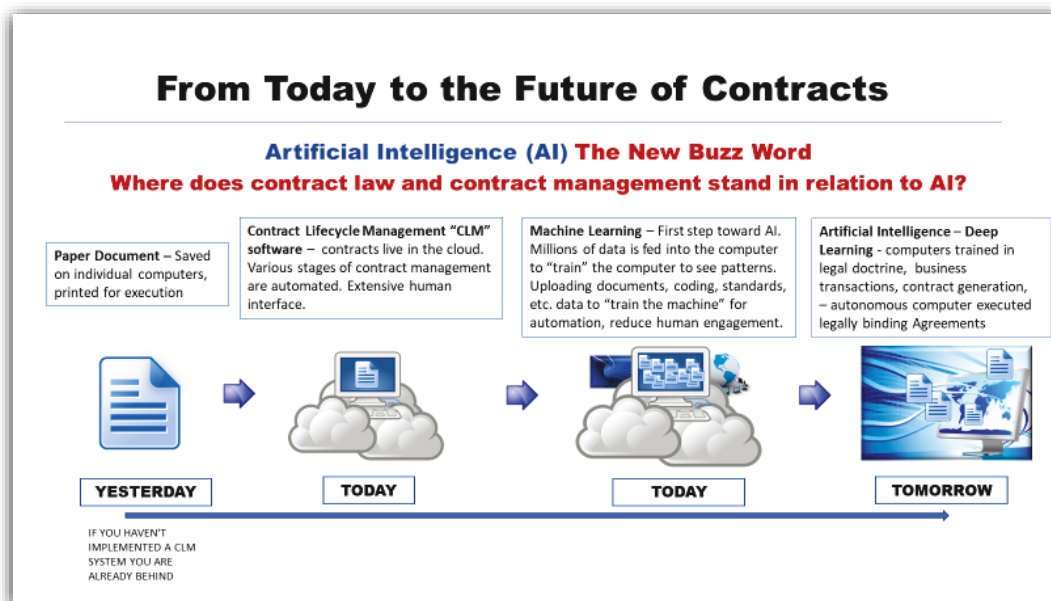
Image by Milva Finnegan©

Figure 17.   Evolution from Paper Contracts to AI

Evolving from softcopy contracts to machine-generated contract documents to the world of artificial intelligence is a progression in time. The author's evaluation of today's state to the future state is shown in Figure 17. While the illustration might be dramatic, the reality is that companies today are at different stages of technology adaption; the only certainty is that technology will keep evolving, and the legal and contracts fields should continue to leverage technology to gain efficiencies.

One challenge for automating contract creation is that the natural language of contracts varies too greatly to be conducive for standardized codification in its current form. Standardized terminology and phrases, on the other hand, are very conducive for codification. To the extent possible, contract standardization is a solution to contract codification and automation of executed contracts and automation of contract document compilation. How to reach this state where one variable relies on the other must be resolved.

The notion "the devil is in the details" becomes crucial as smart contracts and blockchain transactions evolve. The contract redesign ideas presented simplify the contracting process and content, allowing for a better baseline for smart contract codification. Most importantly, contract redesign and contract codification share the same goals, to streamline activities via standardized parameters. An ideal future state would be standardization of activities across specific groupings of contract transactions as open-source code.

2.4.4   Standardization

Standardization and technology together can be a powerful combination to revolutionize how contracts are developed and designed. Most companies have standardized contract language, template contracts, and clause language that deliver efficiencies in terms of reduced resources to create, modify, and review contracts. The benefits of standardization are reusability, duplication, and streamlined processes. However, standardization can produce more than reusability and duplication. Codable standards can drive a global shift in contract document development.

Individual company standardization versus globally recognized standards is different. Company-specific standards provide internal efficiencies for a business. Nevertheless, with two or more parties involved in every transaction, an individual company standard can hinder efficiencies when neither party is willing to deviate from their approved standards. Form templates are the most common example of a company-approved standard that drives inefficiencies in the contracting process because it is only approved by one party, tends to be one-sided, and companies are resistant to modifying the terms to avoid having to obtain legal approval. In B2B transactions between large companies that require flexibility and a shared understanding to instill trust and support the relationship, template contracts can have negative consequences.

To address these negative consequences and to instill a contracting environment of trust and collaboration, professionals in the field have collaborated on drafting

various standards documents available for anyone to use to support a two-way collaborative contracting process. Developed and published in partnership with WorldCC, there are three key standards documents: the contracting principles[41], contracting standards,[42] and the contract design pattern library[43], all available as resources to standardize and streamline contracting practices on a global scale.

The contracting principles are a set of guidelines and example contract language at the clause level, along with a glossary of terms for some of the most frequently occurring contract negotiation topics. The goal is to introduce balanced terms to instill trust and collaboration, and in addition, to yield efficiencies by speeding up negotiations (IACCM, 2020a). Contracting standards are about mass data analytics to produce conformed clauses (IACCM, 2020b). The intent of the team of professionals in the discipline part of analyzing, creating, and documenting the extensive standards is to instill contract and contract management standards globally. The idea is that there is a relationship between contracting principles, contracting standards, and the design pattern library, as illustrated in Figure 18. Contracting principles and standards aim to produce balanced positions and best practices (IACCM, 2020b). The relationship between contracting standards and the contract design pattern library is to design more user-friendly, clear, and engaging contract documents (IACCM, 2020b).

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[41] Available at: https://www.iaccm.com/resources/contracting-principles/
[42] Available at: https://www.iaccm.com/contract-standards/
[43] Available at: https://contract-design.iaccm.com/
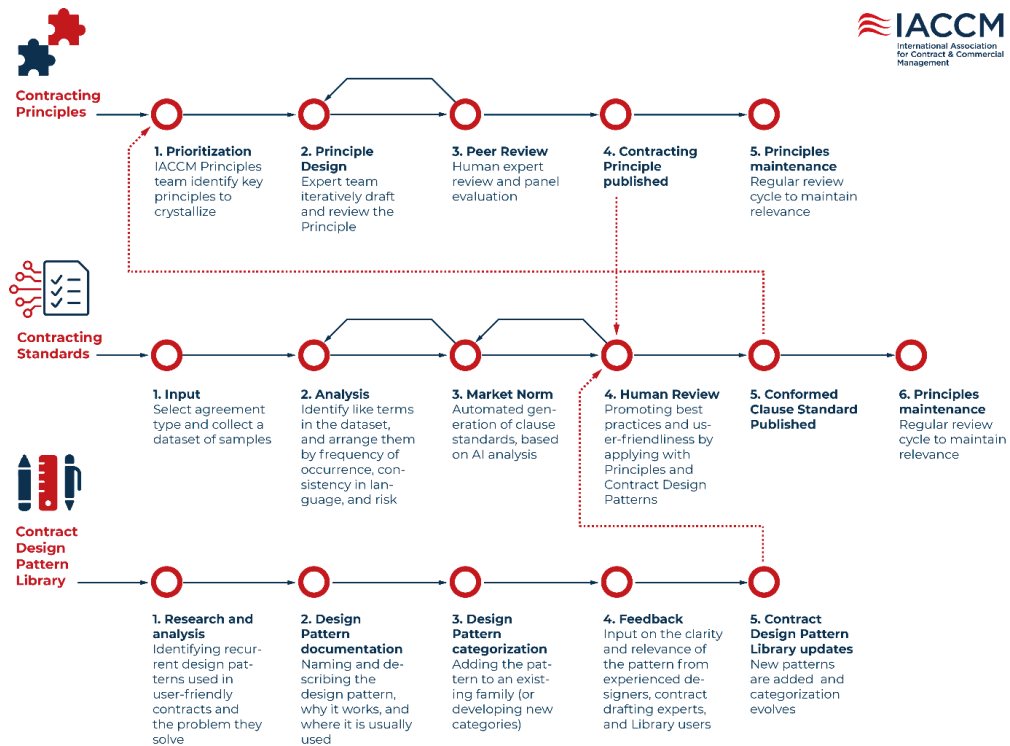
WorldCC©. Used with permission.

Figure 18.   Contract Principles, Standards and Pattern Library Matrix

While the contracting standards and principles with defined contract terminology, sample clause language, and contract document design templates are available, they are not commonly encountered in B2B transactions yet. However, the identification of a need and these available resources is changing the current contracting environment.

To support companies in initiating new designs to communicate contract information and to engage in contract simplification, the contract pattern library offers reusable models and guides (Passera et al., 2020). These are another example of how standardization is starting to emerge across the globe. However, the contract simplification methods taking place today are mostly in isolated environments or within individual companies. To make a pivotal change in contract design, the design principles and standards adaptability to be codified are essential for universal integration by CLM providers.

Technology is changing and influencing the contract's field; however, it is still human interaction that decides on what baseline data are correct. This is one key reason why understanding how contracts operate in society is fundamental to analyze, describe, and develop new solutions. The ability to document the process

on paper first, define variables, and restriction are essential prior to coding any software. Because of this, contract experts have an indispensable role in defining how contract technology is coded for automation.

The assumption throughout the dissertation is that technology is the means by which the new ideas can be streamlined and duplicated within companies and across the discipline. Contract automation is instrumental in today's business to yield efficiencies, and it is evolving rapidly within the legal field and contract management discipline. Embracing contract automation, CLM systems, and future technology enabling Smart contracts and Artificial Intelligence (AI) is essential. This dissertation will argue that automating the contract lifecycle or natural language is not enough; rather, solutions that support computer codification are where true efficiencies can be gained. Supporting standardization requires an analysis of contract structure, defining contract building blocks, controlling the natural language of contracts, and integrating visualization. Each of these topics will examined in the next three chapters.

3 CONTRACT STRUCTURE SIMPLIFICATION

3.1 Problems in Current Contract Design

The first design problem of the traditional contract form is that most contract documents look like a novel; continuous text with no clear headings, breaks, or common systematic structure. Even if the information is comprehensible, the lack of any structural or graphical signals causes documents to be undesirable to read (Waller, 2015). The problem we face today has been summarized well by Waller, Haapio, and Passera (2017), as explained:

> *Complex information is not read in the same way as a newspaper or a novel. Effective readers of complex text read strategically, in a purposeful way to solve problems. They skim-read to see the structure, re-read parts they don't understand, follow up cross references, and compare information from different documents. This means that contracts must have an access structure, with headings logically organized and visible at a glance. A good structure helps users to search, find, and interpret information. (para. 19)*

A novel-like design signals to the reader a significant cognitive load (Eggleston et al., 2000). This type of design strongly deters readers from even starting to read the document. In an empirical study on anticipation of effort to read a document, Fennema and Kleinmuts (1995) found that individuals are sensitive to information display and organization changes. The goal of structure simplification, via various methods, is to reduce the perceived cognitive load and invite users to read the document.

The second shortcoming of traditional contract design is that it ignores the reader's need to move from place to place to obtain the information and understand the relationship between different sections (Burnham, 2013). A hierarchy of the content visually clarifies the location of information and helps users find the specific information they seek, thereby eliminating the need to search the entire document. A document that clearly shows the user's alignment to the information improves readability and helps users find the information sought.

The third and maybe the most prevalent design problem stems from the legal perspective to categorizing contract clauses by contract law principles (Burnham, 2013; Stark, 2014). Indeed, although already Macaulay (1963) believed that contracts have two purposes—creating an exchange relation as well as protecting it—most contracts are still drafted from the legal perspective.

For example, Burnham's (2016) and Stark's (2014) macro view categorizations represent the legal approach to contract clause categorization. Tina Stark teaches to translate the agreed business arrangement into contract concepts before drafting specific contract language. According to Stark, to draft clear and unambiguous contracts, the drafter must understand the seven key legal concepts and assemble them properly (see Table 5) (Stark, 2014, p. 9).

Table 5.　　　　Stark's Seven Contract Concepts

Stark – Seven Concepts in Contract Drafting
1. Declaration
2. Representations
3. Warranties
4. Covenants
5. Rights
6. Conditions
7. Discretionary authority

Similarly, Scott Burnham (2016) categorizes clauses into five categories of contract principles (p. 236). He believes transactional lawyers should be part of planning the contract document before execution to ensure a future breakdown is prevented. Burnham's five categories are summarized in Table 6:

Table 6.　　　　Burnham's Five Categories of Contract Principles

Burnham – Contract Principles Categories
1. Obligation
2. Discretionary Authority
3. Conditions
4. Representations and Warranties
5. Declarations

Burnham guides the drafter to have two sequential tasks when drafting: first, to determine which type of clause is appropriate for each agreed-to term of the contract, and second, to determine appropriate language to express that type of clause. Burnham's analysis was built on the book*, Contract Law in Modern Society*, by Jackson & Bollinger (1980), which emphasized what Burnham calls the three Ps of drafting:

> *Predict* what may happen;
> *Provide* for that contingency; and
> *Protect* your client with a remedy.

One benefit of drafting focusing on the three Ps is that it shifts the drafting process away from winning an argument in court to a preventive approach focused on considering and including alternative approaches beyond purely focusing on language proven in court. Indeed, in this sense, Burnham takes a proactive approach to contract drafting, which is also an approach adopted in this dissertation.

In addition to scholarly categorizations, practitioners and contract management experts have developed contract clause categories intending to standardize contract structure. For example, ContractStandards has developed a unified framework structure consisting of nine main categories (Table 7) (ContractStandards, n.d.a). The nine defined categories partially resemble both Stark's and Burnham's approaches (categories four through eight). The main difference is the additional categories of Bargain, Exchange, and Term. These three categories add a focus on the transaction-specific business details. The approach supports the idea that the purpose of a contract is to create an exchange relation that produces an economic benefit. Bargain, exchange, and term are critical elements in a contract that supports operational success. The ContractStandard Framework categorization strives to ensure that the contract captures both the business clauses and legal doctrinal founded clauses. A ninth category is added, General Provisions; this category includes administrative-type clauses that differ from business- and legal-focused terms and are crucial clauses to include.

Table 7.   ContractStandards Framework Clause Categories

ContractStandards Structure Framework
1. Bargain
2. Exchange
3. Term
4. Representations, Warranties and Acknowledgments
5. Conditions
6. Obligations
7. Rights
8. Remedies
9. General Provisions

One challenge with both Stark's and Burnham's approaches is the legal foundation guiding the drafting process. This approach focuses on assuring legal protections are first and foremost included. Secondary consideration is given to the user who will use the document to execute the exchange. Focusing on legal protections tend to perpetuate the traditional legalese writing and contract form.

ContractStandard's expanded nine-group categorization is a business-oriented approach, striving to assure transaction-specific details are included to achieve successful operational management. However, none of the three categorization approaches place the user as the central framework to categorize contract content. Shifting to a user-centered design approach to simplify the contract structure produces a user-based model for contract content categorization. The user-based categorization and the alignment to contract clauses are presented next.

3.2   Structure Development: User-based Categorization and the Building Blocks of a Contract Document

3.2.1   User-based Categorization

The analysis of contract structure simplification aims to explore new methods to improve the organization of contract content and facilitate finding specific information. Structure simplification is proposed as a standalone contract design category due to its unique design approach. Structure simplification differs from other redesign approaches, such as language simplification or visualization, by focusing on the clause structure and flow. Language simplification only deals with written language, words, and grammar at the word, sentence, and paragraph level. Visualization focuses on supplementing or replacing words, within specific clauses, with graphics and other visuals to improve user comprehension.

Aligned with the theory of contractual structuralism, the idea of structure simplification follows the idea that a contract consists of numerous core concepts, the "building blocks" of a contract. A different macro-level user-based categorization to manage the contract content and many building blocks is presented. Unlike a legal or business approach, the user-based categorization proposed is developed around four general functions: business, technical, legal, and administrative (Table 8).

The goal for a user-based categorization is for users and stakeholders to intuitively recognize the specific information that relates to them. The four user-based categories provide a macro-level view of contract content that supports the

alignment of contract clauses by user type when initiating structure simplification. A macro-level initial structure is envisioned to support assembling contract content, aligning the clauses in a logical flow, and ultimately producing an outline that improves readability and usability for the end-users.

Table 8. Finnegan's User-based Contract Categories

Finnegan – Clause Categories
1. Business
2. Technical
3. Legal
4. Administrative

One of the main differences in the user-based division is that it considers the audience first and foremost. A user-based division will support the contract design and development process by identifying who the users or user groups are for the specific clauses of a contract. Aligning contract content with user groups at the onset helps tailor information by the experts and the intended audience.

The first category, business, encompasses the transactional aspects of the agreed-to relationship, covering the "*what,*" "*when,*" "*where,*" and for "*how much.*" The business terms of a relationship are commonly discussed and negotiated first when a transaction is contemplated, which makes it logical to place business-related clauses first. From a user perspective, the business terms are fundamental for the execution team to perform the obligations in the agreement. In this category, the users tend to be composed of the operations team who will perform the obligations and ensure the project is executed within the agreed-to parameters; this can include program management, the finance team, human resources, and the commercial management team.

The second category, technical, comprises the clauses containing the specifications and detailed scope of the products and services transacted. The technical category aligns with users with specialized skills related to the production or performance of the contract obligations, such as engineering, technology, and architecture, to name a few. Business and technical clauses overlap to a certain extent; for example, the scope of the project is often a clause at the beginning of a contract that is important to business users. In addition, the detailed specifications or Statements of Work (SOW) are integral and located in other sections or as attachments or exhibits that are part of the contract.

The third category, legal, is aligned with users with expertise in contract law application, limiting risk, dispute resolution, and the like. These terms are often aligned with the legal department but can also be aligned with risk management, insurance, contract management, human resources, or other experts. The legal clauses' foundation is often contract doctrine intended to assure that the legal protections afforded under the law are included. Legal clauses also focus on the "*what if*" regarding the actions or remedies—if performance or the relationship does not go to plan. Also, they include clauses such as how any disputes will be handled and under what legal jurisdiction. The parties' rights and remedies are important elements and make up several clauses in the legal category.

The fourth category, administrative, is broken out separately, even though many clauses can be categorized as legal. The main reason why administrative clauses are identified as a separate category is to create a section for standard clauses that are frequent and relatively consistent in language across different contract types. Administrative clauses can include, for example, notices, amendments, severability, and assignment. Often companies establish pre-approved clause language for inclusion that does not require additional approvals.

Administrative clauses are referred to by both business and legal users during contract execution. Administration clauses are as important as business and legal clauses, even though the language is often standardized to a certain extent, even globally. The same process of assembling and tailoring each clause is necessary to ensure that the terms align with the specific business transaction.

A user-based categorization challenges the mindset that contracts are purely intended for legal users because contract design capabilities reside with many different individuals – not just lawyers (Argyres & Mayer, 2007). Grouping the clauses by users is built on the notion that contracts consist of diverse information that holds importance for various end-users and stakeholders who have specific expertise. The user-based categories aligned to each contract clause supports both the document development process and designing each clause for the intended audience.

3.2.2   The Building Blocks of a Contract Document

Contracts are a collection of individual concepts or clauses[44], the *building blocks*, and not until they are combined does a complete contract document exist. This

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[44] Contract clause refers to specific concepts within contracts and has different naming conventions across the globe, for example, term, provision, section, or element. In this dissertation, the term "clause" or "building blocks" is primarily used.

mindset views contract creation as a building process. Structural isolation of clauses is a modular structure that can aid in designing, executing, and enforcing contract obligations (Hwang & Jennejohn, 2018).

The approach of identifying each contract building block to initiate contract simplification builds on contractual structuralism that proposes that the way contract content is structured plays a vital role in every aspect of a contract's lifecycle (Hwang & Jennejohn, 2018). All contract users throughout the contract's lifecycle should be able to locate the specific information they need easily.

Contract concepts in a traditional document can be identified by skim-reading or doing a high-level review of the contract document. A contract lacking clear headings or even clear paragraph breaks can be broken into building blocks by reading parts of each paragraph to identify the main concept. Figure 19 is an example of a page from a traditional difficult-to-read contract. On the left are the building blocks identified by clause title.

PURCHASE AND SALE AGREEMNT

THIS PURCHASE AND SALE AGREEMENT (this "Agreement") is made as of August 14th, 2015 (the "Effective Date") between Nordic Birdhouses Ltd (Seller") and Timo Inc. ("Buyer"). Seller and Buyer are collectively referred to as the "Parties".

Buyer agrees to buy and Seller agrees to sell and deliver to Buyer ten thousand (10,000) custom built bird houses ("Birdhouses") as agreed to herein. The Birdhouses shall meet the agreed to specifications, Appendix 1 "Specifications", which includes detailed size measurements for each bird type, electronic monitoring devices and surveillance capability integrated.

Seller agrees to deliver all 10,000 Birdhouses within twelve (12) months of the Effective Date. Seller agrees to deliver all Birdhouses installed on-site at the various county preserves in Illinois, USA as outlined above. Seller agrees to hold a Design Review (DR) after three (3) months from the Effective Date outlining a computer rendering of the final product including detailed drawings of the surveillance and monitoring system. Within fourteen (14) days after the completion of the DR Buyer agrees to send written notifications of its approval of the design. Should Buyer not approve the design outlined during the DR the Parties agree to hold a second DR two (2) months after such notice date and the program schedule shall be extended by two (2) months as well. Final Pre-Delivery inspection shall be conducted by Buyer two (2) weeks prior to each Lot delivery. Lot deliveries shall be in accordance with appendix 2 "Delivery Schedule".

Parties agree to a one hundred ($100) USD price per each Birdhouse, for a total purchase price for the 10,000 Birdhouses of one million ($1,000,000) USD ("Purchase Price"). Buyer agrees to pay amounts due per the following milestone payment

Building Blocks

1. Scope

2. Delivery

3. Price & Payment

Figure 19.   Sample Contract Excerpt and Identified Building Blocks

The specific clause language can be several paragraphs long; however, the clause's context can usually be identified from even a skim read. In the example, a description of the product sold/purchased is outlined first (commonly referred to as scope). Details of the delivery of the products are defined next. The price and payment details are documented in the last two paragraphs. Sometimes the same concepts can be in different sections of a contract. Combining and summarizing similar concepts together is part of structure simplification.

Once the contract is reviewed and a heading identifies each concept, an outline of the contract content can be identified, similar to a table of contents. Figure 20 is an example of a summary of building blocks from a purchase agreement. The high-level summary of clauses is the initial framework for starting to simplify the structure. Repositories of company clauses are often housed in databases or clause

libraries. When housed electronically, for example, in a CLM system, clause libraries provide great flexibility in reusing and organizing clauses.

Various Building Blocks

1. Scope	9. Warranty
2. Delivery	10. Notices
3. Price &Payment	11. Choice of Law
4. Term	12. Arbitration
5. Delay in Delivery	13. Entire Agreement
6. Indemnity	14. Amendments
7. Force Majeure	15. Assignment
8. Confidentiality	16. Severability
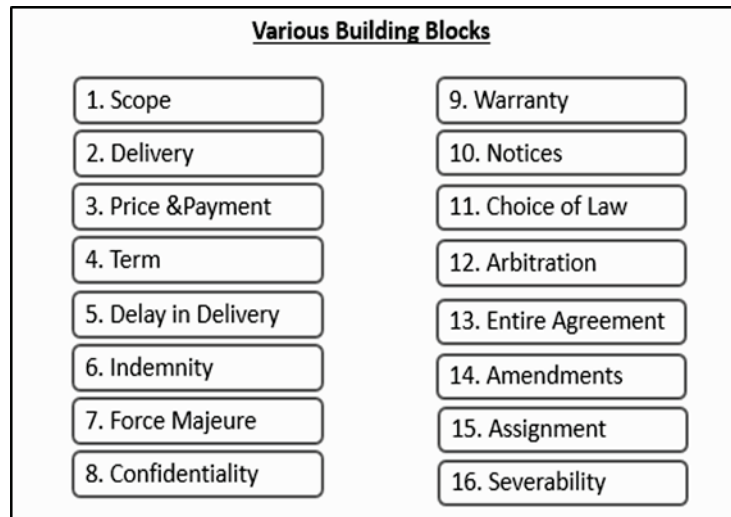
Figure 20.   Sample Contract Building Blocks

The notion that contracts are made up of building blocks is not novel. For example, Ken Adam's (2014) approach to improving layout and readability outlines contract sections and shows how they can be further grouped into articles that form building blocks. Also, Gulati and Scott (2013) identified the concept of standardized provisions as the building blocks of a contract, where standardized provisions refer to the component of contracts that are common across all contracts, even though the exact wording may vary from one contract to the next.

Finally, in a conceptual analysis, Tina Stark (2014) uses the term contract building blocks to define the process of developing a contract one concept at a time. Similarly, this dissertation builds on the same assumption that contract development should be considered a process of combining contract concepts. The unique contribution of the present dissertation is that it proposes a user-based four-level categorization as the initial outline. Employing the user-centered design process as the framework, developing contracts one building block at a time, and engaging users and stakeholders with the relevant expertise achieves a contract design tailored to the end-user(s).

3.2.3   Aligning the Building Blocks by User Category

In the user-centered design process, each identified building block is aligned with one or more user groups. The relationship between contract clauses and users is

identified in the first phase of the proposed user-centered approach. Aligning the contract clauses to the macro-level user-based categories, business, technical, legal, and administrative clauses guides the users to the section where clauses related to them reside. This structure guides the various users during both document development and contract execution.

The theoretical idea of grouping contract content by user-based categorization as the first layer is illustrated in the below relational concept map, Figure 21. The idea is to align contract clauses in the four user-based categories. The model provides a framework view of what a user-based categorization of contract clauses is. In the real world, the specific clause titles and clauses will vary; nevertheless, conceptually, the concept map can be applied to any contract to develop a two-tier structure outline.
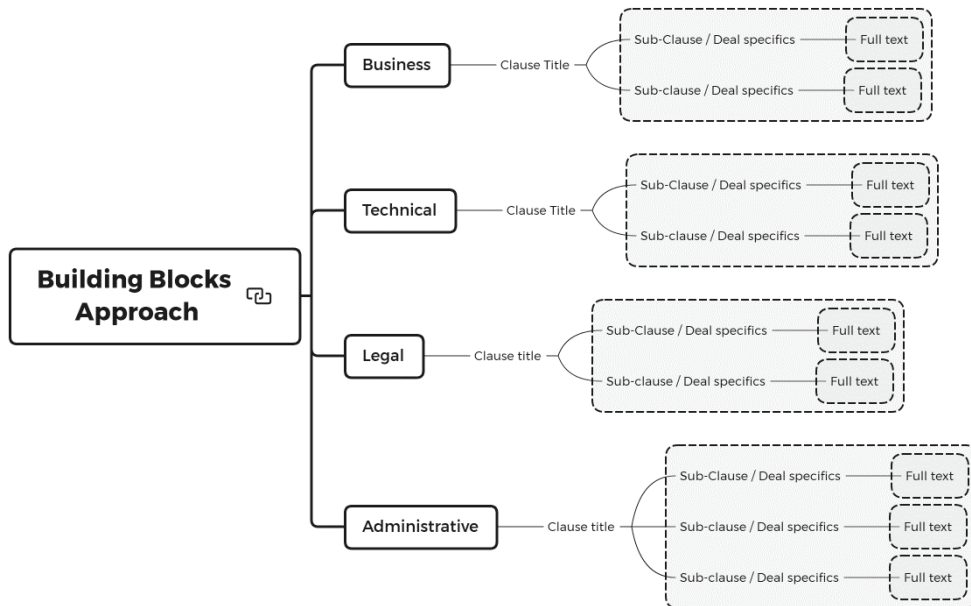
Image by Milva Finnegan©.

Figure 21.   Building Blocks' Relational Concept Map

Approaching contract development one clause at a time, "building block by building block," will change the process from a document editing to a building process. Summarizing the various building blocks by title and assembling each clause one at a time simplifies the contract development process and allows easy integration and tailoring clauses to the specific transaction. This process is

different from the common approach of starting with a complete contract document.

The theoretical categorization is a general outline, and the relationship in a large-scale cross-functional transaction can produce a more complex outline. There is often an overlap between user groups and contract-specific clauses, and the division is not a one-to-one relationship. Thus, the design process should be collaborative between various individuals and an iterative process to capture the interdependencies.

The contract lifecycle is the framework that helps guide the outline to allow multiple people to engage with the document simultaneously. While developing a user-centered design process, each contract clause's context and intent must be individually analyzed to align them to the responsible users or user groups properly. Many clauses will have one or more users and depending on the information this can vary during various stages of the contract lifecycle. With the aid of technology, the responsibility for contract drafting and review can be assigned to specific users or user groups.

Implementing a cross-functional model into the contract planning and development process shifts the drafting responsibility from primarily a lawyer's responsibility to a team effort. Traditionally, contractual planning has required a significant amount of a lawyer's time (McNeil, 2002), but now companies seek ways to reduce legal involvement to reduce cost (Cummins, 2017). The benefits are two-fold; not only does a cross-functional drafting process create a document that is more usable for different users, but it can also reduce legal involvement as other functions initiate and partake in the preparation of the document.

In addition, users can gain efficiencies when information is easily found, and the document is intuitive to navigate. Searching for specific information in a traditional contract document might require the user to read several paragraphs of text before finding the information they need. In contrast, a contract structure in which parts are divided into distinct, recognizable explicit sections improves readability (Garner, 2013). Clear titles and a summary outline, like a table of contents in a book, reduce the initial cognitive load users experience when looking at a novel-like document and helps users find specific information quickly.

Finally, a document design process that integrates cross-functional collaboration is more straightforward when the users are directed to specific parts of the contract that directly relate to their area of responsibility and expertise. This process breaks down the substantial task of developing a contract into smaller, more manageable tasks. All users might not necessarily need to know all the information in the

contract. For example, an engineer building the product requires the details of the scope and the specifications but does not necessarily need to know the choice of law. This is the essence of a tailored user-centered contract design; clauses are developed by individuals with the knowledge and expertise to tailor the delivery to the audience.

3.3 User-centered Categorization and the Building Blocks Approach

3.3.1 Engaging Users in the Contract Development Process

The user-centered contract design process is built on the assumption that contract development is a multi-disciplinary collaborative process aimed at achieving successful contract execution. It is common for the pre-award and post-award activities to be fragmented or completely separate. All too often, those responsible for negotiating and finalizing the transaction details consider the document complete when a final agreement has been reached, while those involved in executing the contract consider the starting point to be when the contract is signed (Ertel, 2004). When the individuals involved in the negotiations are different from those performing the contract, issues can arise. The conflict that can arise is that the deal negotiated might not be realistic and might not work in practice (Ertel, 2004). A process that considers the entire contract lifecycle and the contract as the central reference point serving many purposes can help resolve discrepancies or contradictions by connecting pre-award and post-award objectives.

Early involvement by the negotiators and the execution team is important to understand whether the deal documented on paper will work in practice. Both subject matter experts and those who can provide insight into how future conflicts can be avoided should be part of the document development process (Ertel, 2004). The aim is to develop a document that reflects the agreed-to business arrangement, and outlines the process to execute the intended relationship while avoiding disputes.

In current contracting practices, various stakeholder's involvement early in the contract drafting process is limited (Finnegan, 2014). Integrating those responsible for executing the contract as collaborators in the negotiation and contract development phase can help avoid misunderstandings later. Contract document collaboration would take place *prior to* rather than *after* the business deal is negotiated and executed.

Inviting users and stakeholders to engage in the initial phase of the document development has two benefits. First, it encourages the tailoring of the content to reflect the specific contracting relationship. Proactively building the relationship and defining the "rules of engagement," upfront helps avoid disputes later. Second, integrating the technical experts and operational teams responsible for executing the obligations to provide inputs and develop the document improves the accuracy of the information.

Integrating multiple departments and individuals as part of the document development process, which is generally completed by only one or a few individuals today, is not easy. From a logistical perspective, assuring alignment between responsible parties can be a challenge, and if not managed properly, it can have a negative impact on contract drafting efficiencies. For instance, if the multi-user process adds review time or lacks clear directions about who is responsible for what section, the results may be confusion and duplication of effort.

In order to avoid issues arising, a single assigned lead to manage the contract document is necessary. It is common practice for lawyers or contract specialists to be considered the "owners" of the contract; this holds true, as every team activity requires a leader. The contract focal with principal responsibility for the document is the "glue" that holds it all together, the keeper of the configuration control key. The document coordinator is not necessarily the individual or department who has economic responsibility for meeting the financial obligations. Rather, the contract focal is the central communicator that assures that information and cross-functional collaboration is achieved.

The holistic view of the contract lifecycle and the five phases, as described in Chapter 2, provides the foundation for identifying the user with expertise who is an essential participant in the contract document development process. Including many functions early in the document writing process improves information accuracy, promotes cross-functional communication, and bridges the gap between pre-award and post-award information sharing.

3.3.2   Assembling the Final Contract in a Logical Flow

The final step to producing a simplified contract structure is assembling the contract clauses in a logical flow. How the contract content is structured becomes important when multiple users, including those unfamiliar with contracts, are part of the document development process. The user-centered design strives to model the user's natural behavior to develop a flow that is intuitive and easy to navigate so the user can efficiently perform the intended actions (Oviatt, 2006). The

contract structure establishes the document's flow and layout and is therefore an integral part of contract simplification. The outline of the content and a systematic flow can enhance the readability of a document when users can find the information sought at first glance.

When determining a logical flow, considering what clauses are most frequently used during execution is an excellent guide to follow. For example, business and technical teams rely on clauses that support ongoing activities central to contract operations. Placing them first can improve usability. Subsequent clauses after scope and delivery could be price, payment, invoicing, and essential information for the business team to perform tasks such as billing once products or services are completed. The frequency of operational activities and sequential flow is a good guide to develop a logical outline of the contract content structure.

To ensure a logical information flow and that the user can navigate the document, both information and context should be considered. Grouping together similar topics that connect naturally simplifies the contract development task by leading the drafter to continue from one section to the next eliminating the need to jump from one section to another. For example, when defining the price, it is natural to discuss payment terms and possibly invoicing in the subsequent section to create a natural flow. The benefits of grouping similar information together help users to find cross-referenced information more easily. Another example is the term, start and end dates of the transaction, both are directly tied to termination, and it would be logical to place them sequentially in the document.

In addition, having a well-defined contract outline supports the assembly of contract clauses. Understanding how each building block aligns with the users allows the related contract clauses to be grouped based on users. The goal is to include applicable content in a logical flow to support ease of locating information. The users should be able to quickly identify in a macro-level outline the information sought and then be guided to the location within the document for the complete clause language.

One practical tool to guide those not trained in contract drafting or familiar with contract documents is a checklist (see Figure 22). For individuals new to contract drafting, writing directly into the contract document can be intimidating. A checklist can be a valuable tool to break up the task, assure those with the knowledge and expertise to develop clause language, and ensure that all substantive information is included.

