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Transformational Leadership in High Performing Product Development and Products Organisation

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ABSTRACT:

Today's world is changing even faster, and companies must find new, more efficient ways and methods to get their products to market even faster. High-performance organisations are one method of improving competitiveness in this changing environment. The foundation for high-performance organisations is created by a high-performance culture, self-directed and competent personnel, a transformational leadership model, and an agile organisation. A high-performance culture reflects how the organization behaves, performs, and lives in the operating environment. It is not easy to achieve a competent self-directed organisation, when establishing a completely new organisation there is a big risk in hiring people, because the people do not necessarily adapt to the team or the team's competences do not complement each other in the desired way. The development of already existing teams into competent and self-directed teams can be achieved by coaching, training, and motivating them to independently take on greater responsibility and grow into a high-performance team.

In both cases, leadership plays a big role in success and failure. Among several different leadership models, transformational leadership is considered the most capable model to achieve a high-performance organisation. In the transformational leadership model, teams are given responsibilities and authority to make the necessary decisions efficiently and at the right time. The teams themselves also have the necessary information and competence to make a decision.

The organisation and team sizes should be planned so that communication and cooperation within and between teams is as efficient as possible. The ideal team size is 7 people, in which case the mutual interactions of all team members are still continuous events. If the size of the team grows larger than this, the communication and information flow within the team is no longer as effective. One of the best ways is to create competence matrix resource pools, from which project groups of 7 people are created.

According to the input-mediator-output model, the efficiency and effectiveness of teams is the output of inputs and mediators. In which the inputs are all members, teams matters and organisation matters, which are then processed according to the processes and the emergent states. The emergent state describes the organisation's behaviour, the team's learning, and information about who can and knows what in the organisation.

The research was carried out using the analytical hierarchy model in one global organisation. The goal of the study was to find out the organisation's leadership model in product development and product management, and to give ideas for improving high-performance. The research confirmed the current state of the organisation's leadership model well, and the results were in line with the interviews conducted.

KEYWORDS: Transformational Leadership; High Performing; Product Development Organization; AHP Analysis;

VAASAN YLIOPISTO
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Tekijä: Syvänen Kimmo
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TIIVISTELMÄ:
Nykymaailma muuttuu entistä nopeammin ja yritysten on löydettävä uusia tehokkaampia tapoja ja menetelmiä saada tuotteet markkinoille entistä nopeammin. Korkean suorituskyvyn omaavat organisaatiot ovat yksi menetelmä parantaa kilpailukykyä tässä muuttuvassa ympäristössä. Perustan korkean suorituskyvyn organisaatioille luo korkean suorituskyvyn kulttuuri, itseohjautuva ja osaava henkilöstö, mukautuvajohtajuus malli sekä ketterä organisaatio. Korkean suorituskyvyn kulttuuri kuvastaa sitä, kuinka organisaatio käyttäytyy, suorittaa ja elää toimintaympäristössä. Osaavaa itseohjautuvaa organisaatiota ei ole helppoa saavuttaa, perustettaessa kokonaan uutta organisaatiota on suuri riski henkilöiden palkkauksessa, koska henkilöt eivät välttämättä sopeudu tiimiin tai tiimin osaamiset eivät täydennä toisiaan halutulla tavalla. Jo olemassa olevien tiimien kehittäminen osaavaksi ja itseohjautuvaksi tiimiksi voidaan saavuttaa valmentamalla (coaching), kouluttamalla sekä motivoimalla ottamaan itsenäisesti isompaa vastuuta sekä kasvamaan korkean suorituskyvyn tiimiksi.

Molemmissa tapauksissa johtajuudella on suuri merkitys onnistumisessa sekä epäonnistumisessa. Useista eri johtamismalleista mukautuvaa johtamista pidetään kyvykkäimpänä mallina saavuttaa korkeankyvyn organisaatio. Mukautuvassa johtamismallissa tiimeille annetaan vastuut ja valtuudet tehdä tarvittavat päätökset tehokkaasti ja oikeaan aikaan. Tiimeillä itsellään on myös tarvittavat tiedot ja osaamiset päätöksen tekoon.

Organisaatio ja tiimien koot tulee suunnitella niin, että tiimien sisäinen ja tiimien välinen kommunikaatio ja yhteistyö on mahdollisimman tehokasta. Ideaali tiimien koko on 7 henkeä, jolloin kaikkien tiimin jäsenten keskinäiset kanssakäymiset ovat vielä jatkuvia tapahtumia. Jos tiimin koko kasvaa tätä suuremmaksi ei tiimin sisäinen kommunikaatio ja tiedonkulku ole enää niin tehokasta. Yksi parhaita tapoja on luoda osaamismatriisi resurssipoolit, joista luodaan 7 hengen projektiryhmiä.

IMO (input- mediator-output) -mallin mukaisesti tiimien tehokkuus ja aikaansaavuus on lopputulema (output) syötteistä (input) ja välittäjistä (mediator). Jossa syötteitä ovat kaikki jäsenet, tiimien aiheet sekä organisaation aiheet, jotka sitten prosessoidaan prosessien sekä esiintyvien tilanteiden mukaisesti. Esiintyvillä tilanteilla kuvataan organisaation käyttäytymistä, tiimin oppimista sekä tietoa, kuka osaa ja tietää mitäkin organisaatiossa.

Tutkimus toteutettiin analyyttisen hierarkia mallia hyödyntäen yhdessä globaalissa organisaatiossa. Työn tavoitteena oli selvittää organisaation johtamismalli tuotekehityksessä sekä tuotehallinnossa sekä antaa ideoita korkean suorituskyvyn parantamiseksi. Tutkimus todensi organisaation johtamismallin nykytilan hyvin ja tulokset olivat linjassa tehtyjen haastattelujen kanssa.

KEYWORDS: Transformational Leadership; High Performing; Product Development Organization; AHP Analysis;

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Abbreviations

AHP	Analytic Hierarchy Process
HPO	High-Performing Organization
HR	Human Resource
ICR	Inconsistency Ratio
IMO	Input-Mediators-Outcome
IPO	Input-Process-Outcome
IT	Information Technology
PM	Product Manager
R&D	Research and Development
TLI	Transformational Leadership

1 Introduction

Business environment is coming more and more challenging today and new product shall be developed and released more efficiency, less people and faster than before. When products are complicated and they include a lot of mechanical, electrical, software and other matters which shall be working seamlessly together the challenge is more demanding. If products are for consumer markets the evolution of the products is much faster than in industrial markets. Consumer products can be developed with some minor updates and changes with new release annually and in industrial markets customers are not willing to pay extra without real benefit and products are used years instead of short time like general consumers.

This more challenging runs companies to look-in for more efficient way of working. Efficiency can be improved with processes, tools, IT-systems, and many other ways. One way is also management and how organisation is led. In the past is done multiple studies how management can affect employee's satisfaction, motivation, co-operation, and that way also to efficiency.

1.1 Aim and purpose of the study

This study was done to the global large-scale industrial company with multiple divisions. The company is looking improvements for efficiency and time to markets with new products from their product development organisation. Products are done for industrial purposes and their life cycle is from 10 to 30 years and they are used in multiple applications. Study focuses in the one division and their research and development department together with product management organisation and project office. The R&D department is doing design tasks, product management is responsible for product requirements from customers and project office is responsible to run development projects efficiently and according to defined processes. All these selected organisation units have a direct influence for total efficiency of releasing new products to the markets.

Study was done for measure current state of the leadership in selected departments and results are used to support planning of improvements to gain more high-performing teams. The final changes can include organisational changes, process changes and training for leaders to implement most efficient way to lead people. The study includes theoretical research what is used to support done survey and analysing the results. Theory is also used for conclusions and recommendations.

The key research question is "*How to generate global high-performing organisation with local flavour?*". By the question study is aiming to find key elements for high-performing organisations and same time take account cultural and organisational differences in local organisations. Supportive research questions are "*What are main characteristics of leadership which influence to the team performing?*" and "*How organisation should be organised to able most high-performing organisation and how organisation shall be led?".*

2 Theoretical Study

In the theoretical part of this thesis, I will present the basic theories behind high performing organizations, high performance culture, leadership models, organization structures and team sizes, Maslow hierarchy of needs, team efficiency and effectiveness, validity, and reliability. These theories are commonly known and much studied in the past, therefor I´m don´t concentrate into these theories more than in the basic level in this thesis.

2.1 High Performing Organization / Team (HPO)

"*A sustainable high-performance organization is the one that is able to remain responsive to the marketplace expectations while also sustaining the behaviours required to meet these expectations*" (Kaliprasad, 2006, p. 34). The previous definition of HPO is only one from many existing definitions. Like this one most of the definitions define what HPO is, one definition of HPO wrote by Kirkman B. L., Lowe K. B. and Young D.P., (2007, p. 13) in their article defines HPO by what it does. Their definition is "*an organizational system that continually aligns its strategy, goals, objectives, and internal operations with the demands of its external environment to maximize organizational performance".*

High-perform organizations and teams have come more and more common trend in companies, because markets and competition are getting harder every day and without needed flexibility, fast reactions, cost efficiency and ability to bring new products to the market on time and as fast as possible companies are no able to fight for customers and revenues against their rivals. High-performance organizations that can transform their structures and working practices according to changed market demands make the organization high performing. Daily changing economic environments force companies to improve their ability to be faster and more cost-effective with high quality from product launch to the end of the product's life cycle. These challenges drive companies to look

in for new ways to survive, and there´s high-performing organization with transformational ability with successful change management is wanted state of the will. High- performing organizations are always looking into the future with longer period targets and sustainability in their acts and decisions (Holbeche, 2011). HPO don´t do any acts or decisions for short period, because every time when a new change is done there is change resistance in the organization which decrease productivity and create uncertainty in organization. Of course, sometimes companies are in situations where short-term fast changes are a must, for example dramatically changed business environment where changes are must to survive in the changed environment. But even in these cases after the situation is stabilized the actions must be again long-term acts to prevent continuing uncertainty and secure high-performance in the organization to serve their customers.

When talked about high-performing organizations there is many times mix between organization level and team level. If organization is meant to include the whole company, then there is a need to consider co-operation, efficiency and processes between different teams who work to the same goal (Holbeche, 2011) and not on an individual level like in the teams. If analysis is done at the team level, then study needs to concentrate more on individuals in the team and how they are working together, do they have needed competence and are they empowered to do independent decisions to be high-performing team.

2.1.1 Do the right things at the right time

HPO- is the organization who are doing and focusing to the “right things” at the “right time” (Holbeche, 2011). Some organizations and teams can be very productive and efficient, but still not reach the given target, why? The reason is that organizations are doing wrong things at the wrong time, and they are not focusing on the tasks which will improve progress in the projects or in other processes. Here competent management with the right “lean processes” can make a huge difference in the output of the organization. The main principle is to focus only to the items which add the value, where all secondary

reporting, additional work or any other tasks which won´t add any value to the product or service are seen as a waste. When a team or organization wants to be high performing, they will remove all waste from their processes and work.

2.1.2 Customer-focused mind set

High-performing organizations are customer-focused, where all acts are made to serve customers (Holbeche, 2011). Customer can also be internal stakeholder not only external customer as term “customer” is many times understood. This means that inside the organization individuals’ customers can be their co-worker who will catch the ball after them and continue to work after them. In example in product development purchase organization can be waiting to have specifications and drawings form the designer to be able to order prototype components. Research made in the ISR firm concluded that high-performing organizations exist to serve their customers, and in these customer-focused organizations employees provide better outcome when they really feel to serving customers (Holbeche, 2011).

2.1.3 Value employees and grow leadership

HPO values their employees and grow leadership. HPO knows that their most valuable and important asset is their staff. When investing the employees, they will stay happier, motivated, and eager to serve the organization. They also know that the only way to value their employees is to become great leaders who can create an open, learning, inspiring and co-operative ambience. When a team and the organization have great management that is also noticed by employees, and they are willing to buy same values and targets with the management (Holbeche, 2011).

Basic elements of the HPO are High Performance Culture, Self-Driven and Talented Employees, Transformational and Supportive Leadership Model and Agile Organization

Structure with Focused and Supporting Processes (Holbeche, 2011). In coming sub-chapters, I will explain these elements in a more detailed level.

2.2 Culture in the High-Performing Organizations

Before we can look more deeply into the High-Performance culture, we need to understand what is concerned to be a culture of organization in a content of this thesis. The term culture is explained in the Cambridge Dictionary (2019) with two different meanings, first as a way of life "*the way of life of a particular people, especially as shown in their ordinary behaviour and habits, their attitudes toward each other, and their moral and religious beliefs"* secondly as a culture in an arts "*the arts of describing, showing, or performing that represent the traditions or the way of life or a particular people or group; literature, art, music, dance, theatre, etc."*. In this thesis the culture is defined to be "*the way how things are done in the organizations and teams*..." This definition includes company values, underlaying assumptions, behaviours, and norms. Norms are the way how things have unwritten used to be or done for years and this has become the standard way of acting in the company. According to Kotter (1995) companied can value from great company culture "*Corporate cultures can have a significant impact on a firm's long-term economic performance. We found that firms with cultures that emphasized all the key managerial constituencies outperformed firms that did not by a huge margin"* (Holbeche, 2011). The main characteristics of high-performance culture are competence, control, collaboration, cultivation, and supportive leadership (Kaliprasad, 2006).

2.2.1 Competence

Competence is the heart of the high-performance teams, without competence team can´t be high-performing because they use valuable time to learn how routine tasks should be done instead of doing them with most efficient way with ready proven and adjusted processes with needed skills and knowledge. Competent teams can contribute

high quality achievements with the first trial while incompetent teams and individuals will make mistakes which will then cost time and money e.g., multiple rounds of prototypes instead of one prototype round. Competence is also one of the key elements in problem solving. As said competence is very important to the high-performing teams, organizations must train and develop their employees all the time to stay in the front of the technical and commercial development. Investing in competence development organization builds the foundation of competitive and competent organization for years. Organization will be most competent when there is a culture which embraces constant learning and empowers training (Agugliaro, 2017).

2.2.2 Control

Control defines how organizations manage all tasks what they are doing. The control includes all used processes, instructions, used IT-tools for transactions, orders, material handling or any other item what need to be under systematic control (Kaliprasad, 2006). If an organization has no control at all it causes chaos where everyone does things differently. In the high-performing organizations there is freedom to do tasks in teams and by individuals, but still all the tasks must be done according to defined processes and IT-tools. If these process steps are bypassed or different IT-tools are used these will generate waste and extra work in later steps. In example, designer didn´t follow the process where was defined to save done design into the company documentation system, the purchaser was going to order prototype sample, but couldn´t order them because drawings wasn´t in the system. This type of uncontrolled act caused the waste in the organization with lost time when purchaser had to go to the designer and request the drawings manually.

2.2.3 Collaboration

Collaboration is one of the organization characteristics that affects directly to the organization´s outcomes and performance (Boughzala I. & De Vreede G., 2015). In a larger organization where, organizational structure is more complex there is no task that individuals can do everything by them-self. Collaboration isn´t the same thing as teamwork, collaboration is interaction between different functions and organizations when teamwork is two or more people are working for a same goal (Blanchard, 2019). Collaboration isn´t either company internal act, the real collaboration also includes collaborations with external parties like customers and sub-suppliers and other stakeholders. When collaboration is boundaryless with all functions and stakeholders the organization can reach high performing teams where knowledge and information flow will increase competence and efficiency of whole organization equally (Kaliprasad, 2006).

As Marilyn Laiken (1994) has said about collaboration in HPO is that the most fundamental skill in HPO is the ability to work effectively in small groups. With collaboration we often raise our thoughts to the collaboration between teams and organizations, but as M. Laiken pointed out, most of the collaboration happen inside the teams and it must be efficient, otherwise there won´t be any potential to reach required efficiency level.

2.2.4 Cultivation

Cultivation or innovations in the organizations are usually made at the individual level where employees have a dream for something disruptive technology, product, or services (Kaliprasad, 2006). In a high-performing organization this kind of innovation is wanted behaviour and when these innovations are developed to the end products, companies can have great advances in the markets compared to the competitors. Encouraging innovations and not stifling these innovators' organizations can create a great ambience to the continuous improvements and innovations in their business. Also, this kind

of ambience creates a culture where everybody can participate to create something new, and this will also improve the performance level of the organization.

2.2.5 Leadership

High-Performing organizations are always as good as the management of the team. Therefore, if the team management is not supporting the right type of leadership even the greatest team won´t be a high-performing due lower motivation, bad processes, lack of trust or in worst case by terrible micromanaging. High-performing organizations are empowered by their management, when ideally all employees are self-driven, hardworking, effective, responsible, accountable, and flexible with burning will to learn and develop themselves and share their knowledge with all the others (Holbeche, 2011).

Unfortunately, we are not living in the ideal world and all employees or even employers aren´t perfect, here the management can do the difference between good and bad results in the organization. If a manager has an absence of leadership style it causes lack of direction from bad leading results, low morale, and lack of passion for work (Bhatti N., Maitlo G. M., Shaikh N., Hasmi M. A. & Shaikh F. M., 2012). There are many theories from different leadership styles and when this research is focusing to the R&D and Product Management organizations where organization need to be innovating, improve the performance and manage a lot of changes, most suitable leadership style is transformational leadership style (Suk Bong, Kihwan & Seung-Wan, 2017).

2.3 Self-Driven and Talented HPO- Organization

As said earlier, the one of the key successors to the high-performing organization are self-driven and talented employees. In this chapter I will shortly present two ways to build up the self-driven and talented organization. Unfortunately, there are not any short

cuts to succeeding with this target and both methods will take some time to reach the required level.

2.3.1 Building the new team or organization

The first one is not often suitable for the existing organizations. Hiring only highly talented with the right knowledge and highly motivated employees who are the perfect fit for the established team. The team must have the right amount of diversity, but there should not be any friction between the team members, what could cause decreased performance. Changing or hiring new employees in the teams are not always easy or even possible to do and hiring more members won´t always make sense due higher costs and in most of the cases there are not enough work for all team members to do. Even the most talented employees are not creating a high-performing team without trusted and inspiring leadership (Laiken, 1994) who will lead and build the culture, processes and supporting and encouraging ambience into the team.

One markable weakness of a totally new team without former employees is that new employees are now familiar with the used processes, tools, availability of existing materials or existing stakeholders. This will cause some extra time to learn how and where things can be found or done. The best way, if possible, is to have a few highly talented and high performing former employees in the team / organization and they can teach and coach new team members when learning time will be much shorten, then purely self-learn.

2.3.2 Teach, coach, and empower the existing team

The second way to have self-driven and talented teams is to teach, coach and empower team members to have mentality of learning, where learning must include “heads-on” and “hands-on” training to really understand item. If employees have only “heads-on”

knowledge, they may not have any skills to use knowledge in practice (Barrie & Pace, 1997). Organizations must follow up and empower all members to maintain their knowledge and skills. When the team members are more willing to trust in their knowledge the decision making becomes easier and team members will take more responsibility individually. This way teams transform into more self-driven and high performing teams. Organization will also benefit from growing knowledge and skill level inside the organization, when they can give more challenging duties and even new roles to these employees inhouse, rather than hire new people outside the company who don´t know existing processes, tools, or products.

Even with the new teams with highly talented and competent new hires, organization must build a culture of learning where employer encourage everybody to maintain their knowledge and learning new. In the educating it´s important to know key-skills and knowledge of each role in the team (Agugliaro, 2017). Only the skilled teams with needed knowledge and freedom to make decisions can be self-driven and high-performing teams. Therefore it´s very important to create the culture of learning where learning in daily based act, more than participating annually or bi-annually some one-time training sessions. The team is staffed by members who are willing to learn and know more and will create a team who is willing to be self-driven and high performing.

2.4 Leadership styles

Multiple researchers like Bass have revealed the leadership style is the most important influencer to team effective and organizational performance (Suk et al., 2017). In this chapter I will shortly present 8 commonly used leadership styles with their pros and cons and situations where they are most preferable styles. Leadership styles are not “black and white” where a leader can just pick one what she thinks to be best one and run with that. Successful leaders can use multiple styles and pick the most effective one for each situation to have the best results (Harper, 2012).

2.4.1 Transformational leadership style

According to Suk et. al. (2017) “transformational leadership is a style of leader behaviour by which the leader helps followers to exceed their initial performance expectations by promoting changes to their values, norms and personal interests”. Transformational leadership is the perfect match for the project teams and organizations where team members need to be self-driven and talented. The leadership style courage and pushes employees to be aware of new technologies, processes, and ways of working. Transformational leadership empowers employees to show their personalities and strengths when team can become more diverse where team can find the ways to use each one strength to perform more efficient. Like Breevaart K. & Zacher H. (2019) wrote in their article the transformational leadership is highly effective and increases employees´ satisfaction with their work and job performance by its four dimensions. These four dimensions are presented later in this chapter.

Transformational leadership also boosts morale and motivation by preparing employees to reach set targets and future challenges (Rehman S., Rahman H. U., Zahid M. & Asif M., 2018). Transformational leaders can see the potential of employees and courage and coach employees to grow and even to push them to more challenging duties when needed. The leader expresses her/his confidence to employees that the team will achieve set goals even under pressure and stress and decisions can be still done efficiently.

As mentioned before transformational leadership is based on the four dimensions (Ha-Vikström, 2018; Bass B. M. & Avolio B. J., 1993). The first one is inspirational motivation where leaders’ behaviours generate team spirit where all are committed to the common goals, and all have same vision (Yaslioglu M. M. & Erden N. S., 2018). When a leader acts as an example with transparency, the team is involved and informed with current statuses and made decisions. The team members are more motivated in transparent teams

than in organizations where decisions or status of organization/project etc. is not openly communicated and discussed with the team.

The second dimension is intellectual stimulation, where a leader keeps employees motivated with challenging and interesting tasks. Intellectual stimulation is focused on improving creativity and innovation in the organization. Leaders encourage and challenge team members to find new ways to do things and innovate new technologies and processes (Ha-Vikström, 2018). Being the part of the organization where new ideas are allowed and implemented without any fear of personal punishments in the case of failure, employees are more willing to bring new ideas to know and this will increase innovation in the organization. Intellectual stimulation encourages employees also to use some time to learn and study new theories and methods, when they know that they have the possibility to use these new learnings in his/her work.

The third dimension is individualized consideration, where leaders treat employees as individuals and take account individual needs and know how to coach, encourage, and support them (Suk B.C. & al., 2017). This also improves diversity in the team and as many theories have proved that high diversity in the teams improve efficiency and innovative performance of the organizations (Martinez M. G., Zouaghi F. & Marco T. G., 2017). Leaders are also willing to listen to their individual team members, delegating tasks to them and developing individual potential for future challenges (Yaslioglu M. M. & Erden N. S., 2018).

The fourth dimension is idealized influence, where leader act as an example and show respect to employees. With this influence leader also creates open atmosphere and feel of psychologic safety with mutual trust where all team members can feel the freedom to speak up and say own opinions without any fear of punishment or any negative feedback or affect to future position in the organization. Leaders never use her power to gain her personal benefits (Yaslioglu M. M. & Erden N. S., 2018).

Transformational leadership has two ways to influence employees, it can be either supportive or directive (Avolio & Bass, 1991). In the inspirational motivation directive leaders require employees to follow and track their own progress whereas supportive leader establishes the climate where team works together and track their progress mutually. In idealized influence directive leader courage employees to trust and follow their own direction and decisions to succeed, whereas supportive leader has the direction in her hands and asks employees to support her to achieve targets. In intellectual stimulation directive leader ask employees to face the problems and find their own solutions, whereas supportive leader gathers team together and they face the problems together and find the resolutions. In individualized consideration directive leader tries to provide direct support to the employee whereas supportive leader invites the whole team to join and find out the ways how they can develop their capabilities (Yaslioglu M. M. & Erden N. S., 2018).

2.4.2 Laissez-Faire leadership style

Laissez-Faire leadership is a passive leadership style where a leader tries to minimize any kind of controlling or directing of the team. The team has free hands to make all decisions and needed actions to succeed the set goals and objectives (Tarsik N- F., Kassim N. A. & Nasharudin N., 2014). This type of leadership has a positive impact on employees by giving the feeling of full autonomy and responsibility to reach set targets.

While transformational leadership is an active leadership style where the leader is always directing or supporting the team members in the right direction, the Laissez-Faire style is seen even lack of leadership where team is in the “free flow”. This free flow may cause sliding off from the set targets and focusing on the wrong items at the wrong time. Leaders who use Laissez-Faire leadership style, in studies the style is shown to be their per-

sonality feature and many times this feature together with lack of basic leadership competence will affect negatively to the employees´ job satisfaction (Buch R., Martinsen O. L. & Kuvaas B., 2015).

2.4.3 Transactional leadership style

Transactional leadership is based on rewarding based on setting targets. Goals and objectives are set clearly, and employees know exactly the expected performance level. Leaders monitor performance levels and usually give numerical evaluations which correlates to set rewarding levels (Bass, Avolio, Jung & Berson, 2003). With this kind of performance measuring employees can be easily punished by setting unreachable targets when employee doesn´t have any methods to reach set targets. This kind of punishment will affect the employees´ motivation and therefor targets should be always to set to the items where employee can affect to the end results. Goals and objects need to be set to the right level to have courage to reach the ambitious targets and go beyond the boundaries, but even if the targets are set high, they must be reachable. If goals and objectives are set too easily to reach then this will cause lower-level performance where followers are not willing to push any extra miles, because they are able to reach maximum reward with less effort.