Purchase Agreement Checklist

Business Terms

❑ Fee / Payment
  ❑ Price or Fee Agreed To
  ❑ Payment Terms and Timing
  ❑ Invoice Process
❑ Include Term and Termination of Agreement (Define End Date)
  ❑ Effective Date
  ❑ End Date or Final Event
❑ Delivery

Technical Terms

❑ Scope of Purchase
  ❑ Goods/Services to be procured Statement of Work (SOW)
  ❑ Specifications of the Goods/Services
❑ Performance Guarantees
  ❑ Product Warranty
  ❑ Service Level Guarantee

Legal Terms

❑ Contracting Parties, Legal Entities
❑ Confidentiality
❑ Limitation of Lability
❑ Indemnification
❑ Force Majeure
❑ Choice of Law
❑ Dispute Resolution
❑ Entire Agreement

Administrative Terms

❑ Assignment
❑ Amendments
❑ Severability
❑ Notices

Figure 22.   Sample Purchase Agreement Checklist

Furthermore, a user-based structure supports the task of assessing each clause for inclusion or exclusion by dividing the content between several users or user groups. Contracts do not generally contain "fluff"; rather, all content is important even if it fills 500 pages. Determining the exact contract content and required clauses are beyond this dissertation's scope; however, contract simplification presents an opportunity to streamline and potentially reduce contract content. The important part is that each clause is aligned with a user group so that individuals with the knowledge and expertise are responsible for determining what clauses apply to the specific transaction.

Once the contract is completed, the building blocks approach, where each clause is first identified by a heading, produces a table of content. The clauses summarized by the four user-based categories creates a layered table of content, Figure 23. A table of contents is a valuable reference tool in a multi-page document. Using different font or colors for the macro-level user groups provides visual cues to easily help the users navigate the contract content. The page numbers allow the user to locate the information without having to read the full document.

Table of Contents

Figure 23.   Example Contract Table of Contents

The alignment of clauses with the four user-based categories is not a one-for-one relationship. In the example above, confidentiality could be aligned under administrative, depending on the contract type and specific content of the clause. In general, once a relationship of clauses to user groups has been defined within an organization based on user and tasks, it is often similar from transaction to transaction. However, clause categorization is never absolute and can be changed at any time.

One benefit of establishing a structured outline summarizing the main clauses and clause types in contracts helps avoid errors and omissions. Shown in Table 9 are examples of common contract errors and omissions that are not related to contract law clauses, practices, or application in particular; instead, they are about information errors or omissions that relate to contract information included or excluded by the drafter. They can relate to the accuracy of the deal-specific information, unclear writing, and poor document design. While some might seem minor, these common contract errors and omissions can drain company profits. Many of the outlined types of errors and omissions can be avoided by a more thorough review of the contract structure and content at a clause level.

Table 9. Common Contract Errors and Omissions

Common Contract Drafting Errors and Omissions
1. Unclear Titles
2. Incorrect or Missing References
3. Convoluted Structure
4. Wrong Dates – Effective Date Not Defined
5. Wrong Legal Entity
6. Vague and Lacking Clauses
7. No Delivery Schedule
8. No Invoicing / Payment Instructions
9. No Performance Requirements / Specifications Included

One goal is to limit re-writing information; this can be achieved by the early involvement of various users and experts in the development and drafting process. A process that gathers specific information in modular form can reduce the time it takes to draft the actual contract document. Various automation tools that assist in gathering transaction-specific information are available to make the process more efficient. Specific information obtained from a human interface assures accuracy and supports producing a contract that is tailored for the specific transaction.

When the transaction details are documented, one useful tool is a conversational interface approach. The goal of a conversational interface design is to outline a data input interface mirrored to a conversation (Brownlee, 2016). A conversational input process is a two-way communication process where a specific question is asked, and the user answers the question in the application. This is followed by another specific question that the user answers, mirroring a two-way conversation between two people. This process is different from starting a contract by using a prior document in whole or part, which is then edited. The structure of a conversational interface is predicated on addressing one topic at a time. For example, what is the quantity, what is the price? This is similar to the relational concept map model of outlining the contract requirements. The information entered automatically feeds the specific contract clause or building block in the contract draft.

Conversational interfaces are used today for contract creation in many software applications; one standard tool is a contract questionnaire[45]. By soliciting answers to specific questions, essential contract information is documented via a user-friendly method. Users input information in a format that requires them only to read a short question or requirement at a time. This process allows the individual to focus on one requirement or element of the relationship at a time. The intent is that users with the knowledge and expertise are asked only questions that pertain to their area of knowledge. The inputs entered into the questionnaire auto-populates contract clauses or model documents[46]. Using a questionnaire type input process eliminates the users from directly writing in a contract document.

In addition, conversational interfaces and tools such as questionnaires allow user inputs to be limited to specific options; for example, using drop-down options eliminates free form inputs. The drop-down feature supports consistency and produces a baseline for automated reporting by specific terminology. Having fixed input data fields provides additional benefits, as it streamlines contract management by categorizing contracts according to various parameters.

Contracts populated by a conversational interface, such as questionnaires, capture the human data inputs that remain unknown to a computer. Each large-scale B2B deal is unique; therefore, a human should document the transaction-specific information. Machine learning and smart contracts can auto-generate contracts; however, any deal-specific information requires a human interface to some degree to assure accuracy. The questionnaire approach naturally tailors information as the participant answers questions about one specific transaction. Companies can tailor input fields by any selected criteria (e.g., by division, contract type, department, etc.), and within the form, sub-categories can be linked to subsequent fields.

Several other tools are available to gather contract-specific information in a multi-user environment where users not trained in contract drafting participate in the process. One resource available online is the IACCM Contract Design Pattern Library. It offers guidance and examples of various design tools to gather and document transaction details tailored for the purpose and the audience of the information (WorldCC et al. n.d.). Figure 24 is an example of a term sheet

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[45] Contract input questionnaires have become a standard feature in CLM software for contract initiation. Some systems are connected to sales and procurement systems where sales and negotiations teams provide the initial information. This type of interface at the start of the business relationship, which feeds a contract document outline, initiates the collaboration already in Phase one of the contract lifecycle.

[46] Questionnaire and input screen approach to contract generation have a software application that auto-populates a model contract.

commonly used in financial transactions. The document outlines the transaction details in a logical flow, consisting of the specific topic and an input field with guidance to help the drafter fill in the specific information. The benefit of a term sheet is an easily navigable layout, integrated guidance to help the user fill in the details, and a user-friendly document.

WorldCC, Passera, & Haapio ©. Used with Permission.

Figure 24.   IACCM Contract Design Pattern Library Example – Term Sheet

In sum, when drafting a simplified contract, breaking the contract into building blocks and structuring the information in a logical flow is critical. To achieve this, it is necessary to implement a user-based categorization as the first summary level and then align clauses to produce an outline that flows and guides the reader to find the information they need easily. Multiple users, including those not familiar with contract drafting, can be integrated into the process by assigning specific content to specific users. Leveraging tools such as checklists, two-way

conversational interfaces, or term sheets break an otherwise daunting task into a straightforward guided approach to documenting specific information. This approach differs significantly from the traditional document initiation process of copying a prior negotiated contract document and then editing it.

3.4 Summary: Contract Structure Simplification and its Benefits

To pave the path for a user-centered contract design, streamlining the contract content and its structure is essential. Designing the contract document to promote usability for all user types involved throughout the contract lifecycle requires each individual building block to be identified and labeled with a title. Further, using the user-based categorization as the first-level summary and aligning clauses provides a framework for structure simplification.

Developing a systematic structure based on the users guides the process to develop a user-based flow of the contract clauses. Even though differences exist between building blocks in terms of specific language and content, the contract can be streamlined by how the information is structured (Pitt, 2019). Identifying clauses by title and grouping them under the four user-based categories provides a high-level summary of the content.

A document's look influences the reader's initial reaction and can either invite or deter the person from reading the document. Structuring information with clear visual cues similar to a table of contents provides a simplified overview of an otherwise complex contract document. A user-centered structure simplification process allows users from different functions to contribute to contract development and makes information accessible to those who need it during execution.

User recognition of contract content is an essential element of contract structure simplification. There are many players throughout the contract management lifecycle, but there is only one final document. When information is strategically structured around users' needs, and the specific information sought can be accessed easily, this brings efficiencies and saves time (Waller et al., 2016). Therefore, the ease and efficiency with which a user can find the information become the priority (Burton, 2018). The user-centered contract structure simplification process is envisioned to produce a logical contract outline and communicate a clear relationship to the user.

Standardizing the general flow of clauses using a user-based macro-level categorization allows users to recognize their specific areas of responsibility. The distinct aspects of user-centered design seek to improve users' relationships with a contract and break the contract into manageable parts. Each business deal is unique, and as such, the contract content should reflect the transaction-specific terms. Different users or user groups have the expertise and knowledge that is part of a contract. Integrating each function in the document development process helps ensure the information is accurate.

The intention of structure simplification is not to create standard clause language or contract content. Rather, the intent is to identify the main concepts and tag each building block with a heading to improve the organization and usability along with ease of finding specific information. In addition, the aim is to involve various users and functions with the expertise to partake in the document development process to promote a collaborative process.

The benefits are three-fold:

1) A multi-disciplinary contract development and drafting process is established, promoting documenting the transaction-specific details early in the exchange relation.

2) Efficiencies are gained in the time and effort needed to gather and document the transaction-specific details when users are integrated into the process and document information directly in the draft document.

3) Accuracy of the information is improved when experts and those with firsthand knowledge are part of the document drafting process.

Establishing an outline of contract clauses with identifiable headings aligned to specific user groups is the first and second phase in the user-centered design process. The third phase focuses on tailoring the clause language for the intended audience. The idea of language simplification is presented next.

4   FROM LEGALESE TO A CONTROLLED CONTRACT LANGUAGE

4.1   The Divide between Plain English and Legalese

The traditional contract document with black and white text only, technical language, and writing style are contributors to why contracts are complex and challenging to read and comprehend. The fact that contracts tend to be solely in textual form is not surprising because the law is inextricably expressed in written form (Gilmore, 1995). The traditional contract language and writing form prevalent today is often referred to as "legalese".

The type of legalese language predominant in common law countries, such as the US and the United Kingdom, derives its roots from contract law principles dating back centuries and does not resemble today's standard English [47] (Burnham, 2016). The problem that arises from legalese language in text-only format is that it causes contracts to be difficult to read and comprehend for those not trained in legal writing. While the language might not be as archaic in code law countries such as Finland, Germany, and France, the language consists of technical terms in black and white text-only format, making it difficult to read and comprehend for non-lawyers.

The common English used in most business communication is different from traditional contract English. Contract writing and grammar deviate from today's grammar rules taught in elementary and upper school. Within our society, the archaic English words and writing style prevalent in contracts have been replaced with new word choices; however, still depicting the same meaning. These language differences can cause misunderstandings or miscommunication that impact performance and can ultimately have a significant negative economic impact on achieving successful business outcomes (Haapio, 2003).

To address the problem of two different writing styles, the movement of writing in plain language has emerged. Bryan Garner (2013) describes writing in plain English to be expressing an idea in the most straightforward way. Furthermore, organizations such as Clarity International[48], in collaboration with organizations

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[47] Standard English is the form of the English language widely accepted today as the natural English language used by society. "Standard English" or "plain English" is used throughout this dissertation to represent the opposite of the traditional style of legal writing.

[48] Clarity International is a worldwide network of professionals promoting plain legal language. For more information see: https://clarity-international.net/

such as the US-based Center for Plain Language[49] and The Plain Language Action and Information Network (PLAIN) [50] have been conducting research and developing a plain language standard since 2000. These efforts have culminated in the formation of the International Plain Language Federation Standard Committee (IPLF), a working group formed to develop an international standard for plain language[51]. The committee's goal is to publish a plain language standard to be approved as an international standard by the International Organization for Standardization (ISO) [52] (Balmford, 2020). The common framework for the various organizations that participate in this work is to promote a style of writing that focuses on the reader first and frames the communication in the context in which the user will use the document (IPLF Standards Committee, 2020) [53].

IPLF Standard's Committee developed and submitted a draft document *Plain Language—Part 1: Governing Principles and Guidelines* in 2020 to the ISO/TC 37, Language and terminology committee for approval of an ISO standard for plain English. TC 37 approved the proposal and established Working Group 11 to develop the proposed standard (ISO/TC 37). In this document plain language is defined as: *"communication whose wording, structure, and design are so clear that the intended readers can easily find what they need, understand what they find, and use that information" (Section 3.1).*

What determines when communication is in "plain" form depends on the audience; it is important to consider that what might be clear to one audience might not be clear to another (Center for Plain Language, 2020). However, the essence is that the audience can find the information, understand it, and act on that understanding (Center for Plain Language, 2020). Plain English principles are more than only the written words. They focus on the content, organization (structure), language (words and sentences), and visuals (design and graphics) (ISO/TC 37). Based on the shared goals, plain English standards are selected as

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[49] The Center for Plain Language is a non-for-profit organization advocating for use of plain English in both the government and business sector to promote writing in clear language that the intended audience can easily find, understand and use. For more information see: https://centerforplainlanguage.org/

[50] PLAIN is a group consisting of federal employees from different agencies who advocate for clear writing in government communication. For more information see: https://www.plainlanguage.gov/

[51] IPLF standards committee, of which the author is a member, received approval from ISO TC 37 at the end of 2019 to start to work on defining an ISO plain language standard.

[52] ISO creates documents that provide requirements, specifications, guidelines or characteristics that can be used consistently to ensure that materials, products, processes and services are fit for their purpose. Source: www.iso.org/standards.html

[53] The draft document, dated March 2020, is not ISO endorsed or approved at the time of this writing.

the framework for language simplification and the new tools presented to develop simplified contract documents.

Focusing on how the traditional contract legalese language can be simplified via the use of plain English principles requires an analysis of the technical language that forms the natural language of contract writing today. The general definition of a natural language is *a language of speech and writing native for a set of people* (Merriam-Webster, n.d.). For a specific discipline or field of study, the technical terms and words of art in use form the natural language for that discipline.

The natural language of contracts consisting of the textual form with its unique schematics is considered its own technical language, requiring a certain level of technical skills that are fairly universal to all contract drafting (Goldman, 2006). The technical nature of the natural language of contracts contains a certain complexity that will always exist because many terms are derived from contract law and are an integral part of the technical language in contracts (Finnegan, 2018). However, if consistent use of contract terminology was established, then unintended differences in meaning could be eliminated (Adams, 2013).

In everyday communication, many of the archaic words prevalent in legal writing are becoming extinct (Finnegan, 2018). Also, English textbooks teach grammar rules which differ from legal writing. For example, run-on sentences, long passive sentences, and non-use of punctuation are not commonly accepted other than in legal writing. With contract users coming from various disciplines, backgrounds, and varying educational levels, the divide between different audiences' reading and comprehension level is magnified due to the limited use of legalese in everyday communication.

Integrating design thinking in contract drafting relates directly to plain language goals. The audience, purpose, and context of the information are central to how the drafter approaches contract writing. Table 10 shows four fundamental principles that are foundational for plain language drafting, defined in the IPFL standards committee document (IPFL Standards Committee, 2020, section 4). By relating the plain Language principles to user-centered design goals, a direct relationship to four key areas can be made. These assure that the communication is applicable, intuitive, understandable, and usable for the reader.

Table 10.　　　Plain Language Principles and User-Centered Design Principles Alignment

Plain Language	User-Centered Design
The content is what the reader needs or wants.	**Applicable**
The reader can easily find the content they need or want.	**Intuitive**
The readers can understand the content.	**Understandable**
The readers can use the content.	**Usable**

The plain English principles are intended to improve clarity in all types of business communication, including contracts. The English language is complex, making it imperative to strive for plain language in any writing. Professor Joe Kimble (n.d., para.2), outlines the benefits of plain language:

- *It's faster to read.*
- *Readers are more likely to read plain language documents in the first place. They are less likely to be put off or intimidated*
- *Readers are more likely to comply with plain language documents*
- *Readers strongly prefer plain language to traditional style.*
- *Readers understand plain language better than traditional style. In a number of empirical studies, comprehension improved by anywhere from 10–15% to over 100%.*
- *And because readers prefer plain language and understand it better, they'll make fewer mistakes in dealing with it, have fewer questions and complaints, feel more satisfied, and ultimately save time and money—for themselves and for the writer's company or agency.*

For businesses to successfully execute the agreed-to contract obligations, comprehension by all users is imperative (Passera & Haapio, 2011). The critical prerequisite for users to perform the expected tasks requires the contract information to be communicated in clear language (Butt, 2013). In the user-centered design process, the purpose of the contract becomes a central area to evaluate when tailoring the language and writing style to the intended audience to assure they take the intended action.

To address the challenges of users not being able to read or comprehend, information companies are hiring lawyers to translate the "legalese" language to standard English resembling other business documents (Pitt, 2019). However, the practice of hiring lawyers to write and rewrite contract language costs companies significant amounts of money (Pitt, 2019). Exploring how the initial document

draft can be developed in plain English is one way to avoid translating the contract later for specific audiences.

The challenge that differences in the language and writing bring are multiplied for non-native English speakers. English as a second language textbooks do not contain the old English words and only teach today's commonly accepted grammar rules. Adding to the challenges, the English language is inherently complex, compared to other languages, due to the existence of different words with the same meaning and one word having several meanings.

There are challenges to translating contract writing into plain English. First, the drafters must prevail over the default technical legal language and poor drafting practices that are the norm today, caused by the inefficiencies the law has brought (Orozco, 2016). Second, a new baseline for writing contract language would need to be established to overcome the traditional writing style.

Contract drafters strive for precision. In legal writing, it tends to be intuitive for the drafter to duplicate the same terminology and clause language from prior contracts rather than to remove content or simplify language (Di Pietro, 2019). Practitioners' desire to duplicate prior language to be as detailed as possible is mainly driven by the belief that legal precision equals precision when the contract is interpreted (Denoyelle, 2019). This argument is supported, in part, by the fact that many disputes revolve around a specific action or meaning of a word (Kim, 2016).

The reluctance to give up legal certainty for clarity is a reason for the persistent use of traditional legal writing by legal professionals and contract practitioners (Pitt, 2019). However, some believe clarity and business success is achieved only when contracts are written in a language all users can understand (Burton, 2018). This argument brings forth the vital consideration that must be given to the fact that contracts are multi-user documents.

In his book, *Modern Legal Drafting*, Peter Butt (2013), states that traditional legal writing will die as a result of two realities: "first, that a modern, direct style of writing is as precise and legally effective as traditional styles of legal writing; and second, that citizens of modern societies have the right to read and understand for themselves the documents they sign and the laws that bind them" (p. 3). A contract is a legally binding agreement between two or more parties that can be executed by anyone with legal capacity, even without legal training. Executing a contract

document highlights the importance of comprehension by those who will be legally bound and expected to perform the contract obligations; this can be argued to be more important than legal precision.

As a discipline, contracts have a set of terminology, terms of art, and technical schematic; these are often applicable universally regardless of the contract substance (Goldman, 2006). Business-specific terminology, for example, "scope," "deliverables," and "payment terms," to name just a few, are examples of business terminology that are common in the natural language of contracts. There are business and relationship information, not just legal provisions, related to roles, responsibilities, and requirements that are naturally part of all contracts (Haapio et al., 2016). Assuring consistent use and clarity for both legal and business derived terminology is essential.

Writing complex ideas clearly and unambiguously using a natural language is not easy (Farmer & Hu, 2016) This is because a natural language lacks precise semantics and structure (Roach, 2016). To overcome this, companies and organizations have developed style guides to establish consistency in writing by providing common principles and writing rules. Most writing style guides incorporate plain English principles and teach the drafter to "write for the audience." These style guides are, in essence, a type of controlled language that is explored as a solution to reduce language complexity in contracts.

The rest of the chapter proceeds as follows. First is a discussion on the reasons behind the continued use of legalese in contract drafting by introducing the findings of a field study conducted as an embedded observer at Saint Louis University Law School, Contract Law I class. Next, the specific challenge resulting from the continued use of legalese, namely the readability challenges, are discussed. In this sub-chapter, the findings of two readability tests comparing the readability of a purchase order agreement and a traditionally written Non-Disclosure Agreement (NDA) with a simplified NDA are evaluated. The analyses show that contracts that are written in traditional legalese are harder to comprehend and that organizations would benefit from contract simplification efforts. In essence, contract simplification that focuses on reducing unnecessary words, shortening sentences, using common English words, focusing on one thought per sentence, and generally reducing the number of words per sentence translates into direct savings for a company.

After discussing the root causes for and challenges relating to the continued use of legalese in contracts, a theoretical idea of a CCL is explored. The idea of CCL is a new contribution to support contract simplification by bringing standardization to contract language as well as to reduce ambiguity.

4.2 Lack of Change and the Readability Challenges of Traditional Contract Design

4.2.1   The Force behind Legalese

Contract law principles have shaped the art of contract language and the way contracts are written. Understandably, contract-specific terminology would play a critical role in the eyes of the law because the terminology used in contracts is derived from contract law and legal education (Burnham, 2016). Because contract language remains closely tied to the law that has mainly remained in archaic English[54], purely textual form, a divide has ensued between lawyers and people not trained in legalese.

A root cause analysis was conducted via a field study to evaluate the causes of the slow change in contract language and writing style. The field study was conducted as an embedded observer at Saint Louis University Law School, Contract Law I class[55]. A law school was selected because the contract law teaching method is one of the main drivers for how contracts are written today (Hogg, 2019). Lawyers are the main professionals producing contract documents and resolving contract disputes; hence, the initial foundational approach to how law schools teach a contracts class plays a significant role in the evolution of the design of a contract document.

The class used the case method as the teaching method[56], a standard teaching method in US law schools. This teaching approach dates to the 19th century when Christopher Columbus Langdell[57] introduced it at Harvard law school. Langdell's teaching method aimed to systematize and simplify legal education by students studying court decisions and analyzing the law and principles applied (Harvard Law School, 2020). The required reading and analysis focus on contract disputes, decided upon by appellate court judges. The analysis is on the dispute in question and its relation to contract law principles, and there is little analysis on how the dispute could have been prevented. Preparing for future disputes deviates

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[54] The specific analysis of the common English in US contracts is seen to be applicable to countries outside of the US because of the trend of US companies operating in multiple countries using standard templates.

[55] Special thanks to SLU Law School for allowing me to participate as an active student completing all requirements. The teacher was Susan Fitzgibbons, who took time to meet as follow-up to review my tests and assignment in order for me to complete my research.

[56] The textbook used for instruction was *Contract Law and Its Application* (9th ed. 2016) by Daniel Bussel.

[57] Langdell was the Dean of Harvard Law School from 1870 to 1895 where he introduced the case study method to teach Contract law.

significantly from the proactive law theory that focuses on how to avoid disputes (Haapio, 2013).

Part of the field study documentation and analysis was a comparative narrative between how the teaching method in law school compares to how businesses develop and manage contracts in practice. The study aimed to understand how the law school teaching method, in the US specifically, teaches contract language writing and content development. The curriculum consisted of weekly assignments for students to read prior cases, some dating back to 1850s English court decisions, and analyze the contract law principles applicable to the case. The class was taught in a Socratic seminar style environment that is a teaching method requiring extensive reading of cases and writing case briefs to prepare for in-class discussions.

One of the main observations was that neither contract document-writing nor contract design was discussed or covered in the course material. Neither were contracts in practice part of the lecture material to provide a forum for analyzing alternatives to how the contract language could have been written to avoid the dispute. Because all the contract language is analyzed via the case method and taken as a given, the students inherently learn the reviewed contract language as the baseline for contract content and writing. There was limited discussion about the purpose of a contract beyond protecting parties in the case of a dispute.

The field study provides valuable insight into the differences when considering contracts as business enablers rather than only legal documents intended to protect the parties in the case of a dispute. A summary of the teaching approach compared to the elements of contract simplification is shown in Table 11. The class teaching approaches are summarized on the left, with the right-hand side outlining what a proactive approach to teaching contracts entails.

Table 11.   Summary of Contract Law I Course Teaching Contrasted to Contract Simplification Approach

Contract Law I – Teaching Approach	Contract Simplification Approach
How to win an argument in court.	How to avoid disputes and stay out of court.
Learn prior cases and associated contract law principles as the basis for contract content.	Learn to define the business deal to document a guiding road map for use during execution.
Contracts settled in court and specific disputed clauses are used for teaching.	No review of well-written contracts, which did not go to court.
Teaches contract doctrine application and how to build an argument.	Purpose of a contract—both legal and managerial documents.

One reason why contract language and form have remained mainly in their traditional style is because generally, law school's contract law curriculum does not teach that contracts serve two purposes, legal and business documents. The transactional skill approach to teaching, where contract concepts focused on translating the business deal into the contract drafting process, is not emphasized (Stark, 2014). Many current practicing lawyers lack formal schooling in contract drafting; rather they have gained their expertise on the job from more senior lawyers (Espenschied, 2019). It can be said there is an inadequate focus on proactive approaches to contract drafting that would support avoiding contract disputes.

Furthermore, there is a lack in reviewing ordinary contracts society uses and engages with to help students understand how contracts operate in society (Swain, 2019). The result is that the class fails to teach future legal professionals that contracts are intended to produce economic value in exchange relations. In addition, the teaching objectives are not well aligned with the notion that there are numerous contract users outside of the legal discipline with varying backgrounds that depend on the contract document.

Legal doctrine is an integral part of understanding contract language and drafting the building blocks of a contract. The exercise for students to read contracts that have gone to court does provide context to the terminology and specific concept that is an essential part of a legal professional's expertise. However, the class did not focus on the business and technical terms that are also part of a contract

document. Legal and administrative clauses only make up part of a contract document. In conclusion, the law school contract law class fails to consider that contracts are multi-user documents, supporting both legal and business objectives, nor do they look at how to draft contracts that proactively focus on avoiding disputes.

Identifying the root cause of why legal writing has stayed mostly in its traditional form sheds light on the need for law schools to shift away from only teaching the practice of analyzing, dissecting, and developing patterns of formal concepts of contract law principles to use when building contracts (Friedman, 2011). This realization has fueled significant scholarly research focused on the limitations of contract law teaching and how it does not align with how contracts operate in the real world. Swain (2019) argues for an overhaul in how contract law (or contracts) are taught in law school and that new pedagogical approaches in teaching law school students are a key to reducing the use of legalese.

Drafting in plain English changes the objective from solely legal protections to communicating with the intended audience as clearly as possible so that they can comprehend the information (Cheek, 2000). With B2B transactions becoming more global, the impact of clear contract language takes on a significant role when individuals find themselves doing business together without sharing linguistic and legal regimes (Bussel, 2016). Plain English writing, especially for non-native speakers, brings clarity when a more common word choice and simpler sentence structure is used.

Shifting away from the traditional complex legal language supports the objective of reducing ambiguity. The contract document is the central reference point parties rely on when performance or communication fails. If the parties did not comprehend or share a common understanding of what was agreed to when the document was signed, the parties' intent becomes harder to determine. Taking a proactive approach to the language and writing style that focuses on both parties understanding the written information and interpreting it the same way is beneficial to avoid misunderstandings and disputes.

A user-centered contract development process focuses on understanding who the intended users are. Knowing specific legal content is valuable when defining who the contract users are by clause type. The clauses intended to provide legal protection for dispute resolution, division of liability, and similar protection provided under the law should be aligned with users who possess expertise in the discipline of law. Dividing the contract by a user-based four-level categorization and then further aligning individuals with expertise at a clause level helps avoid legal or business terms being overlooked due to lack of expertise of the drafter. In

addition, it encourages plain English writing because business users are not trained to write in legalese.

4.2.2   Readability Challenges of Legal Writing

To assess the complexity of traditional contract writing, two readability tests were conducted. The first test focused on assessing the readability of a Shell purchase order agreement. The second test compared a traditionally written NDA with a simplified NDA. Two different test methods were used to quantify the test results: the Flesch-Kincaid Grade level test[58] and the Gunning Fog Scale test[59]. Each test gave a numerical value in relation to the document's readability, which is correlated to the equivalent years of education needed to comprehend the text.

In the US, the National Center for Education Studies (NALS)[60], conducted a survey in 1992 and found that over 40 million Americans[61] had low levels of literacy skills (White & Mansfield, 2002). The survey results were grouped into five levels, with Level I as the lowest literacy level and Level V as the highest. In a readability test using consumer contracts such as lease agreements, loan agreements, and credit contracts, only 3% of the American adult population showed documentary literacy at Level V of the NALS scale (White & Mansfield, 2002).

The readability tests conducted for this dissertation indicated that the education levels for reading contract text require an education equivalent to a university master's degree. Comparing it to a more recent literacy level study, the National Assessment of Adult Literacy (NAAL) found that only 13% of adult Americans had a document literacy level of proficient (NAAL, 2003). Determining how text and writing can be modified to reduce the readability level is the focus of language simplification.

Many factors contribute to why contract language is complex and contracts difficult to read. As mentioned before, technical legal language, archaic writing style, length, lack of white space, small font, among other things, add to the

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[58] Flesch Grade Level Readability Formula improves upon the Flesch Reading Ease Readability Formula. Rudolph Flesch, an author, writing consultant, and supporter of the Plain English Movement, is the co-author of this formula along with John P. Kincaid.
[59] The Gunning Fog Scale Level was developed by Robert Gunning in 1952.
[60] Congress passed the National Literacy Act, in 1991 "to ensure that all adults in the US acquire the basic skills necessary to function effectively and achieve the greatest possible opportunity in their work and in their lives." Congress also directed the US Department of Education to conduct a comprehensive survey of the literacy of American adults. Details of the study and full survey results are available at:
https://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=199909
[61] About 13,600 adults participated in the survey.

complexity and comprehension challenges. The readability test results indicate that there are also many design aspects beyond language simplification that can improve readability for a larger set of users.

4.2.2.1   Readability Test for Shell Purchase Order

The first readability test was conducted to assess the level of education required to read a business contract. The contract selected for the experiment was a "Shell Purchase Order Terms for Goods and Services for suppliers in the US"[62]. It is a standard contract used by Shell when procuring supplies from various vendors. This type of standardized company contract for purchase of goods or services is common among corporations. The pdf document consisted of nine pages of text, in small font, laid out in two columns on each page. When converted into a Microsoft Word document using font size 11, the document was 15 pages in length. Figure 25 shows a sample excerpt to illustrate the look of the document. The text consisted of 447 sentences, with 8825 words (average 24.45 per sentence) and 1.81 syllables per word.

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[62] The version used is for the US. Available at: https://www.shell.com/business-customers/shell-for-suppliers/purchase-order-general-t-s-and-c-s.html

PURCHASE ORDER TERMS FOR GOODS AND SERVICES

These terms and conditions apply to the CONTRACT between COMPANY and CONTRACTOR, which may be in the form of a purchase order or a work statement (the "CONTRACT"). These terms and conditions are binding between COMPANY and CONTRACTOR and supersede and replace any CONTRACTOR terms and conditions or previous contracts for SCOPE. In the event any special terms are agreed between the parties, the special terms will prevail over terms contained in these terms and conditions. Where these terms and conditions are attached to or incorporated in a CONTRACT issued under an existing contract, the terms and conditions of that existing contract will prevail.

PART A

1. DEFINITIONS
Capitalised words and expressions have the following meanings when interpreting the CONTRACT:
ACCEPTANCE: COMPANY accepts SCOPE in writing or is deemed to have accepted SCOPE in the manner specified by the CONTRACT.
AFFILIATE: in reference to a PERSON, any other PERSON that: (a) directly or indirectly controls or is controlled by the first PERSON; or (b) is directly or indirectly controlled by a PERSON that also directly or indirectly controls the first PERSON. A PERSON controls another PERSON if that first PERSON has the power to direct or cause the direction of the management of the other PERSON, whether directly or indirectly, through one or more intermediaries or otherwise, and whether by ownership of shares or other equity interests, the holding of voting rights or contractual rights, by being the general partner of a limited partnership, or otherwise. An AFFILIATE of COMPANY is also an AFFILIATE of Royal Dutch Shell, plc.
AGENCY PERSONNEL: those CONTRACTOR PERSONNEL who are not direct employees but are working under the direct control and supervision of CONTRACTOR GROUP.
ANTI-BRIBERY LAWS: all APPLICABLE LAWS that prohibit the bribery of, or the providing of unlawful gratuities, facilitation payments, or other benefits to, any GOVERNMENT OFFICIAL or any other PERSON, including: (a) the United States Foreign Corrupt Practices Act of 1977; and (b) the United Kingdom Bribery Act 2010.
APPLICABLE LAWS: where applicable to a PERSON, property, or circumstance, and as amended from time to time: (a) statutes (including regulations enacted under those statutes);

CONFIDENTIAL INFORMATION: all technical, commercial, or other information, and all documents and other tangible items that record information, whether on paper, in machine readable format, by sound or video, by way of samples or otherwise, relating to a PERSON's business, including WORK PRODUCT, PERSONAL DATA and SCOPE provided to that PERSON, business plans, property, way of doing business, business results or prospects, the terms and negotiations of the CONTRACT, proprietary software, IP RIGHTS, and business records.
CONSEQUENTIAL LOSS: (a) indirect or consequential losses; and (b) loss of production, loss of product, loss of use, and loss of revenue, profit, or anticipated profit, whether direct, indirect, or consequential, and whether or not the losses were foreseeable at the time of entering into the CONTRACT.
CONTRACT PRICE: the total amount payable by COMPANY to CONTRACTOR.
CONTRACTOR EQUIPMENT: any machinery, plant, tools, equipment, goods, materials, supplies, and other items (including all appropriate associated spare parts, storage containers, packing, and securing) owned or contracted for by CONTRACTOR GROUP, provided title has not passed and will not pass to COMPANY under the CONTRACT.
CONTRACTOR GROUP: CONTRACTOR and: (a) its SUBCONTRACTORS, (b) any AFFILIATE of CONTRACTOR or its SUBCONTRACTORS; and (c) any director, officer, employee, other PERSON or AGENCY PERSONNEL employed by or acting for and on behalf of CONTRACTOR, its SUBCONTRACTORS, or the AFFILIATES of CONTRACTOR and its SUBCONTRACTORS.
CONTRACTOR PERSONNEL: any individual provided by CONTRACTOR GROUP, whether directly or indirectly, and assigned to work in connection with the performance of SCOPE, whether or not an employee of CONTRACTOR GROUP.

Figure 25.   Shell Company Supplier Purchase Order Terms for Goods and Services

Two different readability tests were conducted using the Shell document. The first test is the Flesch-Kincaid Grade level test[63], with the formula shown in Figure 26 and the interpretation of the scores outlined in Table 12. The test calculates, based on a mathematical formula, a score in relation to the readability of the document. These numerical values are then translated into equivalent years of education based on the education system in the US[64]. Flesch-Kincaid readability tests are designed to measures how difficult a passage in English is to understand. The

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[63] Flesch Grade Level Readability Formula improves upon the Flesch Reading Ease Readability Formula. Rudolph Flesch, an author, writing consultant, and supporter of the Plain English Movement, is the co-author of this formula along with John P. Kincaid.
[64] In the US the standard compulsory school consists of a total of 12 years – elementary school grades 1–4, middle school grades 5–8, and high school 9–12. Children start school usually at age 6 and graduate at age 18. In Europe this is different, for example, in Finland compulsory school (peruskoulu) is 9 years and children usually start at age 7, graduating at age 16.

Flesch readability score uses the sentence length (number of words per sentence) and the number of syllables per word in an equation to calculate reading ease. The Flesch-Kincaid formula was first used by the Army for assessing the difficulty of technical manuals in 1978 and soon after became a US Military Standard (Readability Formulas, 2020). This type of test is used for many purposes, such as determining the equivalent education level for newspapers and books to assure the writing is at the right level for the intended audience.

$$0.39 \left(\frac{\text{total words}}{\text{total sentences}} \right) + 11.8 \left(\frac{\text{total syllables}}{\text{total words}} \right) - 15.59$$

Figure 26.   Flesch-Kincaid Grade Level Formula

The Flesch-Kincaid Grade Level Formula measures how difficult a passage is to understand[65] and translates it to equivalent years of education in the US education system. The Flesch-Kincaid Readability test is the baseline formula for the Flesch-Kincaid Grade Level formula. The test is centered around measuring the word length and sentence length. The interpretation table includes notes to further explain the reading level and norm ages at various score levels.

Table 12.   Flesh Reading Ease Score Interpretation

Score	School level	Notes
100.00-90.00	5th grade	Very easy to read. Easily understood by an average 11-year-old student.
90.0–80.0	6th grade	Easy to read. Conversational English for consumers.
80.0–70.0	7th grade	Fairly easy to read.
70.0–60.0	8th & 9th grade	Plain English. Easily understood by 13- to 15-year-old students.
60.0–50.0	10th to 12th grade	Fairly difficult to read.
50.0–30.0	College	Difficult to read.
30.0–0.0	College graduate	Very difficult to read. Best understood by university graduates.

The second test, the Gunning Fog Scale test, examines how easily the intended audience can read the text. The Gunning Fog test formula is shown in Figure 27, and the conversion to the reading level is outlined in Table 13. One limitation of the Gunning Fog Scale test is the assumption that longer words equal more complexity. This is not always the case. For example, a common word such as "meaning" has four syllables it would probably not be considered difficult by even non-native English speakers due to its common use. Similarly, a short word could

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[65] The test assumes the reader is reading the document for the first time.

be complex, asserting that most tests have limitations that can skew the results up or down.

$$0.4 \left[\left(\frac{words}{sentences} \right) + 100 \left(\frac{complex\ words}{words} \right) \right]$$

Figure 27.   Gunning Fog Scale Level Formula

Table 13 outlines the Gunning Fog Scale index and associated grade level. The reading by grade level provides an overview of the level of schooling needed to comprehend the text.

Table 13.   Gunning Fog Scale Index and Equivalent Grade Level

Fog Index	Reading level by grade
17	College graduate
16	College senior
15	College junior
14	College sophomore
13	College freshman
12	High school senior
11	High school junior
10	High school sophomore
9	High school freshman
8	Eighth grade
7	Seventh grade
6	Sixth grade

The weightings are slightly different between the Gunning Fog Scale test and Flesch-Kincaid Grade level tests. However, each test's objective is to test the difficulty of the text and then translate it into years of education to achieve the specific grade level required to comprehend the text. Next, the results of the tests are analyzed.

The Flesch-Kincaid grade level test result was 18 years of equivalent education to comprehend the Shell standard contract (see Figure 28). The score translates into an equivalent education obtained by a person over 22 years of age who has completed high school, an undergraduate college degree, and one year in a master's degree program. For a form contract used for a wide range of companies

of all sizes, consideration should be given to whether the expected education level is reasonable.

GRADE LEVEL								
1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17+
	US GRADE LEVEL CONVERSION TABLE							Shell Contract ★
6-7	8-9	10-11	12-13	14-15	16-17	18-19	20-21	22+
STUDENT'S AGE								

Figure 28. Flesch-Kincaid Grade Level Score 18 Years

In comparison, in the second test, the Gunning Fog Scale test, the grade level score was 16[66]. This can be equated to a senior in college. The test indicates a slightly lower level of education required than the Flesh-Kincaid test results. A senior in college is usually equivalent to the 4th year of college for the average college student, who has completed 12 years of primary education. In some countries, primary education is only nine years; however, secondary schooling is required before starting university, making the comparison to years of university education similar for school systems outside of the US.

There are limitations relating to both readability tests conducted. For example, neither test takes into account the design nor the way the information is presented in the document. The small font, text only, and no headings are also significant contributors to making the text difficult to read. However, the results provide insight into the fact that simplification efforts for contract documents should address the complexity of the word choices, sentence length, number of words, and paragraphs.

The goal of contract language simplification is to improve readability and comprehension. To achieve this, the readability test indicates that shorter sentences and the chosen terminology play a significant role in reducing readability scores. To improve comprehension among a greater sub-set of people, simplifying contract writing by focusing on the word choices and grammar is essential.

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[66] For further information on the Gunning Fog Index calculator visit: http://gunning-fog-index.com/fog.cgi as the calculator.

4.2.2.2 Readability Test Comparison of a Traditional to a Simplified Contract

The second readability experiment was conducted to understand the impact that contract simplification has on readability. The Flesh-Kincaid Grade Level test was used to yield a grade level equivalent score for two different NDAs, one written in traditional contract language and the second in simplified contract language. The purpose of the test was to determine what, if any, impact word substitution and grammar changes have on readability.

The sample contracts chosen were two different short-form corporate NDAs[67]. Each agreement was two pages in length, eliminating length as a driving factor in the Flesh-Kincaid scoring. The first contract was a "short-form" NDA from a multi-billion-dollar US company, which a team of lawyers and contract professionals developed with a goal to enhance readability for all users. This NDA is referred to as the "traditionally" drafted contract.

The second NDA was developed by ContractStandards[68], a company focused on developing simplified contracts and contract clauses written in Standard English. This contract is referred to herein as the "standard English" contract. ContractStandards' approach to contract writing is to replace legalese with standard English when equivalent words are available and produce text adhering to common grammar rules such as short sentences, one thought per sentence, proper punctuation, etc. The main selection criteria for the two documents chosen for the comparative analysis was that both contracts were considered "simplified contracts."

For the traditionally drafted NDA, the readability test yielded a readability score equivalent to a grade level education of 15 (see Figure 29), while the standard English NDA yielded a readability score of 12 (see Figure 30). The scores 15 and 12 represent the years of equivalent US education required to comprehend the writing based on the Flesh-Kincaid Readability Test methodology.

The results show a three-year difference in education level between 12 years versus 15 years of schooling. The three-year difference is equivalent to the difference between completing high school and three years of college[69]. This is a significant

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[67] Also referred to as Confidentiality Agreement or Proprietary Information Agreement.
[68] Available online at:
https://www.contractstandards.com/public/contracts/nondisclosure-agreement
[69] Based on the US education system which consists of 12 years in basic schooling – 5 years elementary school, 3 years middle school and 4 years high school. Followed by college undergraduate program that averages 4 years. A university master's degree, on average, is an additional 2 years.

difference considering that only about 66% of high school graduates go to college (US Bureau of Labor Statistics, 2020). This percentage decreases further after the first and second years of college.

The conclusion from the results shows that three years of college education or equivalent upper secondary university level schooling is required to comprehend the NDA written with traditional "legalese" wording and traditional writing style. Even though the length of the text had been shortened and assumed to be "simplified" by the team of contract and legal professionals, it was still significantly more complex to comprehend. Replacing the archaic word choices common in contract writing with equivalent common English words, when possible, has a significant impact on comprehension.
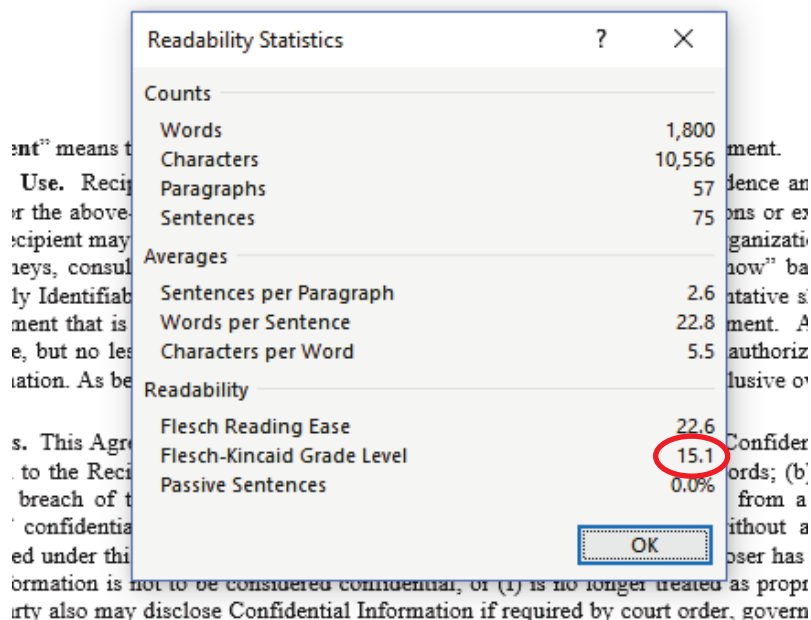
Figure 29.   Traditional NDA Readability Score 15

Figure 30.   Standard English NDA Readability Score 12

NDAs are legal documents; however, the writing and word choices used can improve comprehension for a broader population set. NDAs and confidentiality agreements are some of the most frequently used contracts. Hence, it would be important for most of the adult population to comprehend the documents. In B2B transactions, many small vendors are parties to contracts, and it should not be assumed that all users can comprehend a traditionally written NDA.

Analyzing the results, the main factor which drove the difference in the readability scores is the number of words in one sentence. The traditional contract had an average of 22.8 words per sentence compared to 10.7 words per sentence in the standard English contract. This is over a 50% difference in the length of a sentence. In addition, the word count was reduced, driving a reduction in the reading level score[70]. Neither contract contained any passive sentences. The difference in the total number of paragraphs and sentences was less than 15%.

A lower grade score can have a significant economic impact on the company by saving review time, reducing legal engagement, and resolving misunderstandings or disputes. One study found that the amount saved when reducing the grade level score from 24 to 21.6 was USD $49,000 and a reduction from 24 to 18 yielded USD $66,400 in savings (Martin & Guyer, 2019).

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[70] The word count was reduced from 25,000 (grade score 24) to 22,500 (grade score 21.6) and 5,000 (reading grade score 18).

In sum, introducing contract language simplification via the use of standard or plain English does not mean contracts are becoming any less of legal documents. Rather, changes in word choices to more common English terminology and using proper English grammar simplifies complex writing. The NDA with a lower Flesh-Kincaid score focused on replacing traditional legal terminology and writing style with common English words and following English grammar rules in use today, only altering word choices and grammar.

The conclusion drawn from the results of the two different readability tests is that contract simplification, focused on reducing unnecessary words, shortening sentences, using common English words, one thought per sentence, and generally reducing the number of words per sentence, translates into direct savings for a company. Improving readability by focusing on how contract language simplification can be achieved and how it can be implemented on a universal scale is explored next.

4.3 Developing a Controlled Contract Language (CCL)

4.3.1 Defining a Controlled Natural Language (CNL)

A Controlled Natural Language (CNL) is a discipline-specific language that has attributes such as, "*controlled, processable, simplified, technical, structured,* and *basic"* (Kuhn, 2013, p.121). Because only parts of a natural language are defined or documented, it can be considered an artificially designed subset of the natural language (Bünzli & Höfler, 2012). While different techniques exist for defining a CNL, most involve "lexical analyses, grammar and style checking, ambiguity detection, machine translation, and computational semantics" (Kuhn, 2013, p. 122). Because contracts can be considered a technical language, analyzing CNL for contracts is another of area of interest in the research.

A CNL is recognized as a global standard by the International Organization for Standardization (ISO, 2015). The CNL standard created by the ISO (2015) aims to define major concepts, outline the scope of CNL, and describe its application in language resource management. Today's CNL standard has a long history of providing efficiencies, especially in technical documentation, technical writing, and business communication. CNLs are designed to improve communication between humans, especially non-native speakers of the respective natural language, and CNLs are created to impose restrictions to improve computer-aided or computer translations into other languages (Controlled Natural Language, 2020).

A CNL is also referred to as a controlled language. "Controlled languages use restricted grammar rules and vocabularies (typically between 800 and 1,000 words) to reduce or eliminate ambiguity and complexity" Huset, 2019, para. 1). The primary use is to simplify technical communication, in particular, to enhance comprehension among non-native readers and to support accurate machine translation (Huset, 2019). Within the controlled language framework, the idea of a CCL is analyzed and presented.

Defined terminology specific to the contract discipline exists today. Professional organizations in the field of contract and commercial management[71], such as the WorldCC association and NCMA, have released documents containing defined terminology specific to the field of contracts. The NCMA Contract Management Body of Knowledge (CMBOK, 6th ed.) provides a summary of the terminology, practices, policies, and processes common in contract management (NCMA, 2019). Similarly, the WorldCC association has documented best practices and training documents for CCM and CM professionals. The US Federal Acquisition Regulations (FAR) define contract terminology and specific language for use in all government contract actions (FAR, 2020). In their respective controlled environments, each organization's defined technical terms and style guides can be considered a controlled language. However, no universal discipline-specific controlled language for contracts exists today.

Further collaboration is needed across the discipline. Some duplication of definitions is occurring; for example, the CMBOK structure and defined contract lifecycle mirrors the US government procurement process. In addition, several parts and defined terminology in the CMBOK are from the FAR. WorldCC definitions and contract lifecycle processes also have many similarities.

The FAR is a baseline example for controlling contract drafting by the virtue that it has defined contract clauses, defined terminology, and defined structure for the contract document. Originally, FAR was established for the codification and publication of uniform policies and procedures for all US executive agencies' procurement activities (FAR, 2020). With its 51 parts and its nearly 2,000 pages in its printed form, the FAR defines the entire government procurement process. In addition, Section 2.101, Definitions, provides a lexicon of the standard terminology used in all US government contracts (FAR, 2020).

Today, controlled language standards and clear writing goals exist in professional organizations' published documents and within companies that have published

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[71] Contract and Commercial Management (CCM) and Contract Management (CM) are terms used to describe professionals working in the field of contract administration and contracts

contract guides. Striving to develop one universal CCL can bridge the gap between each unique standard to a discipline-wide standard. To achieve a universal standard would require a model that encompasses a contract-specific CNL or CCL framework. The benefits of a discipline standard language are two-fold; first it can instill simplified contract language supporting readability and comprehension to all users, and second, it can provide a baseline dictionary and writing guidelines that are computer-readable and can be coded into any computer application.

4.3.2 ASD-STE100 as a Controlled Language Model

When researching controlled languages, the aerospace industry's ASD Simplified Technical English, Specification ASD-STE100 (STE) emerges as one of the prominent controlled languages in use today. It "is an international specification for the preparation of technical documentation in a controlled language" (STEMG, 2020, section 1.0). Because the technical nature of contract language is similar to technical maintenance manuals, ASD-100STE was selected as the comparative model for the research analysis. Both disciplines operate globally, and a central document is the primary means of communication to the users of the obligations and actions they are expected to perform. In the aerospace industry, maintenance manuals were the first target documents for a controlled language.

Because ASD-STE100 shares the same underlying goal to improve readability and eliminate ambiguity, it is a well-founded comparative model (Finnegan, 2018). Controlled languages reduce ambiguity proven by the controlled language of the aerospace industry (STEMG, 2020). The benefits of controlling a discipline-specific language are to bring efficiencies via promoting a shared understanding of discipline-specific terminology and streamlining the writing process in one controlled document.

Next comes some background on ASD-STE100. It is a universal controlled language used globally in the aerospace industry. Simply stated, it is an international specification for the preparation of technical documentation in a controlled language (STEMG, 2020). When the natural language of a discipline is documented in a controlled document that is controlled by an official governing body, it is a controlled language.

Starting in the late 1970s, the initiative for developing a controlled language was initiated by the European Association of Aerospace Industries (AECMA, now called STEMG). The outcome sought by the working group was to develop a Simplified English guide to aid the users of English language maintenance documentation comprehend what they read (STEMG, 2020). The initiative

focused on simplifying the language to improve readability and comprehension among native and non-native English speakers. Today, most primary texts of maintenance manuals are written in Standard Technical English (STE).

The first outcome from the AECMA Simplified English committee was a document called "The Standard Technical English" (STE) language guide. The guide was the outcome of the investigation of the readability of maintenance documentation in the civilian aircraft industry. From the project, the formal ASD-STE100, [72] including the STE guide, was released in 1986 and today serves as the global standard for commercial and defense aerospace maintenance manual writing. The pdf document is available to anyone by request via the STEMG website[73].

The aerospace industry developed the controlled language, specifically focusing on comprehension among non-native English speakers and the accuracy of translations into other languages. The impact of translation errors or misunderstandings by a technician working on an aircraft can be astronomical, driving the need to establish the standard around clear writing parameters in standard English that are conducive for translation. Today, all maintenance manual writings are required to adhere to ASD-STE100.

The goal for writers to adhere to STE, as defined in ASD-STE100, is to assure that users of aircraft technical manuals can read and understand the content to perform the aircraft maintenance correctly. Two key features of STE are an approved dictionary and a set of writing rules. The common vocabulary is identified and documented in a dictionary that is sufficient for accomplishing any required technical writing. The baseline words were selected for their simplicity and ease of recognition.

The underlying philosophy of STE is "one word, one meaning," eliminating those words that have identical meanings. The English language has many different words with the same meaning. In developing the STE, such duplication was eliminated. For example, the word "start" was chosen instead of the words "begin," "commence", "initiate," or "originate." This same type of correlation can be drawn to contract writing, which uses many different words with the same meanings.

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[72] A complete overview of ASD and the development of ASD can be found at: http://www.asd-ste100.org/about.html.
[73] Issue 7 of the document can be obtained from: http://www.asd-ste100.org/request.html.

Table 14.   ASD-STE100 Document Structure

Part 1. Writing Rules	Part 2. Dictionary
• Words • Noun clusters • Verbs • Sentences • Procedural Writing • Descriptive Writing • Safety Instructions • Punctuation and Word count • Writing Practices	• Introduction • Word List

The ASD-STE100 structure contains two main parts. Part one contains writing rules, and part two a dictionary. The content of the two parts are presented in Table 14, summarized from the table of contents in the ASD-STE100 document.

ASD-STE100 selected the American Merriam-Webster's Dictionary to be used when there is a choice between American English and British English words and spelling. In the controlled document, words are not only defined, but synonyms are also flagged as "unapproved" or "unknown words." The intent is to drive consistency in the use of terminology across all users working within the discipline.

The writer is not limited to the defined vocabulary. In fact, STE developers' intent is for the drafters of maintenance manuals to go beyond the documented vocabulary to supplement it with other words required to convey the information. In the same way, standard contract terminology and clauses vary based on many factors such as contract type, jurisdiction, industry, etc.; this type of additional industry-specific terminology can be added to the controlled contract vocabulary. Furthermore, internal company-specific terminology can be added to the dictionary. One main consideration of assuring standardization while maintaining flexibility is the objective that the dictionary is supplemented with company, industry, contract, and jurisdiction-specific terminology that best fits the context and the intent of the writing related to the transaction.

Another benefit of a controlled language is that it is susceptible to machine translation. A controlled language is a rule-based approach to language, making it highly adaptable to machine learning. Furthermore, the benefit of having suggested definitions and clauses appear in text and having the ability to hover

over terms and see their meanings, provides a new approach for the legal profession to leverage technology to guide the writing and word choices during contract drafting (Roach, 2016). The controlled nature of the dictionary and grammar rules is what makes the language adoptable universally.

4.3.3   Controlling the Natural Language of Contracts

In this dissertation, the focus is on evaluating the natural language of contracts and analyzing how standardization via a CCL could support language simplification on a universal scale. The idea of a CCL is derived from implementing the parameters of a CNL to contracts. Creating a CNL for contracts requires identification of a dictionary and grammar rules to present a CCL model. Next, a model CCL developed based on the same approach as the ASD-STE100 applied will be presented as a language simplification solution.

Following a model such as ASD-STE100 provides a research path for analyzing the natural language of contracts and the elements to consider when developing a model for CCL. By assessing the natural language of contracts, along with individual controlled languages and style guides, vocabulary and language are analyzed to determine what a CCL framework can be. Evaluating contract similarities and further relating the contract language and grammar to plain English is used as the foundation for defining a standard dictionary and grammar rules in a controlled environment.

The American National Standards Institute (ANSI) defines a standard as "A document, established by consensus that provides rules, guidelines or characteristics for activities or their results" (ANSI, 2020). ANSI is the sole organization in the US that is part of the International Organization for Standardization (ISO), one of the most well-known global standards organizations in the world (ISO, n.d.). One main benefit of standardization is the efficiencies gained from reuse instead of "re-inventing the wheel every time." Familiar, repeated use of terminology and processes in any given industry increases productivity and improves compliance.

Plain English is the framework for language simplification and the focus of exploring standardization. The goal is to improve clarity for the intended audience. This approach builds on the user-centered design process presented in Chapter 2, and the user-based categorization of contract content presented in Chapter 3. The creation of CCL is two-dimensional as it focuses on both the specific user's natural language and plain English as the preferred language. To develop contract language standards, the research conducted first sought to find the alignment of

traditional terminology to equivalent plain English to assess the differences between legalese and standard English.

A controlled language has a documented dictionary and writing rules that are universally adaptable for the discipline. This requires the proposed solution not to be tied to one contract type, jurisdiction or user group. Replacing archaic English words, via a systematic analysis, with common English terminology is part of producing a CCL document. In addition, the defined grammar and writing rules are intended to facilitate the shift away from the traditional legal writing style by providing a style guide and specific examples for following the defined grammar rules.

Plain language can reduce ambiguity, and this is one of the key reasons why plain language scholars are striving to standardize plain English internationally (Butt, 2013). Lexical ambiguity arises when one word has two or more definitions. For example, the words "covenant" and "obligation," both mean "a formal agreement or promise, usually in a contract." However, obligation is the more commonly used term in modern-day English and is also the term most often seen in English language textbooks. Similarly, lexical ambiguity is caused by one word having two or more meanings.

Contract writing, in particular, is complex because of the common practice of using different terms with the same meaning. To illustrate, "allow" and "permit" from Bryan Garner's book, A *Dictionary of Modern Legal Usage*[74] were selected as example terms (Garner, 2013, p. 668)). These terms are commonly used not only in legal writing but also outside the legal discipline. Figure 31 outlines the definitions found in Garner's legal dictionary.

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[74] The dictionary is comprised of 945 pages filled with legal terminology used in the field of contracts.

> **allow.** *Allow* = (1) to give or grant (something) as a right or privilege <she allowed her neighbor as easement>; (2) to approve by not objecting <the court allowed appellee's counsel to reply to the rebuttal>; (3) to make provision for <rue allow depositions upon written questions>; or (4) in BrE, to sustain (a judgement, claim or appeal) <the appeal should be allowed>.
>
> **permit.** The words *allow* and *permit* have an important connotative difference. *Allow*, as in sense 92), suggests merely the absence of opposition, or refrain from proscription. In contrast, *permit* suggests affirmative sanction or approval. (p. 46)

Figure 31. Dictionary Definitions of *Allow* and *Permit*

In the example, it becomes evident that analysis would need to be conducted to determine how to define the difference between "allow" and "permit" in the context of contracts. Should one term be used in a specific context over the other? This type of individual term-by-term analysis is part of defining a controlled dictionary.

A controlled language dictionary is different from a legal lexicon that includes a magnitude of terms that might appear when working with contracts. A controlled contract dictionary is limited to terms that can be determined to be universally applicable and contains only about 500−800 words. Table 15 shows an example of the types of words that could be part of a CCL dictionary to replace legalese terminology with plain English equivalents. The goal of this dissertation is not to select the dictionary words; rather it is to provide examples of how a contract-specific dictionary could look.

The main challenge for defining a CCL dictionary is determining if "words or art" commonly used in contracts have equivalent standard English terms that mean the same under the rule of law. This requires examining terms of art and the technical language of contracts within the framework of the law. Because contracts function as both legal and managerial tools, terms of art stem from both contract law and business operations. Legal terminology has not changed much over time, and the intent of the comparative analysis is not to induce a debate over what terms should be left in legalese versus replaced with plain English. Instead, the intent is to select common English terms when there are multiple terms with the same meaning and provide a definition for terms that are already in use and part of the technical language of contracts. Plain English provides a framework to support replacing long and complex words with standard English; it is not absolute.

Table 15. Examples of Plain English Words to Replace Traditional Legal Writing Words

Legalese Terminology	Plain English Equivalents
Afforded	Given
Aforementioned	that, these, previously mentioned *[or best omitted]*
at the present time	Now
concerning the matter of	About
due to the fact that	Because
during the time that	While
for the purpose of doing	to do
Hereby	*[omit; no need for replacement word]*
in witness whereof	Signed
Whereas	*[omit for recitals and any other use]*

When developing set rules for reducing ambiguity, the context of the writing must be considered. Following standard grammar rules for run-on sentences and improper punctuation should enhance readability without affecting legal protections. Similarly, establishing guidelines regarding suggested maximums for the number of words in a sentence reduces complexity without compromising legal protections. The focus is on simplification to enhance the readability and clarity of the writing, not removing content.

Because the technical language and writing structure of contracts are unique, finding standardization opportunities depends on identifying the similarities across different types of contracts. The elements consistently appearing in contracts provide opportunities for controlling the language and grammar. In addition, laws and regulations have standard clauses and language that are important to ensure contracts are legally sound and should be part of the analysis.

Set clause language for laws such as the Equal Employment Opportunity Act of 1972[75] and issues such as data privacy and personal data protection are examples of documented contract language. They are required by law to be part of certain types of contracts, and companies often include the laws and regulations verbatim. The language can be complex as prescribed, and the compliance with the laws and regulations is often assumed to depend on the use of exact language; however, regulations and rules often include definitions for crucial terminology or explain defined concepts. This information can be part of the controlled language lexicon.

Some level of complexity remains when regulations and laws are included in the contract document. One approach to document complex regulations in a contract is to write the regulation inclusion in plain English in the body of the contract and incorporate the complete regulation document in an exhibit. For example, the contract terms that apply in contract actions involving any work with the US government are documented in the FAR. The FAR contains a section of defined terminology defining the terms used in government contracts. Also, clauses are numbered with set titles. The FAR is available online or in published format. Today, it is common for companies to use computer software that houses the FAR to produce a detailed contract document containing the applicable clauses.

Combining the existing controlled languages related to the contracts, whether developed for a specific company, contract type or industry, provides a long list of terminology and contract clause language that is standardized and in use today. While not controlled at a universal level, each document and published regulation is a CCL in its own form. Summarizing and then analyzing re-occurring terminology is where the opportunity to examine the feasibility of universal standardization lies.

4.3.4   The Role of a Dictionary and Grammar Rules in CCL

Exploring how to develop a dictionary with a limited set of vocabulary derived from common contract terminology can be tricky. The task extends beyond just defining common redundant vocabulary and obvious synonyms. In addition, defined criteria must be documented and employed consistently to produce a more comprehensive set of vocabulary. Relating back to ASD-STE100, the criteria of simplicity, flexibility, and frequency of use can be utilized to narrow down the selected terminology (Finnegan, 2018). For example, "do" is a simpler, more

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[75] Section 701 of the Civil Rights Act of 1964 (78 Stat. 253; 42 U.S.C. 2000e). These government regulations prohibit companies from discriminating against individuals based on their race, color, religion, sex, sexual orientation, gender identity, or national origin.

flexible, and more frequently used term than "achieve," "carry out," or "accomplish."[76] For the CCL "do," would then be selected as the preferred term, based on the defined criteria.

A selected vocabulary term would follow a definition criterion. The dictionary document could then be integrated into the writing software, allowing for easy access during the document writing process. In addition to providing dictionary definitions for terms, the dictionary would also include "unallowed" terms, eliminating synonyms. Similar to ASD-STE100, the focus would be on the preferred word choice. This helps meet the objective of "one word, one meaning."

Whereas the dictionary would consist of common terminology in contracts, with associated definitions, a controlled language dictionary is usually limited to 500-800 words. The limited number of vocabulary words is different from Garner's dictionary of legal usage, which contains 945 pages of defined vocabulary (Garner, 2013). The intent of a CCL dictionary is not to define all legal and contract terminology. Rather, it is to select and document the words that can be part of a universal norm and are also conducive for machine translation.

Contract drafting is an art requiring some knowledge of the standard terms and technical language used in certain contract types and specific clauses. Figure 32 below provides an example of two "Entire Agreement" clauses written slightly differently, with some of the legalese removed in the second example. The intent of this dissertation is not to debate legal terminology, but rather to induce a debate on the feasibility of using defined terms on a global scale.

When analyzing the two sample Entire Agreement clauses, one question that arises among scholars is whether "entire" means "final and complete" (Kim, 2016). In the US, under the common law principle of parole evidence rule [77], "final and complete," signifies that any prior oral or written agreements are not part of the final agreement. Because this is a documented specific use of terminology within contract law principles, "final and complete" are terms of art, and therefore, it can be argued that their inclusion is important for providing intended legal protections.

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[76] http://www.asd-ste100.org/faq.html.
[77] The parole evidence rule in the US governs the extent to which parties to a case may introduce into court evidence of a prior or contemporaneous agreement in order to modify, explain, or supplement the contract at issue. Source: Cornell Law School, legal information institute.

EXAMPLE CLAUSE 1	EXAMPLE CLAUSE 2
This Agreement is the entire agreement between the parties and supersedes all prior understandings and agreements between the parties, whether oral or written. This Agreement may be amended only in a written document, signed by both parties.	This Agreement and Exhibits attached hereto and incorporated herein constitute the entire, final, complete and exclusive agreement between the parties and supersede all previous agreements or representations, oral or written, relating to this Agreement. This Agreement may not be modified or amended except in a writing signed by a duly authorized representative of each party.

Figure 32.   Comparison of Entire Agreement Clauses

Every contract is unique. The type of industry, contract type, and legal jurisdiction all have different legal implications and terms of art. Knowledge of the technical language in the field of contracts cannot be eliminated by a controlled language. Everything that is written and edited must be considered in the context of the business deal, and a human interface with the appropriate expertise is necessary.

CCL can be beneficial to bring efficiencies for the user to draft and review the contract. All the guidance and established assumptions integrated into the dictionary aids in driving consistency of use into the process. Determining the level of guidance and standards should consider the many factors that influence the B2B contract's content.

Many scholarly books exist on contract language style of drafting; however, internal company style guides tend to provide more specific directions for employees how to effectively tailor a B2B contract. One company with an extensive style guide for contract documents is the Adobe legal department's published style guide[78]. Within the style guide, there is an outline of specific vocabulary and grammar rules contract writers are expected to follow. Table 16 summarizes the types of rules; for example, one rule is eliminating redundant works and synonyms. The objective is to write clearly, remove ambiguity, and to simplify the writing. Including examples is a powerful way to guide the process. These types of company-specific style guides are essentially controlled languages.

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[78] To see entire style guide, go to:
https://documentcloud.adobe.com/link/track?uri=urn%3Aaaid%3Ascds%3AUS%3A049
e2224-211f-4efa-b236-2a91ee9c1463#pageNum=20

Table 16.   Example Vocabulary Rules

Rule	Goal	Example
Eliminate Duplicate and Redundant Words	Clarity Remove Ambiguity	Use *"sell"* rather than *"sell, convey, transfer, and assign"* or *"sell and transfer"* Use "to" versus "for the purpose of"
Eliminate synonyms	Simplify Eliminate unnecessary legalese	Use the *"complete"* versus *"full and complete"* Use *"void"* versus *"null and void"*
Eliminate or replace archaic words	Use of Standard English Eliminate unnecessary legalese	Remove words such as whatsoever, furthermore, wholly and fully, whereas Use "p*er year"* versus *"per annum"*
Eliminate/Replace ambiguous terms	Clarity	Replace "best effort" with specific obligation
Do not turn verbs into nouns	Clarity	Use *"conclude"* versus *"arrive at the conclusion"* Use *"apply"* versus *"make an application"* Use *"consider"* versus *"take into consideration"*

Furthermore, style guides and documented writing rules are intended to help eliminate the common writing pitfalls, such as adding excessive detail, attempts to sound formal, attempts to write in spoken forms of language, and the use of unnecessary words or jargon that can cause the writing to be unclear. Following simple writing rules can help eliminate these pitfalls. Identifying the rules along with specific examples, provides a guided drafting process, helping the writer produce text that eliminates some of the complexities of traditional legal writing style.

In contract documents, readability and usability go hand-in-hand. The ability to read the language and understand the words are essential to successful contract execution. Globalization has added a new dimension of complexity with people

speaking different languages, further driving the need for contract language standardization. The meaning of words, the implications of actions, and the content of applicable legal rules have become more challenging to determine (Bussel, 2016). The consequences are that neither contract drafters nor the end-users responsible for executing the contract obligations interpret contracts the same way, leading to misunderstandings, re-work, and disputes.

For non-native English speakers, using the "ordinary sense" of a word is critical. Supported by the key statement of principles comes from Lord Wensleydale's opinion in Grey v Pearson[79] and dates back all the way to 1857, the "golden rule" principle requires that words be given their ordinary sense (Butt, 2013). Removing or replacing legalese terminology with standard English is acceptable. For example, "herein" is replaced with "in this agreement," "in witness whereof" is replaced with "signed," and "subsequent to" is replaced with "after."

Consistency in the use of terminology and defined terms is intended to promote reuse and a global standard. The vision is the documented standards can be integrated into any contract management or drafting software by all system vendors. The industry standard guidance document is the input to the system. In the ASD-STE100 model, the controlled vocabulary and grammar rules are documented in a simple pdf file; however, the version-controlled file maintained by an independent organization makes it a controlled language to use as a standard.

The second element of ASD-STE100 is a set of writing rules. Focused on the common English grammar rules in use today, the document outlines specific rules to follow. The rules are comparable to the type of writing rules identified for enhancing machine translation. In general, standard English grammar rules are common to most of the population as they are taught in school. Legalese writing is taught only in law schools and not common knowledge for the average person. Defining a set of grammar rules does not take the same level of analysis as developing a dictionary. However, considering how a certain set of writing rules supports different translation actions is essential.

To illustrate types of grammar rules, Uwe Muegge's ten writing rules, shown in Table 17. aim to enhancing accuracy and reduce ambiguity in the context of machine language translation (Muegge, 2002, pg. 2). The writing rules strive to provide guidelines for software friendly machine language source documents. A controlled contract document can be produced by leveraging defined writing rules

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[79] *Grey vs. Peterson* (1857) 6 HL Cas 61 at 106; ER1216 at 1234 (a case of the interpretation of a will).

in existence today that share similar goals of simplification for improved comprehension for different language users, including machine language.

Table 17. Uwe Muegge 10 Writing Rules

	Rule
Rule 1	Write sentences that are shorter than 25 words.
Rule 2	Write sentences that express only one idea.
Rule 3	Write the same sentence if you want to express the same content.
Rule 4	Write sentences that are grammatically complete.
Rule 5	Write sentences that have a simple grammatical structure.
Rule 6	Write sentences in the active form.
Rule 7	Write sentences that repeat the noun instead of using a pronoun.
Rule 8	Write sentences that use articles to identify nouns.
Rule 9	Write sentences that use words from a general dictionary.
Rule 10	Write sentences that use only words with correct spelling.