When a leader is active, she follows closely all deviations, mistakes or other barriers like un-efficient processes and does the corrective actions as soon as possible. This kind of supportive leadership improves employees' motivation and makes set goals and objectives more reachable. If leader is passive, she doesn´t follow these issues in the organizations and usually passive leaders set unclear goals and objectives which are hard to evaluate and employees don´t know what is expected from them (Bass, Avolio, Jung & Berson, 2003). Goodwin, Wofford, and Whittington (2001) have found out in their research that transactional rewarding is more effective when it is done contingent rather than goals and objectives were set as a base performance expectation.

2.4.4 Servant leadership style

Servant leadership is the style where leader focus to serve her followers as well as she can. Many times, this is very hard and stressful to the leader because she always must push her own needs and interests behind. This may cause some extra stress for the leader when she needs to show to the organization her own capabilities and co-operation especially when follower needs are not aligned with organization will.

Servant leadership is one of most ethical leadership styles and it practiced by half of the *Fortune* Magazine "Best Places to Work" annual list companies (Kiker D. S., Callahan J. S. & Kiker M. B., 2019). This ethical part is one of the most followed features in the companies now a days when press and big audience is evaluating companies. If companies are not working ethically their products can be boycotted in the markets and that will cause loss of income and may make finding good employees more difficult in the future. By the latest definition of servant leadership, it´s focusing to eight dimensions which are empowering, humility, authenticity, interpersonal acceptance, providing direction, stewardship, accountability and standing back (Kiker & al. (2019).

Serving leadership has some same dimensions with transformational leadership, such as individual consideration. In the transformational leadership leaders are always still focusing the betterment of the organization, not purely to the individuals, whereas servant leadership is focusing the best of individuals even it may conflict with the organization interests as long as it doesn´t harm organization. Serving leadership has also moral responsibility to the customers, other organization parts and all other stakeholders, which will lead leader to always think the best for all, not only her followers or her (Kiker & al. (2019).

While transformational leadership is leading followers more individual working, competence and willing to do needed decision inside the teams, serving leadership doesn´t

courage individuals to jump out from comfort zone when leader is always helping individuals with their challenges her (Kiker & al. (2019). This dimension isn´t wanted in the longer term, but when organization has critical times ongoing, this kind of leadership can give a confidence to the followers to follow leader and help organization to reach set goals and objectives.

2.4.5 Democratic leadership style

In democratic leadership the manager involves the team in the decision making, thus she is the one who makes the last call. This is very good way to get the facts behind the decision due to team members having often the best technical or other detailed level information available what leader may not have. Taking team members into the decision-making increases transparency of the team, and this helps all members to follow better current and coming status of the team and works (Rehman & al. 2018). This way will also encourage the team members to take more roles in the organization while they can contribute to the made decisions. When employees are involved to the decision making, they also feel in that they can control their own future and they also are more satisfied after they are heard (Bhatti N. & al., 2012).

Democratic leadership is not suitable for all situations and made decisions are not always for all followers´ mind. Many times, it is also very hard to find consensus inside the team and this may affect the efficiency of the decision making. When consensus is hard to find some of the team members who were overruled are not feeling happy and that can cause lack of motivation. Therefor the leader must always be in front of the team and make sure that everybody knows that she is the one who makes the decisions according to facts she has.

2.4.6 Autocratic leadership style

Autocratic leaders' belief that autocratic use of power will get best results. In huge crises this is true, and this type of leadership can lead organization out from the crisis and even the most difficult decisions and acts can be done. When an organization is not in a crisis this kind of leadership will cause lack of loyalty and dissatisfaction in the followers (Rehman & al. 2018).

Autocratic leadership is a highly centralized way of working and all decisions are made by these leaders. This way of decision-making is most of the time done by feeling based or limited facts, where results can be harmful to the organization (Rehman & al. 2018). Also controlling is in the high level in the organizations which are led autocratically, this high controlling will cause a lot of bureaucracy and reporting to the management. When reporting is done to the management because they must be aware everything what is ongoing at niche level will cause a lack of efficiency in the organization and the organization is focusing more on reporting than productive work.

2.4.7 Bureaucratic leadership style

In bureaucratic leadership is following all rules and process precisely and they also require same from their followers. This is very stiff model and it doesn´t give any room to flexibility or other ways of working what is not written in the instructions. This kind of leadership suits the hazardous or routine jobs where tasks are must to do with one and only way to do it safely or correctly. Because of this un-flexibility bureaucratic leadership is not suitable leadership style in organizations which require innovating and flexible atmosphere, like R&D functions (Amanchukwu R. N, Stanley G. J. & Ololube N. P., 2015).

2.4.8 Charismatic leadership style

Charismatic leadership is based on the personal charisma of the leader. A leader can create high energy and enthusiasm in all team members and can have them follow his vision and ambitions. When a leader is successful in creating such an enthusiasm, the team will be efficient and reach their goals and objectives. When an organization follows a charismatic leader, it can easily run to state where all decisions and power will be in the leader. Leaders will also be a critical resource in this kind of team and if leader leaves the organization for some reason, it may drive organization to the crisis functions (Amanchukwu R. N, Stanley G. J. & Ololube N. P., 2015).

Charismatic leadership works well in the organizations where leader can do individual decisions for visions and strategies like sales and other organizations where she can influence to the customers or other stakeholders who need to be convinced with her present. The risk is that organization get in to the “tunnel vision,” where charismatic leader won´t follow any warning or other signs that she may be doing something wrong or decision may not be the good one (Amanchukwu R. N, Stanley G. J. & Ololube N. P., 2015).

2.5 Organization structures and team sizes

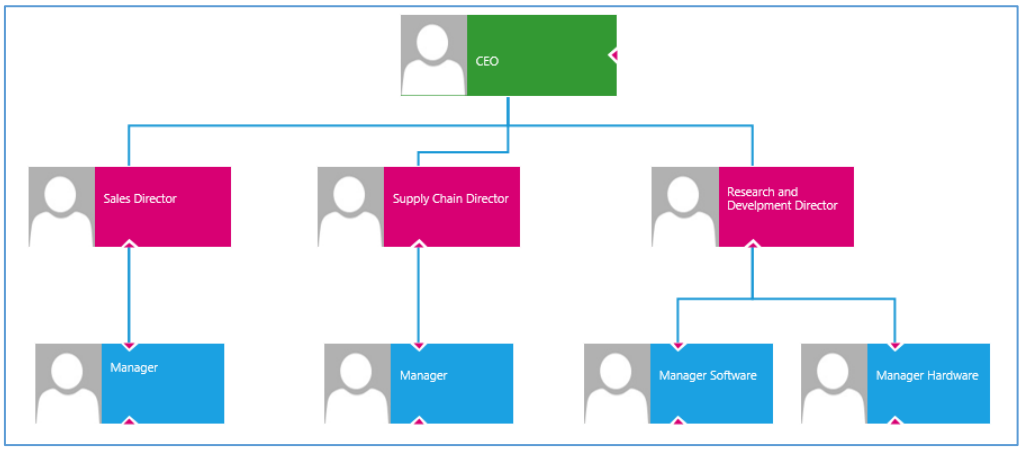
In this chapter I´ll present few most common organization structures, because these structures are already well known from the past and other studies, I won´t enter too deep into them in this study. I´ll also introduce how team sizes can affect to the efficiency and what can be challenges in the different team sizes.

The organizational structure is the main driver to control and manage organization. If the organization structure does not support the main purpose of the organization, it can be un-efficient and hardly managed organization, whereas well designed organization supports the organization work and decision making. In most organizations there are multi-

ple organization structures in the use same time. This is because in the big global organizations there are multiple aspects like function, geographical, product, competence etc. which affect the organization form. In example organization may be divided into the different divisions by assorted products and inside of these divisions, organization can be organized by functions like R&D, product management, supply chain and finance. All these functions can be organized differently, like R&D can be using a matrix form whereas product management can be organized by different product families (David F. R & David F. R., 2019).

2.5.1 Functional organizational structure

Most used organizational structure is functional structure, also sometimes called as line organizational structure, where organization is divided by different functions like R&D, finance, supply chain, Information Technology (IT). Functions are under the CEO and are led by the head of functions, like shown in picture 1. Functional structure is quite simple and shows responsibilities and main competences of the organization. Simple organization enables fast decision making when responsibilities are known, and decision making is centralized. Functional structure is also relatively cheap when expense management organization level is minimized. (David F. R & David F. R., 2019).

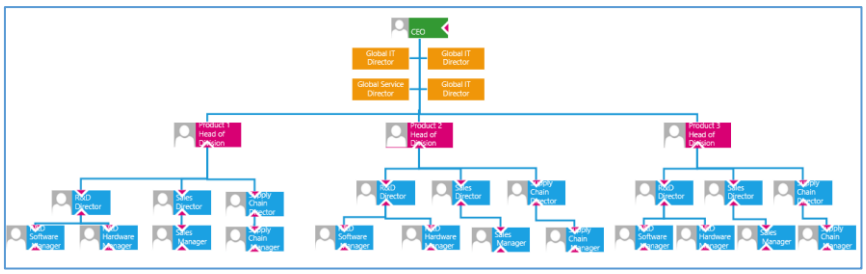


Picture 1. Example of functional organizational structure.

Functional structure has also some disadvantages like accountability forced to the top, delegation of authority and responsibilities are not encouraged, career development can be difficult while open positions in management are not often available, lower morale of the employees and managers, communication and co-operation between the functions can be difficult also planning for marketing and products can be lacking due to lack of visibility to the other functions and different way how they understand the other functions. Functional structure enables fast decision making, but when there is a need of common decision between the functions the decision making can be difficult and slow, because decision can be done only from the top of the organization and decision maker may get disinformation from functions as they try to protect their own advances (Bhattacharyya D. K., 2009).

2.5.2 Divisional organizational structure

Divisional organizational structure is another very commonly used form. Divisions are also called to segments, profit centers and business units, but they all have the same meaning. Divisional organizations are commonly used in the larger companies, where divisions create smaller units to control and manage and decision making can be done inside the divisions. Divisions can be organized by products, geographically, by customers or processes (David F. R & David F. R., 2019). One example of this kind of company is Danfoss A/S where the organization is divided into four different segments by products; cooling, heating, drives and power solutions (Danfoss, 2019). In picture 2 is presented example of divisional organizational structure with global functions.



Picture 2. Example of divisional organizational structure with global functions.

The divisions are most commonly using functional organizational structure, where decision making is centralized in the divisions. In the global business product-based segments are more efficient than divided by any other parameter. Large organizations who are using the divisional organizational structure has also many times global organization built to the top of the divisions (David F. R & David F. R., 2019). These global organizations work with topics that are common to all divisions, some of these activities can be global service, global IT, global sourcing, and global HR. In example global service can be the single contact point for all products to the customers, who don´t need to know how organization is structured to get needed service. Another function for these global teams is to provide common tools and processes to all divisions, like common IT tools (Danfoss, 2019).

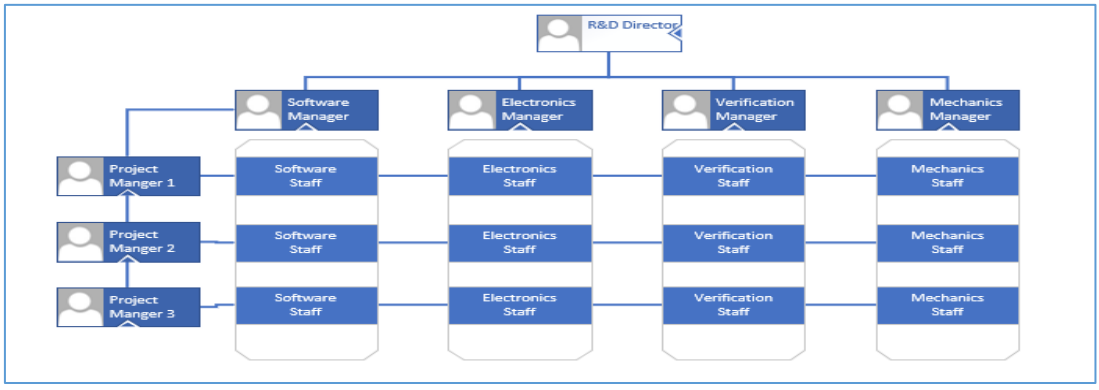
Divisional structure has advantages in large multiproduct or multinational companies where all divisions can focus on their own products and services or local habits. Most of the decisions can be made by the head of division when decision making is more efficient than waiting for the decisions from company executives. Divisions can also have their own divisional level culture and ways of working; this is good especially in the companies where different divisions have different products and processes to work with. In example if other division works in the paper machines, where all work is done according to processes to make paper machines and other division is focusing to service and spare part sales where same processes and ways of working are not be suitable (Gillikin, J., 2019).

Divisional structure has some disadvantages when different divisions may fight for same company level budgets and future strategies and then internal politics may cause harm to some divisions when strategic thinking for whole company may be left background. Other disadvantage is that co-operation between the divisions may not work as well as should, in example if some customers are looking for services from two different divisions to get the deal done and, there might be difficulties internally to server the customer, because lack of clear responsibilities or decision making (Gillikin, J., 2019).

2.5.3 Matrix organizational structure

Matrix organizational structure has been in use for decades and has been most used in product development organizations (Larson E. W. & Gobeli D. H., 1987). Matrix organization gives three different ways to manage projects. Many times, R&D organization has a low level functional organizational structure where different engineering areas are divided into their own teams or functions, like mechanical engineering, software engineering and electrical engineering. Still, in the projects all these functions are in need to co-operate and do the needed tasks on time so that others can continue their tasks. For manage this co-operation between R&D functions matrix organizational structure gives a good tool (Kolodny H. F., 1979).

In the matrix organization there is command line from project management and functional management, and this may cause some difficulties in the projects resourcing or keep the time schedules. Even though the matrix organization gives some advantages it also has disadvantages and because of these disadvantages there are some big companies who have given up from matrix organization at least once during their history. One of these companies is Xerox, who claimed that matrix organization created stranglehold on R&D. And Peters and Waterman have said in their *In Search of Excellence* article that matrix structure flows to anarchy and increases bureaucratic and is non-creative (Larson E. W. & Gobeli D. H., 1987). In Picture 3. Is shown the example of matrix R&D organization.



Picture 3. Example of matrix R&D organization.

The first of the three different matrix management forms are the functional matrix, where head of functions are responsible for design and completion of technical requirements within their discipline. In the functional matrix the role of the project manager is more limited to coordinating the tasks that needed to be done in the functions (Larson E. W. & Gobeli D. H., 1987). This way project managers have less tools to keep projects resourced and time schedules are fully dependent on functions and their efforts. Functions may be involved in multiple projects and same resources can be scheduled to all projects at the same time when this resource comes to critical resource for all projects and may cause delays in all of them.

The second type is project matrix, where project managers have mandate to control all resources in the project. The function manager's role is more to ensure that all project matrix teams have needed resources when needed and gives limited support and technical advisory (Larson E. W. & Gobeli D. H., 1987). This type of matrix is usually the most efficient for projects, but it can be expensive and can cause some idle run to the specialists if there is no need for them all the time. Also, this may require us to have over sized functional teams to be able to serve all running project matrix teams.

The third type is balanced matrix organization where project managers and functional managers are responsible together to have all needed resources in the projects on time and needed skills. The role of the project manager is responsible for defining what is needed and when and the functional manager is responsible for defining how needs are accomplished (Larson E. W. & Gobeli D. H., 1987). This type of matrix organization is most efficient and functional type of matrix organizations because it allows the project manager to control projects but is also allow function managers use same resources in the multiple projects simultaneous or in given turns.

Matrix organization has multiple advantages. The first one is efficient use of resources like specialists and equipment where same resource can be used in multiple projects, but there is need of clear time scheduling of resources to avoid delays in the projects.

Project integration creates a clear mechanism to control resources and tasks in the multiple functions. In the matrix flexibility can be highly available especially in the balanced matrix where decision making, and responsibilities are controlled in the co-operation of project manager and function manager. In the functional- or project matrix managements types this flexibility may not be as good due to authority is centralized. Information sharing from different projects is good for the functions and from functions to the projects, what improve lessons and learnings from project and technical failures or succeeds. In the matrix collaboration between different functions is increases flexibility to do decisions and it also adaptive responses. In the matrix form discipline retention is at a high level because the experts are members in the functions where they can keep up their knowledge and they also feel secure for their workplace even the projects come and go. Matrix organization increase the motivation and commitment when all project members are working for same goals, but for some people this collaboration with different kind of people may also activate frustration when they don´t feel to be in the same ideological level or ways of working may be different (Larson E. W. & Gobeli D. H., 1987).

Disadvantages of the matrix organization are usually affected by dual direction control, resource management and reaction time. In the matrix organization project managers and functional managers may drift to conflicts when they are competing for the same resources, or they have difficulties making decisions and powers are not clearly defined. In the matrix cost accounting can be difficult when functional manager has interest to monitor resource and other costs inside the function and project manager is following the project costs including the resources and other costs. This may cause difficulties in when these costs are overlapping and it´s not clearly defined how to costs are reported to the accounting. Matrix organization can also create excessive overhead in administration due to higher salary levels in the project management and sometimes due to oversized head count to have resources in all running projects. Matrix organization can also create more stress for the staff when they are all the time under tight schedules in the projects and are also requested to work simultaneously on multiple projects (Larson E. W. & Gobeli D. H., 1987).

The way matrix organization is managed affects also the advantages and disadvantages of the organization type. In Table 1. is shown the advantages and disadvantages for all these three different matrix types.

Table 1. Comparative advantages and disadvantages of matrix organization types (Larson E. W. & Gobeli D. H., 1987, p. 130).

Advantages:	**Functional Matrix**	**Balanced Matrix**	**Project Matrix**
Resource efficiency	High	High	High
Project integration	Weak	Moderate	Strong
Discipline retention	High	Moderate	Low
Flexibility	Moderate	High	Moderate
Improved information flow	Moderate	High	Moderate
Improved motivation and commitment	Uncertain	Uncertain	Uncertain
Disadvantages:			
Power Struggles	Moderate	High	Moderate
Heightened conflict	Low	Moderate	Moderate
Reaction time	Moderate	Slow	Fast
Difficulty in monitoring and controlling	Moderate	High	Low
Excessive overhead	Moderate	High	High
Experienced stress	Moderate	High	Moderate

2.5.4 Optimal team size and how size can affect to the team efficiency

In this chapter I will present the optimal team size and why it is so more efficient than other head counts. It´s known for centuries that human isn´t most efficient alone. And there for even the early hominids have started to act in pairs and groups, to be more efficient in the hunting of large animals like Mammoths. Later, this pairing and grouping of people is formed to workplaces and now a days the groups are called to the teams (Kaarlgaard R. & Malone M. S., 2015). The team is the considered to be a group of people who perform tasks with same boundaries, has organizationally common leader, has

same goals, interact socially and acts influence on others´ tasks. In history we have multiple examples of large armies, where armies are built from groups, corps, divisions, battalions, and companies. And these large groups are taken down to the teams, elements, and squads. Same principle we have in the now a day's companies, where we have segments, divisions, functions, work groups and pairs (Mathieu J., Maynard M. T., Rapp T & Gilson L., 2008).

Why bigger groups are then divided into smaller groups. One of the reasons is management, smaller groups are easier to manage and control than large groups. Also, managers don´t have a time to have individual consideration to all team members as much as needed. Another reason is that all the team members in the bigger group are not able to interact with all team members as efficiently as in smaller teams, and this can cause communication or other issues inside the team. The count of connections inside the team is presented in table 2. The table shows well why in the bigger teams' interaction between the team members is not that efficient anymore and team efficiency will decrease (Mathieu J. & al., 2008).

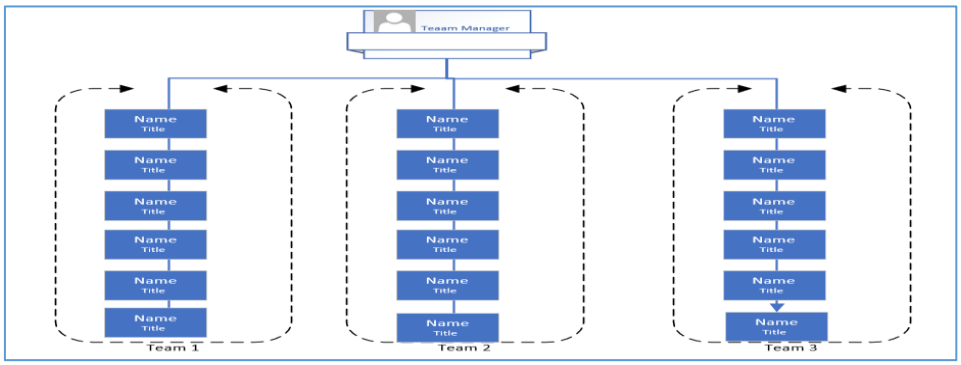
Table 2. Number of connections inside the team (Mathieu J. & al., 2008).

Number of Members	Number of connections
2	1
3	3
4	6
5	10
6	15
16	120
32	496

The magic number of the ideal team size is seven +/- 2 person, this comes from the number of the connections inside the team to have efficient interact between the members, but it comes also from nature of human brain, where human brains have short-memory capability to handle seven, plus-minus two items. The human brain works best in pairs

and under 7 +/-2, below seven brains creates group of pairs or trios. One example of the team efficiency of 7 is given by Canadian team management consultant where he de-scripted to give important software project to the 100 coders or 7 coders. The 7 coders are more efficient than 100, because the picked 7 coders are ones who are motivated and interested in the project, they are able interact between each other efficiently than group of 100 coders. 100 coders are harder to manage and there is not full motivation in all team members due to lack of individual consideration. Also, decision making is more difficult because all needed data can be divided into so many coders that it is very difficult to see the big picture behind the issue (Mathieu J. & al., 2008).

In the bigger project multiple teams, size of 7 can work parallel, but then there must be the project manager or other manager to control made tasks in the teams. And each team must have clearly set goal and all tasks done in the team must be done for this goal. In this way organization form won´t grow too expensive due to high number of team leaders or managers. For one leader 3 is the maximum number of the teams to control efficiently (Mathieu J. & al., 2008). In picture 4. is presented an example of the project organization where one leader has three teams to lead. In this picture we can see that there are 3 efficient team sizes of 5 members, if all these 15 team members were in same team they could not be as efficient as they are now in smaller teams. Even though there are 3 parallel teams there is only one team manager, who is still capable of managing three teams simultaneously.



Picture 4. Example of 3 teams led by 1 leader.

When the task is to find the solution to the problem, or some other issue, then the most efficient team size is two. The team of two has most interact with each other and they can have consensus for needed tasks more easily than bigger team where they must compromise with multiple persons. Also, decision making is much more efficient when decisions can be made together, and all needed data is available. Therefor pairing is courage way of working when organization needs to find out solutions and answers as soon as possible so that the rest of the team can continue with the project without any long-time disturbances (Mathieu J. & al., 2008).

2.6 Team effectiveness and efficiency

In this chapter I´ll focus to the team effectiveness and efficiency. Team effectiveness is the topic what has been studied years and it has roots from early 1960´s when McGrath presented the input-process-outcome (IPO) framework (Figure 1.) for team effectiveness (Mathieu & al., 2008).

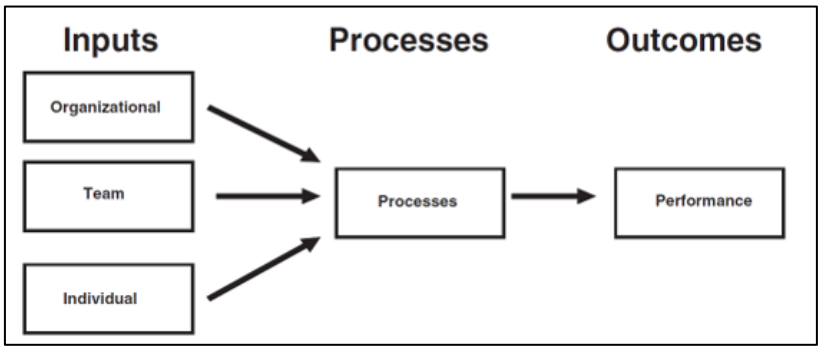


Figure 1. Input-processes-outcomes framework (Mathieu & al., 2008).

IPO frameworks consider inputs from three different aspects, organizational, team and individual. Organizational factors are organization design, environmental influence like freedom to impress own ideas and thoughts. In team level affecting factors are leadership and task management (Mathieu & al., 2008). In individual level factors are individual competences, personalities, and capabilities. The outcome from inputs is affected by

processes and their efficiency and capability to control tasks from the inputs. If these processes are complicated nor have processes described how to control tasks or are other way un-efficient to control given tasks will decrease outcome performance. When processes are simple, and support needed tasks by focusing to serve customers in the most efficient way when all double work and reporting is minimized will improve outcome performance. Outcome can be measured by quality, quantities, or other measured values to show how well inputs and processes can serve the customer.

IPO framework has worked as a foundation for the studies of modern team effectiveness. The more developed framework is known as Input-Mediators-Outcomes IMO (Figure 2.) developed by Ilgen D.R., Hollenberg J.R., Johnson M. & Jundt D. in 2005. They noticed that IPO framework has lack of "emergent states" which are individuals' potency, psychological safety, collective affect. In team level "emergent states" are considered as team climate, team learning, behavioural integration. Also, in the IMO outcomes there are multiple criteria's instead performance itself (Mathieu & al., 2008). IMO model has also feedback to previous state by meters. This feedback enables measuring the efficiency of the team and processes. With measurements, organizations can do improvement in their operations.