Building the controlled contract language CCL following the plain English standard framework incorporates the parameters for supporting a solution that can operate in today's technologically advanced environment. Part of the task to support developing an ISO standard for plain English is to define parameters that support machine learning and AI.

Ultimately, developing a CCL as the documented contract language standard following a similar path as ASD-STE100 developers did, solves the problem of different controlled standards. Furthermore, language and writing simplification can be integrated into the process so that every contract is written in plain English using standard English grammar rules that all users can read and comprehend.

4.3.5   CCL and Benefits for Contract Language Translation

Contract translation from one language to another is also a challenge due to the many technical terminology and words of art used in contracts. Contract language translation is one area of contract management that could benefit from a CCL. Contract translation pertains to both spoken languages and machine translation, both relevant in today's contracting environment. Varying factors drive what makes specific terminology or writing more or less conducive for translation. The IPLF standards committee focuses on assessing the conduciveness of translation as a criterion when developing the plain English principles. This is supported by the fact that ISO representatives from across the globe are part of the committee.

In cross-border transactions, there can be challenges when contracting parties have different languages. While English is evolving as the dominant language in international trade, contracts in multiple languages remain common. Contract language simplification also focuses on the translation of contracts into other languages. Natural language processing and real-time translation software have become highly sophisticated, but due to its complex nature, contract language still requires human involvement to ensure accuracy.

To assess the accuracy of current translation software, a test was conducted to assess the accuracy of Google Translate software for translating a contract clause. From the Shell supplier example agreement, the Assignment clause, a common clause in contracts across the globe, was translated into Finnish. The English language in the sample clause is common and appears in similar form across various contract types. Table 18 shows the exact wording of the clause in English and the Google Translate translated version in Finnish. Highlighted in red are areas that did not translate accurately in the context of a contract or contract law.

Table 18.   Machine Translated English-to-Finnish Assignment Clause

ENGLISH VERSION	**ASSIGNMENT** An assignment or novation by a party of all or part of the CONTRACT requires the written consent of the other party, except that COMPANY may assign and novate all or part of the CONTRACT to an AFFILIATE without the consent of CONTRACTOR by giving written notice to CONTRACTOR.
TRANSLATED INTO FINNISH	SOPIMUS Osapuolen luovuttaminen tai uudelleenjärjestely koko SOPIMUKSEN tai sen osan osalta edellyttää toisen osapuolen kirjallista suostumusta, paitsi että YRITYS voi luovuttaa ja uudistaa kaikki SOPIMUKSEN tai sen osan AFFILIATE: lle ilman SOPIMUKSEN suostumusta antamalla kirjallisen ilmoituksen URAKOITSIJA

Another notable issue with the machine translated version is that the text in Finnish does not align with how a similar assignment clause is usually written in a Finnish contract[80]. The wording and tense forms are incorrect in many places. Terms of art are not recognized. The conclusion from the test is that machine translation software is not sophisticated enough to translate contract documents to another language within the legal context of the other languages' legal writing schematics. This is a constraint to consider when developing a CCL aiming to produce readable and usable contracts without reducing any protections afforded under the law.

The translation test reminds us of the importance that must be placed on the meaning(s) of words within the discipline. English within the context of the legal discipline or within the technical language of contracts when translated into another language does not always produce the intended translation. Furthermore, the English language has many words with multiple meaning, complicating the translation even further. Each legal system has technical terms and terms of art that are part of the technical language that complicates translation into other languages. A CCL in English, for example, with a defined vocabulary developed by experts in the field from various countries, can aid in developing similar controlled languages.

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[80] Sample Assignment clause from a Finnish contract: Sopimuksen siirto- Sopimusta ei saa kumpikaan osapuoli siirtää kolmannelle osapuolelle ilman toisen osapuolen suostumusta paitsi milloin siirto liittyy joko liikkeenluovutukseen tai jommankumman sopimusosapuolen yritystoiminnan sisäiseen uudelleen järjestämiseen.

4.3.6 Technology as the Platform for CCL

Technology can provide the platform for standardizing and automating contracts, defining company terminology, and integrating writing rules to guide contract document development. The number of CLM system providers continues to grow rapidly, with each having their own unique offerings and individual approaches, striving to gain market share by differentiating their product functionality from their competition. This mindset of differentiation impedes the integration of contract standards on a universal scale. To address this fragmented market, a documented CCL, as a global standard for any technology provider to use, can produce a baseline for language simplification and the integration of plain English principles.

A CCL would establish a guidance document to be universally integrated by all software application providers as a standard feature. Because contract document standards and writing guidelines are built to assure compliance, consistency, and efficiencies, the benefits to companies can be immense. CLM systems provide the platform for controlling the inputs and are therefore enablers to drive a universal shift in contract language standardization.

The other key element CLM systems afford is aiding in the development of standard terminology and contract language. Computer software provides the capabilities of data analysis of large amounts of data in seconds. Unstructured datasets from hundreds, even thousands of contracts, extracted using technology, can be summarized by the most frequently occurring vocabulary, clauses, and specific clause content. Analyzing existing company contracts available produces a baseline of the natural language of contracts. The extracted data set provides the information to start analyzing commonalities and to develop a list of most frequently used terminology to form the basis for a contract dictionary. Furthermore, to address the archaic difficult-to-read writing style, technology can be leveraged to code a common writing approach with standard grammar rules.

Technology can be leveraged to initiate a new contract drafting approach that is user friendly. Replicating a user-interface design similar to the Microsoft Word application with in-text word and grammar indicators provides real-time visual cues. For example, using a different word than the dictionary can be indicated with a colored squiggly line, as Word does for misspelled words. Deviating from the documented grammar rules would be marked with a different colored squiggly line. Similar types of highlights could be used for contract writing standards coded into the system – these can be industry standards such as the WorldCC association's contracting principles or company-specific standards. The benefit of such in-text indicators is that writers receive a signal to stop and review, thus

engaging them in two-way communication, a form of guided drafting. Further, providing pop-up boxes with definitions and with suggested alternatives to words and grammar would assure that context is considered when choosing how to disposition the indicator.

Contract data dissected to the word and sentence level also allows clause libraries to be developed with the company preferred language. Clause libraries are the essence of contract compilation software. Contract outlines and model contract outlines (not template contracts) with clause libraries integrated, allow a drag and drop assembly of contract documents. Having approved clause language that aligns with plain English principles will eliminate duplication of traditional legalese clause language.

In addition, the system can house all capitalized terms and their definitions, eliminating a manual review of any inconsistencies in defined terms. This would bring efficiencies and save time during the review process and most likely produce a more accurate review.

Another key feature of CLM systems is the highly sophisticated document comparison feature. Computer programs can dissect any type of contracts at the meta-data level and align similar clause language and even concepts for side-by-side comparison. These features are especially beneficial when reviewing and analyzing a counterparty contract document. The system highlights differing clause language and identifies missing clauses. Systems are sophisticated enough to highlight similarities and deviations, even when data is organized entirely differently.

Instilling in-document highlights and alerts, along with suggested revisions, established a new approach to drafting where the writer is required to review the language and decide what wording is desired by requiring the drafter to disposition the alerts. This approach drives tailoring and language review when the contract document is initiated, and the transaction is documented.

A CCL standard is envisioned as a new integrated process in contract drafting software. CCL would function at the word, phrase, and sentence level. It would be specific to the field of contracts, with an emphasis on assuring consistency. The goal of "one word, one meaning" would be instilled. Company-specific terminology and definitions would be coded into the program as well, to ensure that company- or contract-specific terminology is used consistently.

Each CLM system provider integrating the same controlled contract language—dictionary and grammar rules—into the software application would significantly

change how the industry operates today. In order to overcome each provider developing unique approaches, the global standard for CCL in code form would need to be available in open source for anyone to use. Table 19 provides an example outline of grammar rules that could be implemented as universal solutions to simplify contract writing.

Table 19.   Writing Guidance Automation

Guidance Categories	Drafting Aids	Automation
Sentences	- Indicators for: Run-on sentences, Length, etc.	Integrated into writing software
Paragraphs	- Indicators for: Spacing, Length, etc.	Integrated into writing software
Punctuation	- Highlighted indicators and revision suggestions.	Integrated into writing software
Word Count	Indicators for exceeding suggested word count.	Integrated into writing software
Active Voice	- Pop-up window for suggested revision	Integrated into writing software

To illustrate, ContractStandards has developed an application that evaluates contract writing to prescribed writing rules (ContractStandards, n.d.a). Figure 33 shows how the coded writing rules would manifest themselves in a software application. The program has in-text, color-coded indicators based on a subject, verb, and object approach. The second column provides a "preferred" way of writing the language, striving to simplify and make the writing clearer. The third column provides a comment on the intent and grammar rules of the suggested

revision. The user inputs the contract language into the system, then analyses the document and produces a document view with visual, color-coded suggested changes.

The examples below are color-coded as follows:

- dark blue = party; light blue = subject
- dark green = modal verb; light green = verb
- yellow = object

Example	Preferred	Comment
Nothing in this Agreement creates a partnership or joint venture between the parties.	This Agreement does not create a partnership or joint venture between the parties.	Remove unncessary words. Place noun-subject at start of sentence.
Base Salary shall be paid monthly.	The Employer shall pay Base Salary monthly.	Avoid passive sentences. Apply subject-verb-object order.
No proceedings have been taken or authorized by [PARTY A] or, to its knowledge, by any other Person relating to its bankruptcy, insolvency, liquidation, dissolution, or winding up.	[Party A] has not taken or authorized, nor to its knowledge has any other Person taken or authorized, any proceedings relating to its bankruptcy, insolvency, liquidation, dissolution, or winding up.	Avoid passive sentences. Apply subject-verb-object order.
If the Company receives a written request from Holders of at least [10%] in the aggregate of then-outstanding Registrable Securities (collectively, the "Initiating Holders") that the Company file a registration statement under the Securities Act covering the registration of their Registrable Securities, then the Company shall, within [30] days of receiving the request, give written notice of such request to all Holders, and subject to the limitations of this Section 2.1,	The Company will, within [30] days of receiving a written request from the Initiating Holders that the Company file a Registration Statement, (a) give written notice of such request to all Holders, and (b) promptly file a Registration Statement.	Simplify sentence structure with subject-verb-object order. Use "will" to expresss futurity. Use more descriptive verbs: "file" rather than "effect."

ContractStandards©. Image used with permission.

Figure 33.   ContractStandards Language Editing

Word processing and editing tools have become an essential part of today's electronic document writing process. I challenge you to turn off the editing feature on your writing program and then type a document. You will probably find several typos and mistakes during your own review, and your peers would probably find several more. We rely on editing indicators when typing messages on our phones, writing a simple search in Google or writing a novel. With today's available technology, the opportunity for in-text editing indicators designed explicitly for contract development is a natural step to drive a change in contract language to align with plain English principles.

In summary, coding the CCL dictionary and writing rules into CLM software creates an active guided writing process. A CCL modeled after the ASD-STE100,

integrated into technology, could lay the foundation for shifting away from the legalese writing style. Focusing on the contract development process, a user-friendly interface within the system can further enhance the integration of a new writing style standard.

5 VISUALIZATION AS PART OF CONTRACT SIMPLIFICATION

5.1 What is contract visualization

The third area analyzed as part of contract simplification is how information design via visualization can improve document readability and comprehension in a multi-user environment. The time-old saying "*a picture is worth a thousand words*"[81] is a powerful statement in the context of business contracts, which can be hundreds of pages long black and white text. Steven Weise made a statement to the legal community already in 1999: "words cannot do the entire job — lawyers need to find those crayons that they put away many years ago and learn how to draw again" (Weise, 1999, p.2). He further clarifies that visualization is not only about pictures but that other visual graphic depictions, such as diagrams and tables, are an integral part of enhancing the clarity of writing.

In a similar vein, I argue that a holistic contract document design solution requires a defined design process that guides the development of a user-centered structure and plain English language in conjunction with visualization to most effectively communicate the information to the intended audience. Hence, the visual display of information should take an equal part in contract simplification to enable good and effective communication.

Today when referring to "visualized" contracts, many think of pictures or images replacing contract text; however, "visualization is almost always used in hybrid ways—combinations of words and images to enhance the effectiveness of communication" (Berber-Walliser, et al., 2017, p. 347). While fully visualized contracts, referred to as comic contracts, exist and have proven effective for certain types of contracts (Rooy, 2019), the B2B contract's complex nature requires further research on the feasibility and extent to which visualization proves optimal. Understanding what visualization is and how information design principles support choosing contract design solutions is examined in this chapter.

The research on contract visualization encompasses a wide range of text to image inclusion, from traditional contract documents with improved layout to extensive use of information design techniques and visualization altering the display of content. The research indicates that visualization in contracts is not about replacing contract writing with pictures or graphics, rather it is about improving

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[81] This proverb has long been credited to Frederick Barnard, who used a "look" version in Printer's Ink, Dec. 8, 1921, and a "picture" version in the same periodical, Mar. 10, 1927, while prior versions or similar notions can be found dating back to 1861.

the communication via the use of graphics and illustrations and finding harmony between the text and visual design (Passera, 2017, Haapio, 2013).

Examining how other disciplines have adopted various information design principles to improve user interface and experience can help to improve the user interface in contracts. The key is that the document's functionality must extend to the end-users and produce a product that is usable by the intended audience (Haapio, 2013). Tying together the users and contract functions prior to implementing visual and graphic design places the user-centered design framework as the guide to when text-only versus information design and visual depictions should be applied.

Understanding how visual display of information is taking center stage can be the catalyst for rethinking what good and effective legal communication entail (Leiman, 2017). Incorporating information and graphic design into contract documents provides additional opportunities to communicate complex text more clearly. This is where design thinking becomes an integral part of the process.

Any medium which uses graphics to aid in conveying a message, instruction, or an idea can be considered part of visualization. Graphic designers focus on unity, flow, and the many parts fitting together (Matz, 2011). Similarly, the text and the visuals in a contract document should "fit together", and a visual flow should be evident throughout the document. Regardless of the chosen visuals, the essence of visualization is to present the information to facilitate understanding (Kirk, 2016). The interplay between the content and how the graphics communicate the information most effectively is the goal.

Building on design thinking, there is a focus on aesthetics and the end-user experience. The intent of contract simplification and design thinking is not to "dummy down" or oversimplify the document to the point that meaning, intent or legal protections are compromised. In contract design, the aim is to leverage visualization when it improves comprehension and clarity (Passera et al., 2016). Defining different types of design methods from simple lines to complex multi-dimensional diagrams, graphs or flowcharts helps contract developers and drafters start examining when visualization in contract documents can improve the communication.

5.2   Benefits of Contract Visualization

5.2.1   Improving Readability and Usability

Specifically, in the field of contract visualization, there are two researchers, Helena Haapio and Stefania Passera, whose research and dissertations brought forth ways to design user-friendly contracts. Haapio's Ph.D. dissertation, *Next Generation Contracts: A Paradigm Shift* (2013), builds on the proactive law approach and argues the importance contracts play as both managerial and legal documents. Her research focuses on designing contracts that promote comprehension and usability for successful business outcomes. Passera's Ph.D. dissertation, *"Beyond the Wall of Contract Text: Visualizing contracts to foster understanding and collaboration within and across organizations"* (2013) focuses on contract design, and the use of visuals in particular, and how visualization can foster understanding and collaboration both within and across organizations.

As shown in an experimental empirical study done at Aalto University, changing the layout and integrating visuals, in addition to a user-centered structure, increased comprehension and accuracy (Passera, 2015). Building on this study and other visualization research shows that readability, comprehension, and the user experience improved via inclusions of visuals.

How to initiate and develop a visual depiction from a traditional contract document can be difficult for a person with no formal design training. The idea of a user-centered design approach builds on that belief that the abstract design techniques should be correlated to contract document content (Mitchell et al., 2019). Next is an analysis at the micro-level of contract document design and visualization techniques. Breaking down the types of information design techniques that can be applied in B2B contract design helps break down the tasks to a clause or building block level to produce design solutions tailored to the situation and the users who will engage with the information.

5.2.2   Types and Examples of Contract Visualization

Information and communication design research show that visual design does not need to be extravagant. Visual design can be simple lines, shapes, or bullets to improve how information is presented visually. The research suggests that combining various information design techniques is the key to realizing the true value of contract visualization.

The research examined lines first, the most elementary drawing technique. Lines can be effective in many ways to improve the visual appearance of the document. In contract visualization, lines can be used to illustrate various types of information and content. Lines form depictions and combinations of lines creates relationship to how the human brain perceives information. For example, a horizontal line can be related to something which has a continuous attribute, such as time. Adding vertical lines can then add milestones to the timeline. Table 20 shows some ideas of different visual expressions for different contract information types. The visual expressions summarized below are from the article *Contract Mechanics: What they are, why they're important and learning to work with them* by Jay Mitchell, Emma Hertzberg, and Meera Klemola (2019)[82].

The idea from the contract mechanics article is that contracts are "machines" that express the parts which make the contract "run." Adding visuals to depict different types of information is intended to make the reader pay particular attention to the most important information (Mitchell et al., 2019). Furthermore, relating factors "X" to "Y" to identify dependent actions, decisions, events, actors, decision consequences, etc. aids in communicating inter-related information in one visual. Depicting related terms in one visual is beneficial in B2B contracts containing significant amounts of information, to reduce the cognitive load to the human brain to process and comprehend the information. With multiple users with different backgrounds and varying responsibilities throughout the contract lifecycle, visual cues and illustrations can improve readability and usability.

As discussed, choosing the right type of visual is more than making information aesthetically appealing; it also needs to communicate the information more clearly than text only. The wrong visual can confuse the audience and impact trust between the parties if the data are inaccurate (Todd, 2019). More importantly, if the visual is too complex, the effectiveness of incorporating visuals is lost (Mik, 2020). Too much, too little, or contradicting information in visuals can negatively impact rather than provide clarity. Examining what is effective contract visualization is essential.

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[82] The article further includes illustrations of various visual designs each correlated to different types of contract content.

Table 20.   Visual Expressions

Information Type	Contract Content	Visual Design Technique
Time	Term of the agreement Termination events Payment timing Meetings and milestone events	Combining horizontal lines with vertical to depict milestones
Time and Response	Date specific actions Notifications for events (e.g. extension, proposal, breach) Approvals	Combining horizontal lines with vertical to depict time and response, action or responsibility
Limits Layers	Dollar amounts Percentage amounts Time limits	Shapes and varied line lengths – forming bar charts, line graphs
Numeric and Variable Terms	Terms which change driven by performance or other factors (e.g. royalty payment, interest rates)	Tables
Process Relationship	Flow of information Sequential obligations/tasks Alternating responsibilities Stages and interactions	Lines, shapes and color variation Grouping shapes or dividing shapes
Structure	Entity structure Locations Data storing Departmental responsibilities Document structure	Diagrams – shapes to identify entities; lines to capture relationships
Workstream	Project schedule Internal and External actions / approvals Interdependencies	Combination of horizontal and vertical lines for time Shapes and colors for milestones and specific actors E.g. Flowcharts, swimlanes, diagrams

The first redesigned contract selected to illustrate how visual design techniques can improve and simplify complex legal text is an excerpt from Juro's privacy policy (Figure 34) (Juro, 2017). Juro is a company specializing in CLM systems and an innovator in improving contract design. The company focuses on how to redesign traditional contract language and documents to make them user friendly.

The initial observation from analyzing the privacy policy page is that the use of lines, color-coding, and icons have replaced paragraph style writing. The writing is in short and concise statements rather than whole sentences. The team[83] employed text and image combinations using icons and clearly depicted the two different parties with two different colors. Another critical observation is that language and structure simplification is also evident in the design.
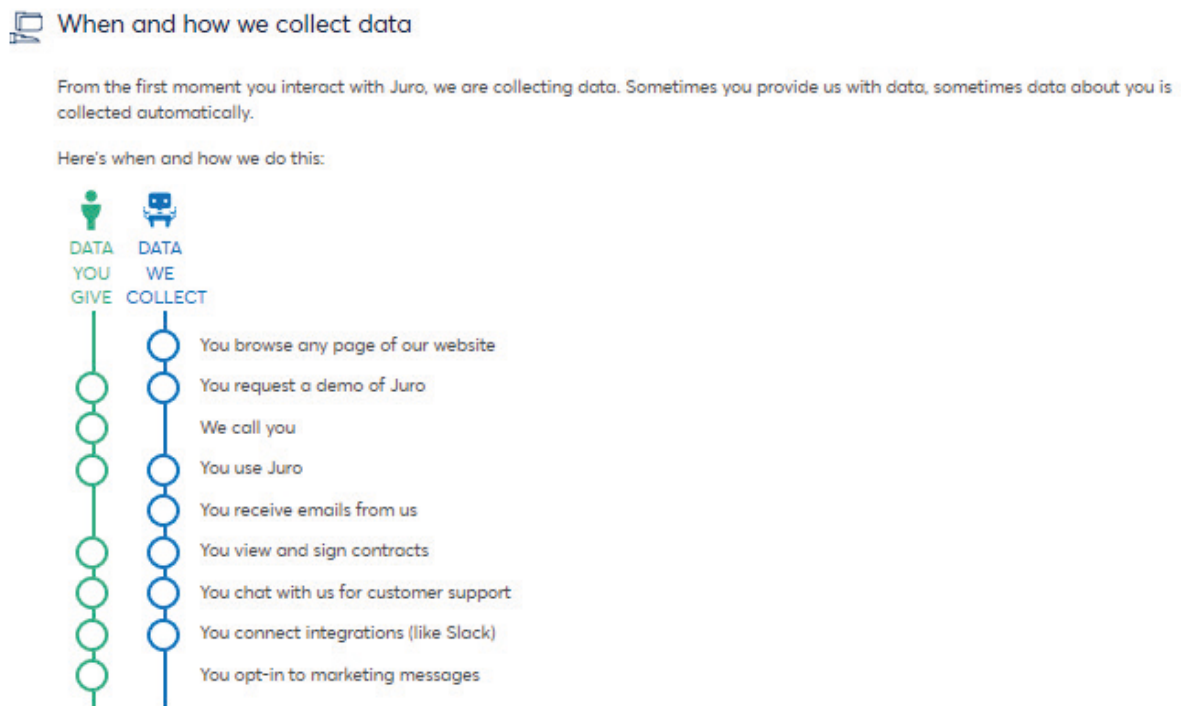
Juro©. Used with permission.

Figure 34. Juro Privacy Policy

The Juro privacy policy is easy to read, comprehend, and user friendly. Correlating to the research undertaken, the design supports the taxonomy of relationships and closeness between text and images, which produces an easy-to-read flow and image to text alignment (Marsh, 2003). Using vertical lines signals a sequence of ideas that are related. The image conveys several concepts related to data sharing. In addition, when and how data is collected is clearly defined. Many vital elements that are standard in privacy agreements, such as how data are collected, what data the company collects, and how the customer can control third party use of their data, is depicted in one illustration. Information is communicated concisely and in

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[83] The company, in partnership with lead designer Stefania Passera from Passera Designs, redesigned the traditional text-only privacy policy into a simplified and user-friendly document.

an easy-to-read format. The result is a privacy policy document, where on the first page, nine elements of data sharing is communicated in one visual depiction.

Privacy policy content follows a sequential flow, with independent events that occur during the relationship; this makes the choice of a vertical line depiction to communicate the information function well. A study on linear data in a diagrammed format showed that comprehension accuracy and answering speed was significantly enhanced; also, the participants perceived the diagrammed format to be more appealing and functional (Passera, 2017, December). Further adding color-coding provides a visual cue that clearly distinguishes obligations between the parties to the agreement. Privacy policies are common in most business transactions and tend to be complicated text-only documents. Simplifying privacy policies is an area of opportunity to implement contract redesign.

A strong argument has been made that the redesigned version meets the EU GDPR regulation better than the traditional text-only version. Based on Article 12[84], which mandates that privacy notices need to be "concise, transparent, intelligible and easily accessible," the visually depicted version meets the requirement of concise and transparent (European Commission, 2016). Following the guidance of GDPR Article 12, legal design is becoming part of a regulatory directive, not just a nice-to-have (Mabey, 2018).

The second type of common visual design analyzed is integrating icons as a visual means to improve readability and comprehension. Icons are one of the most simplistic visual depictions of information, often replacing text altogether. Icons are more in line with pictorials, which are means of presenting information as images. Icons are evident worldwide on street signs, warning signs, and technology interfaces; many icons have become universally known. Most notably, people from different countries with different languages navigate the same computers and smartphones by clicking icons to perform actions, making icons an example of a common language across all languages.

A common setting in which icons are used to simplify complex writing with different user types from different backgrounds is user manuals. Adding an icon to supplement text is an approach to provide visual cues to help users locate information, relate the image to a concept, and to quickly get a general idea of the content. In contract documents, icons could be beneficial to provide visual cues to helps users find information.

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[84] Available at: www.privacy-regulation.eu/en/article-12-transparent-information-communication-and-modalities-for-the-exercise-of-the-rights-of-the-data-subject-GDPR.htm

Thinking about icons and contract content, different icon ideas emerge. Figure 35 shows examples of icons that can be related to common contract content. The first icon, depicting a calendar with a dollar sign, could be used in a contract for the payment term clause. The second icon, indicating a telephone and the number 24, could be associated with 24-hour customer service illustrating the service guarantee clause. The third icon indicating an envelope could be used to identify the notification clause. In contract documents, especially for clauses left in purely textual form, icons can add value by guiding the reader quickly to the content location.

Figure 35.   Sample Icons

Icons have broken language barriers; something global contracts can benefit from when contracting parties have different native languages. Research shows that further integrating lines, shapes, colors, and icons to break up and identify contract text enhances readability and usability. This is supported by a study conducted at Aalto University, which tested the impact of this type of redesign on a tenant agreement, and its impact on reading speed, accuracy, and user experience (Passera, 2015).   The new contract design integrated icons, numbering, and headings for each clause, bulleted plain English language, and improved page layout via the use of lines, bold font, and added white space (see Figure 36).

7. Pets
- Outside of your apartment you must keep pets **on the leash** and they **should not disturb** other tenants
- It is strictly forbidden to take cats and dogs out at the **yard, children's playground** or its immediate **vicinity**
- Pets must not make **dirty** the building or outdoor areas of the housing company
- It is forbidden to **keep or wash** pets in **common facilities**

8. Safety and prevention

1. Use of dishwashers and washing machines
- The Tenant is responsible for the **use, supervision and possible problems** that occur with any equipment/machines that **they or the previous tenant** has installed
- Washing machines and dishwashers should always be **installed by a professional**
- The **water supply tap** must always be **turned off** after using the machine and a safety bin should be installed under the dish washer
- If a washing machine/dishwasher tap cannot be found in the apartment, it means that using one **is not allowed**
- In order to use washing machines and dishwashers the Tenant must have a **home insurance**

2. Fire
- When using doors which are to be kept locked, including fire doors, be sure that they **remain locked** after you for safety reasons
- It is forbidden to **barbecue, light up torches** or practise any other kind of activity on the balconies/terraces that may increase the **risk of a fire**
- **Mopeds** and similar items must not be stored in the basement/other indoor facilities **unless fuel is completely drained**

© 2013 Stefania Passera.

Excerpt from a prototype tenancy agreement for university students (Haapio & Passera, forthcoming). © 2013 Stefania Passera. Used with permission.

Figure 36.   Redesigned Tenancy Agreement.

Background on the study. The original contract selected for the study was a current tenant agreement in use. The study administered three different versions of the contract for the test group[85] to read. The original version consists mainly of only black and white text with no clear headings and minimal white space. The second document was a redesigned version of the original contract where structure and layout were improved with the inclusion of headings and paragraph breaks along with language simplification. The third document, which I refer to as the simplified version, integrated more extensive information design techniques, as discussed above, producing an overall improved page layout that compartmentalized various sections and provided visual cues to the content of each section and highlighted the most important information.

The simplified version used icons as visual means to quickly signal each clause's topic, which helped the study participants to identify the general concept of each section. A user-friendly structure, along with clear headings in numbered order guides the reader to find information quickly. Furthermore, readability improved via shortened sentences and text in bullet form written in plain English, rather than full-text paragraphs. Additionally, the page layout had lines separating the various clauses to group all information related to one topic together visually.

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[85] The test subject consisted of 48 participants from 6 different education backgrounds and 21 different nationalities. The participants answered 7 different questions after reading each document. The experiment tested: answering speed, answer accuracy, skipped questions and user experience.

The study results indicated a difference of 35%[86] in average reading speed between the textual/original group and those who read the final simplified document (Passera, 2015). Comparing the original and simplified group's answers for accuracy also showed a similar difference, where the accuracy was higher for the group reading the simplified version of the document. Additionally, the participants found the simplified document with visuals more pleasing to read, comprehend, and use (Passera, 2015).

In sum, two contract excerpts analyzed, the Juro, Inc. privacy policy and the tenant agreement, revealed two important facts: 1) integrating design thinking, in the form of lines, bolding, icons, color-coding, page layout, and visual shapes improves readability, comprehension and user experience, and 2) contract structure and language simplification are an integral part when incorporating visuals to achieve a good document flow. It is to be noted that each of the example redesign processes were initiated from using an existing document and included a team of individuals from various disciplines; legal, contract management, and design. The difference proposed in this dissertation is for early integration of design thinking to produce simplified contracts each time a new contract is developed.

5.2.3   Layout Simplification for Improved Readability

Improving how information is presented on each page of a document is an essential part of contract design, because contracts are multi-page documents, sometimes consisting of hundreds of pages. Technology offers document design features that can be employed by the click of a button. The most notable are word processing features to improve page layout that add white space and consistent formatting. However, document design for complex contracts or regulatory documents can significantly benefit from employing various information design techniques beyond word processing to improve readability and usability.

Document layout enhancement is another design technique, focused on how the information is outlined and layered on a page. Even when a reader understands the written words, the use of breaks, numbering, and visual signals improves comprehension (Waller, 2015). Especially in documents with technical and discipline-specific language where an image is not optimal, layout design can significantly improve document readability and the structure of the text.

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[86] The textual/original group's time was 896 seconds versus the visual/restructured group's 586.64 seconds.

An example of how integrating visual layout design techniques can transform a document is shown in Figures 37 and 38. Created by the simplification center[87] in the United Kingdom, it illustrates how layout improvements can make complex legislation easier to navigate and read (Waller, 2015). The focus in this redesign project was on using design techniques consisting of lines to break up paragraphs, text boxes to highlight important information, layering information, and using different font and numbering to help the reader locate information. The language was not changed, rather the layout and access structure redesign were used to make the reader's job easier (Waller, 2015).
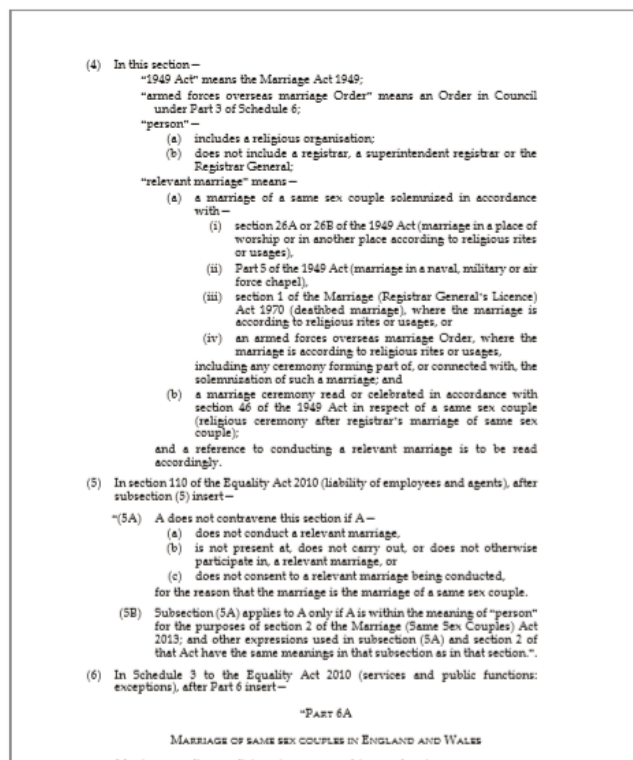
Developed by Robert Waller, licensed under creative commons.

Figure 37.   Original Document

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[87]Aligned with communication design principles, the focus of the simplification center is to take complex communication and simplify it. http://www.simplificationcentre.org.uk/
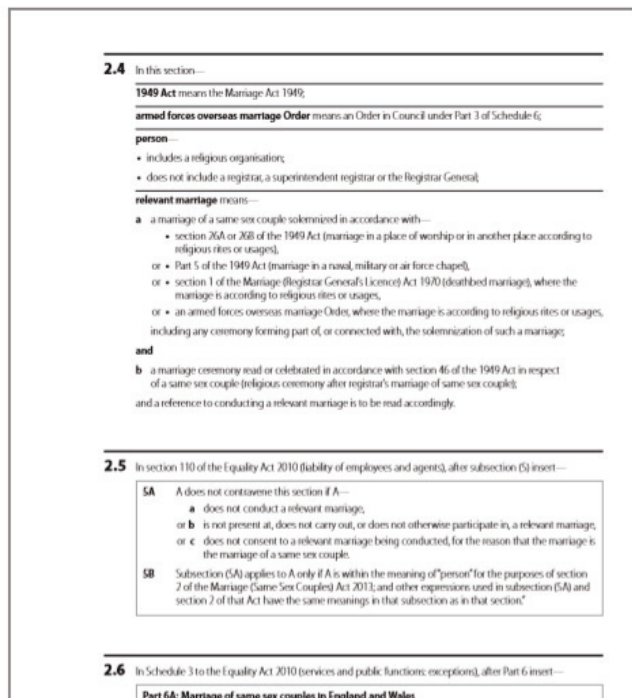
Figure 38.   Redesigned Document

The original legislative document is not visually appealing or inviting to read. The page consists of continues text and requires the reader to start from the top to find the information sought. In the redesigned document, the outline of the information and sections are easy to identify. Visual cues to section numbers in bold font followed by a lead sentence stating the section's purpose allows the reader to skim over the document to find the sought-after information. Using bullets to divide the text into separate sentences renders the text easier to both read and comprehend. The document layout design is a contract design technique to improve how the information is presented on each page of the document without necessarily re-writing the text. The approach of layering the information draws the reader's eye to the most important information and makes the task of reading the information more efficient.

In contract simplification, layout redesign using visual design techniques is critical. It is essential to consider the   stakeholders and end-users when determining how layout design is applied (Matz, 2011, June). In order to shift away from today's traditional document, integrating layout design and focusing on how information is identified via visual cues and layered on the page is an important process to integrate early on in the contract document development process.

Similar to how website and application designers focus on user experience and how users can most effectively navigate and find the information, contract drafters

should consider how various users interact with the document. While visual images are important, applying techniques for page layout helps discover the user's needs and characteristics when focusing on the user experience (Metz, 2013). Considering how to improve contract documents to be inviting and usable documents for various users requires consideration of the user's specific purpose for the information.

Six Principles for Document Layout Design

1. **Consistency** - Visual elements like fonts, colors, rules, icons, and decorations should be used consistently across the page

2. **Coherence** - The design should make sense conceptually. Elements with similar functions and similar importance should be styled with similar attributes (size, color, font, weight); elements that are of the same general type, but which differ in importance should share certain attributes but vary others.

3. **Continuity** - The same visual style and layout scheme should be repeated across all contract pages. Ideally, this consistency should be maintained across all of your organization's contracts.

4. **Simplicity, restraint, and minimalism -** While you do want to make your pages look aesthetically appealing, you should aim to create a simple design. Readability is the aim.

5. **Balance and dominance** - You want to use the space on the page effectively and attractively.

6. **Good gestalt** - You should be able to perceive the design as a coherent whole, rather than a chaotic mishmash or mosaic of elements.

Figure 39. 6 Principles of Document Layout Design

Summarizing the analysis of how the layout design elements can be applied to improve contract documents, six principles for document layout design were developed (see Figure 39). Borrowing from the field of those designing usable

apps, the principles are adapted from *Unity: A primary goal in visual design by Kevin Matz* (2011, June).

Because contract design has remained in its traditional form for centuries, to make a shift in how contract documents look, the field of contracts and law can benefit from leveraging general design principles from other disciplines such as software, web design, and device application design. The common goal is to consider humans' natural way of reading text, scanning, and comprehending complex pages of information.

One particular user-interface principle, which seeks to recognize some structure of order. is referred to as the Gestalt Laws of Perception[88] (Matz, 2011, May). This principle is foundational to good contract design to help users find, read, and use information effectively. The principle relates to both the structure of the information and also the layering of information to assure the document flows. Gestalt is a German word that translates into shape or form, "essence" or "whole." When faced with complex information, the Gestalt effect suggests that the human brain seeks to find inter-connectivity to comprehend information as a whole, rather than individual parts (Gkogka, 2018). Context at both the macro- and micro-level is critical when building a contract to assure that the parts within convey the intended meaning and are clear to both parties; this principle relates to the structure simplification idea presented in Chapter 3.

Furthermore, the visual design in contract documents, aiming to improve the user interface, can benefit from applying gestalt principles by visually grouping inter-related data. Considering how the human brain processes data, the *proximity* principle, where similar items are grouped together, helps readers find information and navigate the document. This is similar to the *common region* principle; grouping common elements together via lines, colors, or shapes signals interdependencies and improves information layout (Gkogka, 2018). Designing around how the human brain processes data aids in guiding the reader to navigate the contract document.

The document layout design is an essential element of contract visualization to simplify and improve the user interface and the user's comprehension of information. The six principles of layout can serve as a valuable checklist tool for contract crafters when applying the user-centered design process to determine optimal design solutions for each building block and when structuring information. Furthermore, applying visual design techniques such as icons, color-

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[88] *The* Gestalt Laws of Perception *helps explain how humans perceive and make sense of visual information.*

coding, text layout, lines, and shapes is part of contract visualization and initiates the process of supplementing text with graphics to improve readability and comprehension further. Psychology and design are linked, and considering how the human brain functions is essential in any design activity. Next is an analysis of inter-connected information and how applying design principles can reduce the cognitive load when processing complex contract documents.

5.2.4   Visualization of Multiple Terms and Fully Visualized Contracts

In the context of multiple terms or inter-related terms, contract visualization offers the opportunity to improve how contract information is communicated more clearly to help users comprehend the many complexities that exist in the text. In support of this statement, the longest existing visually depicted contract terms used in international B2B sales contract is used as an illustration.

Published by the International Chamber of Commerce (ICC), the International Commercial Terms Incoterms® 2020 was first published in 1936 to facilitate international trade (ICC, n.d.). Last revised in 2020 and available both in print and digital form to anyone, the ICC maintains and develops the officially published document (International Trade Administration, 2020). Companies across the globe have adopted Incoterms® as the agreed contract terms in international sales transactions. When Incoterms® are included as delivery terms in B2B transaction, the acronyms, inter-related clauses and terminology defined in the short form are used in the contract. Besides, visualization of Incoterms® is a long-standing practice, and many companies integrate visual depictions in their contracts, or at a minimum, use the Incoterm® visual guide as a reference during negotiations.

What makes Incoterms® so unique is that it is globally recognized; major international companies such as Boeing, Shell, General Motors and many more have integrated them as part of their standard delivery term clauses. Both the US government Federal Acquisition Regulation (FAR) terms and the Convention on the International Sale of Goods (CISG) terms recognize Incoterms®' defined delivery terminology. Today, the terminology and abbreviations are globally recognized and hold universal meaning.

The standardized terminology is defined in the Incoterms® document, controlled via a governing body and available to anyone, making it essentially a controlled language. Terminology, along with abbreviations, definitions, and documented explanations is detailed to convey the rights and obligations of each party. When delivering goods there are many more contract concepts and clauses beyond

stating what transportation mode will be used to deliver products from point A to point B.

Defining the details of what constitutes product delivery involves many inter-connected terms. The parties must agree on who pays for delivery, insurance, customs, taxes, title transfer, and ownership transfer. Incoterms® define the seller's and buyer's responsibilities for the delivery of goods under sales contracts (International Trade Administration, 2020). The standard categorization developed and published by Incoterms® covers six key areas integral to delivering goods:

- Tasks involved in shipping
- Which parties hold the contract
- Responsibility for risk of loss
- Delivery of goods (buyers and sellers)
- Insurance duties
- Customs and taxes

Companies use Incoterms® in their international transactions for delivery obligations because the standard trade definitions clearly identify which party is responsible for the shipping, insurance, and tariffs on an item. The main benefit of Incoterms® is minimizing misunderstandings, which have led to fewer trade disputes and litigation (International Trade Administration, 2020).

To give a brief overview of Incoterms®, they are divided into two groups; 1) terms applicable to any mode of transportation and 2) terms which apply to sea and inland transport only. In total, there are 11 different delivery terms defined.

The abbreviations are each defined within the published Incomterms®2020. These abbreviations have become standard in contract writing. For example, "FAS" means "Free Alongside Ship." Choosing FAS delivery terms means the seller has completed delivery of the goods and transferred ownership once the goods are alongside the vessel at the defined loading point at the port of shipment. At the same time as the ownership transfers, the buyer bears all the costs and risks of damage/loss to the goods. This includes the seller clearing the goods for export and paying for further transportation. At this point, the seller is responsible for procuring insurance (if such is desired). The abbreviated "FAS" conveys multiple rights and duties and is used and recognized globally. Using the term FAS in the contract clause reduces the writing by five or more sentences.

Table 21.　　Incoterms® 2020 Definitions

Group 1. Incoterms that apply to any mode of transport	
EXW	Ex Works
FCA	Free Carrier
CPT	Carriage Paid to
CIP	Carriage and Insurance Paid to
DAP	Delivered at Place
DPU	Delivered at Place Unloaded
DDP	Delivered Duty Paid
Group 2. Incoterms that apply to sea and inland waterway transport only	
FAS	Free Alongside Ship
FOB	Free on Board
CFR	Cost and Freight
CIF	Cost, Insurance, and Freight

Visualizing Incoterms® might seem impossible due to the fact there are 11 different delivery types each with different rights and obligations. Below, Figure 40 is an illustration of a visualization of all the Incoterms® 2010[89] in one image. The visual covers all 11 defined delivery methods. Using swimlanes, the illustration shows numerous event that takes place during the delivery process, such as the timing of shipping goods, delivery, expenses, risk, export and import controls, along with which party has responsibility. Because the characteristics of shipping terms and related information are sequential in nature, flow charts, swim lanes, and even drawings are good visual design techniques to choose. The visual below is a combination of text and images. Color-coding, icons, and pictures are used to communicate the many various details of the process. While abbreviations are used in the swimlane for easy navigation to a specific delivery term, the complete definitions are documented on the left; this is an example of layering text. Furthermore, the illustration is in two languages, English and Spanish, making this visual truly a global depiction.

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[89] Incoterms®2010 are used in the visual depiction because Incoterms®2020 were published just recently, the two versions do not differ significantly.

Incoterms® 2010
by the International Chamber of Commerce (ICC)

	WORKS STABILIMENTO	CARRIER VETTORE	ALONGSIDE SHIP BANCHINA	ON BOARD A BORDO	BOARDER FRONTIERA	ARRIVAL ARRIVO	QUAY BANCHINA	DESTINATION'S PLACE LUOGO DI DESTINAZIONE	BUYER'S WAREHOUSE MAGAZZINO COMPRATORE		PRINCIPAL TRANSPORT TRASPORTO PRINCIPALE
EXV EX WORKS — FRANCO FABBRICA (E)									D d — AGREED PLACE LUOGO CONVENUTO		
FCA FREE CARRIER — FRANCO VETTORE (F)	(T) D								d — AGREED PLACE LUOGO CONVENUTO		
FAS FREE ALONGSIDE SHIP — FRANCO LUNGO BORDO	D								d — ENBARCATION'S PORT PORTO D'IMBARCO		
FOB FREE ON BOARD — FRANCO A BORDO	D								d — ENBARCATION'S PORT PORTO D'IMBARCO		
CFR COST AND FREIGHT — COSTO E NOLO (C)	T D								d — DESTINATION'S PORT PORTO DI DESTINAZIONE		
CIF COST, INSURANCE AND FREIGHT — COSTO, ASSICURAZIONE E NOLO	T A D								d — DESTINATION'S PORT PORTO DI DESTINAZIONE		
CPT CARRIAGE PAID TO… — TRASPORTO PAGATO FINO A…	T D								d — DESTINATION'S PLACE LUOGO DI DESTINAZIONE		
CIP CARRIAGE AND INSURANCE PAID TO… — TRASP. E ASS. PAGATI FINO A…	T A D								d — DESTINATION'S PLACE LUOGO DI DESTINAZIONE		
DAT DELIVERED AT TERMINAL — RESO TERMINAL (D)	T D								d — DESTINATION'S PLACE LUOGO DI DESTINAZIONE		
DAP DELIVERED AT PLACE — RESO NON SDOGANATO	T D								d — DESTINATION'S PLACE LUOGO DI DESTINAZIONE		
DDP DELIVERED DUTY PAID — RESO SDOGANATO	T D d								— DESTINATION'S PLACE LUOGO DI DESTINAZIONE		

BASIC GROUPS - CATEGORIE FONDAMENTALI
- EX WORKS - FRANCO FABBRICA
- FREE - FRANCO
- CARRIAGE - TRASPORTO
- DELIVERED - CONSEGNATO

EXPENSES AND RISKS — SPESE E RISCHI — SELLER'S OBLIGATIONS OBBLIGHI VENDITORI

D Export Clearance — Sdoganamento in Esportazione
d Import Clearance — Sdoganamento in Importazione

EXPENSES AND RISKS — SPESE E RISCHI — BUYER'S OBLIGATIONS OBBLIGHI COMPRATORI

T It specifies the obligation to stipulate the freight contract — Indica l'obbligo di stipulare il contratto di trasporto
(T) It specifies the power to stipulate the freight contract — Indica la facoltà di stipulare il contratto di trasporto
A It specifies the obligation to stipulate the insurance contract — Indica l'obbligo di stipulare il contratto di assicurazione

Figure 40.   Incoterms© 2010 visual

The visual is impressive, conveying information equivalent to 38 pages in the downloadable Incoterms® 2010 guide. The benefits of the visual are threefold, 1) the various delivery terms can be compared, 2) the details for each delivery term are depicted, and the inter-dependencies of the many tasks are shown, and 3) it is multi-lingual. Incoterms® are an example of how universal contract simplification can be accomplished. The outcome is reduced page count, simplified clause language, and clear communication of interdependencies of various contract obligations.

The Incoterms® 2010 standardized model is a relevant example of a smart contract. As reviewed in Chapter 2, Technology, smart contracts are self-executing contracts on the blockchain. Incoterms® are conducive to automation because they are a formalized industry standard. Consisting of defined terminology, sequential actions and performance events that trigger the next event allow automated actions to be executed. In this case, record-keeping of these activities could occur in a decentralized environment where the record-keepers receive information that triggers the next sequential contract action. For example, IBM operates on the blockchain where record-keepers provide information regarding shipment status; there are collaborations outside the blockchain, with cross-validations with shipping companies and import-export controls to confirm

delivery (Cong & He, 2018). These computer-readable standardized contract actions at the building block level support the foundation for automating contract actions.

The most recent evolution in contract design are fully visualized contract documents. Unlike visualizing a contract clause, layout, or overall design of the document, a fully visualized contract is initiated in the same way as a comic book. The world's first fully illustrated contract was developed by Robert de Rooy and ClemenGold for Indigo Fruit Pty[90], Figure 41 (CreativeContracts, 2016). Also referred to as a comic contract, the focus at the start of the contract document development is to visually depict the contract relationship between the parties. Visualization is the primary way to communicate the information with text as the secondary element[91].

The main benefit of a fully visualized contract or a comic contract is that they help provide better access and understanding of contract terms, especially for parties with lower literacy skills, different native language, or education levels, to comprehend the information (Haapio et al., 2016). Furthermore, fully visualized contracts where parties are depicted as characters allow the relational element to be part of the contract document.

Depicting the parties as drawn humans makes the contract relatable to the parties involved. Images of the tasks and responsibilities assure that those who are illiterate can comprehend the information. In addition, supplementing the images with text helps specify the exact agreement on specific details; these can be added in as the parties discuss the agreement, for example, number of hours of work a week.

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[90] Indigo Fruit (Pty), is a company based in South Africa and employs people from various backgrounds and languages with many workers illiterate or with low literacy skills. The contract outlines the parties to the agreement, the work pre-requisites, equipment provided to start, the work expectations, the expected amount of fruit to be picked, the pay and discipline if the work requirements are not met. The pay and deductions are outlined in detail along with work hours, overtime, sick leave, absenteeism, and time off. There is a code of conduct and signature page. Each page is reviewed with the employee and initialized during on-boarding.
[91] To see the full contract, see https://creative-contracts.com/clemengold/
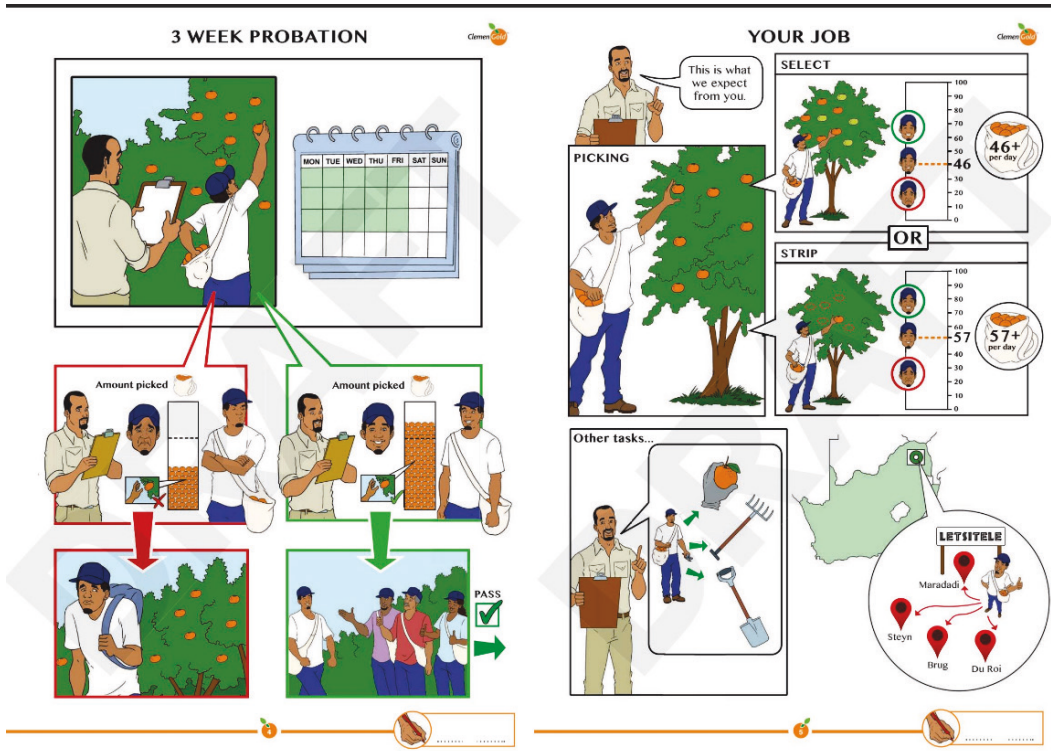
Robert de Rooy© and Creative Contracts (Pty) Ltd and ComiContracts™ © 2020. Used with permission.

Figure 41.   ClemenGold Comic Contract

Because a comic contract is developed as a visual depiction of the agreement with words and text only supporting the main drawing, this differs from how a user-centered design process approaches visualization. However, using common everyday words and short sentences supports translation into numerous languages, which Indigo has done.

The benefits of the redesigned contract were significant. For example, it reduced the on-boarding time from four hours to 40 minutes. Furthermore, the most notable result was the power of equality between the contracting parties, the illustrations show a mutual relationship. Nowadays, it is the contract in use at Indigo Fruit and it is legally binding (de Rooy, 2018).

To further illustrate how visualization can be extended as the primary design of a contract, a second example of a comic contract is presented in Figure 42. Aurecon is the first company in Australia to introduce a fully illustrated, visual, legally binding employment contract [92] (Aurecon, 2018). The contract has been

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[92] The contract is developed in partnership with Law Professor Camilla Andersen from the University of Western Australia.

successfully implemented in Australia and is in use today. The company is now rolling it out to additional countries, with the Philippines as the latest country (Aurecon, 2020). In the contract, Aurecon and its employees are represented by characters, and the images and graphic design are accompanied by the text in plain English, similar to the Indigo Fruit contract.

The positive results of the new design were a reduction of 4,000 words and the removal of legal jargon in the document (Aurecon, 2018). One benefit of the comic contract design is the flow of the information and infographic display that compartmentalizes the information into individual sections. The redesigned Aurecon employment contract is much more user friendly and promotes an environment of trust between the parties.
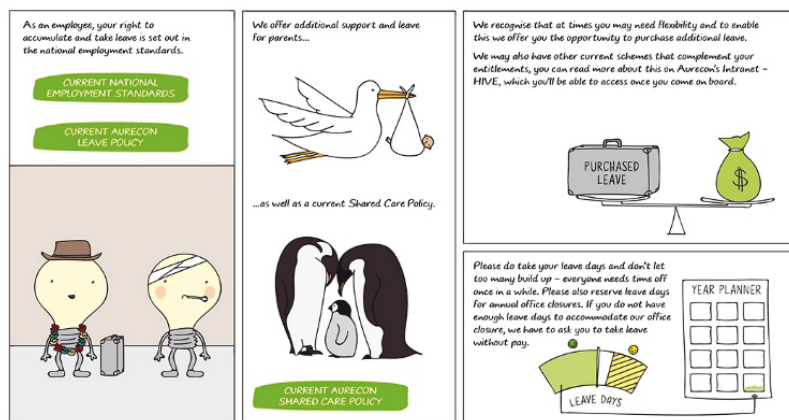
Images produced by Gemma Young/Aurecon in collaboration with the UWA Comic Book Contract project, led by Prof Camilla Andersen[93]. Used with permission.

Figure 42.   Aurecon Employment Contract

The question if a comic or visually illustrated contract is enforceable under the court of law is still under discussion. From a purely legal perspective, no court cases per se indicate that visualization in contracts provides less legal protection. On the contrary, Robert French, a former Chief Justice of Australia, said, if the meaning of the pictures in a contract are clear, then, of course, it is binding[94] (French, 2017). Many see an employment contract where both parties can

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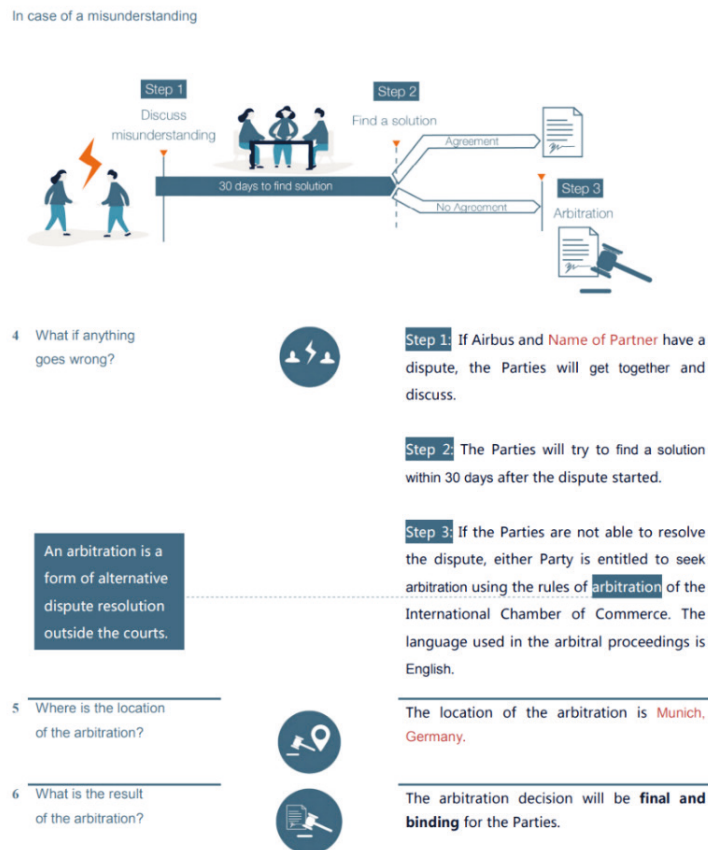[93] The contract is available in full at https://www.comicbookcontracts.com/aurecon-contract.

[94] Robert French was appointed Chief Justice of the High Court of Australia on 1 September 2008 and retired from that office on 29 January 2017.

understand and follow the agreed document as benefitting the employment relationship and proactively working to reduce misunderstandings and disputes.

Attempting to fully visualize a traditional B2B complex multi-page, black and white text-only document using the same approach as a comic contract is not reasonable. Starting with the idea of drawing comic characters to represent the parties would not be optimal in a complex business transaction. Even initiating a contract draft as a comic or fully graphic depiction with text as the secondary task would be challenging with the many various clauses, and extensive legal and regulatory language. However, using the user-centered design process can help initiate inclusion of visualization at the building-block level where some clauses might be primary presented by visual means.

Recently, Airbus Defence and Space released a redesigned NDA where the complex text was simplified by visual means using various information design techniques. NDAs are one of the most common contracts in B2B transactions. NDAs consist of many legal concepts common across most NDAs, such as the rights to intellectual property, rights governing data sharing, protection of confidential information, etc. In general, NDAs tend to consist of standard legalese language and technical terms that have an established meaning under contract law.

The team started the redesign of the existing NDA with a goal to simplify the document to make it user friendly, with an objective to have a document that builds trust and can be understood by everyone (Visual Contracts). In an interview with one of the team's lead member, Ines Curtis, she explained the process entailed engaging a multi-disciplinary team, consisting of individuals from the following departments: legal, commercial, contract management, innovation, finance, user experience (UX) designer, engineering, and procurement. In total, the project took about seven months. The first step in the process was a workshop, where the original document was evaluated by dividing and cutting the contract into pieces, role play, and other exercises. Once the key data was selected and the contract language reviewed, the contract was evaluated and modified to make it more two-sided. Implementing the new design resulted in a reduction in negotiation time from three to four months to 30 minutes (Curtius, 2020). Figure 43 shows an excerpt from the six-page document.

In case of a misunderstanding

Step 1
Discuss misunderstanding

Step 2
Find a solution

Agreement

30 days to find solution

No Agreement

Step 3
Arbitration

4 What if anything goes wrong?

Step 1: If Airbus and Name of Partner have a dispute, the Parties will get together and discuss.

Step 2: The Parties will try to find a solution within 30 days after the dispute started.

An arbitration is a form of alternative dispute resolution outside the courts.

Step 3: If the Parties are not able to resolve the dispute, either Party is entitled to seek arbitration using the rules of arbitration of the International Chamber of Commerce. The language used in the arbitral proceedings is English.

5 Where is the location of the arbitration?

The location of the arbitration is Munich, Germany.

6 What is the result of the arbitration?

The arbitration decision will be **final and binding** for the Parties.

Airbus Defence and Space GmnH©. Used with permission.

Figure 43. Airbus Defence and Space GmnH NDA

NDAs contain technical and legalese language; therefore, certain standard text left in text is the most optimal way to present the information. Using information design techniques to produce a clear layout and balance of text and design elements improved readability immensely.

The team used various design techniques, such as colors, shapes, and graphical depictions with plain English text to achieve one harmonized document. A comic design is integrated with the parties depicted as human characters to signal a relationship. The new design is an inviting document that does not provoke a feeling of cognitive overload as a traditional contract document may.

The end product is a contract that does not resemble a traditional contract document; rather it looks more like a user guide. In fact, the first page of the document is a process overview in a flow chart format, providing a comprehensive view of what is to come in the following five pages. Not considered a "comic"

contract per se, the agreement is a good representation of the future of what contract redesign implementing visualization and other design techniques can be.

5.3 Applying the User-centered Design Process to Contract Visualization

In this dissertation, I propose a user-centered design process to develop a contract document. Within this framework, as previously presented in Chapter 2, Figure 44, the "Design Solutions" phase is where visualization becomes an integral part. Visuals are important because they allow communicating information in a way that words alone cannot (Weiss, 2000). Similar to how structure simplification considers the end-users of the various building blocks and plain language principles considers the readers of the text, visuals in contracts consider the information type, the audience who are reliant on the information, and how to present the information most effectively.
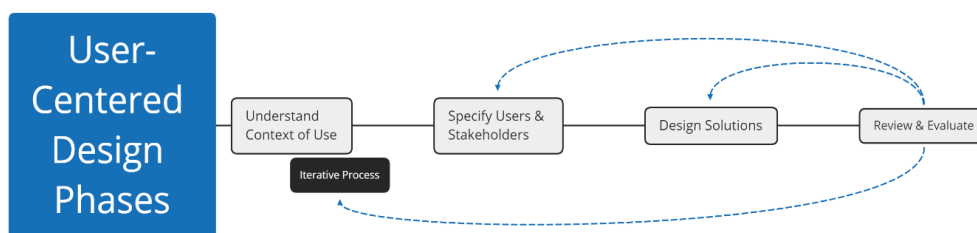
Image by Milva Finnegan©

Figure 44.   User-centered Design Process

When researching contract visualization and contract document design, in support of the design solution phase, the focus was on understanding what visualization is in relation to contract information, content, and users. The initial high-level review of contract content was then aligned with types of visualization examples. The analysis followed the user-centered design process, first assessing the content and context, second aligning the general users at a functional level, with a goal to produce a baseline framework for those new to considering visual design in contract documents. First, contract information was classified into three visualization groups to establish manageable data sets. The information type was categorized by content, users, and visual examples, Table 22.

Table 22.   Visualization Categories

Information Type	Content	Users / Stakeholders	Example Visuals
Data Visualization	Quantitative Data Categorized Data	Program Management Business Management Accounting Team	Bar Charts Line Graphs Tables Pie Charts Drawings
Process Visualization	Sequential Information/Tasks Specific Tasks	Logistics Team Technical Team Management Team	Delivery Diagrams Flow charts Swimlanes
Text Visualization	Technical terminology Titles and Headings Terms/Sentences of Art	Legal Team Contract Management Compliance Audit Team	Icons Color-coding Typography Layout

The purpose of the analysis and creating a relationship matrix between the categories is to summarize various visualization techniques based on the user-centered design framework. Categorization allows considering design ideas when identifying the contract content and initiating the draft document. The idea is to produce a process where users and stakeholders involved at the early phase of the contract development apply design thinking from the start.

Initiating contract simplification via the inclusion of visuals requires a process integrated into the contract development process. Using the user-centered design process, the selection of a design solution is performed on a building-block level. Alongside contract visualization, contract structure and language simplification are essential elements when depicting contract information via graphics and integrating other design techniques.

One approach to initiating redesigning contracts using visualization is the use of existing design patterns. Design patterns are reusable models that can be applied as specific design solutions for specific types of information or problem (Haapio &

Hagan, 2016). One existing library of tools that offers guides on redesigning traditional contract documents is the WorldCC contract pattern library [95]. The library consists of pre-developed models that guide how contract information can be clearly communicated in a user-friendly manner. Focused on information design and user-interface design the various patterns provide users with the practical tools to design and present contract information based on the purpose and the audience of the information. They are intended as reusable models integrated into companies' contract management processes to aid in organizing and communicating a contract so that it is read, understood, and acted upon (WorldCC et al., n.d.). With over 20 different patterns covering each phase of the contract lifecycle along with explanations and illustrations, anyone involved with contract documents can initiate and engage in improving contract design.

Contract pattern examples consist of clause libraries, contract document maps, delivery diagrams, flow charts, swimlanes, and more. The patterns extend across the entire contract lifecycle, recognizing that during various phases of the contract lifecycle information is used for different purposes by different users. All the library patterns have visual examples and is designed around an optimal user interface. The visual design makes the pattern library adaptable across a wide range of users and contract types. The guide is presented in plain English with an overview explanation and guide to introduce and educate the user what the pattern represents and what types of information are best suitable, followed by examples of contract redesign and simplification using real-life contracts. Reuse and duplication by practitioners to achieve standardization is the idea of the pattern library.

Contract patterns designed for contract documents are different from contract templates. The main difference is that patterns offer flexibility; templates on the other hand lack flexibility for tailoring the content. Another problem with templates is that they are static and often duplicated from one transaction to the next. In addition, templates tend not to consider end-users nor the importance of usability. Contract patterns, such as clause summaries, companion icons, and contract document maps, offer flexible guides for designing contract documents, which is the objective of moving away from traditional black and white text-only documents.

Using a contract outline and a building process of tailoring each clause to communicate the information as clearly as possible eliminates using prior

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[95] The Contract Design Pattern Library was originally developed by Stefania Passera and Helena Haapio. Part of WorldCC Contract Design Pattern Library new patterns and examples are added by contributions from scholars and practitioners in the field. Available at: https://contract-design.iaccm.com/

agreements as the starting point. Templates are replaced with an integrated process that reuses modifiable contract clauses, and assembly is done one building block at a time. The integrated reusable model contract outlines and the user-centered design process guides the task of incorporating visualization as the document is initiated; this eliminates re-writing or redesigning how parts or entire contracts' information is communicated later.

5.4 Visualizing Interconnected Information

Contracts contain a magnitude of information of which many are related and some dependent on each other. Complex information can be learned individually, one concept at a time. However, once multiple concepts must be comprehended at one time, they cannot be understood until they all are processed simultaneously (Paas et al., 2003). The challenge contract users face is that many interrelated contract terms and conditions are located in different sections of the document; this makes it challenging to consider interdependent information in the right context.

Visualization usually focuses on single clauses. Sometimes the visualized image may even extend to a group of clauses, which are presented close to each other. In all of these cases, the visualization manifests itself as a sort of transition from text to visual. The visual image simplifies and clarifies the information included in a certain section of the text. Then, the image is vital, but often only another way to present the same information.

An image or illustration can be even more. With the use of visualization, the information included in separate clauses and located in different parts of the contract can be combined and presented to produce a holistic view to provide context to the information. The critical concept is visualizing the inter-connectivity of the clauses.

Sometimes complex information can be a challenge to visualize; however, visualization provides an opportunity to simplify complex ideas. Visual techniques can improve comprehension of interrelated terms and the ability to communicate several concepts simultaneously.

How to select clauses and information that is well suited to be combined in one graphic depiction is not extensively researched in the context of contract drafting. The research focused on the document development phase when context is defined, connecting and depicting interrelated clauses located in different sections of the document in one visual. The ability to group together interrelated information can significantly reduce the cognitive load, improve comprehension,

and reduce processing time by the reader, when the dependencies between multiple requirements and obligations can be processed in one illustration.

To illustrate how inter-connected terms can be depicted simultaneously via visual design, a procurement contract in black and white, text-only format was examined. First, the inter-related clauses were selected via an analysis of the various building blocks related to obligations involving set dates and timelines. Related to the start and end date of a contract is the delivery dates, which are often tied to the start date. In addition, termination for delay in delivery is connected to the delivery dates. This type of analysis is part of the user-centered design process. The final selected inter-dependent clauses are delivery, term, termination, termination for late delivery, and extension rights and obligation clauses.

Next, a visual was drawn, Figure 45, to depict the various clauses' obligations and requirements into one graphic image. The inter-connectivity of the termination clause is dependent on the existence of a defined term or duration of the business engagement. Hypothetically until a contract term starts, a contract cannot be terminated. The termination clause outlines the rights to terminate, this can be based on the completion of an action or non-action by the other party. In the example timeline graphic, the specific deliverables are tied to specific delivery dates that if the supplier does not meet, the buyer has specific remedies. The remedies are a 5% discount per week off the price for the item not delivered within the agreed to date, not exceeding 20% discount off the price of the specific item not delivered by the agreed date. In the contract, the discount terms were included in the Termination for Default clause, and the delivery obligations were outlined in the Delivery clause; each located several pages apart.
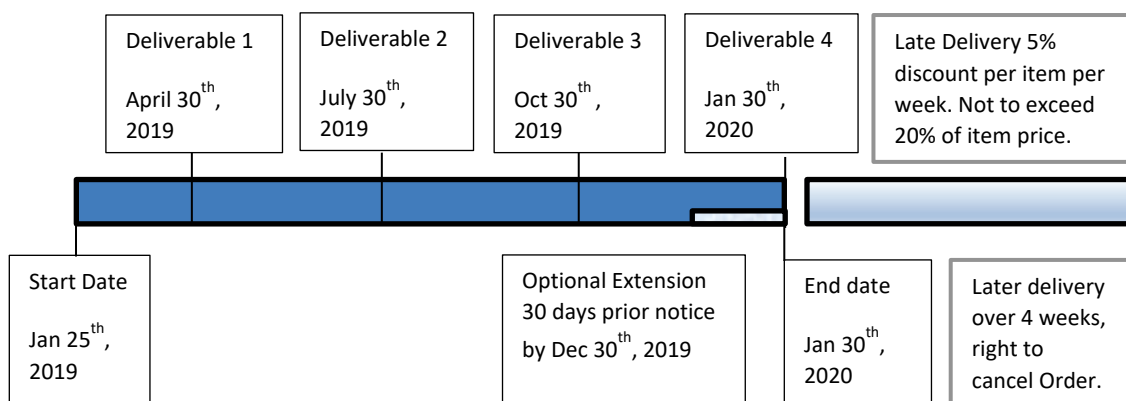

Image by Milva Finnegan©

Figure 45.   Interrelated Contract Terms

In the example illustration, the delivery clause has four set deliverable dates. The term clause states that the contractual engagement ends once the final delivery takes place. The term clause also includes a right to extend the agreement predicated on a requirement of a 30-day prior written notice. The interconnectivity of the delivery obligations and the term of the contract is depicted as a horizontal line indicating continuation and follows the CLT of how the human mind processes continuous activities. Deliverables and dates are identified via vertical tick marks to indicate separate events during the contract term. Color-coding is used to highlight breaks in the timeline, this is intended to highlight and bring attention to the critical information related to late delivery and extension obligations. Information design techniques employed in graphical illustration provide the tools to highlight different information with different importance. Drawing the reader's eye to the most important information helps present information clearly and unambiguously.