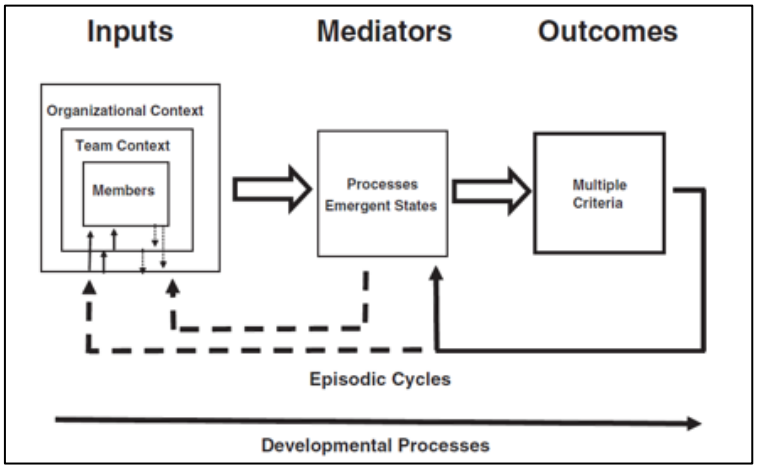


Figure 2. Input-mediators-outcomes framework (Mathieu & al., 2008).

2.6.1 Inputs

In both frameworks Inputs are same, but in IMO framework we can see that there is affects also between the inputs. The organizational context affects team inputs and member/individual inputs. Organizational context is based where teams are located, and teams are base to the members. This way organizational context will affect the inputs what members do and affect this way to the effectiveness of the organization (Mathieu & al., 2008).

2.6.1.1 Organizational context

Organizational context inputs include Human Resource (HR) systems, openness climate, multi team coordination and top-management environment interphase (Mathieu & al., 2008). The HR-systems define and control how organizations recognize, reward and train teams and members. Hyatt D.E. & Ruddy T. M. (1997) proved in their studies that these HR acts have direct and indirect effects on group effectiveness. The openness climate directly supports the employee involvement and teamwork outcomes when openness is a well-developed social structure with sociopolitical support (Mathieu & al., 2008).

Multi-team coordination has an important role in the creation of efficient organization when teams must co-operate with multiple teams during their tasks. Multi team coordination must maintain organization level processes and low barriers between teams to have successful and efficient workflow in the organization. Hyatt and Ruddy (1997) concluded in their study that team function more effectively as self-contained teams when they have good information flow and co-operation between internal and external teams and team members (Mathieu & al., 2008).

Top-management environment interphase is shown to have direct effect to the team performance. When top-management have created an open, simple, and stable organizational environment the quality of the made decisions and organizational effectiveness

is better than in the complex organizations with turbulent environment where decisions are not as long lasting, and organization have continuously ongoing changes (Mathieu & al., 2008).

2.6.1.2 Team context

In the team contexts there are many characteristics what affect to outcome via mediators, but most important ones for team effectiveness are interdependence, technology/virtuality, training, team leadership and team structure. Interdependence means acts and state of team where team members cooperate and work actively together to complete the tasks (Steward G. L. & Barrick M. R., 2000). When team members have higher level in the task interdependence the team satisfaction and team performance are higher than in the teams where tasks don´t have similar interdependence (Mathieu & al., 2008).

Now-a-days technology and virtual teams have become more common and are part of the organizations. Technology will help global communication and co-operation between different locations. Teams are also led virtually where team managers are not located anymore in the same locations as employees. Studies like Carte, Chidambaram, and Becker in 2006 proved that leadership is a critical aspect in high performing virtual teams. Especially *performance* and *keeping track of group work* were highlighted variables to control in the virtual teams.

Training the teams is one aspect to improve effectiveness of the teams. The problem is to define what, when and how is needed to be trained. Training for direct task level competences must be held to individuals. Team-level training should focus on processes, teamwork skills, but also on the behaviour and attitudes required by an effective team. (Mathieu & al., 2008). New technology provides numerous different online trainings and other methods with parallel of traditional face-to-face training. Studies have shown that some training is very efficient to do on-line, but there is still a lot of training where face-

to-face training is still the most efficient way to ensure an effective training session (Rapp & Mathieu, 2007). The online trainings are more suitable when trained material is simple and more informative material. Face-to-face training is still the preferred way to train when interaction between the class and trainer is needed and when topic is more complex, and learning can be ensured with testing and discussions (Charniga J., 2019).
Team leadership is one of the most remarkable functions in team management and can influence most of the team effectiveness and efficiency. Because the leadership styles were already introduced before, they won´t be re-presented again in this chapter. Team efficiency is directly affecting the outcome by leadership styles and used leadership tools. Leadership influences team performance, used processes, team coordination, knowledge sharing, problem management, team strategies and team efficiency, empowerment, and team satisfaction (Mathieu & al., 2008). Because leadership influences so many ways to team effectiveness and team efficiency, the team leaders must be carefully selected, and they must be team management skilled. Good leaders aren´t always good leaders to all teams, different type of the teams needs to have different type leader. Therefor top management must be aware of needs of each team when they are selecting new leaders to the teams and if team manager is not suitable to lead one team it doesn´t mean, that she/he wouldn´t be great leader to some other team.

2.6.1.3 Member level inputs

Team members affect the team level inputs, as all members who are part of the teams. Still individual members also have direct impact to the effectiveness, efficiency of process and emergent states and then to the outcome. These member level mediators can be divided into *composition* or *compilation* processes. Composition refers to the simple low-level approach and it has two dimensions, *mean values* where member values -are referred as summary index and *diversity* where individual characteristics influence to the outcome, like least competent or most competent individual may directly influence to team performance. Compilation processes are complex combinations of the individual

characteristics and their affect to the team performance. These compilation characteristics can be persons´ ability to manage his/her position, networking abilities and other personal characteristics where other people have influence on the outcome (Mathieu & al., 2008).

Mean values of composition include personality, competence, and some other attributes. Personality includes high level factors such as achievement, orientation, dependability, assertiveness, and locus of control. The individuals who show high level in conscientiousness and agreeableness together with facilitating co-operation, conflict resolution, communication and teamwork achieve highest level of performance (Mathieu & al., 2008). Although these are personality factors, these can be improved with training and increased awareness about how personalities can affect team effectiveness.

Competences are markable individual factors what affect to the outcome. Teamwork competences, skills and abilities are important in team working and they are different from individual professional skills. Although, professional skills affect team efficiency when more experienced and competent team members can help and support less competent members (Mathieu & al., 2008).

2.6.2 Mediators

Mediators are considered as processes in the IPO model. In IMO model there are also acknowledged emergent states together with processes (Mathieu & al., 2008). Mathieu together with the group considered emergent states to be *team learning, behavioural integration* and *transactive memory*. When mediators are not seen to be only process, and other influencers are taken account to the outcome, organizations can measure total efficiency of used processes and have better understanding how all characteristics affect to the outcome. In this chapter processes are not presented anymore because they were already instructed in the IPO chapter.

2.6.2.1 Emergent States

Team Learning is a crucial part of team competence developing. Team learning is concerned with interactions between team members. While a team is learning together, the team will learn to communicate and collaborate more efficiently and modify team behaviours, this will also improve the outcome of the team. Team learning will also improve team to support each other when team is facing high workload or is facing demanding team tasks to complete (Chung D. S. & Li J.M., 2018). When team learning increases team morality it also boosts individual mental stabilities of members, and this way will also affect their self-confidence. Teams with culture of team learning have less stress and improve adaptability, this will foster team to perform more efficient (Han & Williams., 2008).

Behavioural Integration means that a team shares the best practices, knowledge and supports each other as a team. Behavioural integration has three major elements quantity and quality of information sharing, collaborative behaviour and joint decision making (Mathieu & al., 2008). Quality and quantity of information sharing at team level has a significant role for team learning magnitude and learning orientation strength as presented in Figure 3.

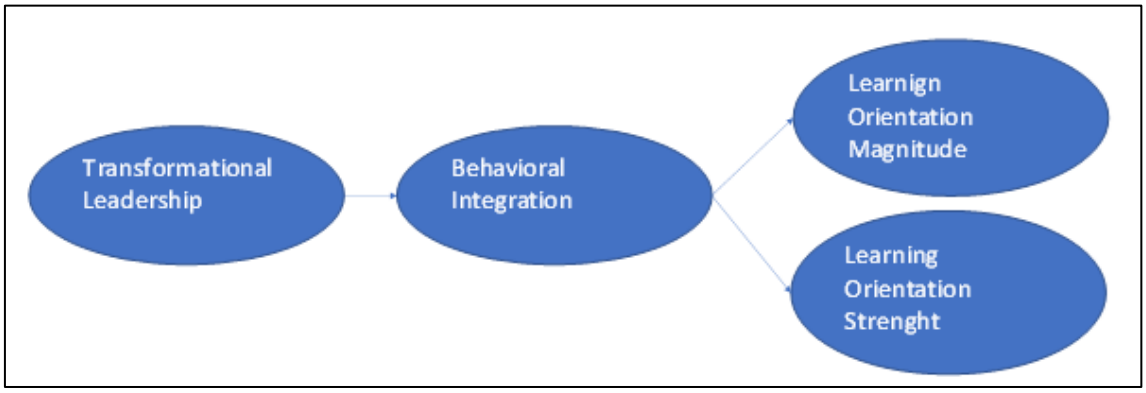


Figure 3. Behavioural Integration is a key mediator between leadership and learning (Chiu & Al., 2021).

When behavioural integration is high then team learning will be boosted because team members share learnt information more willingly with other team members. The open learning climate motivates all team members to continue learning and will help the team to become more efficient. When open learning climate is shared feeling in the team, team members share understanding of continual learning and self-development as an essential in the team (Chiu C-Y., Lin H-C and Ostroff C., 2021).

Transactive memory means collective knowledge of the team where team members know also who knows what. With a high level of transactive memory, team competence and co-operation will also increase faster when team members are able to share information with each other in a more efficient way. When a team has this kind of knowledge and information sharing the team has better relationship between the team members and team climate is also better (Mathieu & al., 2008).

2.6.3 Outcomes

In IMO framework outcomes has multiple criteria's instead of *performance* alone like in IPO- model. In previous studies like Cohen and Bailey (1997), Sundstrom et al. (2000) have found more than 20 different outcome parameters as result of team efficiency.
Mathieu & al. (2008) defined team outcome in three sub-categories: organizational-level performance; team performance behaviours and outcomes; and role-based performance. These three different categories may be used for different types of operations to measure team performance as described below (Mathieu & al., 2008).

Organizational-level performance is a relevant measure for top management teams where all team members have similar roles and responsibilities of outcome like in sales teams where team performance / sales result is reported as combined value. Organizational-level performance is not usable meter for individuals or lower-level analysis.

Team performance behaviours and outcomes whereas team performance behaviours are acts and tasks like process improvements, learning activities and seeking way of working to do things better in next time. Output is the result or consequence of these performance behaviours and can be measured also in lower-level analysis (Mathieu & al., 2008).

Role-based performance indicates how each role is performing, not how an individual person is performing. All individuals with the same role have similar performance across the team. Role-based performance is highly related to the competence of individuals and how they can accomplish their role (Mathieu & al., 2008).

2.7 Theory of validity and reliability of research

Like Catherine Taylor refers to "Messic S. (1989)" in her book the definition of validity: "*Validity is an integrative, evaluative judgment of the degree to which empirical evidence and theoretical rationales support the adequacy and appropriateness of inferences and actions based on test scores and modes of assessment"* (Taylor, 2013). Validity has internal and external perspectives. Internal validity is when researchers prove the relationship between their logical claims and results with empirical evidence. External validity is when done research can be generalized the way the results and research method aren´t tight into time, samples, population or in the specific study (Taylor, 2013).

Reliability of the research is defined as a reproducibility of the results. Research always has certain error level in the results. There are two types of the errors, first one is "random error" where error is outcome of different reasons which are not controlled in the study and usually, they are caused by sampling techniques. Random error can be minimized by increasing and wider sample rate. How ever, increasing sampling is having disadvantages like the increased costs and spend time. Instead of increasing the sampling rate, probability calculation is a better way to define the reliability level of the study. Other type of the error is "measurement error" and this is caused by accuracy of the used measurement equipment and user errors during measuring (Litvin M., 1995). Every

measurement equipment has measurement tolerances and depended on the measured value these tolerances shall be at least one decade better in equipment than in used results to get reliable measuring data. In example if length of the pencil is given in centimetres, then the meter shall be able to measure millimetres.

2.8 Analytic Hierarchy Process (AHP) model

"The Analytic Hierarchy Process (AHP) is a general theory of measurement" (Saaty R.W., 1987). AHP method is used to compare two attributes at the time in the defined scale where both have same maximum value and value "1" as a minimum in the middle. The maximum value means that attribute overrides other attribute totally and value "1" in the middle means that both attributes are equal compared to each other's. Compared attributes reflects the respondents' feelings and preferences or values can be taken from real measured values. The AHP can be used for multiple applications like multicriteria decision making, planning and resource allocation, conflict resolution and other application where multiple attributes are affecting to wanted output. The AHP is nonlinear framework where several attributes influence to the result. Each attribute for same alternative is compared against to all criteria to get goal (see figure 4.) (Saaty R.W., 1987).

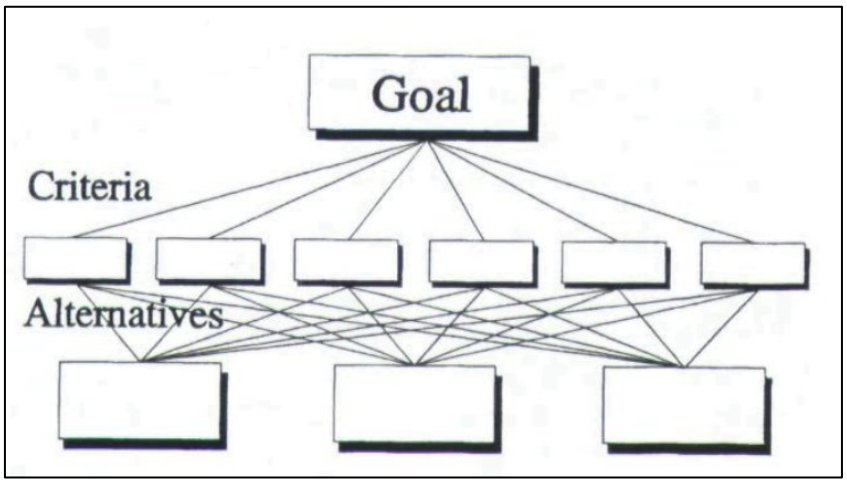


Figure 4. A three-level hierarchy (Saaty T.L., 1997).

The given values are taken into matrix calculations where each alternative will get numerical value for each criterion compared to other alternatives. Calculations are not presented in this material, more detailed information for calculation can be found from reference materials like "*Saaty R.W. (1987). The Analytic Hierarchy Process – what it is and how it is used*". The numerical results can be then used for decision making, support resource planning, or other wanted output. In example made by Saaty T.L. for decision making between three houses (Figure 5.) where eight different criteria are used to compare houses.

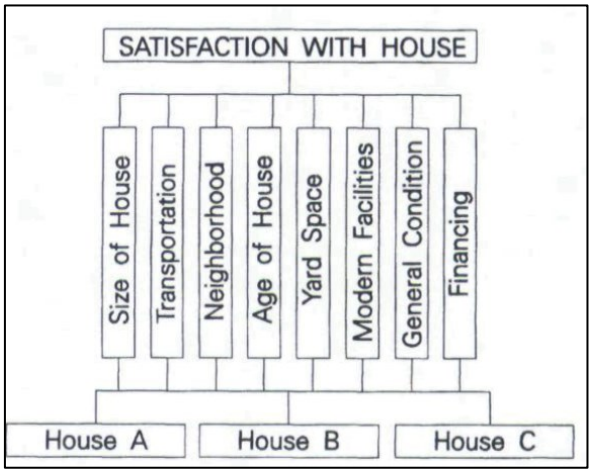


Figure 5. Hierarchy problem solving for house selection (Saaty T.L., 1997).

At the first each criterion is compared against each other to get priorities for each criterion. When all criterion has priority value for all, then same similar comparison between the houses is done for each criterion for having priority value for each. When Each house has priority value for each criterion and each criterion has their priority value (weight) then houses can be then compared against each-others based on criterion priorities and weights (See tables 3 to 5). Then based on calculated values decision for most suitable house can be made easily.

Same way AHP can be used for all other applications where multiple criteria exists. AHP model can be also used in two-level hierarchy evaluation when priorities for each criterion is wanted to find out to see how respondents feels or done measurements are affecting to existing situation.

Table 3. Criterion priority matrix (Saaty T.L., 1997).

	1	2	3	4	5	6	7	8	Priority vector
1	1	5	3	7	6	6	1/3	1/4	.173
2	1/5	1	1/3	5	3	3	1/5	1/7	.054
3	1/3	3	1	6	3	4	6	1/5	.188
4	1/7	1/5	1/6	1	1/3	1/4	1/7	1/8	.018
5	1/6	1/3	1/3	3	1	1/2	1/5	1/6	.031
6	1/6	1/3	1/4	4	2	1	1/5	1/6	.036
7	3	5	1/6	7	5	5	1	1/2	.167
8	4	7	5	8	6	6	2	1	.333
	λ_{max} = 9.669 C.I. = .238 C.R. = .169								

Table 4. Priorities for houses per criterion (Saaty T.L., 1997).

Size of house	A	B	C	Normalized priorities	Idealized priorities
A	1	6	8	.754	1.000
B	1/6	1	4	.181	0.240
C	1/8	1/4	1	.065	0.086
λ_{max} = 3.136			C.I. = .068	C.R. = .117	

Yard space	A	B	C	Normalized priorities	Idealized priorities
A	1	5	4	.674	1.000
B	1/5	1	1/3	.101	0.150
C	1/4	3	1	.226	0.335
λ_{max} = 3.086			C.I. = .043	C.R. = .074	

Transportation	A	B	C	Normalized priorities	Idealized priorities
A	1	7	1/5	.233	0.327
B	1/7	1	1/8	.005	0.007
C	5	8	1	.713	1.000
λ_{max} = 3.247			C.I. = .124	C.R. = .213	

Modern facilities	A	B	C	Normalized priorities	Idealized priorities
A	1	8	6	.747	1.000
B	1/8	1	1/5	.060	0.080
C	1/6	5	1	.193	0.258
λ_{max} = 3.197			C.I. = .099	C.R. = .170	

Neighborhood	A	B	C	Normalized priorities	Idealized priorities
A	1	8	6	.745	1.000
B	1/8	1	1/4	.065	0.086
C	1/6	4	1	.181	0.240
λ_{max} = 3.130			C.I. = .068	C.R. = .117	

General condition	A	B	C	Normalized priorities	Idealized priorities
A	1	1/2	1/2	.200	0.500
B	2	1	1	.400	1.000
C	2	1	1	.400	1.000
λ_{max} = 3.000			C.I. = .000	C.R. = .000	

Age of house	A	B	C	Normalized priorities	Idealized priorities
A	1	1	1	.333	1.000
B	1	1	1	.333	1.000
C	1	1	1	.333	1.000
λ_{max} = 3.000			C.I. = .000	C.R. = .000	

Financing	A	B	C	Normalized priorities	Idealized priorities
A	1	1/7	1/5	.072	0.111
B	7	1	3	.650	1.000
C	5	1/3	1	.278	0.428
λ_{max} = 3.065			C.I. = .032	C.R. = .056	

Table 5. Weighted evaluation between the alternatives (Saaty T.L., 1997).

	1 (.173)	2 (.054)	3 (.188)	4 (.018)	5 (.031)	6 (.036)	7 (.167)	8 (.333)	
A	.754	.233	.754	.333	.674	.747	.200	.072	.396
B	.181	.055	.065	.333	.101	.060	.400	.650	= .341
C	.065	.713	.181	.333	.226	.193	.400	.278	.263

3 Research Method

In this chapter the research is explained how research was done and what methods were used to conclude the results.

3.1 Gathering research data

Research was done in global technology company who has R&D and product management departments in four locations, two in Europe, one in China and one in North America. The survey was done in all four locations to see how different locations are working in matter of transformational leadership. Survey was done based on Analytic Hierarchy Process (AHP) model, where different attributes are evaluated against each-others. Survey had three organization levels included to study how leadership is seen in developer / product manager level, team leader level and in mid-management level. Survey (see Appendix 1.) was sent out to 38 responders and 33 answered to the survey. The respondents were selected randomly to get more broad view of the organization and all responses was given confidentially and only researcher knows the person level answers. Also, research participants don´t know who has taken a part to the survey. At the survey also product development strategy during normal operation and in crisis were gathered, yet this information and analysis were excluded from this study and were used only internally at the company.

3.2 Analysing the data

Research analysis was conducted by TLI questionary calculation tool. Calculation tool is developed in Vaasa University by Prof. Josu Takala et al. and can be found from their webpage from address “http://webapps.puv.fi/sca/index.html”, where given answers are analysed based on mathematic calculations. More detailed calculations used in the

tool are presented in Measuring Leadership Behaviour in a Global Industry chapter 2.2.1. (Ha-Vikström T., 2018).

Calculated results were used to do charts to have visual presentation of the relationships between attributes. Results were brought into sand cone model, developed by prof. Josu Takala et al. in Vaasa University. Sand cone model (figure 5) is multilevel concept to visualize all measured dimensions of the leadership behaviour (Ha-Vikström T., 2018). At sand cone model presents leadership response type, inconsistency ration (ICR), TLI Leadership styles, TLI Cornerstones and balance of resourcing.

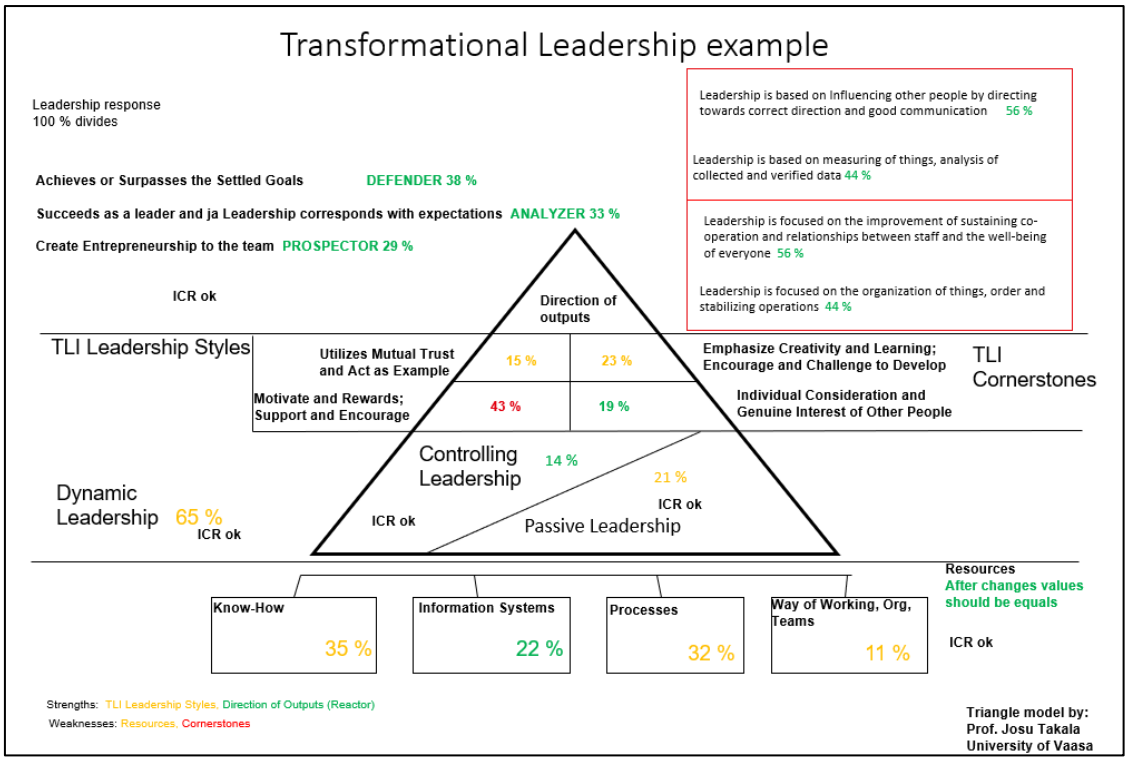


Figure 6. Example of leadership sand cone model.

At leadership response we can see defender / effectiveness, analyser / satisfaction, and prospector / extra effort. Defender can be seen the leader who is at the defending state, in example organisation has worked with running products for some time already and products are in life cycle where they are competing against coming new products and ideas. Analyser can be seen as a leader who is actively analysing their own products to

competing products and is maintaining existing product with necessary changes. Prospector is the leader who is developing and challenging existing markets with new products with new ideas. When all previous three output directions are at the balance the leadership response is "*reactor*". The reactor is ideal response type in transformational leadership where leader can react according to ongoing situation and can form his/her leading model to reach best performance out from the team.

The leadership styles describes if leadership is dynamic, passive, or controlling. Where dynamic style is more flexible for changes and empowers employees to do their own decisions and take responsible of progress. Passive leadership style can be seen that there is not active leadership and things are floating independently by employees. Controlling leadership is also seen as a micro-managing, where leader is controlling everything, and employees have no possibility to do any decisions for their work.

At transformational leadership there is four basic principles, building trust and confidence, inspirational motivation, intellectual stimulation, and individualized consideration. These four attributes should be on balance in the ideal situation.