Furthermore, a four-week delay in delivery is defined as a Late Delivery, and the right to terminate for default is triggered. The remedy is the right to cancel the order. A termination for cause[96] clause provides for rights and remedies in the case of late delivery or failure to deliver. If the delivery date is missed the only way to prove late delivery and recover damages is if each specific delivery date is documented and the late delivery termination rights are both outlined in the contract. If no delivery date is specified, the late delivery damages might be argued to be non-enforceable.

Delivery clauses usually outline the milestone and delivery times, while a late delivery clause outlines the process and the other party's rights to recover damages. The two concepts are usually defined in two separate clauses within the contract document. The two clauses are integral together when drafting risk mitigation language to protect against non-performance. In addition, identifying an omission of an important clause, such as language detailing the rights of each party if the other party fails to perform, is improved when depicting the information in one visual image.

The text part of the visual graphics is essential. The text should aid in guiding the audience to follow and comprehend the information presented. In the illustration, the most important information contained in the term clause is included below the blue bar as text. Using text boxes around the text helps the reader identify the information as separate elements. Each deliverable identified above the blue bar

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[96] The "Termination for Cause", also known as the "T for C" clause, is common in most B2B contracts to protect parties against cost incurred if the other party does not meet the agreed delivery date or performance obligations. The concept for remedies is a central part of contract law. Specific remedies vary from contract to contract.

signals a timeline of activities. Late delivery terms are at the end of the timeline. The timeline starts from the left and progresses right to mirror the human intuitive reading approach[97]. Throughout the illustration, various visual aids are included to help the reader process the various information simultaneously, which purely textual clauses in different sections of a document could not.

Another benefit of depicting visually inter-related requirements is identifying and quantifying areas of risk that the contract terms impose on the company. For example, the opposite of a written extension requirement is an auto-renewal. Auto-renewals are a common type of contract term that is sometimes considered a risk mitigator to avoid a contract expiring. A contract that auto-renews might also provide for efficiencies and savings by not requiring a contract amendment to be processed. However, if inter-connected terms such as an auto-renewal is not reviewed as part of the specific transaction other risks might be present. For example, a price clause may contain price discounts that expire after the initial term[98], causing the price to increase when the contract auto-renews. Unaware of this, companies might not realize that prices increased when the contract automatically was renewed. If the price clause and term renewal clauses were identified as interconnected, the company could renegotiate the pricing prior to the renewal date to avoid a rate increase.

Another area where contract risk can be reduced by visualizing inter-connected terms in one graphic are the price, payment, and invoicing clauses. Without a price or cost reimbursement clause, payments can lag or not be made. Without invoicing instructions, payment amounts and timing or where to send the bill are challenging. These types of missing information create ambiguity and lead to delays in performance. Key elements of an invoicing clause, in addition to where to send the bill, are what triggers a payment. This can be based on dates or tied to specific performance events. If performance events are the triggers, then when performance is deemed complete, specific criteria are required to know when to invoice. Graphical depictions of such processes outline interdependencies in a manner that users can quickly process.

Combining multiple contract clauses in one visual to show inter-connectivity provides a context to requirements and brings forth clause dependencies. This can be beneficial when the contract document is developed to identify missing or contradictory information. It is also useful during contract performance to identify

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[97] Applicable only to those languages where text is read from left to right.
[98] Telephone companies publish online prices for services, but these rates, often called "rack" rates, are significantly reduced for a new customer or negotiated down when initial contracts are entered into. After the initial term the rates go back to the non-discounted rack rates, which can be significantly higher.

information, process, and requirements that are dependent on each other. This promotes collaboration across the many different functions and users relying on the contract to guide the successful completion of the contract obligation per the agreement between the parties.

5.5 Contract Visualization Beyond the Contract Document

5.5.1   Pre-award Visualization

The process of integrating design thinking into contract development has been outlined in this dissertation as being optimized when it is begun during the initial phase of the contract lifecycle. One benefit of starting the document draft at the initial phase is that the sales and procurement documents already have integrated visuals to communicate information in a multi-stakeholder environment (Bryan, 2018). Leveraging the information from the pre-award[99] documents, such as bid documents, negotiation documents, and proposal documents, is another replicable tool for introducing design thinking and visualization into the initial draft contract document.

A benefit of leveraging pre-award documents is that the proposal information that developers have is expert knowledge of the products or services to be sold or purchased. The individuals or functions are generally engineers, program managers, or other operational team members. The same functions, but not necessarily the same individuals, are also integral members during contract execution. The consideration is that the earlier the document development starts, the earlier different users and functions can contribute information that will help eliminate misunderstandings caused by different interpretations of the obligations between the pre-award and post-award teams.

The sales and proposal teams are a related discipline that contract document drafters can benefit from collaborating with. Proposal documents contain business-deal specific information written in plain English along with visuals, these could be leveraged in the contract document. Proposal documents are good examples of integrating user-centered design thinking in document design and of communicating the intended message clearly. In sales and proposal documents, the language and message are focused on the audience, and visual graphics are

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[99] The term "pre-award" is used in this dissertation to describe the actions prior to contract signature. It includes the various phases within the contract lifecycle from identification of the need to when the contract is approved for execution.

considered one of the most effective ways to persuade a customer to select the company's products (Newman, 2011). Developing a process where the proposal and sales documents are used as an input for the initial draft automatically brings information design principles into the process.

During the formation of a business relationship, legal terms are not at the forefront. Instead, details of the business transactions are. Legal language is not usually introduced, even though crucial terms such as term, delivery timelines, and risk of failure to perform may be discussed. The discussions, negotiations, and meeting minutes are documented in everyday business English that is plain English. Inherently, when users outside of legal participate in drafting the contract, plain English is naturally brought into the document.

The notion of contract documents serving as the roadmap throughout contract performance places high importance on how the final document will be used post-award. The contract document design needs to support and enhance the ease of communication of the contract content to drive successful contract performance to plan. Ultimately, the company expects to derive the planned economic benefit that was calculated before the contract was signed. Designing a contract that supports the execution team's needs can be a challenge, not only because the individuals who draft the contract are often different from the execution team but also because the focus on drafting a traditional contract document does not align with how the primary users utilize the information during execution.

Limited research has been done on correlating proposal document sections to contract document clauses and identifying content replication of opportunities. As a part of my research, I developed and taught a—Proposal Management and Contract Management course —as an adjunct professor at Saint Louis University, School of Professional Studies. During the eight-week class, ten students developed a contract using fictional proposal documents as the starting point[100]. Each fictional sales proposal document was developed independently by each student, following ten requirements outlined as a request for a proposal from a buyer.

Once the students had developed their completed proposal documents for their businesses, the contract document development phase commenced and was part of the student's final project. As part of the final project, each student was provided with a table of contents from a model contract. The assignment was to correlate the content back to their respective proposal's table of contents. The goal of this

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[100] The author taught the class for two semesters, fall 2016 and spring 2017. All class lectures and exercises were developed by the author. The students' work products were analyzed as part of this research.

task was for the students to identify what building blocks of a contract appear in both documents. Figure 46 and 47 show the contract table of contents and parts of the proposal table of contents below, with similar building blocks highlighted.

Table of Contents

Figure 46.   Contract Table of Contents

Proposal Table of Contents

1. Executive Summary
2. Product Specifications
3. Benefits
4. Pricing
5. Payment Terms
6. Warranty
.
.
.
.
.
12. Production and Installation
13. Schedule
14. Technical Support

Image by Milva Finnegan©

Figure 47.   Proposal Table of Content

The data gathered shows that many business terms stood out as a direct one-for-one alignment. This supports the notion that contract scope and product specifications are defined during the proposal phase. Product and service specifications are also usually negotiated by the program and technical people.

Furthermore, a great deal of financial and business-related information could be identified by title to be part of both documents. Breaking down essential business terms such as scope, price, delivery, and term, and then leveraging the proposal document information is one way to replicate and reuse proposal document information directly during contract document drafting.

Duplicating proposals or other business documents' content in a contract document is not explored much in published contract drafting research but is common in the practical world. For example, duplicating scope and technical specifications and adding an Appendix or Annex to a contract is a standard practice. Similarly, delivery schedules in visual form and the entire production and installation grant charts developed during the proposal phase in sophisticated scheduling software are often incorporated into contract documents. Warranty documents are a common part of sales documents and are often included in the contract document. It is important to note that any proposal, visual or text, to be leveraged in a contract document must be edited to ensure that open-ended promises used in sales tactics are tailored and accurately reflect the parties' final agreement. For example, statements such as "Our superior product can fly higher than any other aircraft" should be modified to state the airplane's exact specification, for example "the airplane can fly up to 50,000ft".

Below is an illustration of a visualized product specification from a proposal document (see Table 23). This exact information is part of the final agreement between the parties, but in the traditional contract[101], the information was written in text format. The proposal product specification table is duplicated to replace the text-only scope clause (see Figure 48). The visual design of how the information is presented has changed dramatically. Using a table design with clear color-coding for each type of bird provides an easy-to-read and -process way to communicate the birdhouse specification information. Furthermore, the table format of the specification can be printed and shared with the execution team.

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[101] The following examples and analysis of various approaches for redesigning or communicating about contracts are derived from a fictitious traditional contract between Nordic Birdhouses and Timo, Inc.

Table 23.   Product Specification from Proposal Document

Bird Type	Quantity	House Floor (in.)	House Depth (in.)	Hole Above Floor	Minimum Diameter of Hole (in.)	Location
Flicker	30,000	7x7"	16–18"	13"	2.5–3"	Bond County
Bluebird	20,000	6x6"	9"	7"	1 and 9/16"	Fayette County
Barred Owl	10,000	14x14"	26–28"	21–23"	6–8"	Hancock County
Woodpecker	40,000	6x6"	12–15"	9–12"	1.6–1.8"	Livingston County
TOTAL	100,000	units				

Image by Milva Finnegan©

Scope. The Buyer agrees to buy and the Seller agrees to sell and deliver to the Buyer one hundred thousand (100,000) unique bird houses ("Birdhouses") as agreed to herein. The Birdhouses shall meet the agreed-to specifications which include detailed size measurements per bird type, electronic monitoring devices and surveillance capability integrated. Each Birdhouse will have one side made from Plexi glass provided from Plexi Glass Corporation. For a Flicker Birdhouse, the house floor must be 7x7 inches, the house depth 16 to 18 inches, the hole above the floor shall be 13 inches and the minimum diameter of the hole must be 2.5 to 3 inches. The Seller shall deliver and install thirty thousand (30,000) Flicker Birdhouses in the Bond County national preserve in Illinois, USA.   For a Bluebird Birdhouse, the house floor must be 6x6 inches, the house depth 9 inches, the hole above the floor shall be 7 inches and the minimum diameter of the hole must be 1 and 9/16 inches. Seller shall deliver and install twenty thousand (20,000) Bluebird Birdhouses in Fayette County national preserve in Illinois, USA. For a Barred Owl Birdhouse the house floor must be 14x14 inches, the house depth 26 to 28 inches, the hole above the floor shall be 21 to 23 inches and the minimum diameter of the hole must be 6 to 8 inches. Seller shall deliver and install ten thousand (10,000) Barred Owl Birdhouses in Hancock County national preserve in Illinois, USA. For a Woodpecker Birdhouse, the house floor must be 6x6 inches, the house depth 12 to 15 inches, the hole above the floor shall be 9 to 12 inches and the minimum diameter of the hole must be 1.6 to 1.8 inches. Seller shall deliver and install forty thousand (40,000) Woodpecker Birdhouses in Livingston County national preserve in Illinois, USA.

Figure 48.   Contract Scope Clause

Another example from the same contract is the delivery obligations and other inter-related events. A contract's start date, meeting dates, design reviews, payment terms tied to specific milestones, and other time-driven information are often included in various clauses in the contract. Depicting timeline-related events in one visual is common in a proposal document. One such example is shown in Figure 49. Establishing a graphic illustration of the delivery clause that includes other inter-related delivery or important dates upfront is critical. Duplicating the proposal schedule and developing it during negotiations can assure that the exact agreement between the parties is documented in the contract correctly.

Timeline Milestones	2017						2018					
	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE
Project Awarded	1 July											
Kick Off Meeting	15 July											
Design Presentation/Approval		15 Aug										
25% Payment		30 Aug										
Concept Build Out/Approval				15 Oct								
25% Payment				30 Oct								
Build Out				16 Oct								
Shipping												
25% Payment								30 Feb				
Installation & Acceptance of all Deliverables												15 June
Final Payment												30 June

Image by Milva Finnegan©

Figure 49.   Delivery Schedule from a Proposal Document

Computer software today can produce advanced delivery schedules that are used in pre-award and post-award contract management. Functionality similar to a scheduling software application could be integrated into contract management software to produce visuals as the contract information is documented. The computer obtains the contract-specific details from drafters inputting specific dates and events, for example, via an input screen, two-way conversational interface, or data tagging. The system can automatically produce a visual depiction of the interrelated information based on the type of visual programmed as the model. This type of computer feature is the future state where contract visualization is an automatic output, eliminating the need to design each building block each time a new contract is completed.

The three examples provide support for three key elements that contract visualization strives to achieve: 1) leveraging documents such as proposal, sales and negotiation documents, to reuse visuals, and reduce or replace traditional legalese language or long paragraph style writing, 2) individuals with the specialized knowledge produce the document in a language and design that is common for them that will then support post-award execution performed by the

same functions, aligning pre-award and post-award information transfer, and 3) sets the foundation for automating contract visualization.

5.5.2   Post-award Contract Visualization

Communicating information about the contract content and obligations after contract award is essential. Post-award contract visualization, when complex contract information can be presented in simplified form, can improve the communication about the contract and add value to business operations and contract management activities. After a contract is executed, the contract requirements and obligations are communicated internally to the teams. It is common practice to e-mail the final contract to all the team members who are part of the execution phase. This is where the pre-award to post-award information transfer often fails.

Post-award contract information communication is equally critical after contract award, if not more important, as the document serves as the one single reference point for successful execution. During post-contract award activities, the contract information should be dissected and aligned with the different users and functions responsible for a specific area of operations. Consideration should be given to which users need which information. All users do not need the entire contract document. A document structure with a clear outline of the building blocks can bring efficiencies when providing post-award contract information to specific users. The ability to easily identify the content and the inter-related clauses along with the identified user groups further guides the task around which users need which information.

Sometimes information is needed about the contract but in a different format. A common division of visualization is visualization *in* contracts and visualization *about* contracts (Haapio et al., 2016). Both are part of contract visualization but might produce different types of visuals. In the post-award stage, visualization about the contract takes center stage.

Examples of contract content that might be visualized post-contract award are information about the anticipated expenditures to perform the contract, resources needed, and sub-contractor requirements. The purpose and use of the information can vary a great deal. A few examples of the types of information that are usually not in a direct, usable format in a contract document are:

1. Movement of money, i.e. inflow and outflow of dollars based on the agreed delivery timing: the corresponding payments is critical for company cashflow management.
2. Staffing needs, i.e. human resources planning for staffing needs is derived from the contract scope, delivery terms, and support requirements.
3. Risk planning, i.e. liabilities, warranties, and insurance requirements are an important part of risk management activities

Part of presenting this type of information often requires the contract terms to be translated into dollar values. Figure 50 is a visual financial summary of a contract that shows the revenue, earnings, and cashflow over the life of the contract, along with total revenue, earnings, net earnings, and maximum negative cashflow by year. This type of contract visualization is especially beneficial for management and executive briefs.

Furthermore, the tracking of contract performance throughout the contract's lifecycle summarized in a visual form helps teams quickly identify any overrun or deviations from plan. Most CLM systems today include some type of contract dashboard that shows contract performance. In addition, robust reporting features allow reporting on any type of performance information that is managed within the system.
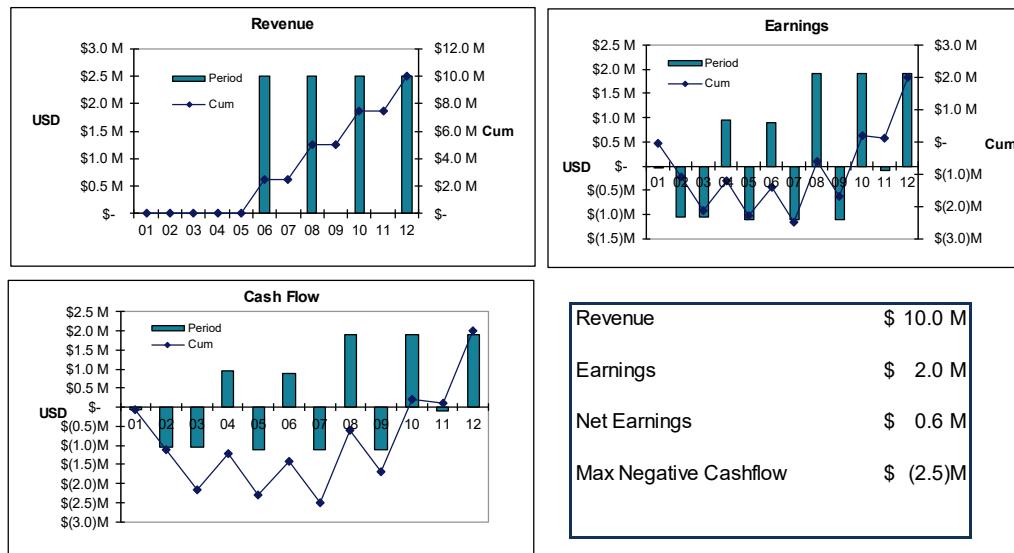

Image by Milva Finnegan©

Figure 50.   Contract Financial Summary

The example financial summary includes several key financial indicators that are tracked throughout contract performance. The top left square shows revenue by

year and cumulative amount. This illustration of the contract, developed after the contract was executed, shows the negotiated and expected financial return from the transaction. In contract management, revenue tracking and earnings are often tied to delivery. If a delivery is delayed, it could significantly impact company revenues, earnings and cashflow. This type of financial tracking about the contract is a type of visual tool to manage contract operations throughout the lifecycle of the contract.

Another key company financial activity tied to contracts post-award is the resources needed to perform the contract obligations. For example, human resources rely on this data to hire or assign the needed number of individuals to perform the work. The contract document does not usually include details about staffing or personnel needs to perform the transaction because contracts tend to outline the agreed-to outcome, not how each company plans to execute it[102]. Figure 51 is an example visual showing the staffing needs by year in a moderately complex production contract. As the chart illustrates, the quantity of product deliveries demands an immediate ramp-up in production personnel. Additional staffing requirements are the warranty services after product delivery, the surveillance system requirement for specialized personnel, and the maintenance of the products for up to ten years. When all the requirements are translated into headcount requirements by type of activity, the total resources needed can be easily identified and used for planning and execution purposes. These types of visuals are critical for large-scale projects or programs where dedicated staff is hired to perform a specific tasks.

Image by Milva Finnegan©

Figure 51.   Contract Staffing Requirement

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[102] Exceptions are Cost type or Time and Material type contracts.

In both pre-award and post-award visualization, the user-centered design process is applicable. The design technique or method should be chosen based on the context and the audience. Pre-award visualization can significantly benefit from reusing information from proposal and bid documents, especially sections that are visualized. Post-award visualization is often *about* the contract and communicates key information to support a company's financial and resource planning.

One argument against using visuals and deviating from traditional contract design is that the traditional, tested contract clauses provide the essential contract law protection. However, a recent ruling from the High Court of Justice, Business Property Courts of England and Wales (Altera Voyageur Production Limited v. Premier Oli E&P UK LTD, 2020) shows that courts do take into account the context of the specific transaction. In essence, the court ruled that illustration and worked examples are integral parts of a contract and are means by which the true mechanics of a formula will work and be part of the contract. The ruling also brought forth that illustrations and examples are integral to B2B contracts and not just financial contracts (Covington & Burling LLP, 2020). Thus, the traditional view can be challenged, especially if the reason for continuous duplication of the traditional contract language and clauses is driven by familiarity and personal preference.

For contracts to function well, the requirements must be accurately recorded and the document needs to work as an effective communication tool (Robert et al., 2016). Integrating visuals can bridge the gap between how different people comprehend and interpret information. Depending on the intended audience, the approach to how the information is communicated will vary; this is true for any scientific or data visual design (Krause, 2017). The contract users are the contract designer's audience, and clearly communicating the information to the varying users and contracting parties requires a user-centered design mindset.

6 FROM THEORY TO PRACTICE

The research for this dissertation started with pondering the causes and effects of the ever-increasing complexities in current B2B contract documents. The objective was to explore how contract documents can be simplified. The outcome of the research identified three distinct design areas that should be considered when developing a contract, structure, language, and visualization, each presented in Chapters 3, 4, and 5, respectively. These three distinct approaches, when combined, are proposed as the solution to producing one holistic simplified document.

Integrating design thinking as part of contract development focused on the theory that a user-centered design as the framework is the key to shifting to a new mindset of designing contracts versus drafting contracts. The research results indicated that a distinct user-centered process showed improvements in readability, usability, and overall user experience when applied consistently throughout the entire contract development process.

The traditional contract drafting approach tends to start with a document of continuous text. The research indicated that the approach of initiating a new contract document from a prior contract, often duplicated it in its entirety and then edited, is one reason why the traditional contract form continues to persist. The traditional document form is also taught in law school to be text only, even though it is acknowledged that the document is difficult to read and comprehend.

Gradually, integrating information design and user-centered design in B2B contract documents to improve readability and comprehension is taking place. This change in both the design and content is driven by how contracts are generated (Haapio, 2020). More and more contracts are "built" rather than copied. Building contracts in modular form offer flexibility to the drafters, with clause libraries and model contract outlines as a framework rather than inflexible template contracts. A modular building process allows tailoring the content and design at the clause level to the intended audience.

Accelerating this trend is abundant contract-specific technology, smart contracts, and computable contracts that allow the automation of certain tasks currently performed by humans. In today's world, technology is a necessity to bring efficiencies and improve the user experience when engaging with a product; this observation is universal to any industry. In the field of contracts, innovative technology companies are introducing tools that support the integration and automation of contract simplification and redesign in the contract development process.

How the theoretical ideas presented can be implemented in the real world was considered an essential element in the dissertation to build the bridge between theory and practice. Because of the growing complexity of B2B contract documents and the environment they operate in, technology is the enabler of implementing the theoretical ideas and tools presented in company business operations.

The contract lifecycle analysis brought forth the dynamic multi-disciplinary and multi-user environment contracts exist in. The idea to integrate users and stakeholders from various departments and functions requires assigned access to specific contract content and configuration control. The many technologies available, reviewed in Chapter 2, include such features and automate many manual tasks.

To test the proposed user-centered design process, an experiment was conducted to redesign a traditional black and white, text-only, B2B purchase agreement. The agreement selected, written by the author, is between Nordic Birdhouses, Ltd. and Timo, Inc., included in its entirety as Appendix 3, referred to as the "Birdhouse contract" hereafter. Figure 52 is the first page of the Birdhouse contract, a text-only document in the traditional form of continuous black and white text with limited white space. The initial look of the document signals a complex document.

A readability test using the Flesch-Kincaid grade level test, the same as that performed in Chapter 2, yielded a grade level score of 13.6 (Readability Formulas, 2020). Translated into the US education system, a score of 13.6 is equivalent to completing a high school degree and two years of college.

To start, the user-centered design process was used as the framework. Next, each of the design areas structure, language, and visualization ideas presented were explored, focusing on how to communicate the information most effectively to the intended audience. The goal was to improve the structure and layout, review the language, and consider the overall design by building block, to produce a holistic, simplified contract document that is easy to read, comprehend, and is user friendly.

Focusing on design thinking, a problem-solving mindset how to improve the contract design was integral to shifting away from the purely legalese writing approach. In the process, only Microsoft Word, Excel and PowerPoint tools were used to redesign the document. The document was reviewed clause by clause and the redesign included changes to structure, language and integrating information design techniques.

Purchase and Sale Agreement

THIS PURCHASE AND SALE AGREEMENT ("Agreement") is made as of August 14th, 2013 (the "Effective Date") between Nordic Birdhouses Ltd ("Seller") and Timo Inc. ("Buyer"). Seller and Buyer are collectively referred to as the "Parties".

NOW, THEREFORE, in consideration if the mutual covenants and conditions contained herein, the Parties hereby agree as follows:

Scope. Buyer agrees to buy and Seller agrees to sell and deliver to Buyer one hundred thousand (100,000) unique bird houses ("Birdhouses") as agreed herein. The Birdhouses shall meet the agreed specifications (Appendix 1; "Specifications") which include detailed size measurements per bird type, electronic monitoring devices and surveillance capability integrated. Each Birdhouse will have one side made from Plexi glass provided from Plexi Glass Corporation. For a Flicker Birdhouse the house floor must be 7x7 inches, the house depth 16 to 18 inches, the hole above the floor shall be 13 inches and the minimum diameter of the hole must be 2.5 to 3 inches. Seller shall deliver and install thirty thousand (30,000) Flicker Birdhouses in Bond County national preserve in Illinois, USA. For a Bluebird Birdhouse the house floor must be 6x6 inches, the house depth 9 inches, the hole above the floor shall be 7 inches and the minimum diameter of the hole must be 1 and 9/16 inches. Seller shall deliver and install twenty thousand (20,000) Bluebird Birdhouses in Fayette County national preserve in Illinois, USA. For a Barred Owl Birdhouse the house floor must be 14x14 inches, the house depth 26 to 28 inches, the hole above the floor shall be 21 to 23 inches and the minimum diameter of the hole must be 6 to 8 inches. Seller shall deliver and install ten thousand (10,000) Barred Owl Birdhouses in Hancock County national preserve in Illinois, USA. For a Woodpecker Birdhouse the house floor must be 6x6 inches, the house depth 12 to 15 inches, the hole above the floor shall be 9 to 12 inches and the minimum diameter of the hole must be 1.6 to 1.8 inches. Seller shall deliver and install forty thousand (40,000) Woodpecker Birdhouses in Livingston County national preserve in Illinois, USA.

Electronic monitoring devices and surveillance capability shall be fully integrated to allow for monitoring at the bird center headquarters located in Vandalia, Illinois (Bond County). Electronic monitoring devices shall have satellite signal capability allowing for remote surveillance.

Term and Termination. This Agreement shall commence on the Effective Date set forth above and, unless terminated sooner in accordance with the terms hereof, shall continue for two (2) years after the Effective Date, unless extended in writing, via an amendment to this Agreement, signed by both parties. Notwithstanding anything to the contrary herein, this Agreement may only be terminated by either party as set forth in this Agreement for default or Force Majeure event. Either party is bound to the specified performance as agreed to in this Agreement.

Delivery. Seller agrees to deliver all 100,000 Birdhouses within 12 months of the Effective Date. Seller agrees to deliver all Birdhouses installed on-site at the various county preserves in Illinois, USA as outlined in Section 1. Seller agrees to hold a Design Review ("DR") after three (3) months from the Effective Date outlining a computer rendering of the final product including detailed drawings of the surveillance and monitoring system. Within fourteen (14) days after the completion of the DR Buyer agrees to send written notifications of its approval of the design. Should Buyer not approve the design outlined during the DR the Parties agree to hold a second DR two (2) months after such notice date and the program schedule shall be extended by two (2) months as well. Seller shall deliver a prototype to Buyer's facility within one (1) month after the design approval. Final Pre-Delivery inspection shall be conducted by Buyer two (2) weeks prior to Lot 1 delivery schedule for March 14th, 2014. Lot 2 delivery is scheduled for May 14th, 2014 and Lot 3 is scheduled for July 14t 2014. Each lot includes various Birdhouse types as agreed by the Parties during the DR. Lot 1 delivery shall be 20,000 Birdhouses, Lot 2 30,000 Birdhouses and Lot 3 shall be the remaining 50,000 Birdhouses.

Figure 52.   Excerpt from Original Birdhouse Contract

The process of redesigning the contract was done in steps. Imagining what a user-friendly interface is and thinking about other products or documents we use daily that are well-designed provided ideas. To start the daunting task of redesigning a traditional contract document, an initial skim through of the clause headings was used to initiate the process. During this process, highlighting the various building blocks by clause title helped identify the main content. In the Birdhouse contract, the clause titles are clearly marked in bold, making the task easier; but this is not the case for all contracts.

Structure simplification is the first idea conceptually presented in Chapter 3: how to simplify a contract document. The idea is that content should be defined as individual building blocks which when combined, form a contract document. Defining the content of the contract by building blocks allows assessing the content as independent concepts. From there, related clauses can be tagged by highlighting each grouping of clauses with a different color.

Using the four user-based categories to group the building blocks of a contract helps summarize the massive amount of information into manageable pieces. Implementing the four user-based categories proposed in Chapter 3—business, technical, legal, and administrative clauses—provides an outline for the drafter to align each building block by clause title with a user group.

Using a relational concept map, presented as a tool in Chapter 3, each building block was aligned to a specific user or user groups. The user groups are the first layer of the contract content and the building blocks by title are the second layer (see Figure 53). This approach of layering greatly simplifies the contract content in a summary view. Now users can quickly navigate to any specific clause.
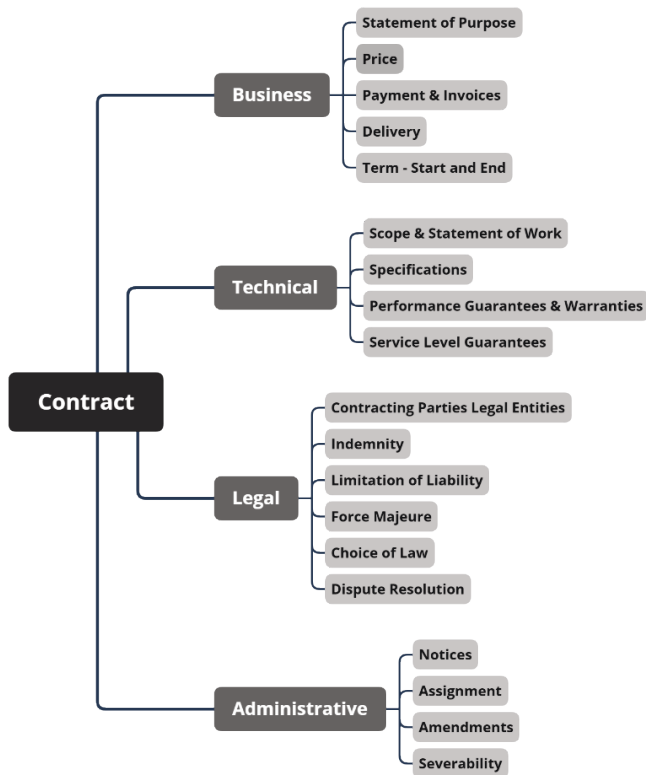
Images by Milva Finnegan©

Figure 53.   Birdhouse contract content map

Technology has made contract assembly flexible, with clause libraries and questionnaires that automatically generate a model contract or contract outline. With drag and drop features and in-text highlights, users are guided to edit the

contract within the contract document. However, the full-text clauses and a continuous text document are still the prevailing format.

Automating a relational concept map for contracts, called a contract map, is a new tool to initiate and create a contract document via the building blocks approach. The contract creation process focuses first on high-level concepts, the building blocks. Many similar concepts can be found across varying types of contracts, even though the specific language varies. Computers can identify a concept at a heading level, for example, scope, price, term, limitation of liability, choice of law, and generate similarity reports to summarize contract building blocks.

When using a contract map for the building blocks approach, the difference in the contract development process is the layered view from a macro-level to a micro-level of the contract content. Contracts are read strategically, and different users read the document at different levels; some users skim-read to get an overview of the content, others look for specific information, while some try to solve a problem. Visually depicting the structure provides an easy-to-navigate outline that allows users to quickly and accurately move between the various parts of the document.

A contract map allows the transaction-specific information to be entered in a building blocks structure. The user-friendly design mirrors a flow chart with a "fill in the blank" input screen where the structure is layered by user category first, then clause heading to further helps users find the specific location of the information they need.

Figure 54 is an example of a technology solution that builds a contract from a contract map. Created by Agreemap©, the main business terms in the Birdhouse contract are entered into the satellite map when transaction details are finalized. The transaction details can be entered by multiple users. Visual cues are integrated to help guide users; for example, the transaction details are entered in boxes that are indicated with a solid color.
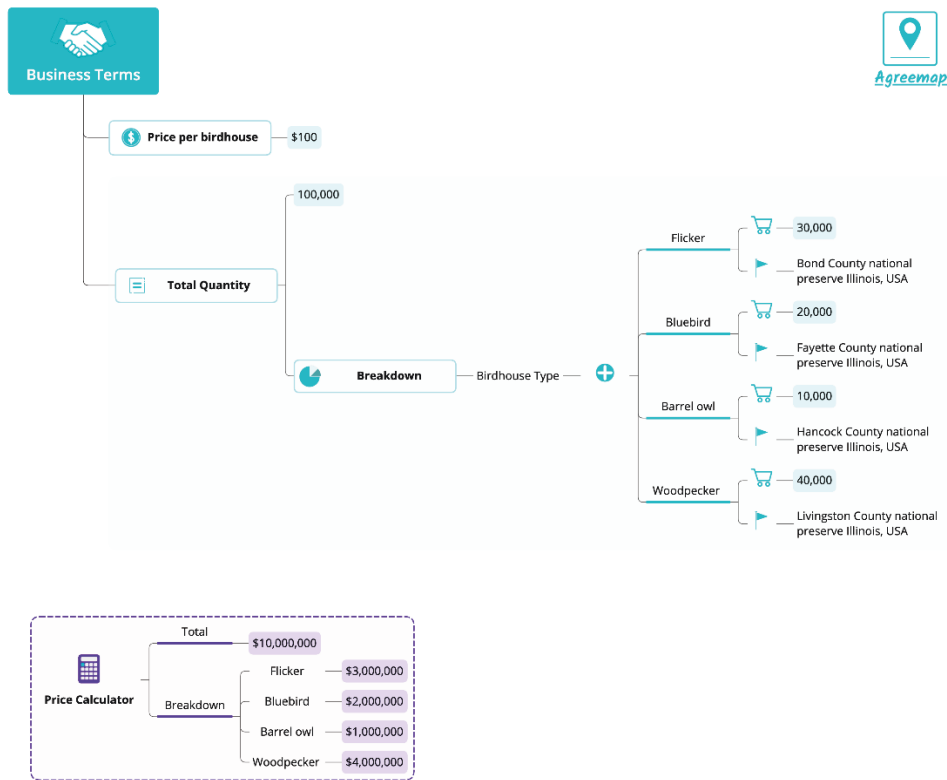
Images created by Nitsa Einan, Agreemap©. Used with permission.

Figure 54. Birdhouse Contract Map

The Agreemap© tool is developed on the theoretical idea of a relational concept map. The content alignment is defined at a higher level, not full sentences, and information is entered in a flowchart view, creating a contract map outline. The flexibility of the tool allows the information and development of the transaction details at any time. Furthermore, multiple users can work in the same system. This type of a tool can be used both pre-award and post-award. A full clause contract document can be generated at any time by the push of a button.

Automating contract negotiations and contract document creation via a building-block approach provides flexibility and efficiencies. Because actual contract clauses are the sequential step after transaction-specific details are entered, the overwhelming view of pages of text is eliminated. Using visual design tools to create a user-friendly input screen further supports the structure simplification idea.

Technology offers multiple additional capabilities such as automatic formulas and connecting terms, for example, calculating the total price, as shown in the purple

box in Figure 54. Additional features that combine related terms create visual graphics such as diagrams or flow charts to define inter-dependencies via visual means. With technology, contract information can be broken to the meta-data level and summarized in endless way. Dashboards and other visual depictions of contract information are already common in business operations.

The benefits of a visual map are threefold. First, the layered outline is easier to read than a complete contract clause. Second, related clauses can be grouped together to help guide users to fill in the required information, reducing omissions. Third, a logical flow using the user-categorization as the first level helps users locate information quickly. The terminology is in everyday business English; no legalese or technical contract terms are considered in this initial view, making it easy for any user type to engage and comprehend the contract content needed.

The visual design in the example illustration is excellent. The information is clearly laid out, easy to read, and the input fields are user friendly. The input fields are marked with solid-colored cells for easy identification. Color-coding is used to identify the price calculator as a formula-driven clause. Choosing a flow chart type of graphic works well when information is inter-dependent. Inter-related terms can be quickly processed, as it is displayed on one screen, reducing the cognitive load.

Implementing a contract map leveraging technology supports standardizing the contract development process. Technology offers extensive additional features to organize, manipulate, and group information once the inputs are entered. For example, inter-related terms can be selected to produce a visual depiction. The building blocks can be organized in any desired order by simple clicks. Most importantly, the human interface, essential in contract drafting, is integrated into the process.

Once the transaction details are entered into the system and the building blocks selected for inclusion, a contract document is generated. The layered outline by the four user groups, followed by clauses by title, creates the table of contents. Figure 55 is the table of contents for the Birdhouse, generated after the content was selected and arranged. During the content documentation and selection of clauses, titles changed, clauses were rearranged, and some clauses were combined.

Table of Contents

Image by Milva Finnegan©

Figure 55.   Birdhouse Contract Table of Contents

After a contract outline is developed, the full-text contract clauses are reviewed. A multitude of building blocks are available in the system, like in a clause library. However, in contrast to copy-pasting a complete contract or clause, the model contract is generated after the transaction specified details are entered and clauses selected. The same benefits clause libraries offer to duplicate company approved clauses, identification of fallback clauses, and other "playbook" guidance can be built into the tool.

Next, the specific language and writing is reviewed by clause. As described in Chapter 4, language simplification is an essential, independent step in the process. With or without technology aids, contract language simplification is a critical element to make contracts easier to read and comprehend. Also, to create visuals or summaries of information, complex text needs to be simplified. Duplication of existing contract clauses and legalese language should be evaluated and changed to align with plain English principles when possible. In this phase, the language is

evaluated to align with the specific end-users, who will need the information to perform their jobs.

The plain English guidelines developed by the Plain Language Standards Committee and in review by the ISO TCP37, defined in Chapter 4, is a standard that can help transform traditional legal writing into plain English. The key consideration is to tailor the language to the end-users, the audience of the text. Because there are many users, including lawyers, a contract will ultimately include both plain English and legalese. Furthermore, integrating company-specific terminology and approved language, and any company style guides are part of implementing language simplification.

Taking the theoretical ideas of plain English writing in legal documents, some clauses in the Birdhouse contract were rewritten. The changes included replacing legalese terminology with plain English words when the meaning did not change, rewriting sentences to adhere to standard grammar rules taught in school, removing jargon, and eliminating synonyms and any duplication of information to be clearer. Reducing ambiguity was the focus to minimize different interpretations.

Automating the conversion of legal writing into plain English can be tricky because of the non-existence of standard language or controlled contract language. With all companies and users selecting preferred terminology and writing rules, the current state of contract language simplification is not standardized. Some degree of standardization is required for a universal codable language to exist.

Conducting a test of automating the conversion from legalese to plain English, the Confidentiality clause from the Birdhouse contract was converted using the Skritswap[103] tool. The Skritswap tool is built on plain English principles. Figure 56 is the original clause and Figure 57 the converted clause. The system converted only part of the text and human editing was required to complete the task.

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[103] Skritswap®, offers a conversion tool that converts complex documents, such as, banking, insurance, contract government legislation and website/app privacy policies and terms, and by using plain English guidelines to produce clearer documents (Skritswap, 2020).

Confidentiality. To the extent approved by the regulation, the events may need, every so often and in reference to work contemplated beneath this Agreement, to reveal confidential data to one another ("Confidential Info"). Every party will use their best efforts to stop the disclosure of any of the opposite party's confidential information to any other party for a period of three years after termination of this Agreement. The Parties shall keep confidential, and shall not disclose at any stage to any third parties, the existence and content of this Agreement as well as any confidential information received from the other Party or otherwise learned in connection with this Agreement without the prior written consent of the other Party. The Parties shall not use confidential information received from the other Party for any other purposes than the proper performance of this Agreement. Confidential Info of the disclosing party shall not be deemed to include: (a) is already within the recipient party's possession at the time of disclosure thereof, (b) is or later turns into a part of the general public area by way of no fault of the recipient party, (c) is acquired from a third party having no obligations of confidentiality to the disclosing party, (d) is independently developed by the recipient party, (e) is required by regulation or regulation to be disclosed.

Figure 56.   Original Birdhouse Contract Confidentiality Clause

Confidentiality.

Events may need to share confidential data with one another ("Confidential Info") now and then, related to work done for this Agreement, to the extent allowed by the regulation. Every party will try their best to avoid sharing confidential information of the other party to any other party for the next three years after this agreement comes to an end. The Parties shall not share the confidential information with anyone else, at any time except when the disclosing party gives a written consent. This information includes:

- the existence and content of this Agreement
- any confidential information received from the other Party
- any confidential information learned in connection with this Agreement

The Parties shall not use confidential information received from the other Party for any other purposes than the proper performance of this Agreement. Confidential Information of the disclosing party shall not be deemed to include:

(a) is already within the recipient party's possession at the time of disclosure thereof
(b) is or later turns into a part of the general public area by way of no fault of the recipient party
(c) is acquired from a third party having no obligations of confidentiality to the disclosing party
(d) is independently developed by the recipient party

Figure 57.   Converted Birdhouse Contract Confidentiality Clause

The actual text remained fairly unchanged. The changes related mostly to shortening sentences, changing the grammar, and replacing some words with more common English words. Analyzing legalese language to standard English equivalent words, the word "shall" is suggested to be replaced with "will." Also reducing unnecessary words, for example, simplifying "comes to and end" by writing "ends" makes the writing clearer.

The conclusion that can be drawn from using technology to convert complex legal text is that significant human interaction is still required. Full conversion would require further standardization for the system to convert a more significant amount of the text.

Analyzing the impact on readability, the Flesch-Kincaid grade level test was conducted for both clauses. Using kResolve[104], a contract-specific readability tool to calculate the readability score, the grade level score between the original and converted confidentiality clauses were reduced by two grade levels, from 15 to 13. The two clauses are still both in text only form and contain a similar number of sentences. The outcome that can be concluded from the readability test is that even small changes to improve readability, such as shortening sentences, can have a significant impact on readability.

Testing the ideas presented in Chapter 5, visualization is another tool to further decode complex writing. Integrating information and communication design to improve document readability is different from re-writing text. As reviewed in Chapter 5, choosing to present the text via visual means and incorporating information design techniques to make the overall document more readable, comprehensible, and usable is an additional step in the simplification process. This can be completed in conjunction with the language review or afterwards.

Employing design thinking is essential when focusing on visual means to display information. Without training in the field of design, focusing on layout and presenting information in graphics such as tables and flow charts was the natural approach. Visualization does not have to be extravagant; even lines, colors, font sizes, etc., are part of simplifying and making a contract easier to read and comprehend.

To illustrate, the first page of the traditional Birdhouse contract consisting of dense, continuous text, with limited page breaks, and essentially lacking any information design techniques, was redesigned, using lines, colors, numbering,

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[104] Available online https://www.kresolve.com/. kResolve uses the Flesch-Kincaid reading formula outlined in Chapter 2. The tool also provides readability options outlined in the document to highlight named entities, defined terms, obligations, and legalese.

and bold font; adding white space; grouping related concepts together to improve the ease of finding specific clauses; identifying information and overall readability of the document. This is the "design solution" phase of the user-centered design process.

Selecting graphical means to depict complex writing, the information type was related to content and users to determine what visual would be optimal. The research in Chapter 5 indicates that data visualization, often consisting of qualitative data or categorized data, is well suited to be depicted in a table. The information in Clause 1. Scope, related to business terms, was especially challenging to comprehend because the various birdhouse types, quantity and locations were written as continuous text in one paragraph. Figure 58's table was created to summarize information using Microsoft excel. The result is a clear display of the quantity of each birdhouse type and the location in which they are to be installed.

Image by Milva Finnegan©

Figure 58.   Redesigned Birdhouse Contract Page

Next, the idea of visualization by replacing or supplementing text with graphics or images was tested. Visualization of inter-related terms, analyzed in Chapter 5, is a way to reduce the cognitive load of processing complex contract information. Duplicating the design techniques from the existing Incoterms® approach of visualizing inter-related clauses, related to the delivery obligations, a visual depiction of the Birdhouse delivery terms was created (see Figure 59). The agreed-to delivery terms in the Birdhouse contract state delivery in single lots to each location DAP, Delivery named Place of Destination, in accordance with Incoterms® 2010.
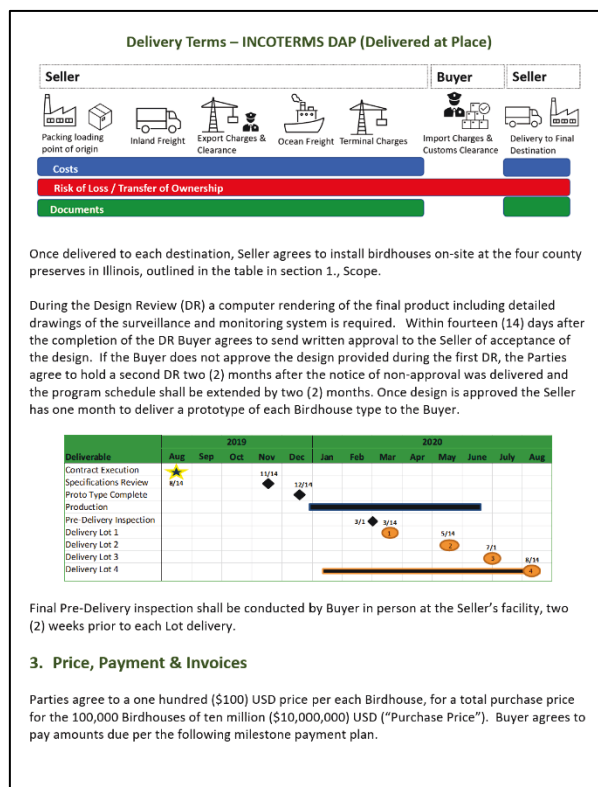
Image by Milva Finnegan©

Figure 59.   Birdhouse Visualized Delivery Terms

The illustration was created using the Microsoft PowerPoint application. Utilizing icons available under creative commons, the various phases and tasks that are part of the delivery are depicted as pictures along with the text. Using icons can improve the communication of the information to non-native English speakers. Visualized sequential information, such as a process, is well suited for swimlane and horizontal type diagrams, as discussed in Chapter 5. The delivery terms illustration outlines each party's obligations for costs, risk of loss and documentation, and identifies when transfer of ownership takes place.

In conclusion, following the multi-step process, the Birdhouse contract was transformed from a traditional contract to a simplified contract. The goal was to present the information most efficiently to the intended audience. The outcome of the redesigned contract is an easier to read, comprehend, use, and overall more user-friendly document. The complete redesigned document is included as Appendix 2.

Information and communication design approaches were integrated in various degrees depending on the content and user of each building block. The path of focusing on structure first broke up the contract into manageable pieces; this helped the language simplification process and visualization of building blocks.

The presented simplified Birdhouse contract was developed by a person with a business degree, not a team of lawyers, businesspeople, contract specialist or designers. The goal of the theoretical ideas and specific approaches presented in this dissertation is to integrate design thinking into the contract development process in a way that any person tasked to participate can contribute to most effectively presenting the information.

Simplifying a B2B contract requires a mixed "design" method ranging from traditional legalese to plain English, from black and white text to visuals. Overall, a clear structure, content outline, layout with design elements, and visualization, produced a user-friendly document. While the redesigned Birdhouse contract is still mostly in textual form, the end result is a visually appealing document.

7 SUMMARY

Shifting from today's traditionally written and designed contracts to simplified, user-friendly contracts that are usable for all stakeholders and users requires a fundamental change in the current contract development process. This dissertation aims to challenge the status quo by proposing a new mindset for developing and designing contract documents.

The relevance of the research specific to contract documents is evident by the vital role contracts play in B2B transactions and the global economy. Central to achieving the expected economic returns, businesses expect effective contracts and contract management to ensure that performance goes to plan. However, research shows that poor contract management has a negative impact, reducing company profits by about 9%[105] (IACCM, 2020c)[106]. This staggering number highlights a critical need to find new methods to ensure that contracts are value creators in business operations.

Companies are recognizing that good contract management brings value and that good contracts deliver success (Cummins, 2016). Furthermore, the notion that contracts need to accurately reflect the agreed to terms and relationship are integral to ensure that contracts are value creators. Finding innovative ways to realize efficiencies rather than expend more resources requires a change in how contract documents are developed and presented.

Moving away from the practice of copying a prior agreement as the starting point, the use of contract technology allows for housing standard contract outlines and clause libraries with user-friendly features that in turn provide flexibility in contract creation. However, even with the increased use of assembly software and standardized clause libraries, companies are still spending more time and money than ever on contract negotiations and contract drafting (IACCM, 2018b). While the process of creating a contract has become more flexible, little innovation in the contract design process has taken place.

Furthermore, the technological advancements and the efficiencies that automating human tasks has achieved, has not solved the problem of contract complexity. The

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[105] Additional research by independent consulting companies is indicating this number could even be higher.

[106] The research was originally reported in 2010. In total 12,000 organizations took part in the survey. The 9% is considered an average across most company contracts, regardless of type, industry, or company size. An updated report was released in 2015. Also, other organizations and consulting companies have conducted similar studies and indicate the range of profit degradation ranges from 6% to 20%. While the 2020 study indicates the 9% is still valid, the extent of value creation improved contract management processes can yield is yet to be scientifically quantified.

contract documents produced remain in traditional black and white text-only format, written mostly in legalese, causing readability and comprehension challenges for those outside of the legal discipline.

To bring efficiencies and to make contracts value creators, the challenge of contract complexity must be overcome. Simultaneously, as contracts have become more complex, the users and stakeholders expected to comprehend and use the document have become more diverse. There was a time when contracts were written and used primarily by lawyers and judges. However, over the past century, as society and contract law have evolved, the expectation has become that all users know and understand contracts (Mik, 2020). While this is the expectation, the reality is that those not trained in legal writing have difficulty reading and comprehending contracts.

In this context, contracts have multiple users and serve many purposes; the argument that court-proven time-tested traditional design cannot be changed has come to question. Aligned with the proactive law theory, a well-drafted contract that communicates information unambiguously, assuring both parties understand and interpret the information in the same way, supports the notion that focus should be on user comprehension and ability to take action rather than on preparing for potential future disputes (Haapio, 2013). For effective communication and optimal user interface, assessing how information is presented is foundational when evaluating the various design methods that can help avoid future disputes.

Identified by existing qualitative and quantitative research, there is no question that today's traditional contract design renders the documents complex and challenging to read and comprehend (Passera 2017). Furthermore, in the most recent benchmark study on contract and commercial management trends, two key areas that companies highlighted as important trends to focus on were contract simplification and designing for the users (IACCM, September 2019). Exploring new ideas and theories for contract design innovation is important and relevant in today's global economy.

Aiming to contribute to both theory and practice, the research undertaken focused on how user-centered design can simplify contract documents. In this dissertation, three distinctly unique yet integrated ideas are presented that can change traditional design into a simplified contract design. First, to simplify contract structure, a contract building blocks approach is presented. Second, researching contract language simplification, a CCL is explored. The third area analyzed is integrating information design techniques to incorporate visualization in contract documents.

Integrating visualization is not only about improving the contract document design and look. Visualization can be leveraged to support the goals of plain language as well by diagramming complex text and concepts. Furthermore, showing information in a layered form, as a matrix or outline of the content, produces a visual of the contract content. A visual structure allows readers to navigate the document easily and to organize information logically. Exploring the full spectrum of what information and communication design entail and how it can be applied in various degrees to communicate contract information more efficiently is researched and tested.

When building a contract, the underlying philosophy is to proactively focus on forming contracts that guide the parties' performance, adapt to changes in the business environment, and avoid resorting to legal actions. Contracts should function as roadmaps and provide flexibility to build trust between the contracting parties and positive business relationships (Nystèn-Haarala et al., 2010; Haapio, 2013). Real efficiencies and value are gained when performance goes as planned and costly disputes are avoided.

The theory of relational contracts and the proactive law approach are foundational to the research, complementary in nature; they suggest business success can be gained from collaboration, both externally and internally during the contract formation phase by focusing on how the parties intend to work together to achieve the business goals, rather than focusing on extensive safeguarding clauses. A proactive approach in contract drafting aligns with the belief that contract documents play a role in successful exchange relations and that document design that builds collaboration by a common understanding works to avoid future disputes.

This dissertation builds on economies of contract literature, which "takes legal rules as given and examines the optimal design of contracts" (Eggleston et al., 2000 p.93). The research aimed to formulate the problem, identify the causes for contract complexity, review existing literature and empirical studies, break the problem into parts, propose solutions, and validate the design ideas by relating to and testing them on a real-world contract.

The research was mainly a social sciences method, examining how contracts operate in society rather than in court. The research sought to find both theoretical and practical answers. Social sciences research on contracts considers contracts as a social phenomenon operating within the legal system. Neither contract law nor doctrinal theories that examine legal rules were part of the research.

Due to the multi-disciplinary nature of the research, a mixed-method approach, including both qualitative and quantitative methods was employed. The various research methods were two literature reviews, ethnography as a participant observer, and Relational Concept Analysis. The quantitative research involved an empirical study measuring contract document readability. Included were also existing published empirical studies to provide evidence and validate the proposed solutions.

Contracts are, first and foremost, communication tools. Usability and user-friendly design are essential elements of effective communication. However, a traditional contract's visible appearance, as a long text-only document, signals a notable amount of effort at first glance, deterring the user from ever engaging with the document. (Fennema & Kleinmuntz, 1995). When a user engages with a contract, the holistic view should have a design that draws the reader in.

Researchers and practitioners have identified various contract design areas that would reduce complexity and make contracts usable in a multi-user environment. Areas of innovation include simplifying contract language and reducing "legalese"; in particular, writing could be simplified by focusing on contract language, grammar, and writing (Adams, 2013; Butt, 2013; Garner, 2013; Stark 2014: Burnham 2016). One of the most notable research areas is integrating plain English principles and universal writing rules to improve readability and comprehension.

Another area of growing scholarship is contract design and simplification, where the research focuses on the document design and how the information is presented for optimal comprehension and usability by the intended users (Haapio 2013; Passera 2017; Waller et al., 2017). Integrating information design and design thinking into the process places the focus on the users of the document.

Contract simplification encompasses many different areas of research that go beyond just the language and written words. Integrating various visual design techniques from simple lines to fully visualized contract documents is a growing area of research. Introducing user-centered design thinking and visualization into the process of contract development changes the approach and framework of how contracts are produced. The new contract design approach considers first and foremost the users of the information.

When designing user-centered contract documents, the heuristics for design, and the study of how people perceive information is relevant to develop solutions that provide for the optimal user interface. An experimental empirical study done at Aalto University showed changing layout and integrating visuals, in addition to a

user-centered structure, increased comprehension and accuracy (Passera, 2015). The aim is to produce a holistic contract document design solution that integrates a user-centered structure and plain English language with visualization to effectively communicate the information to the intended audience.

Integrating a formal user-centered design process supports integrating multiple user-centered design solutions as part of a company's contract development process. Derived from the theory that design thinking is a problem-solving process, a defined four-phase iterative contract design process is posed as the framework for producing a simplified contract document. Presenting contract drafting as a "design process" is not extensively explored in legal research; however, in fields outside of legal, it is prevalent.

In sum, the research objective was to examine how design thinking can be leveraged and integrated in the field of contracts and in particular the contract development process, to reduce complexity and shift away from the traditional document design. The aim was to improve readability, comprehension, and usability by framing contract documents around the intended users and stakeholders.

The research question posed in this dissertation is:

How can user-centered design be applied in a contract design context to produce clearer and more simplified contract documents?

The research started with exploring what the purpose of a contract is and for whom contracts are intended. The two key observations were that contracts serve two critical roles, as management tools and legal documents. Following the theory of law and society, contracts were observed as an integral part of business operations and the research focused on how contract design can produce economic value versus how contracts function in court.

Complications arise when the legally founded contract document design comes to question. The most prevalent question is if a redesigned contract that alters the language, design, and integrates visuals has the same legal protections afforded under the law as the traditional contract. Throughout the research, no clear evidence was found that a new design, in this case, a simplified contract, would be any less legally binding or offer any less legal protections.

Some opponents of contract visualization argue that contract law derived from technical language needs to stay in its original form to hold up in court. This belief might be correct to a certain extent. The technical language of contracts, specific

terminology and legal writing founded on contract law, might be most effectively communicated in textual form when the audience who will read it are lawyers or judges. However, analyzing the effectiveness of contract redesign from a user-centered framework expands the analysis beyond just lawyers and judges as users; it takes into account anyone who is part of the contract's lifecycle and is a user of the document.

Following a user-centered contract design process, the user, not the legal principles, guides the design process. Developing a user-centered design process is a multi-step process that promotes the inclusion of multiple stakeholders and users. Additionally, contracts are assumed to be modular, consisting of building blocks, not one standalone document. Modularity allows for alignment of specific users or user groups to specific clauses related to them supporting the effective engagement of multiple users during the entire contract lifecycle.

This dissertation's unique contribution, to achieve a paradigm shift away from the traditional contract design is by implementing a four-phase user-centered design process. It is advancing innovative design thinking in contract document development and drafting. Adopted from the field of information and communication design, the proposed process is a problem-solving approach to improve the existing design and communicate the information most effectively to the intended audience.

The four phases in the proposed process consist of first identifying the context of the information; second, identifying and aligning the users with the content; third, developing design solutions; and fourth, evaluating and testing the selected design solution. The idea to identify content first is to ensure that transaction-specific information is considered as the contract is built. Aligning users and stakeholders with the content brings in the multi-user dimension considered in the framework for user-centered design.

The second phase, defining who the contract users are, is an essential step to achieve a tailored design for each clause, based on the end-users. Because contracts operate in a multi-functional environment it is impossible to have one definition of who contract users are. Rather, defining contract users becomes a distinct step in the process to ensure that company- and transaction-specific stakeholders and users are part of the process. The idea that contracts live in a dynamic state and that contract document supports many tasks provides a new view of how to ensure contracts support business operations. Utilizing the contract lifecycle as a guide shifts the document development process to be initiated at the proposal stage versus after the negotiations are completed.

The contract lifecycle starts when a contract need is initiated and ends when all contract obligations are completed, various tasks within can be repeated. The contract lifecycle phases are commonly referred to as the pre-award, execution, and post-award phases (Nyden & Kane, 2019). Varying terminology is used in different countries, but the essence that a contract document is developed, then executed to make it a legally binding agreement, and that thereafter, the implementation of the obligations takes place, is similar across continents.

During the research, a five-phase division was outlined to better support the alignment of functions with the contract's lifecycle. The five phases identified are Proposal and Sales, Document Creation and Negotiations, Review and Approval, Contract Execution, and Contract Administration. Within each of the phases are sub-categories of specific tasks that are commonly performed. For example, under the Document Creation and Negotiation phase, requirement gathering, contract drafting, negotiations, and contract revisions are identified as types of tasks. Understanding the various tasks during each phase of the contract lifecycle is critical for designing a contract that functions as an effective road map throughout the execution phase to deliver efficiencies and assure performance as planned.

The third phase is developing the optimal design approach to communicate the information effectively to the intended users. After defining the content and identifying the stakeholders and end-users of each building block, an optimal user-interface assessment occurs. The goal of tailoring each building block for an optimal user interface is intended to improve comprehension and usability. If the selected design solution, when tested, does not improve the communication, the process is started over.

The third phase of the user-centered design process is the most extensively researched area in this dissertation, discussed in three independent chapters, Chapter 3, 4 and 5. The research examines a range of design ideas, which when combined form one holistic approach to how a simplified contract document that is user friendly is developed each time a new contract is initiated.

The first area examined is structure simplification, presented in Chapter 3. When designing a contract document, the focus should not primarily be on legal protection in the case of a dispute; rather it should start with how the document will function as an effective communication tool for the users and stakeholders who rely on the information to perform their jobs. In a multi-user dynamic environment, the document should not be considered as one continues writing, rather it is a sum of many parts. The different clauses or "building blocks" when combined are what produce a contract document. The building blocks approach

reduces cost as clauses can be reused, assembly is flexible, and individuals outside of legal can participate in the process.

More than just reusing and integrating various stakeholders, the building blocks approach allows enhancing information layout and presenting information effectively to the intended audience. To simplify the structure to help manage contract content, a macro-level categorization based on four main user groups is presented. Different from a legal doctrine perspective or division by obligations, requirements and so on, the division is done by four main user groups (see Figure 60). This type of macro-level categorization is envisioned to be standardized for all contract types in contract document design.
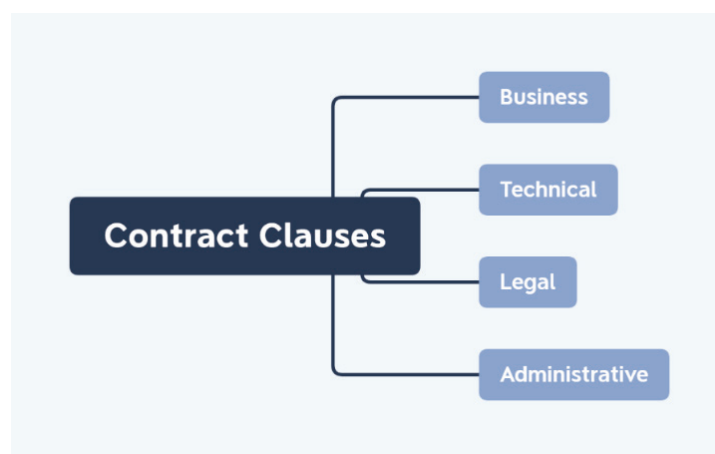
Images by Milva Finnegan©

Figure 60.   Contract user-based Categorization

The user-based contract clause categorization is developed from assessing the purpose of the various types of information contracts include. For example, the business terms are those clauses that outline the business transaction details, such as price, payment, and delivery. The technical clauses apply to those directly involved in building the product, such as mechanical engineers or software engineers. Clauses that fall within this category are specifications of the product or services transacted, performance guarantees and warranties, etc. The legal clauses include choice of law, indemnity, limitation of liability, force majeure, and dispute resolution-type provisions. The legal function possesses the expertise and knowledge to assure that legal clauses are drafted correctly. The final category, administrative, is for contract managers and contract specialists. Included clauses that are more general in nature are standard across contract types and tend to involve process-oriented information. Examples are clauses such as notices,

assignments, amendments, and severability. Grouping contract clauses into high-level categories can be applied to any type of contract.

User-centered contract design focuses on the structure and organization of contract content around how users naturally interact with the product. The organization, logical flow, and display of information is a critical aspect driving usability and readability. The user-centered approach leverages graphic and information design methods such as clear headings, font size, white space, numbering, and other simple general rules used in the information design field to improve the user interface and effectiveness of communicating information to the intended audience.

In Chapter 3, a relational concept map used in academia to evaluate concepts and terminological relationships that could set a baseline for standardization (Nuopponene, 2005) was developed to identify the relationship between contract users and various building blocks within a contract. To define a layered structure to improve and standardize contract content presentation, a building-blocks approach to contract assembly was presented. This supports the notion that different users need different information for different purposes. An easily navigable visual structure, such as a contract map, shows content from a macro- to a micro-level.

Contracts contain extensive amounts of information. When users engage with the document, they most often need specific information. Avoiding having to start from the top and reading the document until the information is found can save a significant amount of time. The building blocks approach is designed to make the contract structure intuitive, easy to navigate, and user friendly.

Chapter 4, language simplification, evaluated the language common in the traditional contract documents. The very technical natural language of contracts is an area that impacts readability and comprehension significantly. An empirical readability test was conducted to determine the reading and education level required to comprehend a standard Non-Disclosure Agreement (NDA). The results revealed that the education level needed to comprehend a standard traditional NDA was 22 years of schooling, which is equivalent to completing three years of college in the US.

To further evaluate contracts' natural language, an analysis of various contracts at the word and sentence level was performed. It examined the definitions of common technical contract terminology or "legalese" wording, comparing them to standard English terminology. In the same way, contract grammar was compared to the standard grammar rules taught in school. Each provided an example

baseline approach to how contract language could be more aligned with standard English. Furthermore, using Plain English principles as the benchmark, several opportunities for simplifying contract language were identified.

Comparing and contrasting traditional legalese to plain English from both a terminological and grammatical perspective provided a framework for how contract language can be simplified. To advance current research, a framework for a CCL was evaluated. The CCL model was developed with the objective to explore language standardization in support of contract automation. The CCL concept was modeled on ASD-100STE, a controlled language used in the aerospace industry to write maintenance manuals. A CCL takes the current plain English and language simplification ideas and explores standardization across the discipline.

In global transactions, standardization can yield many benefits; for example, improving comprehension among users that have different training, backgrounds, and languages. In addition, simplification and standardization of contract language could improve the accuracy of computer language translation.

When applied to language simplification, the user-centered framework focuses on presenting the various contract information in a way that promotes readability and comprehension for the intended audience. For example, transaction-specific business information can be most optimally written in plain English, while information intended for lawyers and judges might be best left in the traditional legalese form. Focusing on a balance between the standardized legally founded contract language and form and the language and form for operational success is part of tailoring each contract building block to the end-user.

In Chapter 5, visualization as part of contract simplification was explored. Visualization provides tools to help bring clarity to complex text in multiple ways. Part of both language and structure simplification, the use of mental visual images and physical images in documents aid the human brain in processing complex information. Visualization, as part of the contract design process is about applying design thinking and various information and communication design techniques throughout the contract development process.

Furthermore, visualization in the field of law is emerging, as the notion that people are lookers first and then readers is gaining acceptance (Newman, 2011). Contract content visualization is about documenting the agreement between the parties through visual means rather than solely in written form (Berger-Walliser, 2011). The goal is to effectively communicate complex information by replacing or supplementing text with graphics or images.

The global business environment is creating new challenges because contracting parties have different native languages and education levels. However, the challenges of comprehension, usability, performance, and enforcement that text-only documents pose can be overcome via visualization (Murray, 2019). Visualization is the one common language that can break language barriers existing in global transactions.

As presented in Chapter 3, contract structure simplification, each contract concept or clause has specific characteristics and end-users. Both content and user type influence the adaptability of visualization in the contract. Determining which clauses are conducive to visualization and which are not is part of phase three in the user-centered design process. Simplifying the language is also an essential element of integrating visuals, as illustrations and graphics are often accompanied by some text.

Focusing on the users and the intended audience when designing each contract building block helps customize the design for optimal comprehension. Focusing on information design techniques and page layout helps break up the monotone black and white text-only look of the traditional contract document. Visuals also provide many benefits beyond just improving the aesthetics of the document. Visuals can communicate different clauses' information and their interdependencies in one graphical depiction. Overall, the goal is to produce a design that invites the users to engage with and allows users to locate desired information quickly, comprehend it, and take the intended action.

Visualization of inter-related clauses is an area where user-centered design can help produce visuals that reduce the cognitive load of processing complex contract information. Inter-related clauses within a document, located in various sections, can be illustrated in one pictorial example, preventing users having to jump to different sections in the contract to find information. For example, time-related clauses such as term, delivery, termination, and payments depicted in a vertical visual showing the various events and timing, is an example of visualizing interrelated clauses. Illustrating the interdependencies by selecting the correct graphic is essential, or the image could have a negative impact on comprehension.

Beyond just leveraging visualization to simplify the contract document, visualization of other aspects of the contract lifecycle can bring efficiencies; this is referred to as visualization *about* contracts. For example, the visualization of pre-award and post-award information can take on different approaches and outcomes. Prior to initiating a contract document, other business documents, such as bid documents and proposals, include visuals about the contemplated transaction. Developed by knowledgeable individuals on the specific topic, the

information is written by and for a specific user or user group. Aligning pre-award teams with contract content can avoid "re-writing" information as the contract is developed. Furthermore, proposal and sales documents tend to incorporate information design techniques and strive to communicate the information as clearly as possible for the audience, which contract drafters can learn from.

Post-award, after the contract is signed, visualization about the contract supports the implementation and management of the contract obligations. The types of information can be financial, resource needs, risk mitigation plans, etc. Developing summaries in a visual form where all related information is depicted can communicate several pages of contract information in seconds. This type of visualization yields efficiencies when communicating contract content and obligations to many stakeholders not trained in reading contracts who are dependent on the information for business management.

Technology has helped reduce the practice of copy-pasting a prior agreement as the starting point, as it offers new solutions to "build" contracts, allowing more flexibility than set template contracts. Particularly CLM applications designed specifically for contract management have shown to increase efficiencies, reduce risk, and save company money by automating tasks performed manually today (Gilbert, 2020). The existing contract automation systems and tools provide efficiencies but tend to follow the traditional contract development process to produce traditional contract documents. The next step is to leverage technology to integrate new innovative design approaches into the contract development process.

In Chapter six, a short overview was presented of how the theoretical ideas are applied in practice. Following the user-centered centered design process, a traditional contract document between Nordic Birdhouses, Ltd and Timo, Inc. was transformed from the traditional difficult-to-read black and white text-only form to an aesthetically and functional document. Furthermore, examples of technology applications built on the theoretical ideas presented illustrate the potential to automate the creation of simplified contracts.

Limitations of the research exist. The lack of a formal empirical research study to measure the effectiveness of the proposed design methods limits accurately quantifying the improvements in readability, comprehension and usability of the redesigned contract compared to the traditional contract. Second, empirical studies assessing the user experience when participants engage with a traditional contract document and when engaging with a user-centered developed document are needed to validate the redesigned contract's effectiveness. An empirical study

with quantitative data could further assess how each design idea could be optimized.

When employing a mixed-method research method, it limits to a certain extent, the full in-depth analysis that a single empirical study would enable. Furthermore, the large amount of information and data leaves room for further research in each specified design area.

Future research focusing on innovative contract design ideas integrated as part of initiating and building contract documents can further develop the idea of automating the presented ideas. Developing both human-readable and computer-readable language is a new research area of particular interest related to machine learning and AI.