Model also describes four different resources which are related to leadership focus and organisation capabilities. Know-how indicates the focus to the employee know-how and education. Information systems indicates the focus to IT systems to support employees on their duties and how organisations data is managed. Processes indicates how well organisation is focused to the workflows, roles, and responsibilities to increase efficiency in the organisation. Way of working, organisation and teams indicated how well processes and organisation structure is aligned with existing processes and how well teams and organisations are working together.

3.3 Processing survey data

Survey data was processed with TLI questionary calculation tool and results were taken as shown at the calculations. During the evaluation of the results there were discussions inside the company where one attribute of passive leadership was not seen to be not wanted behaviour in scrum environment and that´s why "*The work can be done alone independent and intervene only if necessary*" were removed and new weighted values were calculated to leadership styles. Calculations were done based on formulas:

- Each leadership styles had two attributes, what gives six values in total.
  - ➔ Total weight = 100 (%)
  - ➔ Number of values = 6
  - ➔ Weight / value = a,a1,b,b1,c,c,1 = 0,166 (%), where
    - a = Dynamic leadership
    - b = Passive leadership
    - c = Controlling leadership
- When all values are in use, corrections factors are:
  - ➔ a;a1 = 1
  - ➔ b;b1= 1
  - ➔ c;c1 = 1
- When b1 = 0, corrections factors are:
  - ➔ a;a1 = 1 - 0,166 = 0,834
  - ➔ b;b1 = 1 + 0,166 = 1,166
  - ➔ c;c1 = 1 - 0,166 = 0,834

In example calculation:

- Dynamic Leadership:
  - a = *"Creativity, learning and "as an example" behaviour must be emphasized"* = 60 %
  - a1 = *"Stimulating, encouraging and utilizing individual consideration is important"* = 61 %

- => ((60 % +61 %)/2)*0,834 = 50,4 %

- Passive Leadership:
  - b = "*The Decision can be made slightly late and by avoiding situations*" = 26 %
  - b1 = "*The work can be done alone independent and intervene only if necessary*" = 0 %
  - => ((26 % + 0 %)/2)*1,166 = 15,4%

- Controlling leadership:
  - c = "*Mistake must be examined, corrected and sometimes those who are responsible must be punished*" = 14 %
  - c1 = "*The Job tasks must be monitored and done as much as possible by yourself*" = 12 %
  - => ((14 % + 12 %)/2)*0,834 = 10,9 %

Because attribute "*The work can be done alone independent and intervene only if necessary*" were excluded it were set to value 0 %. The original total weight of attributes 100 % came from TLI questionary calculation tool when all attributes were included (see table 6.). After exclusion of one attribute a new weighted attribute value was 73 %. Because of weight of passive leadership is 73 % instead of 100 %, leadership style calculation does not reach 100 % (see Table 7).

Table 6. Example of original passive leadership attribute values.

The work can be done alone independent and intervene only if necessary	27 %
The Job tasks must be monitored and done as much as possible by yourself	12 %
Stimulating, encouraging, and utilizing individual consideration is important	61 %
	100 %

Table 7. Example of passive leadership attribute values with excluded attribute.

The work can be done alone independent and intervene only if necessary	0 %
The Job tasks must be monitored and done as much as possible by yourself	12 %
Stimulating, encouraging, and utilizing individual consideration is important	61 %
	73 %

Table 8. Leadership style comparison before correction.

Dynamic Leadership	50,4 %
Passive Leadership	15,4 %
Controlling Leadership	10,9 %
	76,7 %

To reach 100 % weighted values for leadership styles values were interpolated for value 100 %.

- Original dynamic leadership (DL) 50,4 %
  ➔ 50,4 % * (100/(DL+PL+CL)) = **65,7 %**
- Original passive leadership (PL) 15,4 %
  ➔ 15,4 % * (100/(DL+PL+CL)) = **20,1 %**
- Original controlling leadership (CL) 10,9 %
  ➔ 10,9 % * (100/(DL+PL+CL)) = **14,2 %**

Table 9. Leadership style comparison after correction.

Dynamic Leadership	65,7 %
Passive Leadership	20,1 %
Controlling Leadership	14,2 %
	100,0 %

After calculations results were evaluated and they were not changed remarkable from calculation before excluding one attribute. Results were also evaluated with some respondents and all interviewed confirmed that results are good in their feeling and opinion. After all evaluations and interviews calculated values were concluded to be good for this study and they are not causing wrong results or conclusions.

3.4 Measuring value grades

For outcome for Leadership style was set optimal (wanted), warning, and alert (not wanted) grades. All other outcomes were defined as middle value, intermediate value

and low- or high value. Values were defined together with prof. Josu Takala based on his previous studies and some fine tuning made to the limits to correlate better with interviews of the responders. These limits were seen to be tight to get ideal result, yet the results gave good understanding of the state of the leadership in the company. Limits of each output is presented in the tables 10 to 12. Limits are taking account the respondence organisational position, in example director level should focus more on courage organisation to grow and have intellectual stimulation more than focusing facing individually employees in their daily work. Manager level should focus to motivate and courage their teams to work and support them in their challenges whereas designer level shall focus to create trust and confident in their duties and teams.

Table 10. Limits of dimensions with low / high limits.

Dimension	**Low Alert**	**Low warning**	**Ideal**	**High warning**	**High alert**
Direct of outputs; optimal 33 %	0-9	10-19	20-39	40-49	50-100
Resource; Optimal 25%	0-9	10-19	20-29	30-39	40-100
Cornerstones; Optimal 25%	0-9	10-19	20-29	30-39	40-100

Table 11. Limits of leadership styles.

Leadership style	**Ideal (wanted)**	**Warning**	**Alert (Not wanted)**
Dynamic; optimal 82 %	70-100	50-69	0-49
Passive; optimal 9 %	0-14	15-24	25-100
Controlling; optimal 9 %	0-14	15-24	25-100

Table 12. Limits of TLI cornerstones.

Director / Product Management	**Low alert**	**low warning**	**ideal**	**high warning**	**high alert**
Inspirational Motivation	0-9	10-19	20-29	30-39	40-100
Intellectual Stimulation	0-14	15-29	30-39	40-54	55-100
Individual consideration	0-7	8-14	15-24	25-34	35-100
Trust and Confidence	0-9	10-19	20-29	30-39	40-100
Manager / Project Office	**Low alert**	**low warning**	**ideal**	**high warning**	**high alert**
Inspirational Motivation	0-14	15-29	30-39	40-54	55-100
Intellectual Stimulation	0-9	10-19	20-29	30-39	40-100
Individual consideration	0-9	10-19	20-29	30-39	40-100
Trust and Confidence	0-9	10-24	25-34	35-49	50-100
Developer / R&D	**Low alert**	**low warning**	**ideal**	**high warning**	**high alert**
Inspirational Motivation	0-7	8-14	15-24	25-34	35-100
Intellectual Stimulation	0-9	10-24	25-34	35-49	50-100
Individual consideration	0-7	8-14	15-24	25-34	35-100
Trust and Confidence	0-9	10-24	25-34	35-49	50-100

3.5 Internal and external validity and reliability

For construct validity the survey is done based on AHP- method where all questions have cross-checking between each other's. Responses were also confirmed by interviews after the survey. This cross-check validates the survey results to be valid and in align with discussions.

The internal validity was validated by calculating inconsistency of the answers in AHP survey. Inconsistency calculations were done by TLI calculation tool where value was given together with other ratings. Answer was not approved if inconsistency rate were > 0.3. Only one answer was not approved in this survey. The response rate of the survey was 86,8% and this is concerned to be in good level. When analysing the results, it was also seen that all responses inside the same organisation was in align between the organisation levels and this also validates responses to be valid and no deviations inside the organisations were not seen.

External validity was validated by interviews with respondents in all locations and in all organisation levels. The discussions were done one to one and they were also confidential. Discussions gave good understanding why results are as they are, and these interviews validated results to be good. Cultural differences can also be seen in the responses when the Chinese location had more conservative responses and they aren't willing to use the full scale as often. In Europe and North America respondents were more willing to use full scale in their answers.

Reliability of the study can be seen to be at the good level when research results can be reproduced. In this study survey was done to relatively small group of respondents in global perspective. This study was done in one company and only in selected departments, the quantity of the respondents was approx. 15 % of the employees in these organisations and there for sample rate was seen to be enough to have needed accuracy and cover whole organisation for selected operations. In some smaller organisations one respondent represented all members it the team. These respondents were picked up by random sampling and this secured the anonymity for the respondents, and they were able to answer confidently.

Survey was instructed to think how respondents are led in the project or if not be a part of the development project they were asked to think how they are led by superiors. Inconsistency of the responses may come when some respondents may mirror how they are leading the teams and what attributes values more for them instead of how they are led.

4 Research results and analysis

The aim of this research was study target company leadership state while company were set new target to reach next level with high-performing teams and organisation. Research focused to the product development, product management and project offices. Research was done for three different organisation level to get knowledge if employees and management sees different state in the management. High mid management and top management were not included for research because it was seen that their direct influencing for employee level is not that high, and they may not be at same location with rest of the organisation.

At this chapter combined results from each location will be presented and analysed in more detail level. The combined results are calculated average values from all locations according to analysed organisation or respondent positions. Results for each department are included in appendixes and they can be analysed with same way as results in this chapter has done. The values are not a "*only truth*" and when analysing the numbers, they need to be considered as a reference value and when evaluating some specific topic, they may vary from results.

4.1 Global results, all organisations and organisation levels included

Global results are calculated average values from all locations. In the figure 6 global results are presented with all organisation levels included. From the figure we can see that in overall results are at good level in where leadership response is seen to be reactive and TLI cornerstones are almost all in ideal level only emphasise of learning is little bit over focused.

At the leadership styles company is not performing that well while passive leadership is at not wanted level and controlling leadership is at warning level. Dynamic leadership is also at the not wanted level with low ratings. For resources company has minor over

focus on know-how and under focused for IT systems to support work. Processes and teams are at the right weighted right level in focus areas.

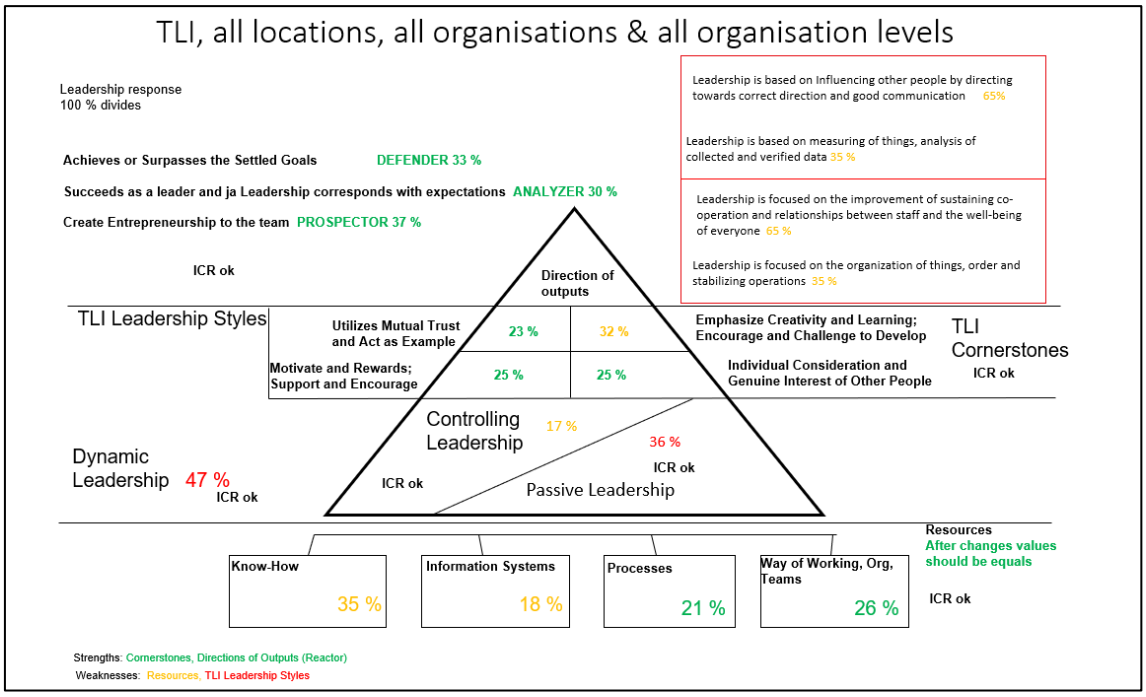


Figure 7. Global results with all organisation levels included.

The global strengths are at TLI cornerstones where organisation is well balanced, and direction of outputs are in balance and leadership response is reactive. The weaknesses are TLI leadership styles and resources where leadership is seen more passive, and resources are little bit off balance.

4.2 Global results, all organisations included at director level

Global results for all organisations at director level is presented in figure 7. From the figure we can see that director level is also reactive in their leadership response. Directors' leadership is mostly based on directing organisation to the correct directions by influencing people and communication, but the weakness is in the lack of measuring and analysing data how organisation is performed. This can cause wrong decisions and decreased performance in teams and organisation.

At the TLI cornerstones we can see that directors are balancing their focus areas quite well between all areas. This also means that they don't always focus their main areas of focus and may bypass leaders to influence teams. At the director level leadership style is also mostly dynamic, but passive and controlling leadership are above the ideal level.

In terms of resources, managers focus a little too little on know-how and IT systems. For processes and organisation resources directors are focusing on the ideal level.

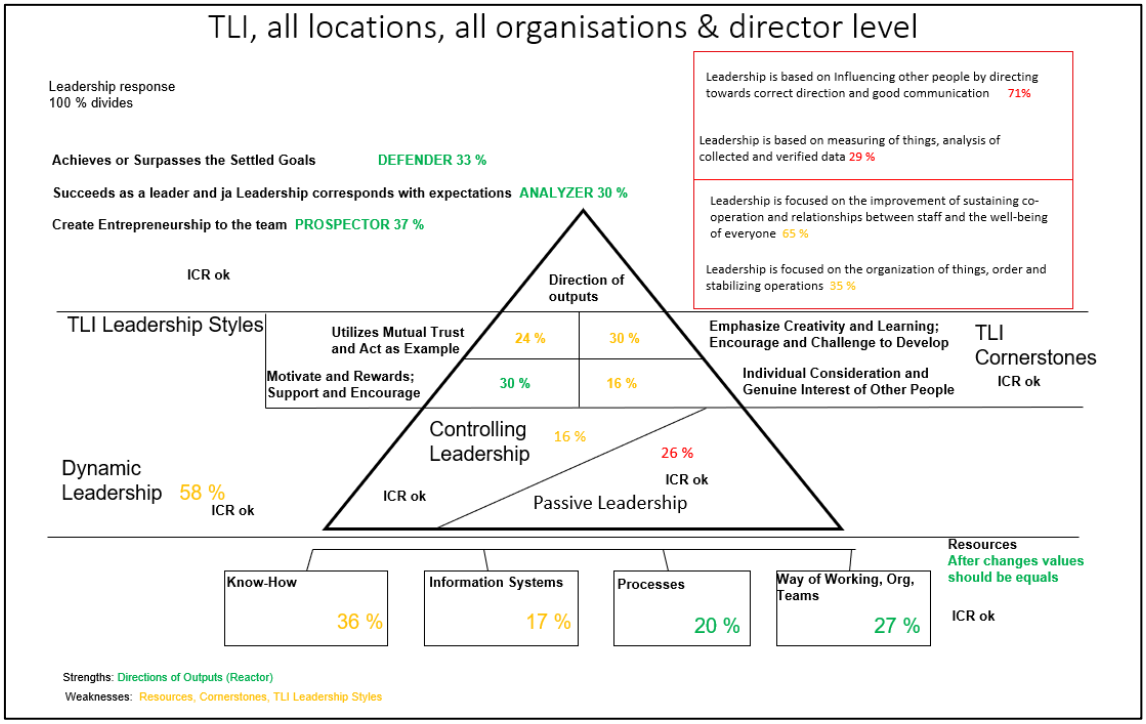


Figure 8. Global results with director organisation level included.

Strength of the directors´ leadership is how leaders are responding, whereas leadership styles and resources are weaknesses.

4.3 Global results, all organisations included at manager level

For manager level results are available only to two European locations, Finland, and Denmark. The reason for this is in the size of the organisations at different locations. European organisation sizes are bigger, and manager level is required to have smaller team sizes and more efficient organisation. In the China and Nort America organisations are smaller and director level is also controlling developer level without additional manager level. For this reason, these results are not available at the global level, only for locations. These are presented in the appendixes.

4.4 Global results, all organisations included at developer level

Global results for developer level are presented at figure 8. Developers have good feeling to be led by transformational leadership. The leadership response is reactive since all response types are well balanced. Also, TLI cornerstones are seen to be in balance what is giving good base to the organisation efficiency and high-performing teams.

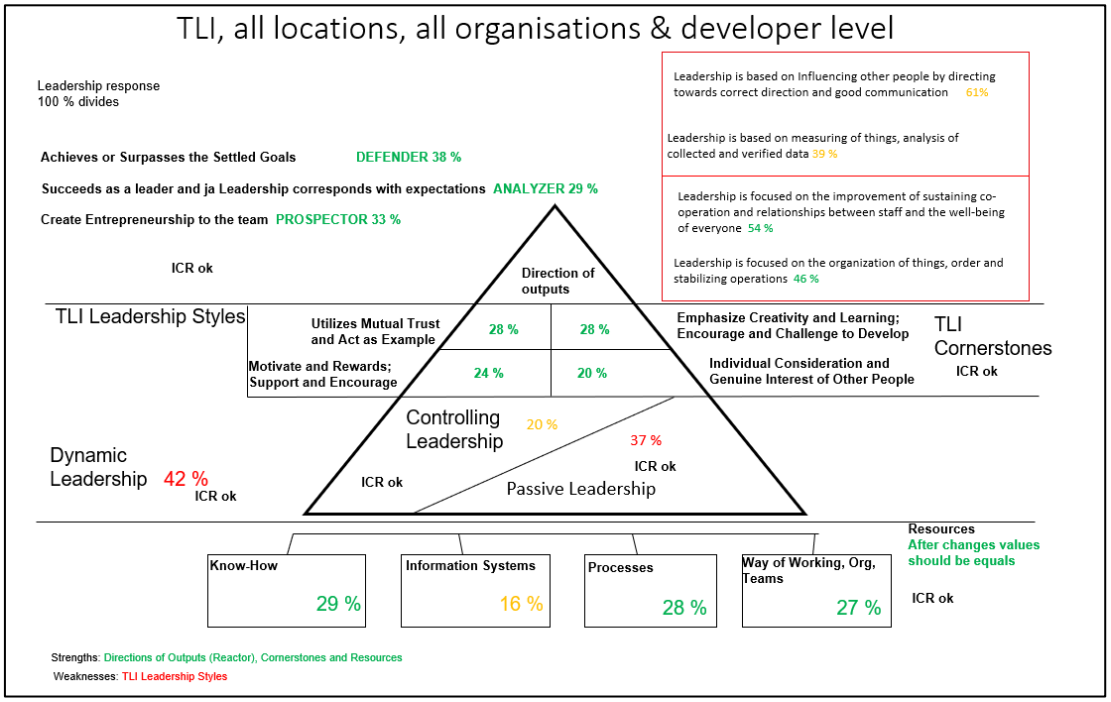


Figure 9. Global results with developer organisation level included.

Development organisation is working in scrum environment and based on scrum methodology projects are led in scrum sessions, not directly from the organisation hierarchy. This is also seen in the results when passive leadership is seen to be almost equal to dynamic leadership. Developers also see more controlling leadership than managers and directors.

For resourcing developer level sees all to be well balanced, only IT- systems are seen lacking slightly behind in the focus areas. The reason for IT- systems is seen to be not enough in focus to support their daily work, when IT- systems has come massive and complex to manage and maintain. Before IT- systems were controlling the development work, duties were more focusing to main duties and now all tasks to maintain IT- systems are seen as an extra work and not supporting their work.

Developers feels their leadership is based on influencing the people and discussions more than actual data of the results. They are also feeling that leadership is in good balance by focusing to co-operation between the staff and organisation wellbeing compared to organisational matters, order, and stabile operations.

5 Conclusions and recommendations

After analysing all results globally, locally, organisational level and by respondents' position, we can conclude that research was succeeded to give answers for research questions and gave new thoughts to the organisation to continue work for high-performing organisations with local flavour. The study also gave good understanding the leadership responses and current state of product life cycle organisations are working with.

5.1 Limitation

The study has limitation to do any conclusions or crosscheck between interviews and real measured efficiency meters in organisations because there are no such meters defined before. Therefor any concrete measurements are not used to analyse efficiency or high-performing organisations on the time of research.

5.2 Conclusions

The key research question was "*How to generate global high-performing organisation with local flavour?*". According to theory of the study and questionaries there is no "one-way" to generate high-performing organisation. The key elements are still same and are no depending from cultural or local differences. The key element for high-performing teams is management of the organisation and how leaders are leading the organisation. According to theories transformational leadership style is one of the most appropriate leadership styles to enable high-performing culture. In example when focusing more to Chine's developers and according to interviews the controlling leadership style affect a lot to the efficiency and motivation of the teams, even the TLI cornerstones seemed to be well balanced. The leadership response is seen as a "*defender*" where organisation is always defending their work and work effort. Because of more conservative answers for survey in China we are not able to recognise fluctuation in cornerstones as there may occur.

In Finland research and development department had highest measure for dynamic leadership style. Even the controlling leadership was seen to be little bit high from ideal the interviews confirmed that teams were able to perform in good level and organisation were able to do needed decisions by them self without any fear to do mistakes. This was also seen in leadership response where "c*reate entrepreneurship to the team; Prospector 53 %"* was much higher rated than others. With this kind of leadership high-performing culture can be created and employees are willing to perform for the company when they feel to be secured and rewarded for done work.

The first supportive research questions were "*What are main characteristics of leadership which influence to the team performing?*". According to theory and results of the study together with assumption that transformational leadership is the best leadership model to influence positively to team performing we can state that all TLI cornerstones shall be in balance. Same time with cornerstones is in balance the leaders shall focus also to all resources. The resources are the frame of efficiency and are required to able efficiency of the organisations. In example if IT-Systems are not supporting working at all and are seen more to be inconvenience than support working they are decreasing motivation and efficiency of the team. Also, if processes are too complicated and unclear, they can cause inefficiency in the work and organisation. Leadership shall also be based on influencing people and good communication without forget to measure organisation performance and analysing frequently gathered data. Leadership shall also focus sustainable improvements, co-operation and relationships same time as organisational matters, order, and stabilising operations. If organisation is not stable and in order it can cause a lot of harm, rumours, and unhappiness in the organisation where all this will affect directly to organisation performance.

The second supportive questions were "*How organisation should be organised to able most high-performing organisation and how organisation shall be led?"*. According to organisational theory the ideal size of the teams is 7 plus minus 2 persons. With this size

of the team, team can have most interaction with all members and if team size gets bigger then team efficiency will decrease due to all members may not been involved to discussions, decision making and information sharing. When employee is not aware of the information it can lead searching the information what could be shared in smaller teams without any team meetings or other information sharing sessions. All meetings and other information sharing sessions just for this purpose is waste and is decreasing team efficiency. Therefore, team size should be at the level were all information reach all members without additional tasks. These teams shall be skilled to perform problem solving and do needed decisions individually. Leading of the organisations can be executed with different ways, now organisation is working scrum environment where scrum master is leading daily tasks and project office is controlling the project management activities and secures that all project process is followed. The organisation employees can be organised to the project teams with sizes of 7 plus minus 2 and behind of these project teams there are competence groups organised in the matrix. Each competence group can have direct superior who is responsible for leading and developing the organisation competences, efficiency, and culture. These people leaders should adopt a transformational leadership style to be able to gain most high-performing organisation.

The selected AHP- model together sand cone model and interviews were usable research method for this kind of study because method can measure the leadership focus areas, leadership styles, cornerstones, and output of the leadership. With all this information researcher can easily do conclusions for state of the organisation leadership and give necessary recommendations for improvements.

5.3 Recommendations

Organisational leadership style is seen to be too passive in many organisations, even the projects and daily work are led by scrum masters, shall employees still feel that there is a people manager, who is their individual leader and actively have discussions and encourage them with their work and challenges. These leaders are also responsible to encourage employees to grow and maintain their knowledge.

At some organisations employees were reporting processes with double approvals or reviews to have tasks forward. Some of these processes shall be reviewed and cleared out to have more efficient processes. When processes are clear with responsibilities defined employees are more satisfied when extra work for finding out what and by who should be doing next tasks. Also, clear responsibilities are required to know who the decision can do if decision can´t be done inside the team.

For having more information of the high performing organisations and teams, leaders need more training about leadership styles and especially transformational leadership. This training shall also include the theory for high-performing organisations with characteristics which affect to team performance. At the training results of this research could be walked through and leaders could have some practical exercises where they need to refer working today and how they should change the leadership styles in different situations. This would give better understanding for reactive responding and practise how different resources affects to efficiency of the organisation.

Organisation should be organised to the matrix organisation where each matrix presents one competence group. This matrix group have people manager who is the superior for the employees. This competence matrix is then used as a resource pool for project teams' size of 7 plus minus 2 employees project teams with required competences. Daily work of the project teams is led by scrum masters.

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Appendices

Appendix 1. Template of survey form

AHP Survey company name YYYYMMDD

CASE STUDY FOR RESEARCH OF PRODUCT DEVELOPMENT

Name, University of Vaasa, Finland

This survey is a part of study to find out current leadership status in company name and see the differences between organizations. This study is one part of this year strategic must win battles set by company management team to gain more efficient and effective product development organization by High Performing Diverse Teams.

Study is not concentrating only into R&D organization, the new product development is the common project to multiple organizations like R&D, Supply Chain, Product Management and Sales and Marketing and therefor all these organizations are included into this research. It´s very important that you will answer into this survey as you are one of the few selected persons.

All information provided by interviewee is kept confidential and will not be published anywhere or forwarded inside the organization.

FILLING THE QUESTIONNAIRE (please read this chapter carefully)
Please evaluate the following criteria in every pair wise comparison what are more important in your opinion. There are two different situations to consider, first situation is in normal operation, where pressure to get something ready and into markets are in the schedule and still reached. The second situation is where product development is seen to be in crisis and there is more pressure to get products ready to markets and product cost and time schedule are not reachable any more without radical actions. When giving the answers usually the first intuition is the best answer.

Please fill your information. Information is used to target answers to right sites and organizations. Name is needed if any additional data or more focused interviews are needed to clarify answers.

Background information:

Name of the Answerer:
Country and site:
Main business area:
Position and area in charge:

PRODUCT DEVELOPMENT STRATEGY QUESTIONNAIRE

Cost = Cost of product development

Quality = Quality of product development (resulting of the bad project execution and bad product quality)

Delivery = Keep the product development in the time schedule

Flexibility = Flexibility of product development

Please mark your answers using BOLD RED, or other well seen method.

Before Crisis (Normal situation)

Cost	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Quality
Cost	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Delivery
Cost	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Flexibility
Quality	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Delivery
Quality	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Flexibility
Delivery	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Flexibility

During Crisis

Cost	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Quality
Cost	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Delivery
Cost	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Flexibility
Quality	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Delivery
Quality	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Flexibility
Delivery	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Flexibility

For validity and reliability checking, please also specify roughly the priority weights of Q(Quality), C(Cost), T(Time/Delivery) and F(Flexibility).

	Quality %	Cost %	Delivery %	Flexibility %
Before crisis				
During crisis				

Note: Percentage of Quality, Cost, Delivery and Flexibility altogether is 100%, which means the sum of every row in above table should be 100%.

THE DESCRIPTION OF PERSONAL LEADERSHIP AT THE MOMENT

If you are not in leadership / project manager position, please answer how your nearest People Manger or Project Manager is working. Person to evaluate is the one who is directing your daily tasks in the product development projects.

We wish you answer to this form so that the result profile is as correct as possible and corresponds to your current leadership in your current position i.e. We wish you answer how you act as a leader in leadership situations at the moment.

THE GOAL IS TO DESCRIBE YOUR LEADERSHIP EXACTLY AT THIS MOMENT (or the leadership of person under evaluation at the moment).

There is no right, best or preferable answers to this questionnaire. The results of questions are used only in order to create leadership index, this index is used to compare different organizations inside the company. We are using the answers in order to collect statistical data, from which no individual answerers can't be recognized.

DESCRIBE YOUR OWN LEADERSHIP AT THIS MOMENT (or the leadership of the person evaluated) by comparing the following:

Utilizes individual consideration	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Supports and encourages
Utilizes individual consideration	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Emphasize creativity and learning
Utilizes individual consideration	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Acts as an example
Supports and encourages	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Emphasize creativity and learning
Supports and encourages	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Acts as an example
Emphasize creativity and learning	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Acts as an example

Utilizes genuine interest of other people	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Motivates and rewards
Utilizes genuine interest of other people	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Encourages and challenges to develop
Utilizes genuine interest of other people	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Utilizes the mutual trust
Motivates and rewards	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Encourages and challenges to develop
Motivates and rewards	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Utilizes the mutual trust
Encourages and challenges to develop	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Utilizes the mutual trust

Operational business processes and work flows	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Utilize the know-how
Operational business processes and work flows	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Utilizes the information systems
Operational business processes and work flows	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Utilizes different organizing practices like teams, matrixes, projects etc.
Utilize the know-how	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Utilizes the information systems
Utilize the know-how	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Utilizes different organizing practices like teams, matrixes, projects etc.
Utilizes the information systems	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Utilizes different organizing practices like teams, matrixes, projects etc.

Achieves the settled goals	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Succeeds as a leader
Achieves the settled goals	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Creates entrepreneurship to the team
Succeeds as a leader	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Creates entrepreneurship to the team

The goals are often even surpassed	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Leadership corresponds to the expectations
The goals are often even surpassed	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	People are willing to do even extra effort
Leadership corresponds to the expectations	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	People are willing to do even extra effort

The decisions can be made slightly late and by avoiding problem situations	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Mistakes must be examined, corrected and sometimes those who are responsible must be punished
The decisions can be made slightly late and by avoiding problem situations	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Creativity, learning and ”as an example” behavior must be emphasized
Mistakes must be examined, corrected and sometimes those who are responsible must be punished	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Creativity, learning and ”as an example” behavior must be emphasized

The work can be done alone independently and intervene only if necessary	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	The job tasks must be monitored and done as much as possible by yourself
The work can be done alone independently and intervene only if necessary	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Stimulating, encouraging and utilizing individual consideration is important
The job tasks must be monitored and done as much as possible by yourself	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Stimulating, encouraging and utilizing individual consideration is important

Leadership is focused on the organization of things, order and stabilizing operations	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Leadership is focused on the improvement of sustaining co-operation and relationships between staff and the well-being of everyone

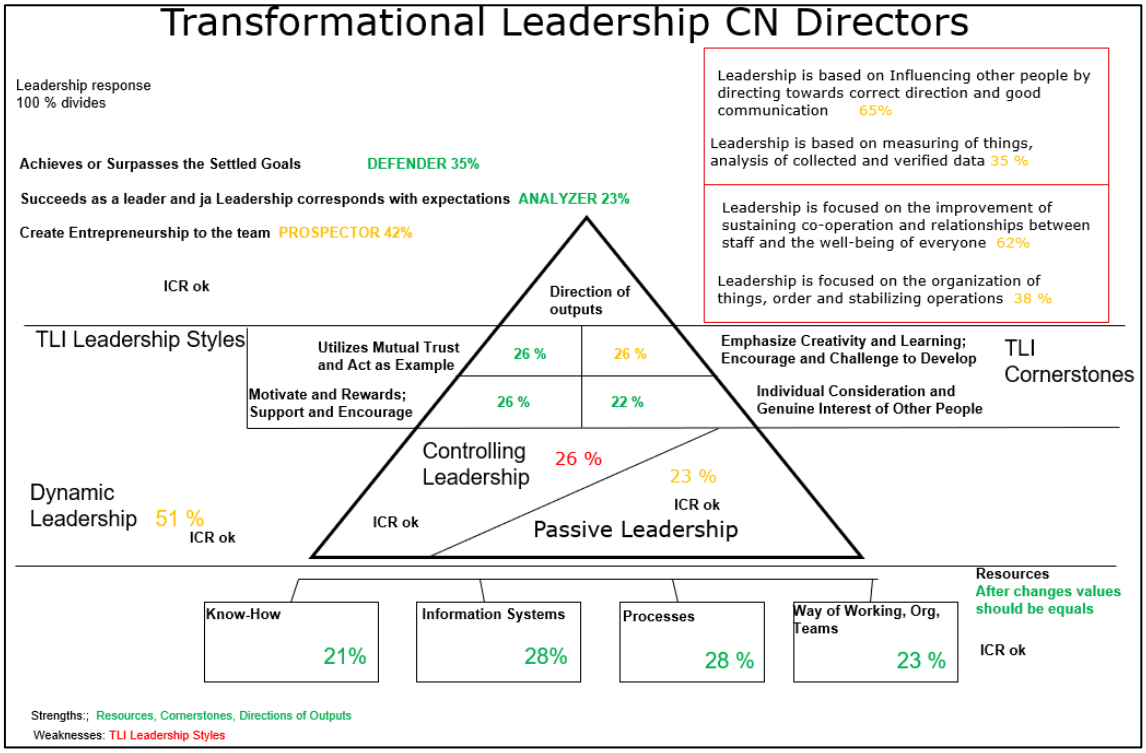
Leadership is based on measuring of things, analysis of collected and verified data	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Leadership is based on Influencing other people by directing towards correct direction and good communication

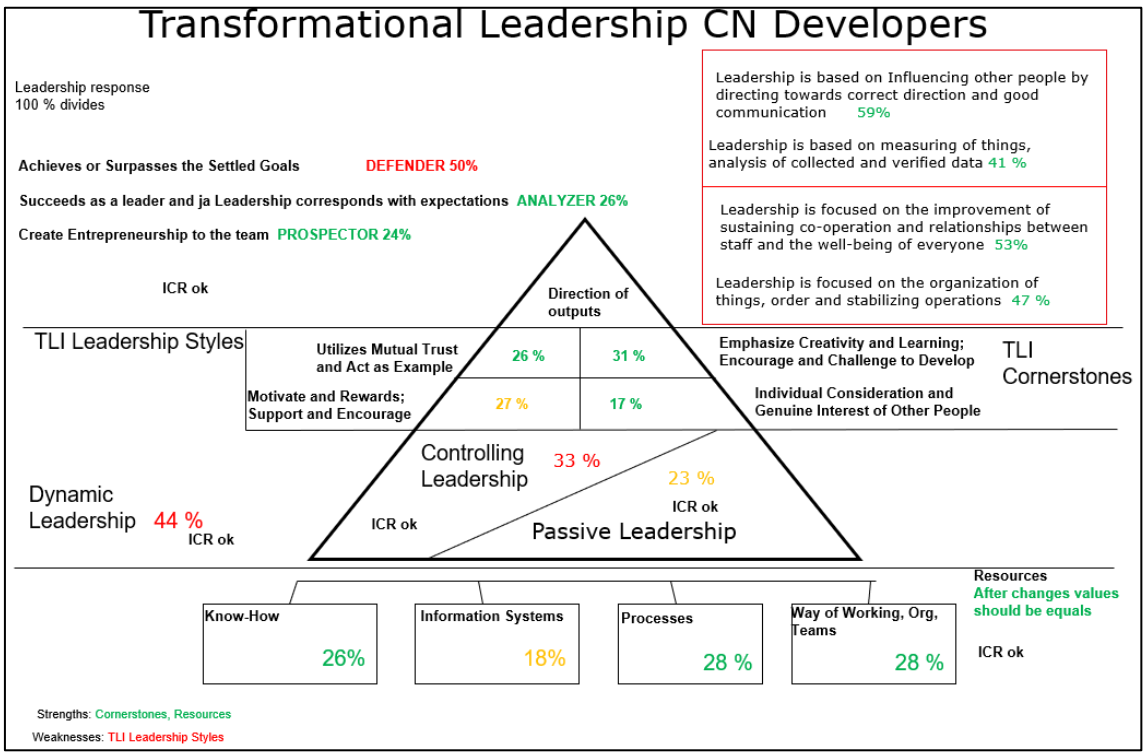
PLEASE ANSWER WITH YOUR OWN WORDS TO THE FOLLOWING QUESTION:

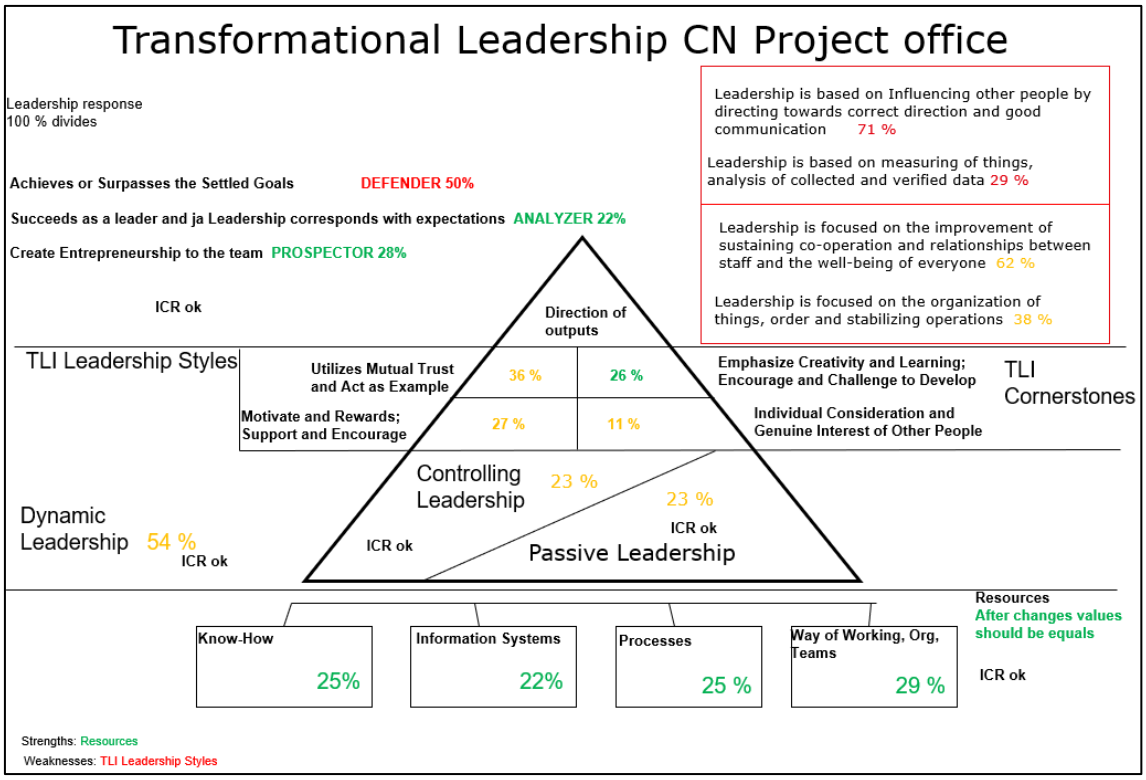
DESCRIPE HOW YOU UNDERSTAND HIGH PERFORMING TEAMS?

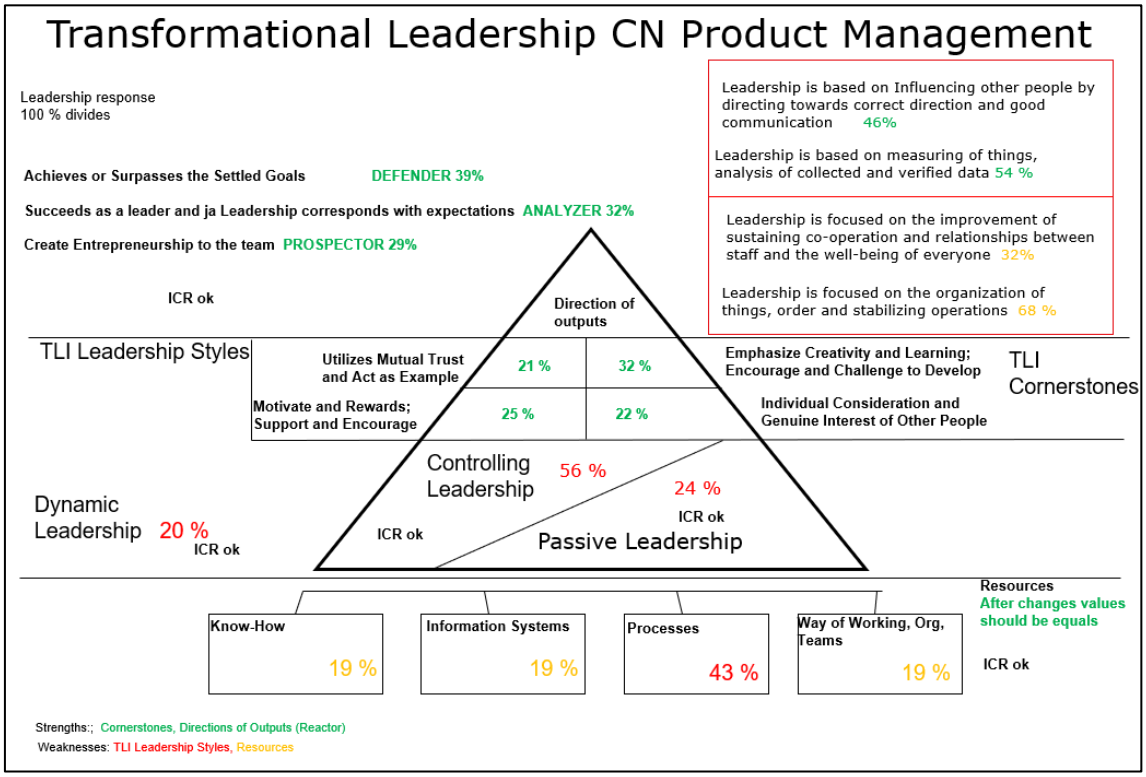
THANK YOU FOR YOUR ANSWER!

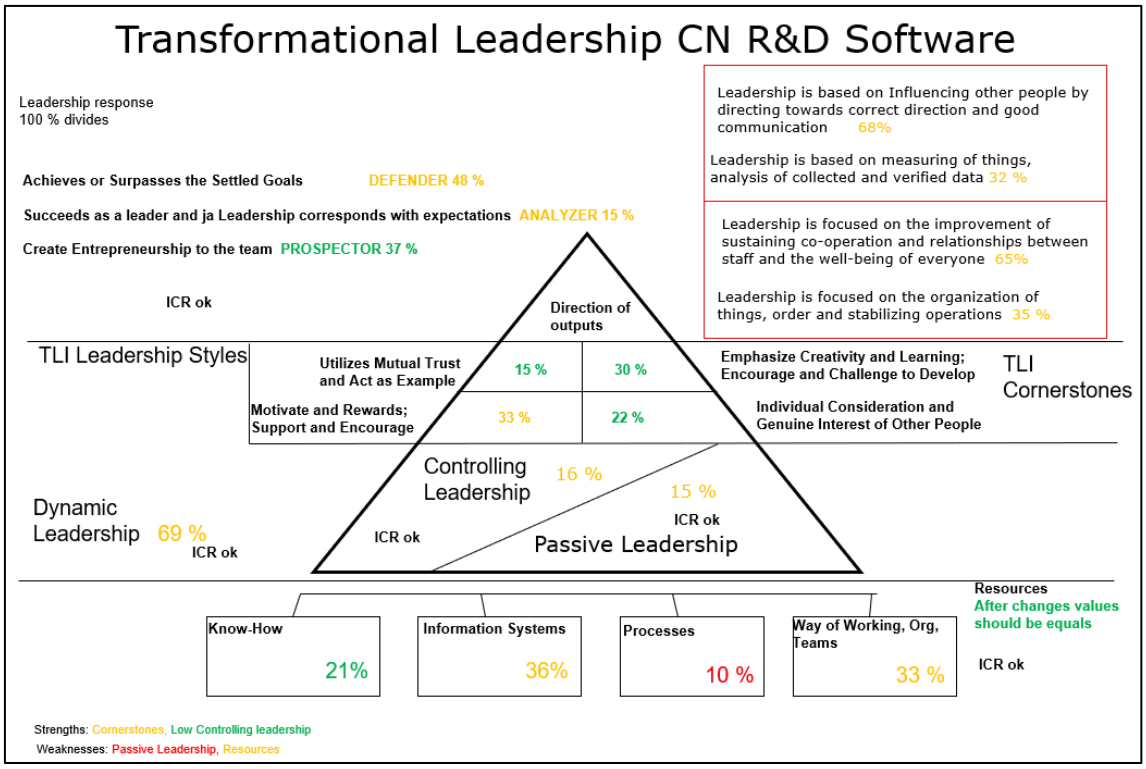
Appendix 2. Local and organisational TLI results for China

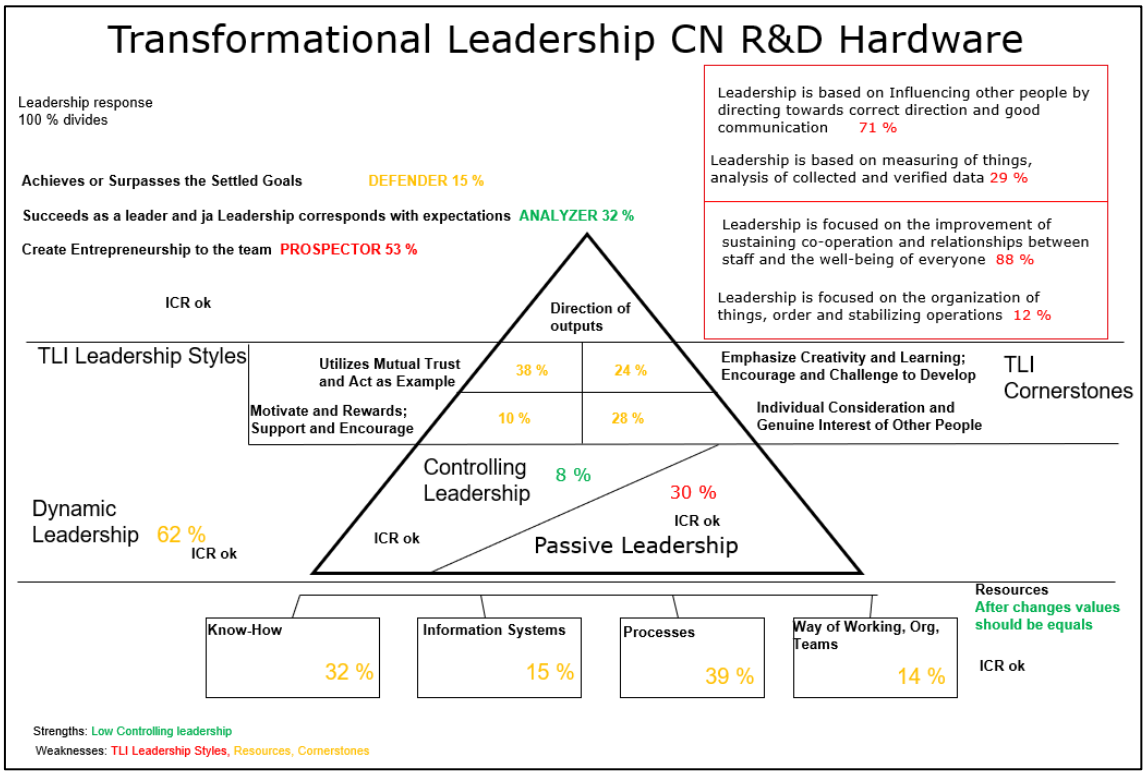




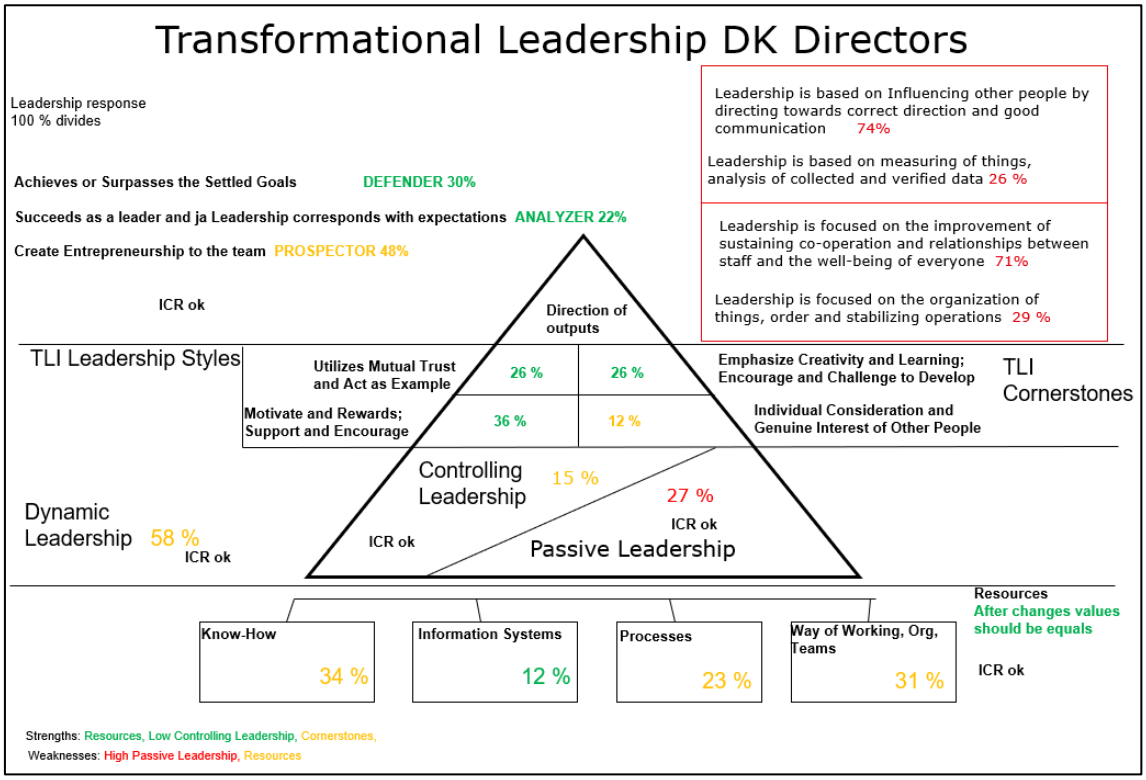

Transformational Leadership CN Project office
Leadership response
100 % divides
Leadership is based on Influencing other people by directing towards correct direction and good communication 71 %
Leadership is based on measuring of things, analysis of collected and verified data 29 %
Achieves or Surpasses the Settled Goals DEFENDER 50%
Succeeds as a leader and ja Leadership corresponds with expectations ANALYZER 22%
Create Entrepreneurship to the team PROSPECTOR 28%
Leadership is focused on the improvement of sustaining co-operation and relationships between staff and the well-being of everyone 62 %
Leadership is focused on the organization of things, order and stabilizing operations 38 %
ICR ok
Direction of outputs
TLI Leadership Styles
Utilizes Mutual Trust and Act as Example
36 %
26 %
Emphasize Creativity and Learning; Encourage and Challenge to Develop
TLI Cornerstones
Motivate and Rewards; Support and Encourage
27 %
11 %
Individual Consideration and Genuine Interest of Other People
Controlling Leadership
23 %
23 %
ICR ok
Dynamic Leadership 54 %
ICR ok
ICR ok
Passive Leadership
Resources
After changes values should be equals
Know-How
25%
Information Systems
22%
Processes
25 %
Way of Working, Org, Teams
29 %
ICR ok
Strengths: Resources
Weaknesses: TLI Leadership Styles