Further research on controlling contract language on a larger scale is needed to test the viability of the proposed CCL. Codification of contract structure and language to support standardization globally is an area of particular interest for future research on contract automation. Future research focusing on how design thinking can be implemented early in the contract lifecycle within companies' contract creation applications, to test how language, structure, and visualization can become integral when a new contract document is initiated.

A revolution of contract redesign is taking place, and there is immense potential for improving how contracts can function as effective communication tools in B2B transactions. Shifting toward the new genre of contract design that proactively seeks to ensure that contracts produce economic value and support commerce is a new mindset that will change the entire field of contract management.

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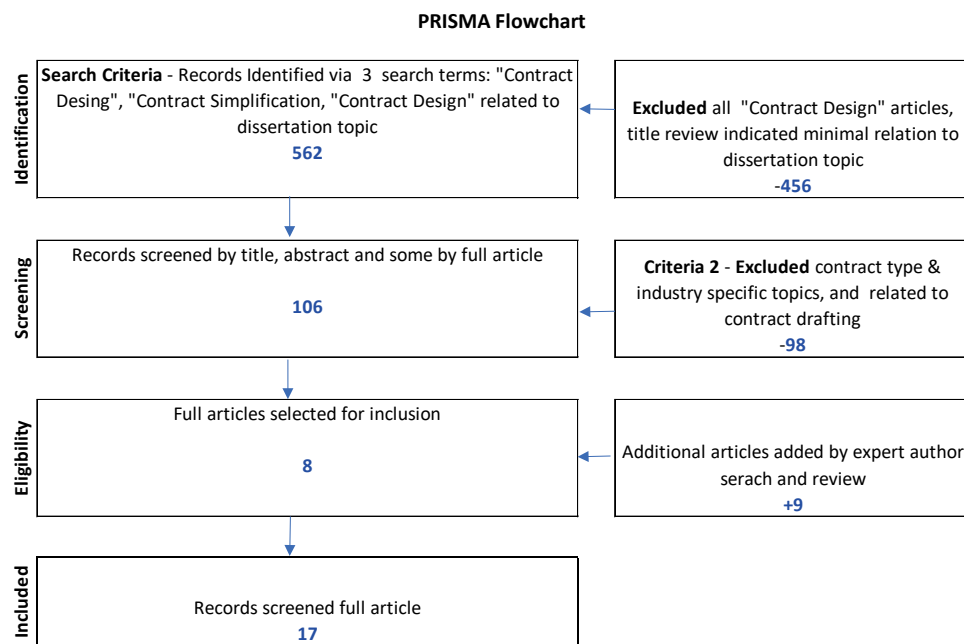
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APPENDIX 1 - SECONDARY LITERATURE REVIEW PROCESS

The outcome of the secondary literature review process was a final number of **17** articles that were identified directly related to the dissertation research topic. Below is a summary flowchart of the process to select the included records. Thereafter is a detailed overview summary of the process and steps used to reach the conclusion.

PRISMA Flowchart

Identification — **Search Criteria** - Records Identified via 3 search terms: "Contract Desing", "Contract Simplification, "Contract Design" related to dissertation topic **562**	**Excluded** all "Contract Design" articles, title review indicated minimal relation to dissertation topic **-456**
Screening — Records screened by title, abstract and some by full article **106**	**Criteria 2** - **Excluded** contract type & industry specific topics, and related to contract drafting **-98**
Eligibility — Full articles selected for inclusion **8**	Additional articles added by expert author serach and review **+9**
Included — Records screened full article **17**	

SLR Process and Results

Step 1 - Selected search terms – "Contract design", "Contract simplification", "Contract Drafting".

Step 2 - Identified relevant records - Four different academic search engines were used for the initial search. This was because the area of study of contract document redesign and simplification is a relatively new area of study. From the preliminary review of number of articles and the titles it was evident that the number of irrelevant articles was extensive. The total from all four databases was 607,368. Below is a summary table of the number of search results from each search engine.

Search Engines	Database	Search Term	Serach Results Total
1	Wiley Online	Contract Design	412,343
	Wiley Online	Contract Simplification	114,548
	Wiley Online	Contract drafting	77,573
		Wiley total	**604,464**
2	Scopus	Contract Design	1,367
	Scopus	Contract Simplification	3
	Scopus	Contract Drafting	49
		Scopus total	**1,419**
3	Web of Science	Contract Simplification	1
	Web of Science	Contract Drafting	23
	Web of Science	Contract Design	822
		Web of Science total	**846**
4	ssrn	Contract Simplification	4
	ssrn	Contract Drafting	102
	ssrn	Contract Design	456
		ssrn sub-total	**562**
	ssrn	Haapio, Helena	29
	ssrn	Berger-Walliser, Gerlinder	16
	ssrn	Passera, Stefania	8
		ssrn total	**615**

SSRN was selected as the database for the identification and selection of relevant articles.

Step 3 – Screening SSRN Search Results

The three defined search terms, "Contract Simplification," "Contract Design," and "Contract Drafting" yielded a total of 562 records. The screening process went as follows:

- The search term "contract design" yielded the greatest number, a total of 456 articles. Reviewing by title and some by abstract it became evident that the articles were not directly related to contract document design; rather to the content of a contract. Even specific articles with "contract design" in the title related to the content, what terms to include, how to assess or negotiate specific contract content. For example, an article titled "Principles of Contract Design" related to what terms to include or exclude in the contract document. The conclusion from the review was that the articles are not related to the dissertation topic.
- From the review by title and abstract review of each record it was determined that the search terms "contract simplification" and "contract drafting" were relevant to the dissertation topic. This included 106 articles in total.

- Next, the defined Selection Criteria 2 was applied as each record was reviewed either by title or abstract. Excluded were records that related to one specific contract type, industry, or contract actions; articles related how to draft a traditional contract (a legal perspective); and any articles on one specific clause.
- Selection Criteria 3 did not exclude any articles
- Selection Criteria 4 excluded 2 articles.
- As a last step, any duplicate records were removed.

The final number of articles included for full review was eight.

A second technique used to identify relevant articles, book chapters, and symposium and conference presentations was an author specific search. The authors selected are known experts in the field who frequently speak at conferences and publish articles. Based on the previously completed literature review, the authors were already known. The authors searched were Helena Haapio, Stefania Passera, and Gerlinder Berger-Walliser, and the total number of records returned were 43. The selection process went as follows:

- Each author's records were reviewed by title and abstract to select the articles that directly related to the topic of the dissertation research. Some articles were excluded because they were related to technology, smart contracts or similar innovations that contract design supports. However, this did not relate directly to how to improve contract design. All types of literature, not only journal articles, were included, i.e. book chapters, conference and symposium presentations and papers were considered. Any contract terms specific to content-specific records were excluded as in the search term selection process.

The summary table that follows outlines the selection criteria applied to screen and select the relevant articles. The articles were screened via a title review initially. Once the selected search terms were identified as most relevant, an abstract review was used. For the final eight selected records, the full article was skimmed. For the author review, the same process of screening and reviewing abstracts in detail was performed, with a review of the articles selected.

Four criteria were identified as the baseline for the articles relevant for the study topic. In addition, a second set of criteria was applied specifically for the author search. The table below outlines the criteria along with an explanation.

ELIGIBILITY CRITERIAS FOR SLA

Eligibility Criteria for Article Search

	Criteria	Explanation
1	File of study: contract design, contract simplification, contract drafting	Research results must include terms: "contract design", "contract simplification", "contract drafting". Topics related to contract law related and contract management are included.
2	Topic: Contract documents in general	**Included** - Topics related to the contract document. **Excluded: s**pecific contract types, general contract teaching methods, case studies for a particular contract action or industry, specific clause or clause language.
3	Study design	Both theoretical and empirical studies are included.
4	Language	English only

Eligibility for Author Search

	Criteria	Explanation
1	Topic directly related to: contract design, contract simplification, contract drafting, proactive law	Included - Theoretical, empirical studies, initial observation articles on the phenomenon, background research related to the topic
2	Medium	Included articles, studies, conference and symposium presentations
3	Language	English only

APPENDIX 2 – SIMPLIFIED BIRDHOUSE CONTRACT

Purchase and Sale Agreement

Between

Timo Inc. and Nordic Birdhouses Ltd

Contract Number: FIN-12345

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Purchase and Sale Agreement

Effective Date of the Agreement: August 14th 2019

Buyer: Nordic Birdhouses Ltd
Contact: Camilla Sand
Koivutie 15
00200 Helsinki
FINLAND

Seller: Timo, Inc.
Contact: Kevin Topp
2020 Lakeview Drive
Vandalia, IL 62471
USA

1. Scope

Buyer agrees to buy and Seller agrees to sell and deliver to Buyer one hundred thousand (100,000) unique bird houses ("Birdhouses"). The Birdhouses must meet the agreed to specifications, Appendix 1 "Specifications", which includes detailed size measurements for each type of bird house, the electronic monitoring devices and the integrated surveillance capabilities. Seller agrees to deliver and install 4 different types of Birdhouses in the following quantities to each location:

Birdhouse Type	Quantity	Location
Flicker	30,000	Bond County National Preserve Illinois, USA
Bluebird	20,000	Fayette County National Preserve Illinois, USA
Barred Owl	10,000	Hancock County National Preserve Illinois, USA
Woodpecker	40,000	Livingston County National Preserve Illinois, USA

Each Birdhouse will have one side made from Plexi glass procured from Glass Corporation. Electronic monitoring devices and surveillance capability shall be fully integrated to allow monitoring at the bird center headquarters located in Vandalia, Illinois (Bond County). Electronic monitoring devices shall have satellite signal capability allowing remote surveillance.

2. Delivery & Schedule

Seller agrees to deliver and install all 100,000 Birdhouses within twelve (12) months of the Effective Date. Seller will deliver birdhouses in single lots to each location DAP, Delivery named Place of Destination, in accordance with Incoterms® 2010. Seller is responsible for all costs associated with Risk of Loss and Transfer of Ownership. Seller is responsible for costs and documents from Point of Origin to Delivery to Final

Destination, except Buyer is responsible for paying the Import Charges and Customs Clearance at the port in the USA. Definition of the terms are in Incoterms® 2010.

Delivery Terms – INCOTERMS DAP (Delivered at Place)
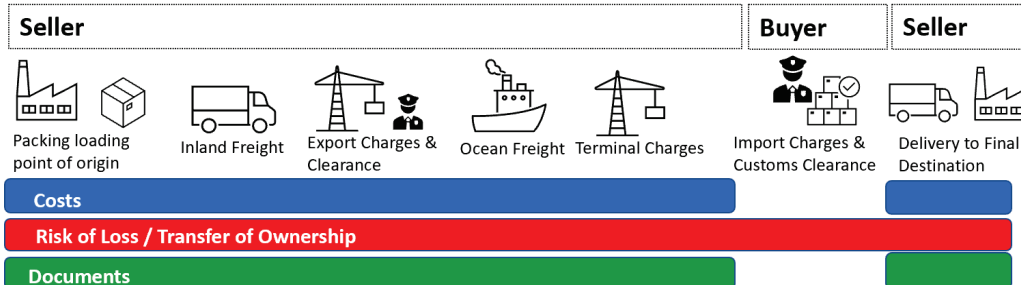
Once delivered to each destination, Seller agrees to install birdhouses on-site at the four county preserves in Illinois, outlined in the table in section 1., Scope.

During the Design Review (DR) a computer rendering of the final product including detailed drawings of the surveillance and monitoring system is required.   Within fourteen (14) days after the completion of the DR Buyer agrees to send written approval to the Seller of acceptance of the design. If the Buyer does not approve the design provided during the first DR, the Parties agree to hold a second DR two (2) months after the notice of non-approval was delivered and the program schedule will be extended by two (2) months. Once design is approved the Seller has one month to deliver a prototype of each Birdhouse type to the Buyer.
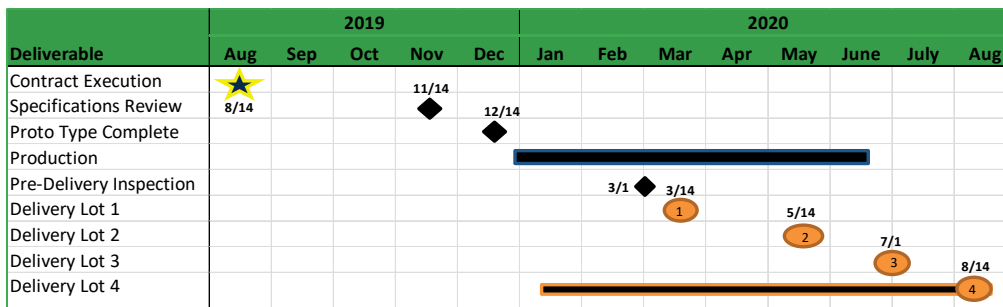
Final Pre-Delivery inspection shall be conducted by Buyer in person at the Seller's facility, two (2) weeks prior to each Lot delivery.

3. Price, Payment & Invoices

Parties agree to a one hundred ($100) USD price per each Birdhouse, for a total purchase price for the 100,000 Birdhouses of ten million ($10,000,000) USD ("Purchase Price"). Buyer agrees to pay amounts due per the following milestone payment plan.

Milestone Payment Schedule

Pmt #	Estimated Month	Event	Pmt %	Amount in USD
1	1	Down Payment - Execution	10%	$1,000,000
2	3	Desing Review (DR) Approved	10%	$1,000,000
3	4	Prototype Approval	10%	$1,000,000
4	6	1st Unit Delivery & Acceptance	10%	$1,000,000
5	8	Lot 1 Delivery & Acceptance	20%	$2,000,000
6	10	Lot 2 Delivery & Acceptance	20%	$2,000,000
7	12	Lot 3 Delivery & Acceptance	20%	$2,000,000
			Total USD	$10,000,000

Payments are due net thirty (30) days from receipt of undisputed invoice. Late payments will incur a late fee of 1.5% per month up to the maximum percentage permitted by applicable law on any amount not paid. Parties agree that any changes to the agreed work scope will be negotiated and a modification to this agreement shall be executed, prior to start of additional work. Signed modification must include added scope, price and payment terms.

4. Warranty

Seller warrants that the Birdhouses conforms to the Specifications, meet the general quality requirements of the branch of industry, and are free from any defects in design, material and workmanship. The warranty period starts when Buyer starts takes into use the Birdhouse and continues for twelve (12) months, however, not in any case longer than three (3) years from the delivery and acceptance of the Birdhouses (the "Warranty Period").

Buyer must notify Seller without delay of any defect or non-conformity detected in the Birdhouses during the Warranty Period. Seller must, upon the request of Buyer, without delay repair or replace any defects and non-conformities in the Birdhouses at no cost to Buyer. The repaired or replaced parts will be subject to a new warranty on the same basis and conditions as those applied to the original Birdhouses. In the case of defect of non-conformity, the Warranty Period will only be extended by a time equal to the time that the Birdhouses have been out of use due to the defect or non-conformity and repair.

Monitoring and Surveillance equipment purchased from third parties will carry the respective manufacturers' standard warranties. Seller undertakes to make necessary spare parts for the Birdhouses available for Buyer at reasonable prices for a period of at least fifteen (15) years from the date of delivery and acceptance.

5. Delay in Delivery

Should Seller be unable to meet the agreed delivery dates Seller must notify Buyer in writing of any such delay as soon as practicable. For any delivery delay past two (2) weeks from the agreed delivery dates for any other reason than Force Majeure event,

Seller will be liable to pay liquidated damages at two (2) percent of the Purchase Price (without value added tax) for each commencing week of delay, however, not to exceed ten (10) percent of the Purchase Price.

6. Termination

This Agreement will terminate once all work is completed per outlined section 2. Scope and Delivery. Agreement may be extended via a mutual written amendment to this agreement.

7. Limitation of Liability

Neither Party shall be liable toward the other Party for any consequential or indirect damages or loss, including but not limited to loss of profit, unless such damages is caused by willful misconduct or gross negligence. Notwithstanding the aforesaid, no limitation of liability shall be applicable to damage or loss arising out of death or personal injury.

8. Indemnity

Each arty (the "Indemnifying Party") agrees to defend, indemnify and hold harmless the other Party and its respective officers, directors, employees, agents, successors, subsidiaries and any other affiliated entity (the "Indemnified Party") from and against all third party claims, demands, actions, causes of action, suits, losses, damages to persons or property, liabilities and all related costs and expenses, including without limitation, reasonable attorneys' fees (collectively "Claim(s)") to the extent arising from or relating to a) the Indemnifying Party's breach of one of its representations, obligations, warranties or covenants set forth in this Agreement; b) any violation of applicable law or regulations by the Indemnifying Party; and/or c) the negligence or willful misconduct of the Indemnifying Party

9. Force Majeure

Notwithstanding any other term of this Agreement , neither Party shall be liable to the other Party for loss, cost or damage, resulting from its failure to perform its obligations under this Agreement if such failure arises from any causes beyond its reasonable control including, but not limited to, acts of god, flood, war, local ordinances, flight conditions, severe weather conditions, military operations, or any computer, telephone or power failure; provided that the Party experiencing the problem takes such other steps as may be reasonable to fulfill , in whole, or in part, the intent of this Agreement**.**

10. Confidentiality

The Parties will keep confidential and will not disclose at any stage to any third parties, the existence and content of this Agreement as well as any confidential information received from the other Party or otherwise learned in connection with this Agreement (Confidential Info") without the prior written consent of the other Party. The Parties will not use Confidential Info received from the other Party for any other purposes than the

proper performance of this Agreement. This Confidentiality clause will remain in full force and effect for three (3) years after the termination of this Agreement.

11. Choice of law

This Agreement will be governed by, the substantive laws of Illinois, USA, excluding conflict of law rules and choice of law principles that provide otherwise. The United Nations Convention on the International Sale of Goods will not apply to this Agreement.

12. Dispute Resolution

Any dispute, controversy or claim arising out of or in connection with this contract, or the breach, termination or invalidity thereof, shall be finally settled by arbitration administered by the International Centre for Dispute Resolution. The following rules will apply:

- ☑ The seat of the arbitration will be Chicago, Illinois, USA.
- ☑ The language of the arbitration will be English.
- ☑ Nothing in this Section 12. will be construed as preventing any party from seeking conservatory or similar interim relief from any court with competent jurisdiction.
- ☑ Any award rendered by the arbitral tribunal will be made in writing and will be final and binding on the parties.
- ☑ The parties will carry out the award without delay. Judgment upon any award or order may be entered in any court having jurisdiction.
- ☑ All aspects of the arbitration will be considered confidential.

Amount in Dispute*	SCC Rules	Number of Arbitrators
➤ Up to USD $100,000	Written submission only. (Oral hearing is necessary)	1 (Sole Arbitrator)
➤ Up to USD $250,000	Rules for International Expedited Process	1 (Sole Arbitrator)
➤ Up to USD $2,000,000	Arbitration Rules	1 (Sole Arbitrator)
➤ Over USD $2,000,001	Arbitration Rules	3

* The amount in dispute includes the claims made in the Request for Arbitration, exclusive of interest, attorneys' fees, and other arbitration costs.

13. Notices

All notices, consent, approvals, or other communications under this Agreement must be in writing addressed to the company contact person. Notices are deemed to be given when delivered personally or sent by recognized overnight courier or by certified mail, return receipt requested to the Parties.

14. Entire Agreement

This Agreement is the entire agreement between the Parties and supersedes all prior understandings and agreements between the Parties, whether oral or written.

15. Amendments

This agreement can be amended or supplemented only in writing signed by both Parties.

16. Assignment

Neither Party will assign its rights, delegates or otherwise transfer its rights or obligations under this Agreement, without the prior written consent of the other Party.

17. Severability

If any term of this Agreement, or the application of it by any person, place or circumstance, is held to be invalid, unenforceable or void, the remainder of this Agreement and terms as applied to other persons, places and circumstances will remain in full force and effect.

Agreed to and executed by duly authorized representative for the Seller and Buyer,

Nordic Birdhouses Ltd   Timo Inc.

_____   _____

Name: Name:

Date: Date:
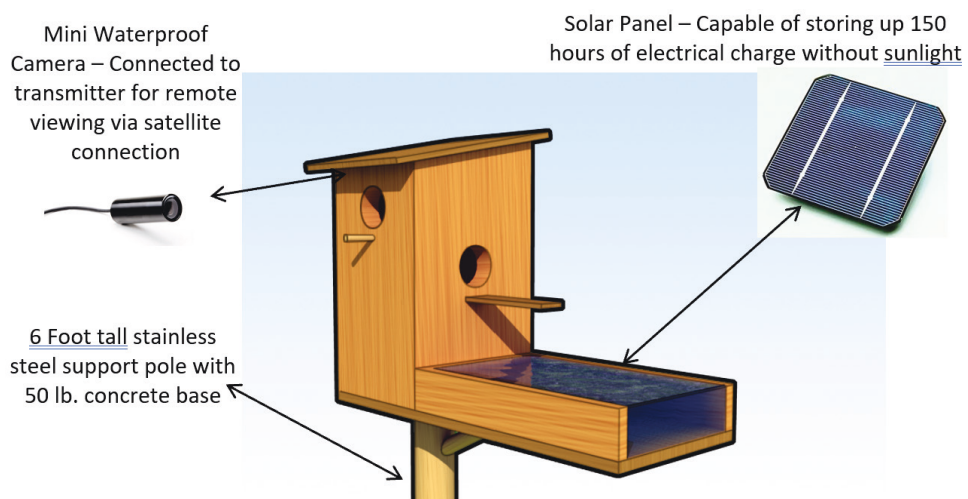

Appendix 1 – Specifications

Appendix 1

Birdhouse Specifications

The Birdhouses will be built to the following specifications:

Bird Type	Quantity	House Floor (inches)	House Depth (inches)	Hole Above Floor	Minimum Diameter of Hole (inches)	Location
Flicker	30,000	7x7"	16–18"	13"	2.5–3"	Bond County
Bluebird	20,000	6x6"	9"	7"	1.6"	Fayette County
Barred Owl	10,000	14x14"	26–28"	21–23"	6–8"	Hancock County
Woodpecker	40,000	6x6"	12–15"	9"	1.6–1.8"	Livingston County
TOTAL	100,000	units				

Each Birdhouse will have one side made from Plexi glass provided from Plexi Glass Corporation.

Fictional Surveillance system rendering

Mini Waterproof Camera – Connected to transmitter for remote viewing via satellite connection

Solar Panel – Capable of storing up 150 hours of electrical charge without sunlight

6 Foot tall stainless steel support pole with 50 lb. concrete base

APPENDIX 3 – ORIGINAL BIRHOUSE CONTRACT

Purchase and Sale Agreement

THIS PURCHASE AND SALE AGREEMENT ("Agreement") is made as of August 14th, 2013 (the "Effective Date") between Nordic Birdhouses Ltd ("Seller") and Timo Inc. ("Buyer"). Seller and Buyer are collectively referred to as the "Parties".

NOW, THEREFORE, in consideration if the mutual covenants and conditions contained herein, the Parties hereby agree as follows:

Scope. Buyer agrees to buy and Seller agrees to sell and deliver to Buyer one hundred thousand (100,000) unique bird houses ("Birdhouses") as agreed herein. The Birdhouses shall meet the agreed specifications (Appendix 1; "Specifications") which include detailed size measurements per bird type, electronic monitoring devices and surveillance capability integrated. Each Birdhouse will have one side made from Plexi glass provided from Plexi Glass Corporation. For a Flicker Birdhouse the house floor must be 7x7 inches, the house depth 16 to 18 inches, the hole above the floor shall be 13 inches and the minimum diameter of the hole must be 2.5 to 3 inches. Seller shall deliver and install thirty thousand (30,000) Flicker Birdhouses in Bond County national preserve in Illinois, USA. For a Bluebird Birdhouse the house floor must be 6x6 inches, the house depth 9 inches, the hole above the floor shall be 7 inches and the minimum diameter of the hole must be 1 and 9/16 inches. Seller shall deliver and install twenty thousand (20,000) Bluebird Birdhouses in Fayette County national preserve in Illinois, USA. For a Barred Owl Birdhouse the house floor must be 14x14 inches, the house depth 26 to 28 inches, the hole above the floor shall be 21 to 23 inches and the minimum diameter of the hole must be 6 to 8 inches. Seller shall deliver and install ten thousand (10,000) Barred Owl Birdhouses in Hancock County national preserve in Illinois, USA. For a Woodpecker Birdhouse the house floor must be 6x6 inches, the house depth 12 to 15 inches, the hole above the floor shall be 9 to 12 inches and the minimum diameter of the hole must be 1.6 to 1.8 inches. Seller shall deliver and install forty thousand (40,000) Woodpecker Birdhouses in Livingston County national preserve in Illinois, USA.

Electronic monitoring devices and surveillance capability shall be fully integrated to allow monitoring at the bird center headquarters located in Vandalia, Illinois (Bond County). Electronic monitoring devices shall have satellite signal capability allowing for remote surveillance.

Term and Termination. This Agreement shall commence on the Effective Date set forth above and, unless terminated sooner in accordance with the terms hereof, shall continue for two (2) years after the Effective Date, unless extended in writing, via an amendment to this Agreement, signed by both Parties. Notwithstanding anything to the contrary herein, this Agreement may only be terminated by either Party as set forth in this Agreement for default or Force Majeure event. Both Parties are bound to the specified performance as agreed to in this Agreement.

Delivery. Seller agrees to deliver all 100,000 Birdhouses within 12 months of the Effective Date. Seller agrees to deliver all Birdhouses installed on-site at the various

county preserves in Illinois, USA as outlined in Section 1. Seller agrees to hold a Design Review ("DR") after three (3) months from the Effective Date outlining a computer rendering of the final product including detailed drawings of the surveillance and monitoring system. Within fourteen (14) days after the completion of the DR Buyer agrees to send written notifications of its approval of the design. Should Buyer not approve the design outlined during the DR the Parties agree to hold a second DR two (2) months after such notice date and the program schedule shall be extended by two (2) months as well. Seller shall deliver a prototype to Buyer's facility within one (1) month after the design approval. Final Pre-Delivery inspection shall be conducted by Buyer two (2) weeks prior to Lot 1 delivery schedule for March 14th, 2014. Lot 2 delivery is scheduled for May 14th, 2014 and Lot 3 is scheduled for July 14^{t,} 2014. Each lot includes various Birdhouse types as agreed by the Parties during the DR. Lot 1 delivery shall be 20,000 Birdhouses, Lot 2 30,000 Birdhouses and Lot 3 shall be the remaining 50,000 Birdhouses.

Price & Payment. The Parties agree to a one hundred ($100) USD price per each Birdhouse, for a total purchase price for the 100,000 Birdhouses of ten million ($10,000,000) USD ("Purchase Price"). Buyer agrees to pay amounts due per the following milestone payment plan. Initial down payment of 10% of the Purchase Price is due 30 days after execution of this Agreement. Milestone payments thereafter with first milestone payment of 10% due after Design Review (DR), second milestone payment of 10% is due after prototype approval by Buyer. Third milestone payment of 10% is due after delivery and acceptance by Buyer of the first unit, fourth milestone payment of 20% is due after delivery and acceptance by Buyer of Lot 1, fifth milestone payment of 20% is due after delivery and acceptance by Buyer of Lots 2 and final payment of 20% is due after delivery of Lot 3 and program completion accepted by Buyer. All payments shall be due 30 (thirty) days after invoice date. In addition to any other remedy available to Seller, for all late undisputed payments by Buyer, Buyer shall pay a late fee of 1.5% per month up to the maximum percentage permitted by applicable law on any amount not paid when due. Parties agree any changes to the agreed work scope shall be negotiated and a modification to this Agreement shall be executed prior to any additional work commencing.

Delay in Delivery. Should Seller be unable to meet the agreed delivery dates Seller shall notify Buyer in writing of any such delay as soon as practicable. For any delay past two (2) weeks from the agreed delivery dates for any other reason than Force Majeure event Seller shall be liable to pay liquidated damages at two (2) percent of the Purchase Price (without value added tax) for each commencing week of delay, however, not to exceed ten (10) percent of the Purchase Price.

Limitation of Liability. Neither Party shall be liable toward the other Party for any consequential or indirect damage or loss, including but not limited to loss of profit, unless such damage or loss is caused by willful misconduct or gross negligence. Notwithstanding the aforesaid, no limitation of liability shall be applicable to damage or loss arising out of death or personal injury.

Indemnity. Each party (the "Indemnifying Party") agrees to defend, indemnify and hold harmless the other Party and its respective officers, directors, employees, agents, successors, subsidiaries and any other affiliated entity (the "Indemnified Party") from and against all third party claims, demands, actions, causes of action, suits, losses, damages

to persons or property, liabilities and all related costs and expenses, including without limitation, reasonable attorneys' fees to the extent arising from or relating to a) the Indemnifying Party's breach of one of its representations, obligations, warranties or covenants set forth in this Agreement; b) any violation of applicable law or regulations by the Indemnifying Party; or c) the negligence or willful misconduct of the Indemnifying Party.

Force Majeure. Notwithstanding any other provision of this Agreement, neither Party shall be liable to the other Party for loss, cost or damage, resulting from its failure to perform its obligations under this Agreement if such failure arises from any causes beyond its reasonable control including, but not limited to, Acts of God, flood, war, local ordinances, flight conditions, severe weather conditions, military operations, or any computer, telephone or power failure; provided that the Party experiencing the problem takes such steps as may be reasonable to fulfill , in whole, or in part, the intent of this Agreement**.**

Confidentiality. To the extent approved by the regulation, the events may need, every so often and in reference to work contemplated beneath this Agreement, to reveal confidential data to one another ("Confidential Info"). Every Party will use their best efforts to stop the disclosure of any of the opposite party's confidential information to any other party for a period of three years after termination of this Agreement. The Parties shall keep confidential and shall not disclose at any stage to any third parties, the existence and content of this Agreement as well as any confidential information received from the other Party or otherwise learned in connection with this Agreement without the prior written consent of the other Party. The Parties shall not use confidential information received from the other Party for any other purposes than the proper performance of this Agreement. Confidential Info of the disclosing party shall not be deemed to include: (a) is already within the recipient party's possession at the time of disclosure thereof, (b) is or later turns into a part of the general public area by way of no fault of the recipient party, (c) is acquired from a third party having no obligations of confidentiality to the disclosing party, (d) is independently developed by the recipient party, (e) is required by regulation or regulation to be disclosed.

Every Party shall maintain for three (3) years after the termination of this Agreement any confidential data recognized as confidential and obtained from the opposite party in the course of this relationship. Nothing herein should forestall establishment or every other element of the system from utilizing any data generated hereunder for extraordinary analysis and typical business functions.

Warranty. Seller warrants that the Birdhouses conform to the Specifications and the details set forth in "Scope" Section, meet the general quality requirements of the branch of industry, and are free from any defects in design, materials or workmanship. The warranty period shall be twelve (12) months from the taking into use of the Birdhouses, however not in any case longer than three (3) years from the delivery and acceptance of the Birdhouses (the "Warranty Period").

Buyer shall notify Seller without delay of any defect or non-conformity detected in the Birdhouses during the Warranty Period. Seller shall, upon the request of Buyer, without delay repair or replace any defects and non-conformities in the Birdhouses at no cost to Buyer. The repaired or replaced parts shall be subject to a new warranty on the same basis

and conditions as applied to the original Birdhouses. This stipulation shall not apply to other parts of the Birdhouses, whose Warranty Period shall only be extended by a time equal to the time that the Birdhouses have been out of use due to the defect or non-conformity and repair.

Monitoring and surveillance equipment purchased from third parties shall carry the respective manufacturers' warranties. Seller undertakes to make necessary spare parts for the Birdhouses available for Buyer at reasonable prices for a period of at least fifteen (15) years from the date of delivery and acceptance.

Notices. All notices, consent, approvals or other communications required or permitted to be given under this Agreement shall be in writing and shall be deemed given when delivered personally or sent by recognized overnight courier or by certified mail, return receipt requested to the Parties at the following addresses::

In the case of Seller,

Camilla Simonen

Nordic Birdhouses Ltd

Koivutie 15

00200 Helsinki

FINLAND

In case of Buyer:

Kevin Topp

Timo Inc.
2012 Lakeview Dr

Vandalia, IL 62471

USA

Entire Agreement. This Agreement and Exhibits attached hereto and incorporated herein constitute the entire, final, complete and exclusive agreement between the parties and supersede all previous agreements or representations, oral or written, relating to this Agreement. This Agreement may not be modified or amended except in a writing signed by a duly authorized representative of each Party.

Choice of Law. This Agreement will be governed by the substantive laws of Illinois, USA, , excluding conflict of law rules and choice of law principles that provide otherwise. The United Nations Convention on the International Sale of Goods will not apply to this Agreement.

Dispute Resolution. (a) Any dispute or claim arising out of or in connection with this Agreement or its subject matter or formation, whether in tort, contract, under statute, or otherwise, including any question regarding its existence, validity, interpretation, breach, or termination, and including any non-contractual claim, will be finally and exclusively resolved by arbitration by the International Centre for Dispute Resolution (ICDR®) in accordance with the current International Arbitration Rules, available online at icdr.org. (b) The arbitral tribunal, to be appointed in accordance with the arbitration rules, will consist of one arbitrator. Where no party's claim or counterclaim exceeds USD $100,000 exclusive of interest, attorneys' fees, and other arbitration costs, the dispute shall be resolved by written submissions only unless the arbitrator determines that an oral hearing is necessary. Automatic incorporation of International Expedited Procedure will apply to cases below USD $250,000 exclusive of interest and the costs of arbitration. However, if either Party asserts the amount in controversy exceeds USD $5 million, then the tribunal

will consist of three arbitrators. (c) The seat of the arbitration will be Chicago, Illinois, USA. (d) The language of the arbitration will be English. (e) Nothing in this Section, will be construed as preventing any Party from seeking conservatory or similar interim relief from any court with competent jurisdiction. Any award rendered by the arbitral tribunal will be made in writing and will be final and binding on the parties. The parties will carry out the award without delay. Judgment upon any award or order may be entered in any court having jurisdiction. All aspects of the arbitration will be considered confidential.

Counterparts. This Agreement may be executed in one or more counterparts, each of which will be deemed to be an original and all of which taken together will be deemed to constitute one and the same agreement.

Amendments. This Agreement may only be amended or modified by a written instrument signed by a duly authorized representative of the Buyer and Seller respectively.

Assignment. Neither Party shall assign its rights, delegates or otherwise transfer its rights or obligations under this Agreement, without the prior written consent of the other Party.

Severability. If any provision of this Agreement, or the application thereof to any person, place or circumstance, shall be held to be invalid, unenforceable or void, the remainder of this Agreement and such provisions as applied to other persons, places and circumstances shall remain in full force and effect.

Section Headings. Section headings have been inserted in this Agreement as a matter of convenience of reference only, are not a part of this Agreement and shall not be used in the interpretation of any provision of this Agreement.

IN WITNESS WHEREOF, Seller and Buyer have caused their names to be signed hereto by their duly authorized officers as of the date first above written.

Nordic Birdhouses Ltd   Timo Inc.

_____   _____

Name: Name:

Title: Title:

Date: Date:

Appendices: Appendix 1 - Specifications