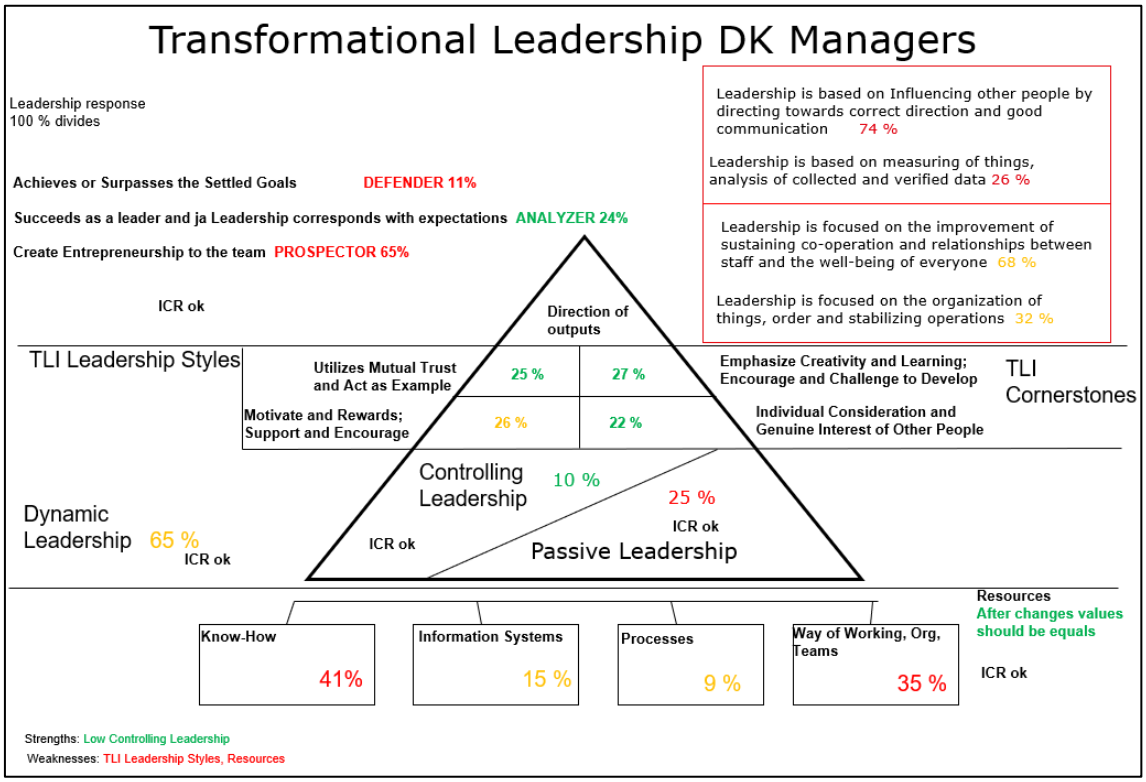

Transformational Leadership CN Product Management
Leadership response
100 % divides
Leadership is based on Influencing other people by directing towards correct direction and good communication 46%
Leadership is based on measuring of things, analysis of collected and verified data 54 %
Achieves or Surpasses the Settled Goals DEFENDER 39%
Succeeds as a leader and ja Leadership corresponds with expectations ANALYZER 32%
Create Entrepreneurship to the team PROSPECTOR 29%
Leadership is focused on the improvement of sustaining co-operation and relationships between staff and the well-being of everyone 32%
Leadership is focused on the organization of things, order and stabilizing operations 68 %
ICR ok
Direction of outputs
TLI Leadership Styles
Utilizes Mutual Trust and Act as Example
21 %
32 %
Emphasize Creativity and Learning; Encourage and Challenge to Develop
TLI Cornerstones
Motivate and Rewards; Support and Encourage
25 %
22 %
Individual Consideration and Genuine Interest of Other People
Controlling Leadership
56 %
24 %
ICR ok
Dynamic Leadership 20 %
ICR ok
ICR ok
Passive Leadership
Resources
After changes values should be equals
Know-How
19 %
Information Systems
19 %
Processes
43 %
Way of Working, Org, Teams
19 %
ICR ok
Strengths:; Cornerstones, Directions of Outputs (Reactor)
Weaknesses: TLI Leadership Styles, Resources

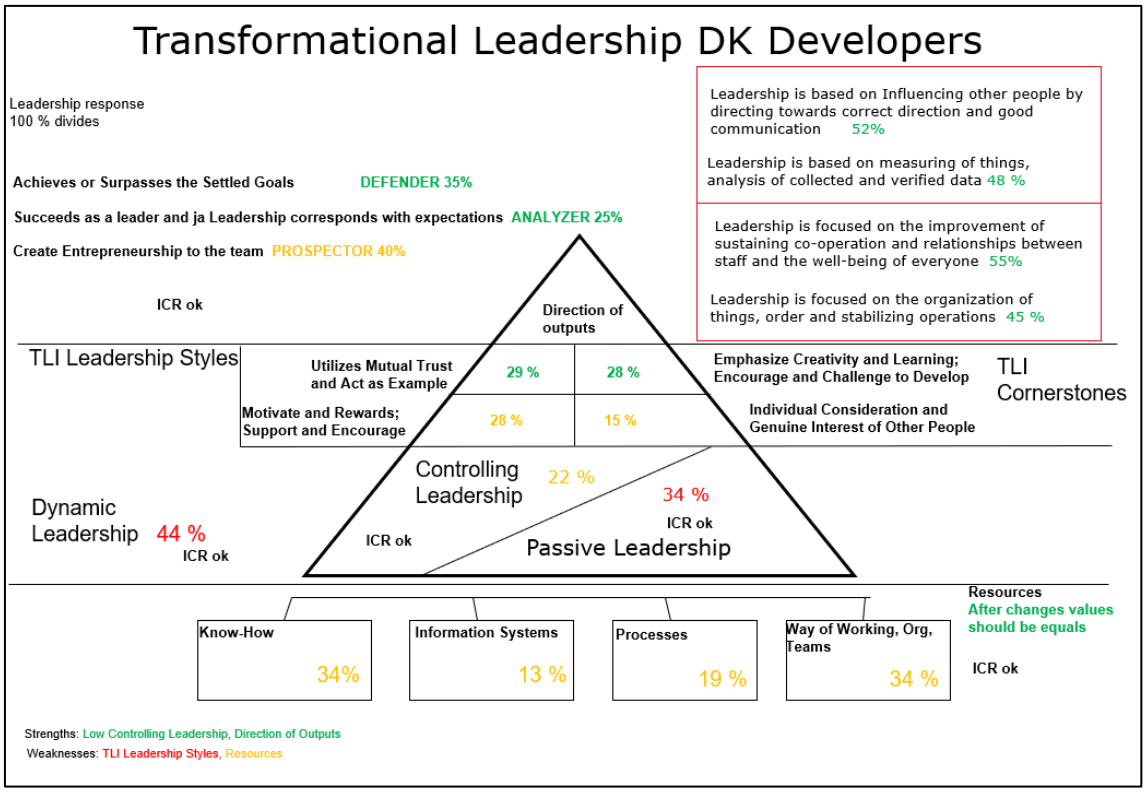

Transformational Leadership CN R&D Software
Leadership response
100 % divides
Leadership is based on Influencing other people by directing towards correct direction and good communication 68%
Leadership is based on measuring of things, analysis of collected and verified data 32 %
Achieves or Surpasses the Settled Goals DEFENDER 48 %
Succeeds as a leader and ja Leadership corresponds with expectations ANALYZER 15 %
Create Entrepreneurship to the team PROSPECTOR 37 %
Leadership is focused on the improvement of sustaining co-operation and relationships between staff and the well-being of everyone 65%
Leadership is focused on the organization of things, order and stabilizing operations 35 %
ICR ok
Direction of outputs
TLI Leadership Styles
Utilizes Mutual Trust and Act as Example
15 %
30 %
Emphasize Creativity and Learning; Encourage and Challenge to Develop
TLI Cornerstones
Motivate and Rewards; Support and Encourage
33 %
22 %
Individual Consideration and Genuine Interest of Other People
Controlling Leadership
16 %
15 %
ICR ok
Dynamic Leadership 69 %
ICR ok
ICR ok
Passive Leadership
Resources
After changes values should be equals
Know-How
21%
Information Systems
36%
Processes
10 %
Way of Working, Org, Teams
33 %
ICR ok
Strengths: Cornerstones, Low Controlling leadership
Weaknesses: Passive Leadership, Resources

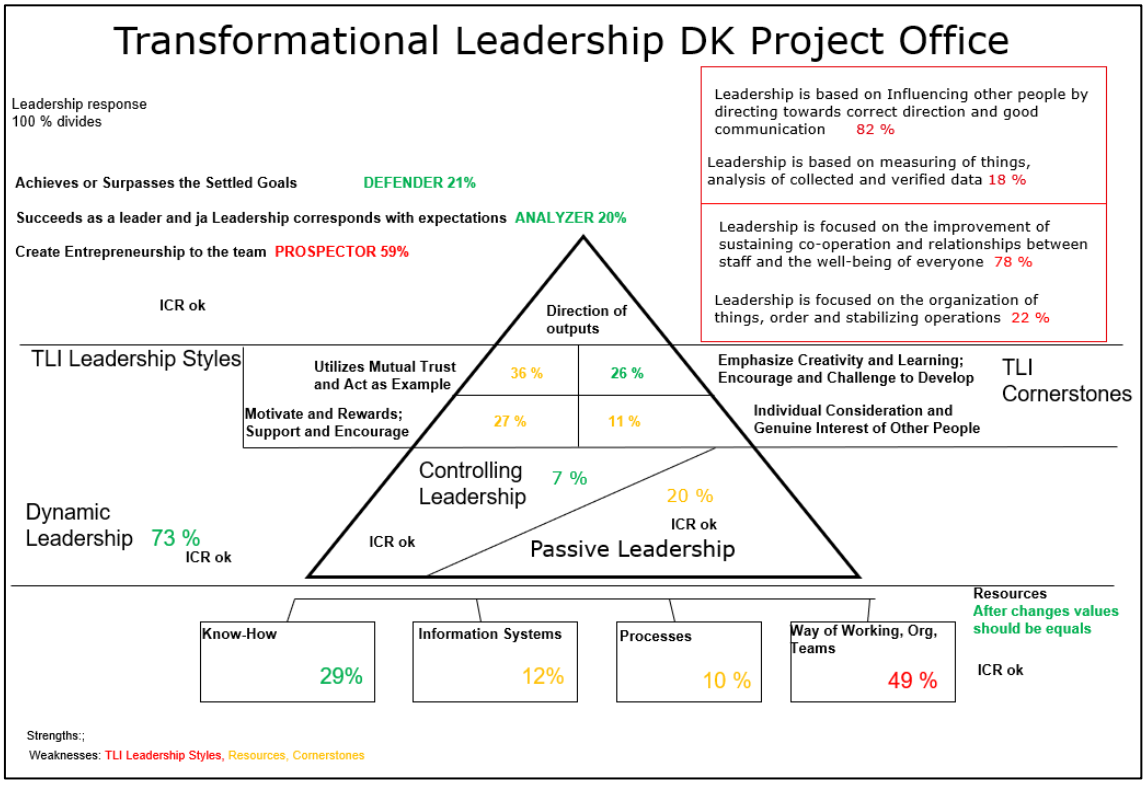

Transformational Leadership CN R&D Hardware
Leadership response
100 % divides
Leadership is based on Influencing other people by directing towards correct direction and good communication 71 %
Leadership is based on measuring of things, analysis of collected and verified data 29 %
Achieves or Surpasses the Settled Goals DEFENDER 15 %
Succeeds as a leader and ja Leadership corresponds with expectations ANALYZER 32 %
Create Entrepreneurship to the team PROSPECTOR 53 %
Leadership is focused on the improvement of sustaining co-operation and relationships between staff and the well-being of everyone 88 %
Leadership is focused on the organization of things, order and stabilizing operations 12 %
ICR ok
Direction of outputs
TLI Leadership Styles
Utilizes Mutual Trust and Act as Example
38 %
24 %
Emphasize Creativity and Learning; Encourage and Challenge to Develop
TLI Cornerstones
Motivate and Rewards; Support and Encourage
10 %
28 %
Individual Consideration and Genuine Interest of Other People
Controlling Leadership
8 %
30 %
ICR ok
Dynamic Leadership 62 %
ICR ok
ICR ok
Passive Leadership
Resources
After changes values should be equals
Know-How
32 %
Information Systems
15 %
Processes
39 %
Way of Working, Org, Teams
14 %
ICR ok
Strengths: Low Controlling leadership
Weaknesses: TLI Leadership Styles, Resources, Cornerstones

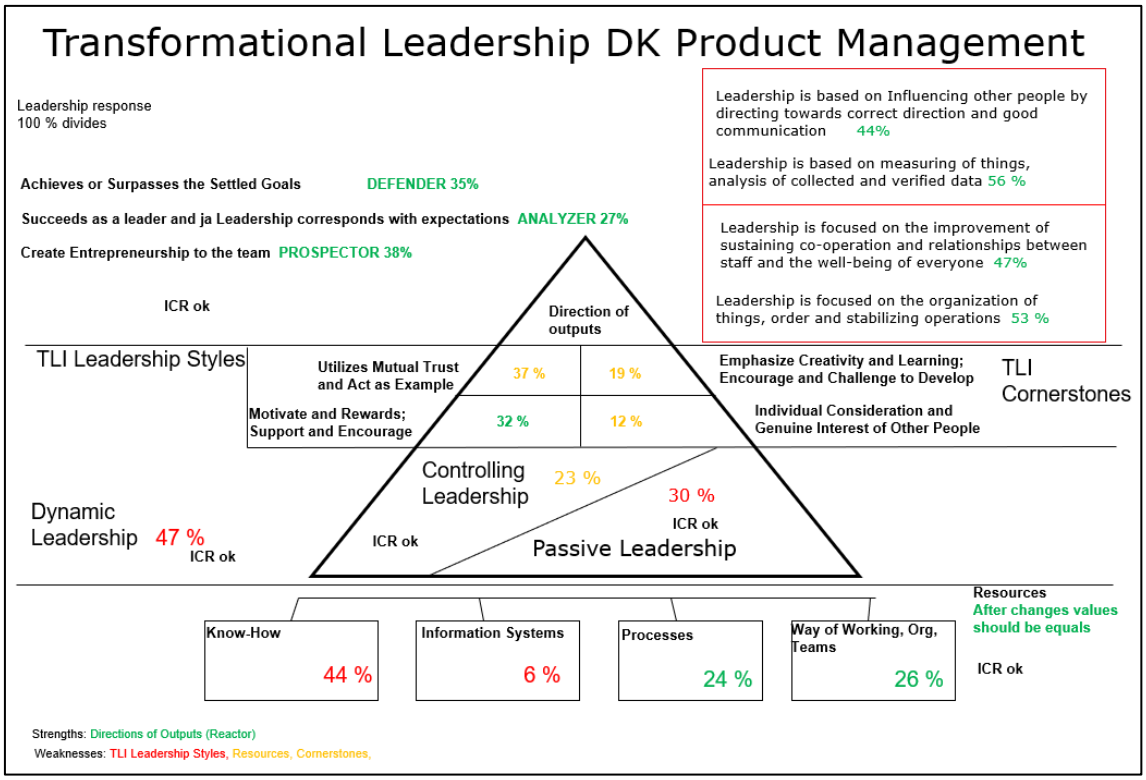
Appendix 3. Local and organisational TLI results for Denmark

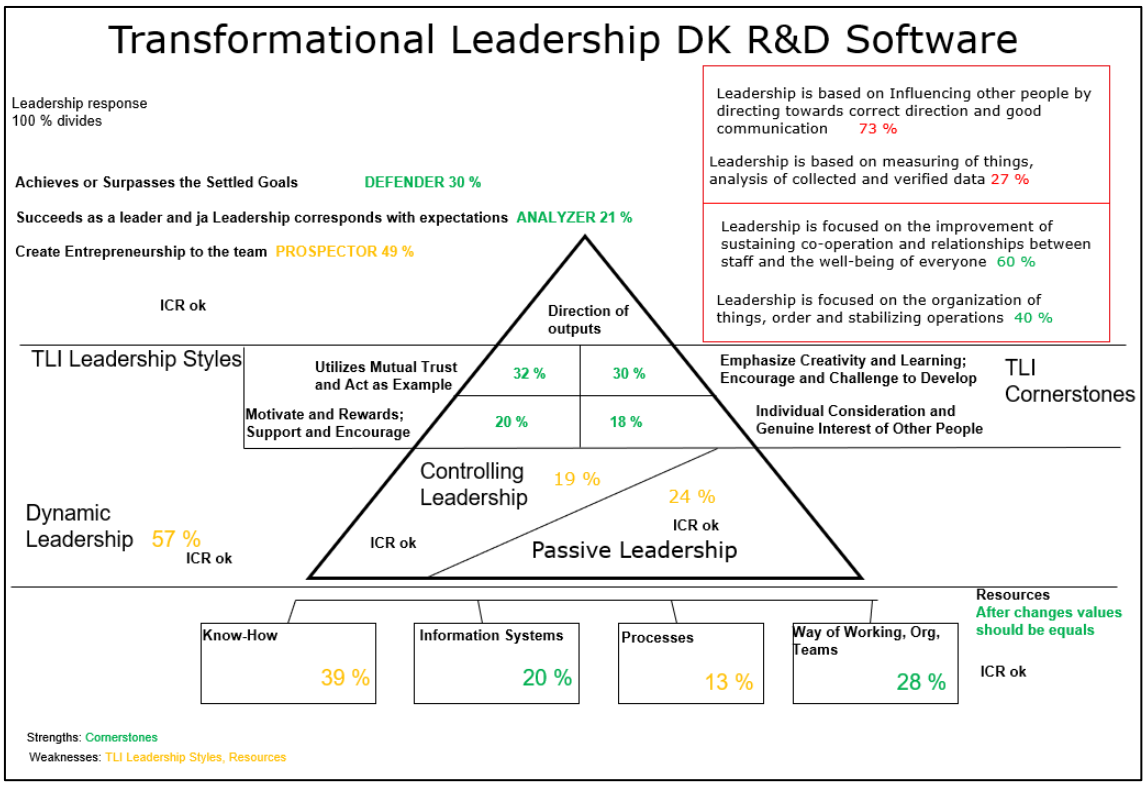


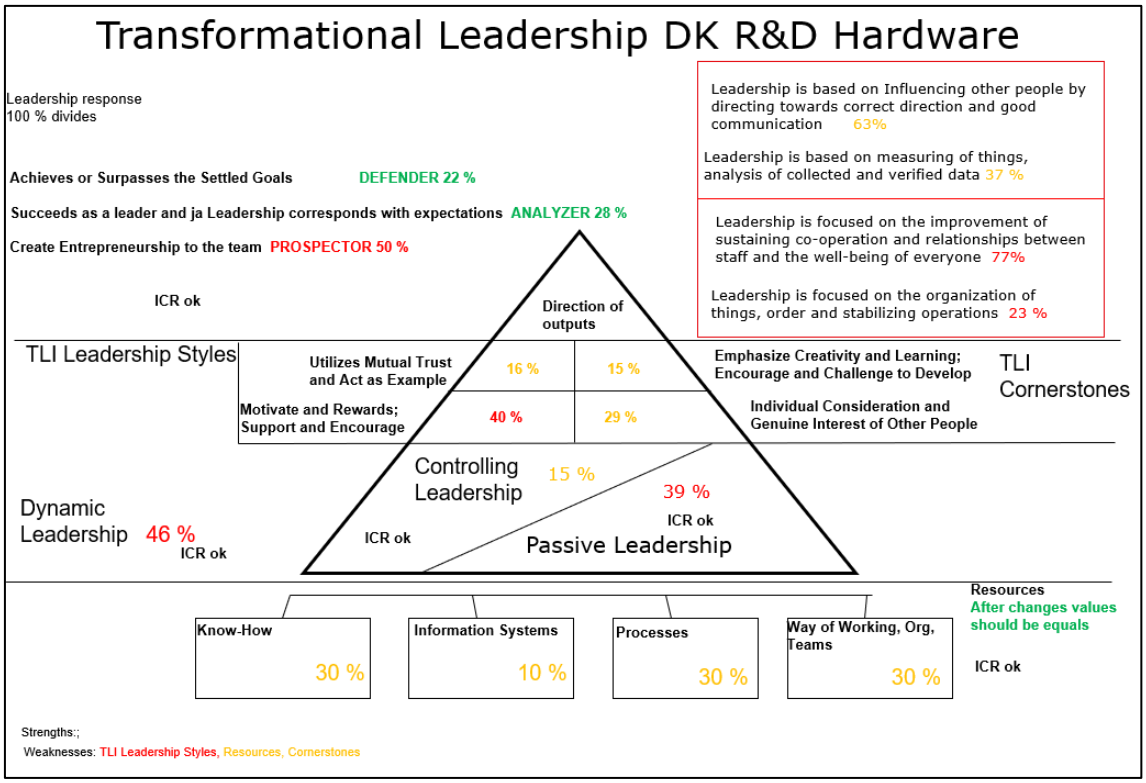



Transformational Leadership DK Developers
Leadership response
100 % divides
Leadership is based on Influencing other people by directing towards correct direction and good communication 52%
Leadership is based on measuring of things, analysis of collected and verified data 48 %
Achieves or Surpasses the Settled Goals DEFENDER 35%
Succeeds as a leader and ja Leadership corresponds with expectations ANALYZER 25%
Create Entrepreneurship to the team PROSPECTOR 40%
Leadership is focused on the improvement of sustaining co-operation and relationships between staff and the well-being of everyone 55%
Leadership is focused on the organization of things, order and stabilizing operations 45 %
ICR ok
Direction of outputs
TLI Leadership Styles
Utilizes Mutual Trust and Act as Example
29 %
28 %
Emphasize Creativity and Learning; Encourage and Challenge to Develop
TLI Cornerstones
Motivate and Rewards; Support and Encourage
28 %
15 %
Individual Consideration and Genuine Interest of Other People
Controlling Leadership
22 %
34 %
ICR ok
Dynamic Leadership 44 %
ICR ok
ICR ok
Passive Leadership
Resources
After changes values should be equals
Know-How
34%
Information Systems
13 %
Processes
19 %
Way of Working, Org, Teams
34 %
ICR ok
Strengths: Low Controlling Leadership, Direction of Outputs
Weaknesses: TLI Leadership Styles, Resources

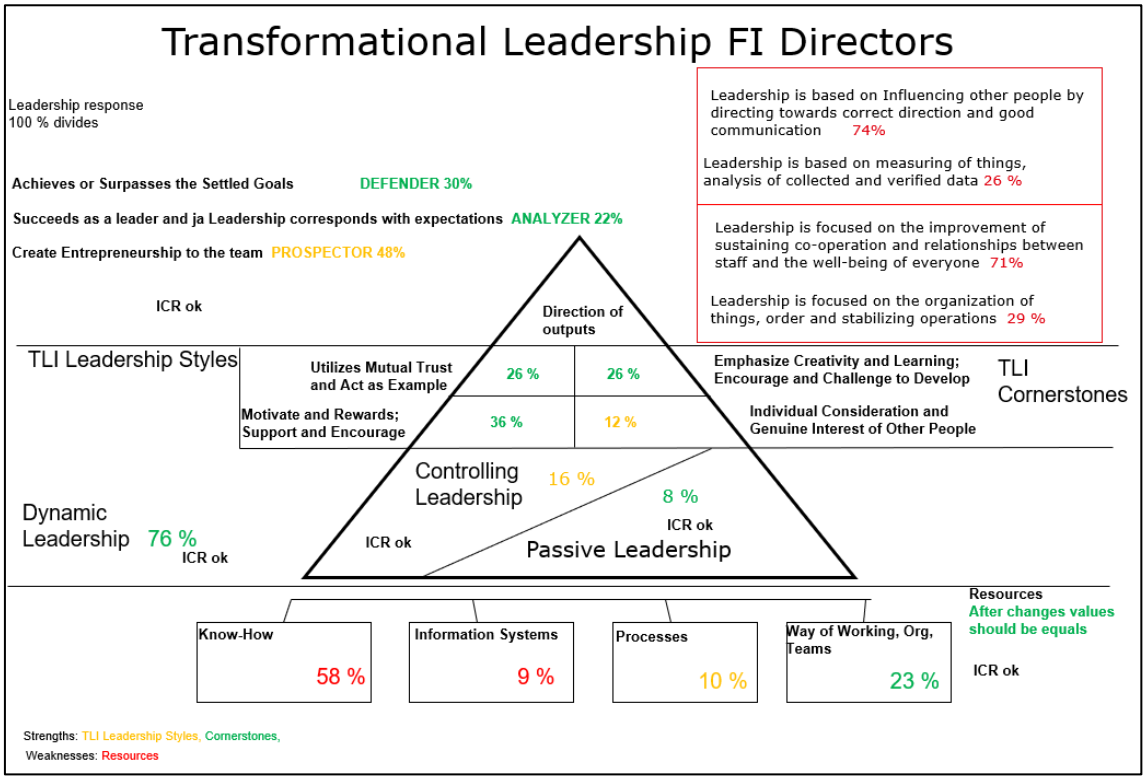

Transformational Leadership DK Project Office
Leadership response
100 % divides
Leadership is based on Influencing other people by directing towards correct direction and good communication 82 %
Leadership is based on measuring of things, analysis of collected and verified data 18 %
Achieves or Surpasses the Settled Goals DEFENDER 21%
Succeeds as a leader and ja Leadership corresponds with expectations ANALYZER 20%
Create Entrepreneurship to the team PROSPECTOR 59%
Leadership is focused on the improvement of sustaining co-operation and relationships between staff and the well-being of everyone 78 %
Leadership is focused on the organization of things, order and stabilizing operations 22 %
ICR ok
Direction of outputs
TLI Leadership Styles
Utilizes Mutual Trust and Act as Example
36 %
26 %
Emphasize Creativity and Learning; Encourage and Challenge to Develop
TLI Cornerstones
Motivate and Rewards; Support and Encourage
27 %
11 %
Individual Consideration and Genuine Interest of Other People
Controlling Leadership
7 %
20 %
ICR ok
Dynamic Leadership 73 %
ICR ok
ICR ok
Passive Leadership
Resources
After changes values should be equals
Know-How
29%
Information Systems
12%
Processes
10 %
Way of Working, Org, Teams
49 %
ICR ok
Strengths:;
Weaknesses: TLI Leadership Styles, Resources, Cornerstones

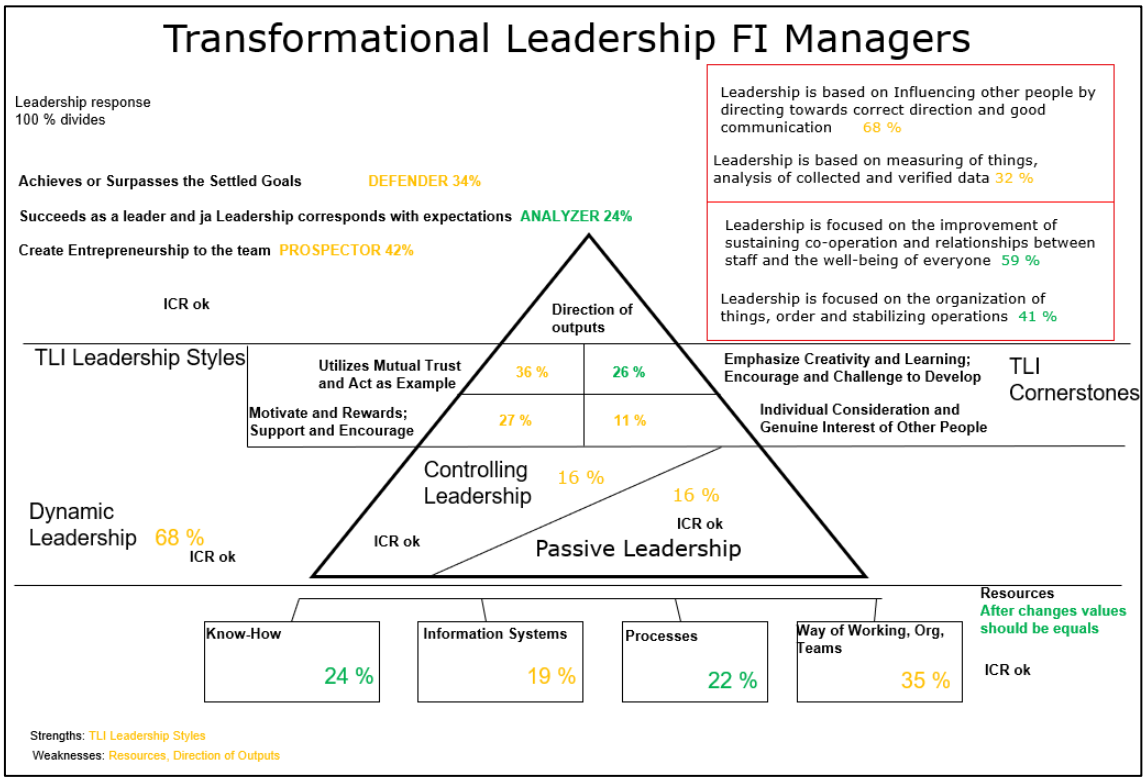

Transformational Leadership DK Product Management
Leadership response
100 % divides
Leadership is based on Influencing other people by directing towards correct direction and good communication 44%
Leadership is based on measuring of things, analysis of collected and verified data 56 %
Achieves or Surpasses the Settled Goals DEFENDER 35%
Succeeds as a leader and ja Leadership corresponds with expectations ANALYZER 27%
Create Entrepreneurship to the team PROSPECTOR 38%
Leadership is focused on the improvement of sustaining co-operation and relationships between staff and the well-being of everyone 47%
Leadership is focused on the organization of things, order and stabilizing operations 53 %
ICR ok
Direction of outputs
TLI Leadership Styles
Utilizes Mutual Trust and Act as Example
37 %
19 %
Emphasize Creativity and Learning; Encourage and Challenge to Develop
TLI Cornerstones
Motivate and Rewards; Support and Encourage
32 %
12 %
Individual Consideration and Genuine Interest of Other People
Controlling Leadership
23 %
30 %
ICR ok
Dynamic Leadership 47 %
ICR ok
ICR ok
Passive Leadership
Resources
After changes values should be equals
ICR ok
Know-How
44 %
Information Systems
6 %
Processes
24 %
Way of Working, Org, Teams
26 %
Strengths: Directions of Outputs (Reactor)
Weaknesses: TLI Leadership Styles, Resources, Cornerstones,

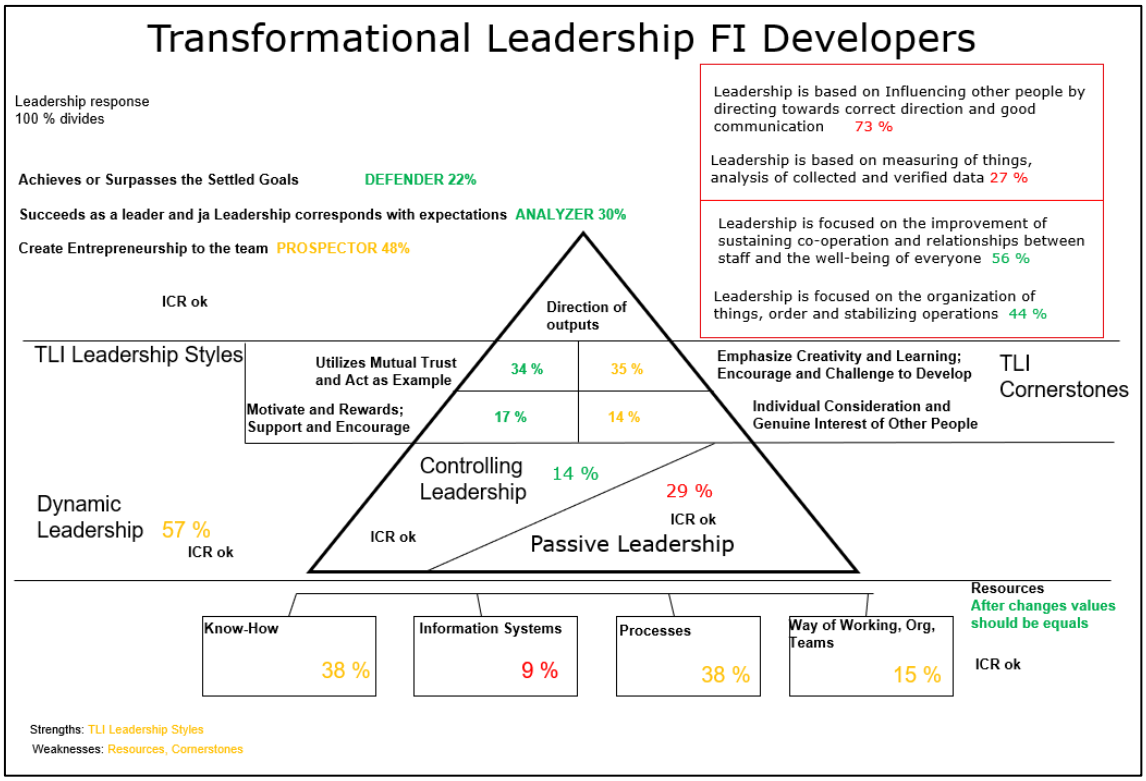

Transformational Leadership DK R&D Software
Leadership response
100 % divides
Leadership is based on Influencing other people by directing towards correct direction and good communication 73 %
Leadership is based on measuring of things, analysis of collected and verified data 27 %
Achieves or Surpasses the Settled Goals DEFENDER 30 %
Succeeds as a leader and ja Leadership corresponds with expectations ANALYZER 21 %
Create Entrepreneurship to the team PROSPECTOR 49 %
Leadership is focused on the improvement of sustaining co-operation and relationships between staff and the well-being of everyone 60 %
Leadership is focused on the organization of things, order and stabilizing operations 40 %
ICR ok
Direction of outputs
TLI Leadership Styles
Utilizes Mutual Trust and Act as Example
32 %
30 %
Emphasize Creativity and Learning; Encourage and Challenge to Develop
TLI Cornerstones
Motivate and Rewards; Support and Encourage
20 %
18 %
Individual Consideration and Genuine Interest of Other People
Controlling Leadership
19 %
24 %
ICR ok
Dynamic Leadership 57 %
ICR ok
ICR ok
Passive Leadership
Resources
After changes values should be equals
ICR ok
Know-How
39 %
Information Systems
20 %
Processes
13 %
Way of Working, Org, Teams
28 %
Strengths: Cornerstones
Weaknesses: TLI Leadership Styles, Resources

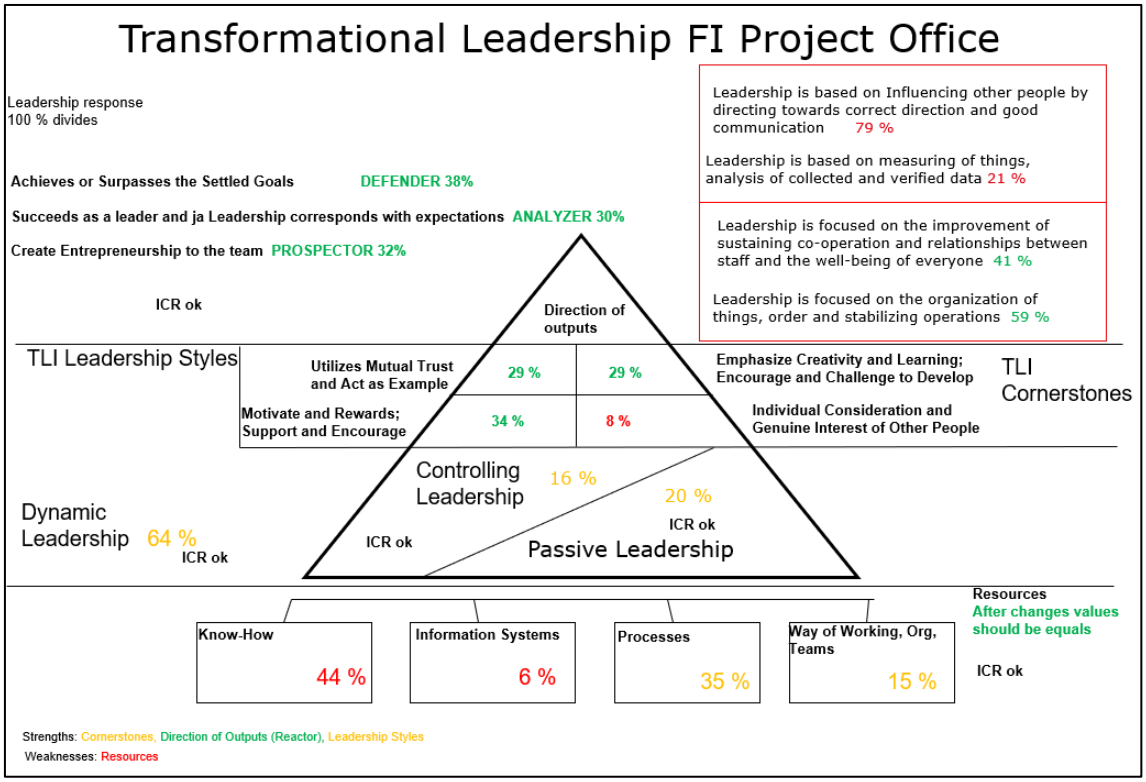

Transformational Leadership DK R&D Hardware
Leadership response
100 % divides
Leadership is based on Influencing other people by directing towards correct direction and good communication 63%
Leadership is based on measuring of things, analysis of collected and verified data 37 %
Achieves or Surpasses the Settled Goals DEFENDER 22 %
Succeeds as a leader and ja Leadership corresponds with expectations ANALYZER 28 %
Create Entrepreneurship to the team PROSPECTOR 50 %
Leadership is focused on the improvement of sustaining co-operation and relationships between staff and the well-being of everyone 77%
Leadership is focused on the organization of things, order and stabilizing operations 23 %
ICR ok
Direction of outputs
TLI Leadership Styles
Utilizes Mutual Trust and Act as Example
16 %
15 %
Emphasize Creativity and Learning; Encourage and Challenge to Develop
TLI Cornerstones
Motivate and Rewards; Support and Encourage
40 %
29 %
Individual Consideration and Genuine Interest of Other People
Controlling Leadership
15 %
39 %
ICR ok
Dynamic Leadership 46 %
ICR ok
ICR ok
Passive Leadership
Resources
After changes values should be equals
ICR ok
Know-How
30 %
Information Systems
10 %
Processes
30 %
Way of Working, Org, Teams
30 %
Strengths:;
Weaknesses: TLI Leadership Styles, Resources, Cornerstones

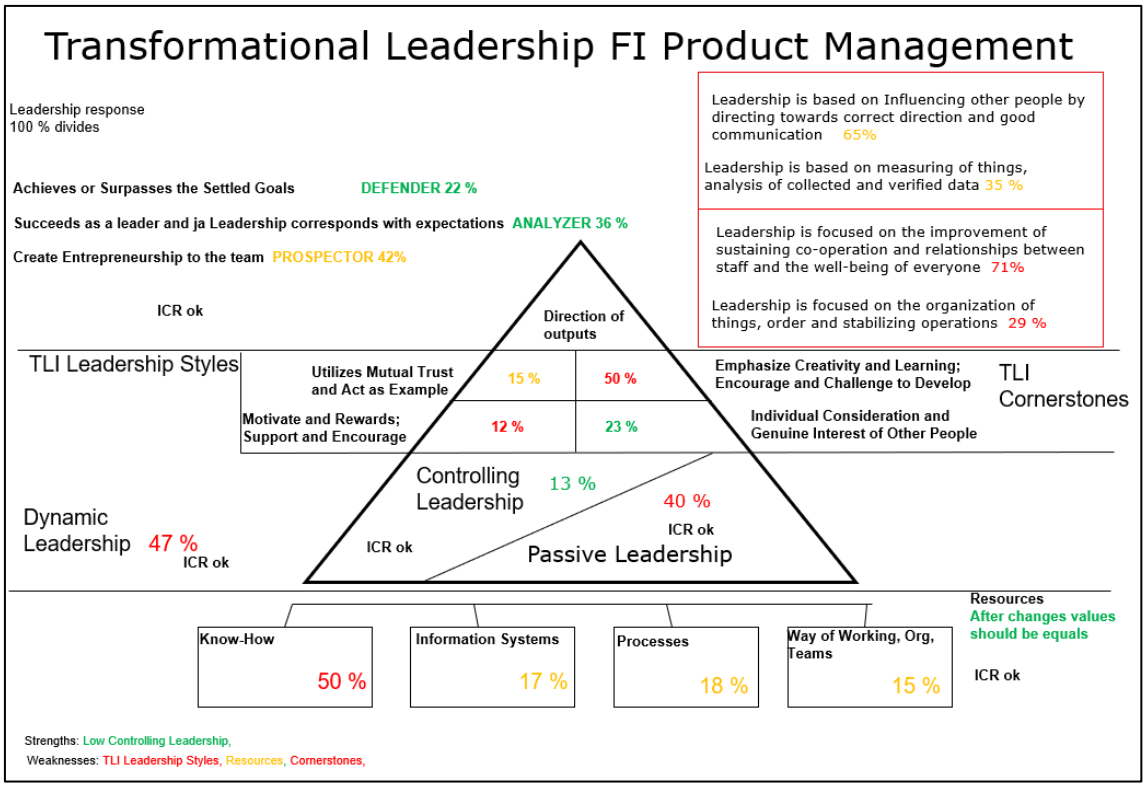
Appendix 4. Local and organisational TLI results for Finland

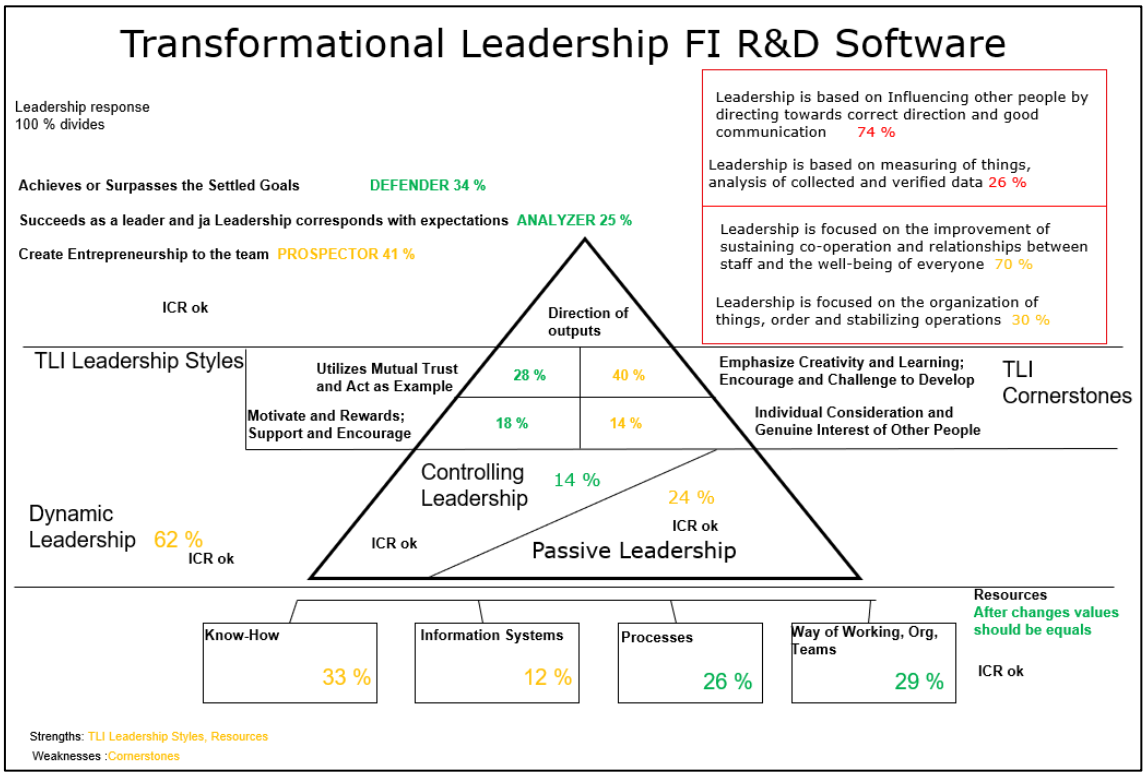


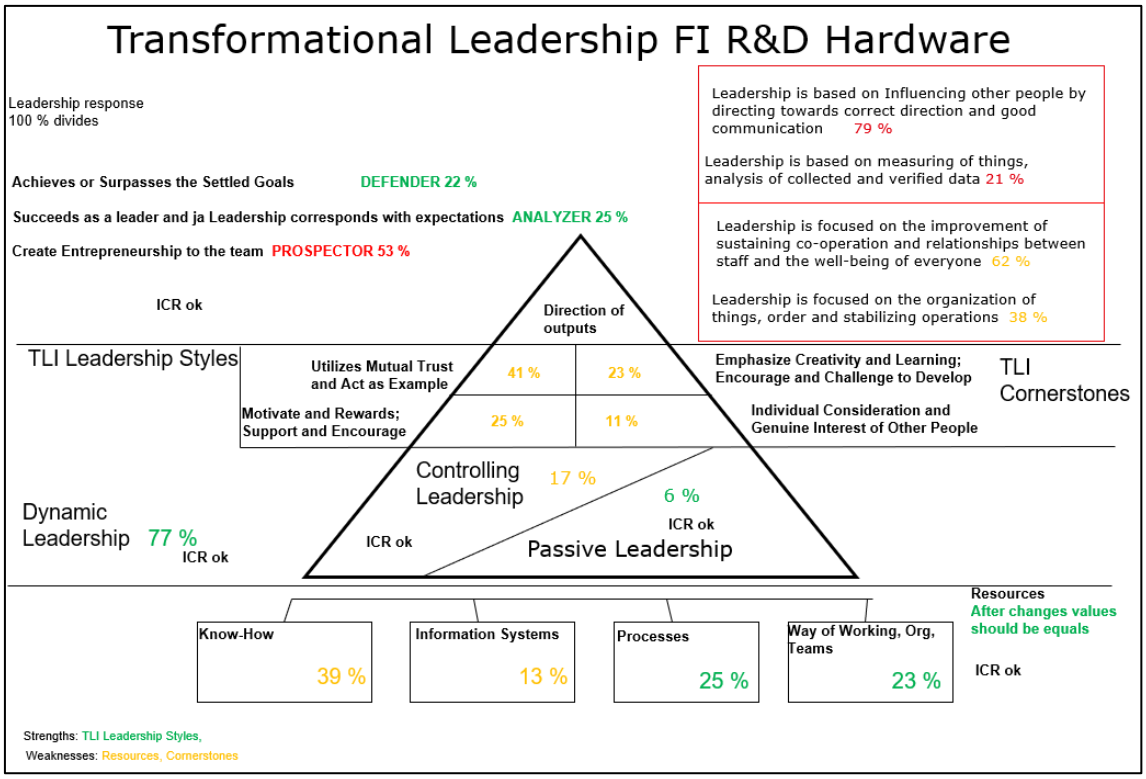



Transformational Leadership FI Developers
Leadership response
100 % divides
Leadership is based on Influencing other people by directing towards correct direction and good communication 73 %
Leadership is based on measuring of things, analysis of collected and verified data 27 %
Achieves or Surpasses the Settled Goals DEFENDER 22%
Succeeds as a leader and ja Leadership corresponds with expectations ANALYZER 30%
Create Entrepreneurship to the team PROSPECTOR 48%
Leadership is focused on the improvement of sustaining co-operation and relationships between staff and the well-being of everyone 56 %
Leadership is focused on the organization of things, order and stabilizing operations 44 %
ICR ok
Direction of outputs
TLI Leadership Styles
Utilizes Mutual Trust and Act as Example
34 %
35 %
Emphasize Creativity and Learning; Encourage and Challenge to Develop
TLI Cornerstones
Motivate and Rewards; Support and Encourage
17 %
14 %
Individual Consideration and Genuine Interest of Other People
Controlling Leadership
14 %
29 %
ICR ok
Dynamic Leadership 57 %
ICR ok
ICR ok
Passive Leadership
Resources
After changes values should be equals
Know-How
38 %
Information Systems
9 %
Processes
38 %
Way of Working, Org, Teams
15 %
ICR ok
Strengths: TLI Leadership Styles
Weaknesses: Resources, Cornerstones

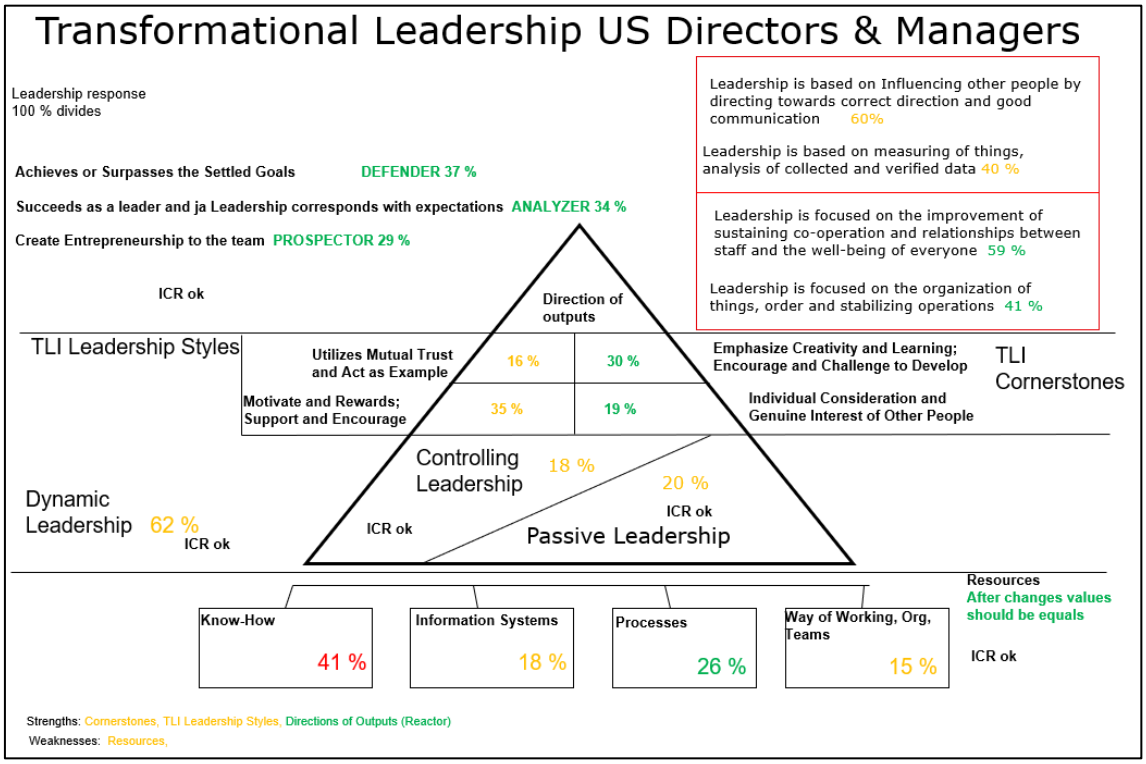

Transformational Leadership FI Project Office
Leadership response
100 % divides
Leadership is based on Influencing other people by directing towards correct direction and good communication 79 %
Leadership is based on measuring of things, analysis of collected and verified data 21 %
Achieves or Surpasses the Settled Goals DEFENDER 38%
Succeeds as a leader and ja Leadership corresponds with expectations ANALYZER 30%
Create Entrepreneurship to the team PROSPECTOR 32%
Leadership is focused on the improvement of sustaining co-operation and relationships between staff and the well-being of everyone 41 %
Leadership is focused on the organization of things, order and stabilizing operations 59 %
ICR ok
Direction of outputs
TLI Leadership Styles
Utilizes Mutual Trust and Act as Example
29 %
29 %
Emphasize Creativity and Learning; Encourage and Challenge to Develop
TLI Cornerstones
Motivate and Rewards; Support and Encourage
34 %
8 %
Individual Consideration and Genuine Interest of Other People
Controlling Leadership
16 %
20 %
ICR ok
Dynamic Leadership 64 %
ICR ok
ICR ok
Passive Leadership
Resources
After changes values should be equals
Know-How
44 %
Information Systems
6 %
Processes
35 %
Way of Working, Org, Teams
15 %
ICR ok
Strengths: Cornerstones, Direction of Outputs (Reactor), Leadership Styles
Weaknesses: Resources

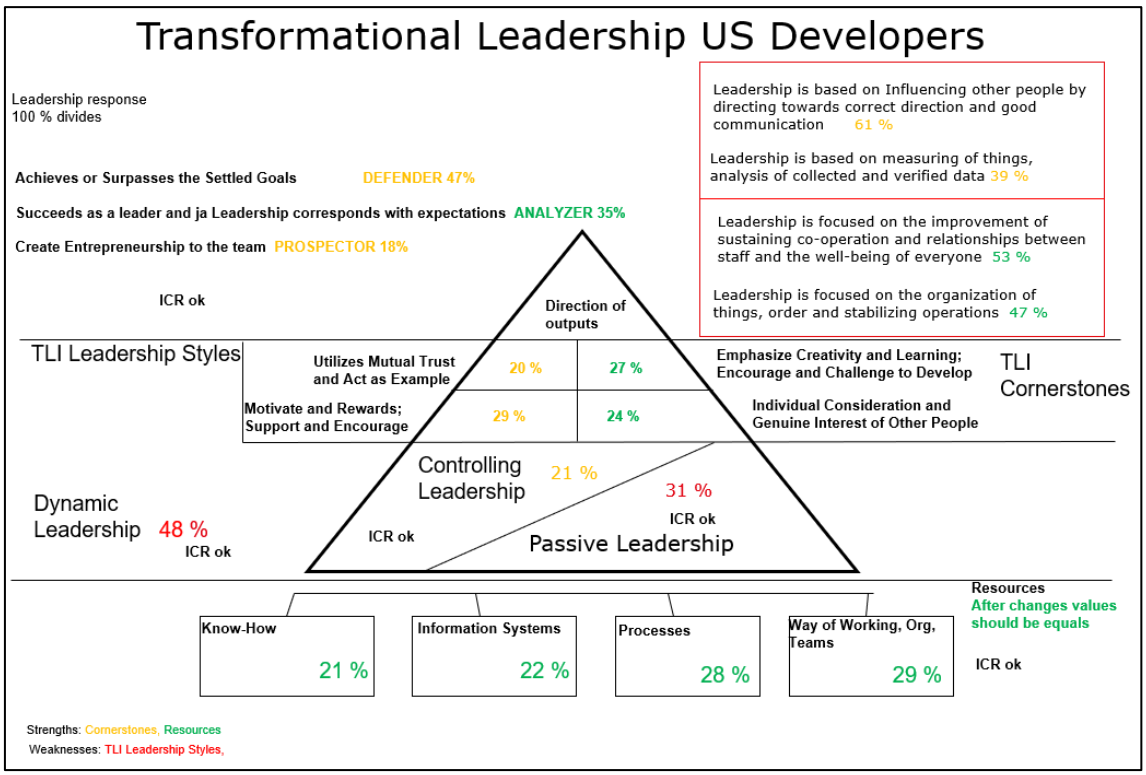

Transformational Leadership FI Product Management
Leadership response
100 % divides
Leadership is based on Influencing other people by directing towards correct direction and good communication 65%
Leadership is based on measuring of things, analysis of collected and verified data 35 %
Achieves or Surpasses the Settled Goals DEFENDER 22 %
Succeeds as a leader and ja Leadership corresponds with expectations ANALYZER 36 %
Create Entrepreneurship to the team PROSPECTOR 42%
Leadership is focused on the improvement of sustaining co-operation and relationships between staff and the well-being of everyone 71%
Leadership is focused on the organization of things, order and stabilizing operations 29 %
ICR ok
Direction of outputs
TLI Leadership Styles
Utilizes Mutual Trust and Act as Example
15 %
50 %
Emphasize Creativity and Learning; Encourage and Challenge to Develop
TLI Cornerstones
Motivate and Rewards; Support and Encourage
12 %
23 %
Individual Consideration and Genuine Interest of Other People
Controlling Leadership 13 %
40 %
ICR ok
Dynamic Leadership 47 %
ICR ok
ICR ok
Passive Leadership
Resources
After changes values should be equals
Know-How
50 %
Information Systems
17 %
Processes
18 %
Way of Working, Org, Teams
15 %
ICR ok
Strengths: Low Controlling Leadership,
Weaknesses: TLI Leadership Styles, Resources, Cornerstones,

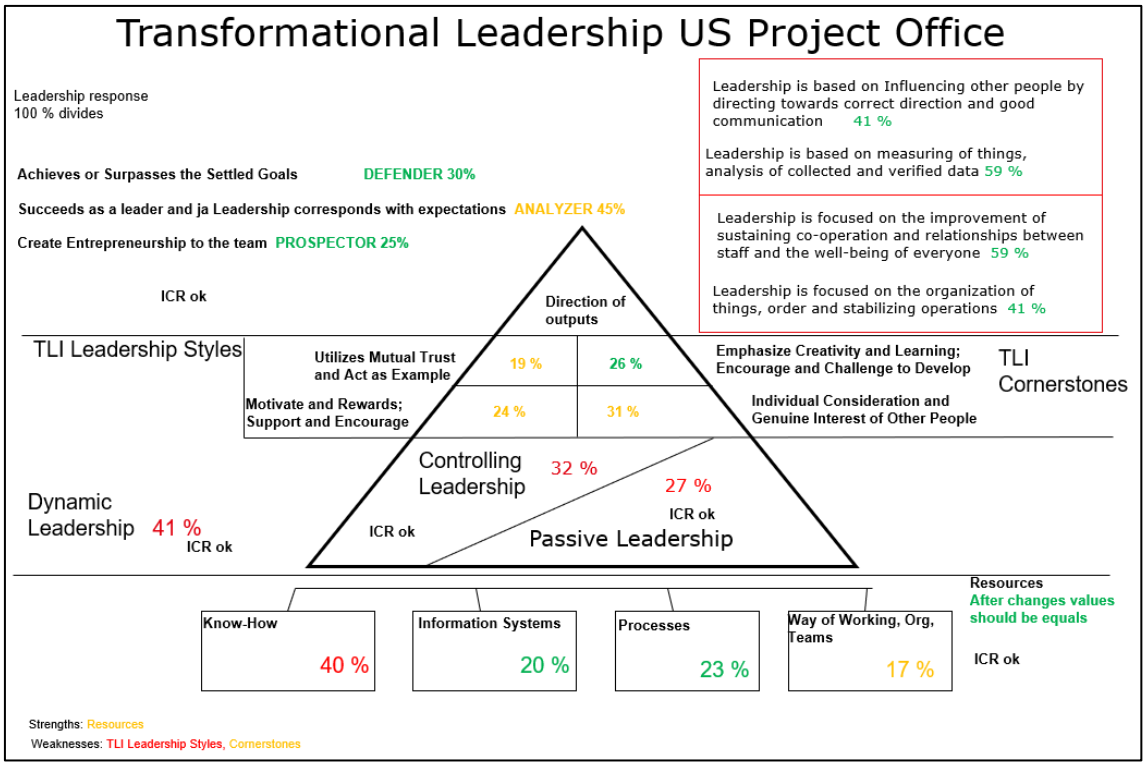

Transformational Leadership FI R&D Software
Leadership response
100 % divides
Leadership is based on Influencing other people by directing towards correct direction and good communication 74 %
Leadership is based on measuring of things, analysis of collected and verified data 26 %
Achieves or Surpasses the Settled Goals DEFENDER 34 %
Succeeds as a leader and ja Leadership corresponds with expectations ANALYZER 25 %
Create Entrepreneurship to the team PROSPECTOR 41 %
Leadership is focused on the improvement of sustaining co-operation and relationships between staff and the well-being of everyone 70 %
Leadership is focused on the organization of things, order and stabilizing operations 30 %
ICR ok
Direction of outputs
TLI Leadership Styles
Utilizes Mutual Trust and Act as Example
28 %
40 %
Emphasize Creativity and Learning; Encourage and Challenge to Develop
TLI Cornerstones
Motivate and Rewards; Support and Encourage
18 %
14 %
Individual Consideration and Genuine Interest of Other People
Controlling Leadership 14 %
24 %
ICR ok
Dynamic Leadership 62 %
ICR ok
ICR ok
Passive Leadership
Resources
After changes values should be equals
Know-How
33 %
Information Systems
12 %
Processes
26 %
Way of Working, Org, Teams
29 %
ICR ok
Strengths: TLI Leadership Styles, Resources
Weaknesses :Cornerstones

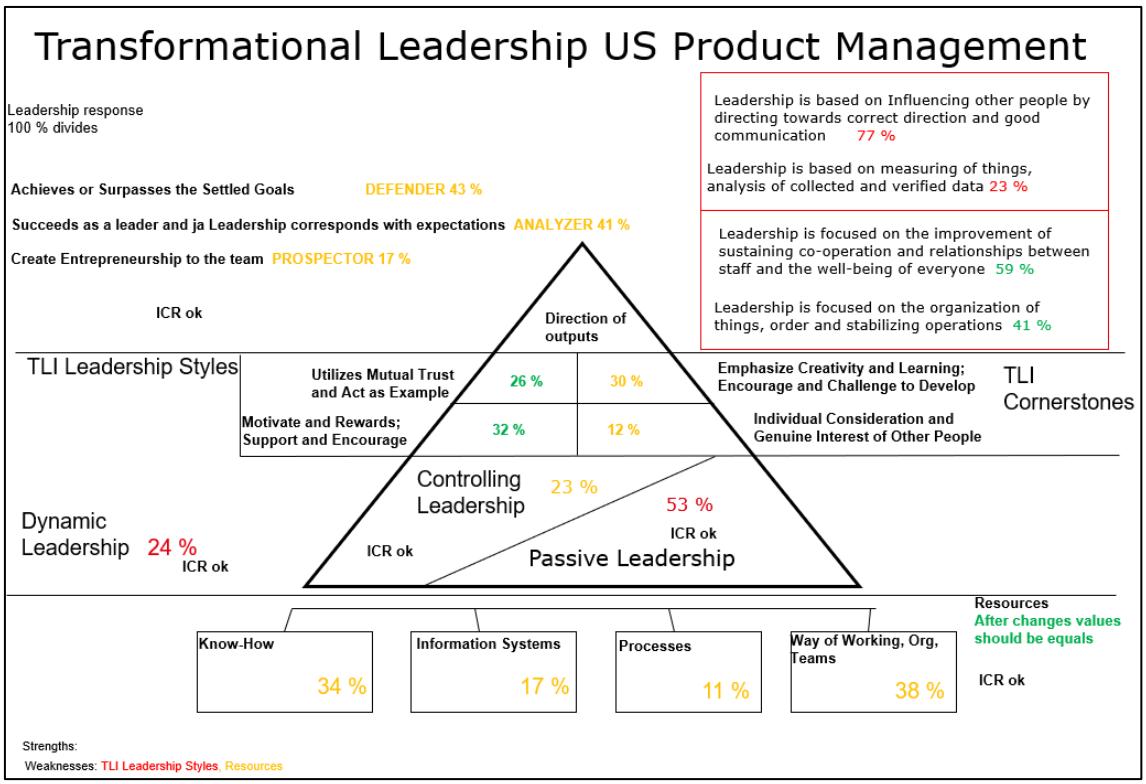

Transformational Leadership FI R&D Hardware
Leadership response
100 % divides
Leadership is based on Influencing other people by directing towards correct direction and good communication 79 %
Leadership is based on measuring of things, analysis of collected and verified data 21 %
Achieves or Surpasses the Settled Goals DEFENDER 22 %
Succeeds as a leader and ja Leadership corresponds with expectations ANALYZER 25 %
Create Entrepreneurship to the team PROSPECTOR 53 %
Leadership is focused on the improvement of sustaining co-operation and relationships between staff and the well-being of everyone 62 %
Leadership is focused on the organization of things, order and stabilizing operations 38 %
ICR ok
Direction of outputs
TLI Leadership Styles
Utilizes Mutual Trust and Act as Example
41 %
23 %
Emphasize Creativity and Learning; Encourage and Challenge to Develop
TLI Cornerstones
Motivate and Rewards; Support and Encourage
25 %
11 %
Individual Consideration and Genuine Interest of Other People
Controlling Leadership
17 %
6 %
ICR ok
Dynamic Leadership 77 %
ICR ok
ICR ok
Passive Leadership
Resources
After changes values should be equals
Know-How
39 %
Information Systems
13 %
Processes
25 %
Way of Working, Org, Teams
23 %
ICR ok
Strengths: TLI Leadership Styles,
Weaknesses: Resources, Cornerstones

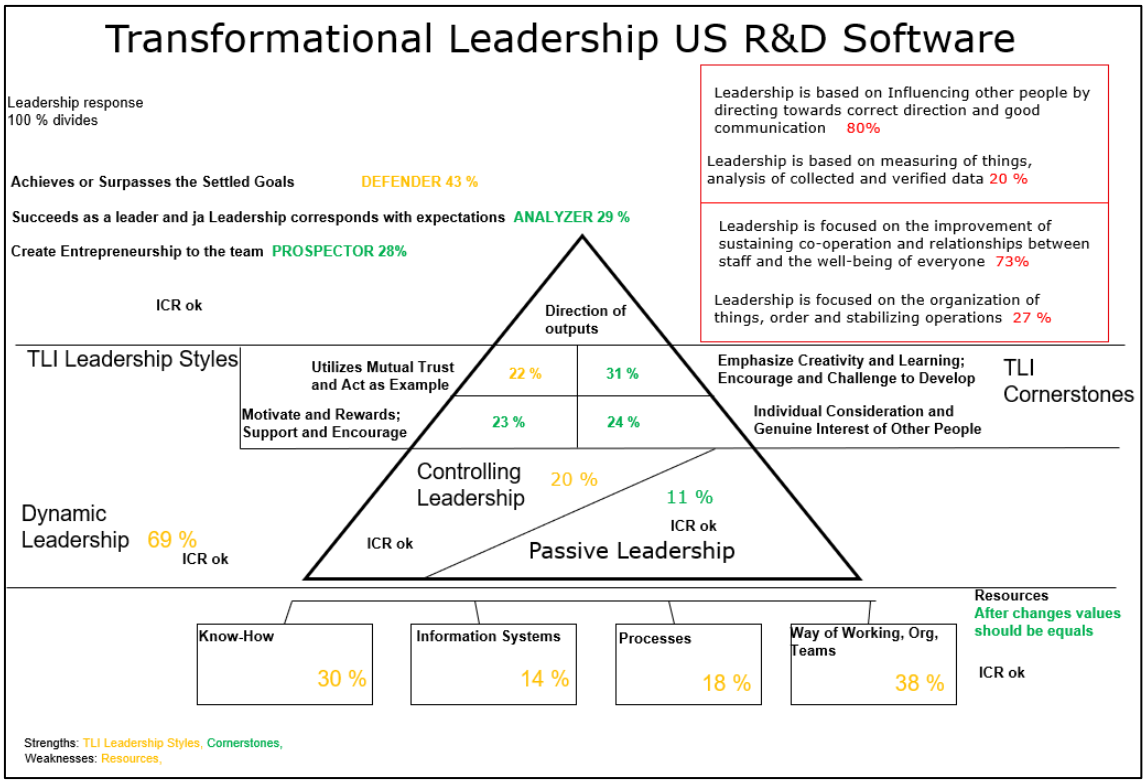
Appendix 5. Local and organisational TLI results for United States of the America

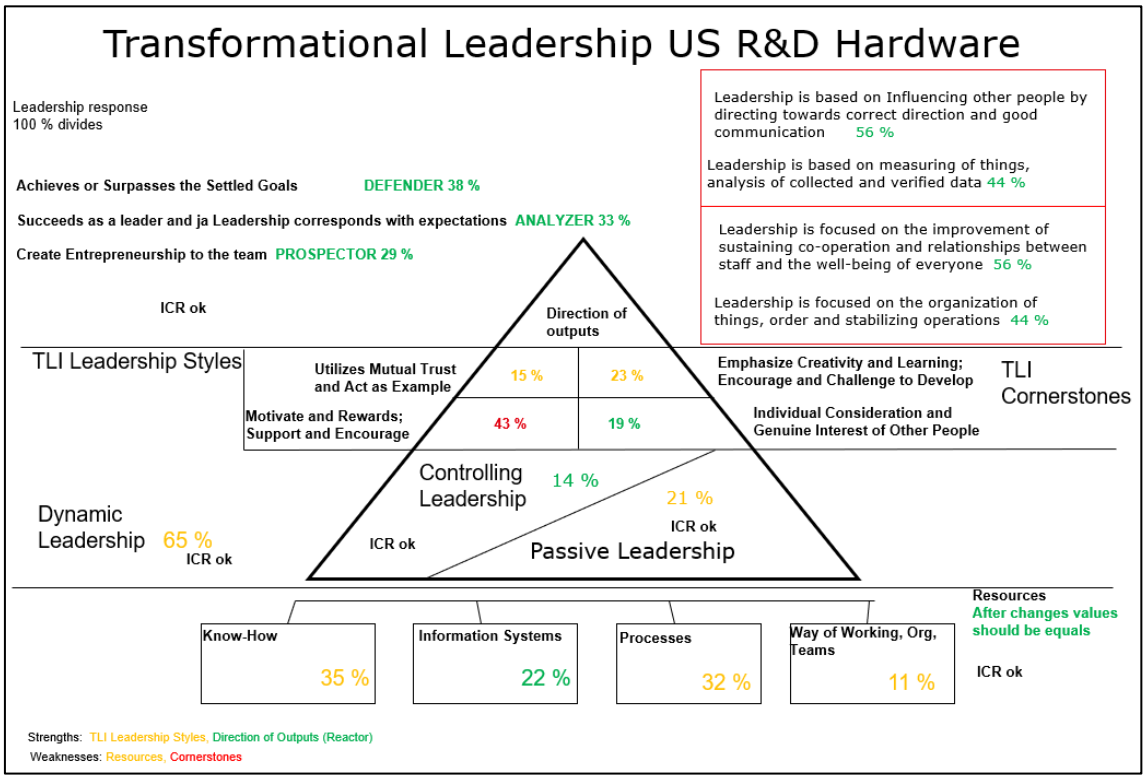





Transformational Leadership US Project Office
Leadership response
100 % divides
Leadership is based on Influencing other people by directing towards correct direction and good communication 41 %
Leadership is based on measuring of things, analysis of collected and verified data 59 %
Achieves or Surpasses the Settled Goals DEFENDER 30%
Succeeds as a leader and ja Leadership corresponds with expectations ANALYZER 45%
Create Entrepreneurship to the team PROSPECTOR 25%
Leadership is focused on the improvement of sustaining co-operation and relationships between staff and the well-being of everyone 59 %
Leadership is focused on the organization of things, order and stabilizing operations 41 %
ICR ok
Direction of outputs
TLI Leadership Styles
Utilizes Mutual Trust and Act as Example
19 %
26 %
Emphasize Creativity and Learning; Encourage and Challenge to Develop
TLI Cornerstones
Motivate and Rewards; Support and Encourage
24 %
31 %
Individual Consideration and Genuine Interest of Other People
Controlling Leadership 32 %
27 %
Dynamic Leadership 41 %
ICR ok
ICR ok
ICR ok
Passive Leadership
Resources
After changes values should be equals
Know-How
40 %
Information Systems
20 %
Processes
23 %
Way of Working, Org, Teams
17 %
ICR ok
Strengths: Resources
Weaknesses: TLI Leadership Styles, Cornerstones


Transformational Leadership US Product Management
Leadership response
100 % divides
Leadership is based on Influencing other people by directing towards correct direction and good communication 77 %
Leadership is based on measuring of things, analysis of collected and verified data 23 %
Achieves or Surpasses the Settled Goals DEFENDER 43 %
Succeeds as a leader and ja Leadership corresponds with expectations ANALYZER 41 %
Create Entrepreneurship to the team PROSPECTOR 17 %
Leadership is focused on the improvement of sustaining co-operation and relationships between staff and the well-being of everyone 59 %
Leadership is focused on the organization of things, order and stabilizing operations 41 %
ICR ok
Direction of outputs
TLI Leadership Styles
Utilizes Mutual Trust and Act as Example
26 %
30 %
Emphasize Creativity and Learning; Encourage and Challenge to Develop
TLI Cornerstones
Motivate and Rewards; Support and Encourage
32 %
12 %
Individual Consideration and Genuine Interest of Other People
Controlling Leadership 23 %
53 %
Dynamic Leadership 24 %
ICR ok
ICR ok
ICR ok
Passive Leadership
Resources
After changes values should be equals
Know-How
34 %
Information Systems
17 %
Processes
11 %
Way of Working, Org, Teams
38 %
ICR ok
Strengths:
Weaknesses: TLI Leadership Styles, Resources


Transformational Leadership US R&D Software
Leadership response
100 % divides
Leadership is based on Influencing other people by directing towards correct direction and good communication 80%
Leadership is based on measuring of things, analysis of collected and verified data 20 %
Achieves or Surpasses the Settled Goals DEFENDER 43 %
Succeeds as a leader and ja Leadership corresponds with expectations ANALYZER 29 %
Create Entrepreneurship to the team PROSPECTOR 28%
Leadership is focused on the improvement of sustaining co-operation and relationships between staff and the well-being of everyone 73%
Leadership is focused on the organization of things, order and stabilizing operations 27 %
ICR ok
Direction of outputs
TLI Leadership Styles
Utilizes Mutual Trust and Act as Example
22 %
31 %
Emphasize Creativity and Learning; Encourage and Challenge to Develop
TLI Cornerstones
Motivate and Rewards; Support and Encourage
23 %
24 %
Individual Consideration and Genuine Interest of Other People
Controlling Leadership
20 %
11 %
ICR ok
Dynamic Leadership 69 %
ICR ok
ICR ok
Passive Leadership
Resources
After changes values should be equals
Know-How
30 %
Information Systems
14 %
Processes
18 %
Way of Working, Org, Teams
38 %
ICR ok
Strengths: TLI Leadership Styles, Cornerstones,
Weaknesses: Resources,


Transformational Leadership US R&D Hardware
Leadership response
100 % divides
Leadership is based on Influencing other people by directing towards correct direction and good communication 56 %
Leadership is based on measuring of things, analysis of collected and verified data 44 %
Achieves or Surpasses the Settled Goals DEFENDER 38 %
Succeeds as a leader and ja Leadership corresponds with expectations ANALYZER 33 %
Create Entrepreneurship to the team PROSPECTOR 29 %
Leadership is focused on the improvement of sustaining co-operation and relationships between staff and the well-being of everyone 56 %
Leadership is focused on the organization of things, order and stabilizing operations 44 %
ICR ok
Direction of outputs
TLI Leadership Styles
Utilizes Mutual Trust and Act as Example
15 %
23 %
Emphasize Creativity and Learning; Encourage and Challenge to Develop
TLI Cornerstones
Motivate and Rewards; Support and Encourage
43 %
19 %
Individual Consideration and Genuine Interest of Other People
Controlling Leadership
14 %
21 %
ICR ok
Dynamic Leadership 65 %
ICR ok
ICR ok
Passive Leadership
Resources
After changes values should be equals
Know-How
35 %
Information Systems
22 %
Processes
32 %
Way of Working, Org, Teams
11 %
ICR ok
Strengths: TLI Leadership Styles, Direction of Outputs (Reactor)
Weaknesses: Resources, Cornerstones