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PERFORMANCE MEASUREMENT SYSTEM FOR ELNOR AS

PART C

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Introduction

As an *improvement project team*, we were asked by the management to develop a performance measurement system for the company; ElNor AS. In consideration that this is an introduction, some questions and simple metaphors are unavoidable. Why do we consider a performance measurement system as such a vital business asset? This can be compared to flying a jet without either an altimeter, angle-of-attack or airspeed instrument. The Wright Brothers did not face this problem, and the same is true for small business, however ElNor is far too large to fly without a proper measurement system. The system needs to serve the purpose of providing employees with feedback as well as provide a broad spectrum of information that can be exploited for stakeholders and decision-making purposes. Likewise, issues such as *user access* to the performance data, *dangers of misuse of the system* and overall *data security* are strictly important topics for the performance measurement system to have its desired effect.

Throughout this paper, we will discuss and elaborate on what a *performance measurement system* should look like for a company like ElNor. An introduction to each step of the design process will follow each of the eight steps. In addition, it is important to note that the basis of this paper relies on the overall theory of the syllabus and is not referenced individually but rather as a whole.

The vision of ElNor is *"To be the earth's most customer-centric retail chain"* is central in the proposed solution. It permeates throughout the recommendations in this report, and supports what the improvement project team believes is the right way to implement the performance measurement system for the electronic retail company.

1 Business structure and process understanding and mapping

1.1 Clarification of business strategy

ElNor's vision is *"To be the earth's most customer-centric retail chain"*. They are focusing on offering customers tailored services for their specific needs, for example updates and software assistance for newly bought computers. This also applies to electronics in need of calibration or other forms of installation, which ElNor uses third-party companies for.

To keep up with the increasing amount of online electronics retailers, ElNor opened their online store in 2010. They aim to reach both younger and older customers through this hybrid strategy with both web and retail stores. As part of their customer-centric vision, their employees must keep up-to-date knowledge about the products and services offered. This strategy, in addition to offering in-depth technical support using third-party companies, should keep customers coming back for the service. It might also bring in new customers and help them regain part of the market share.

The effects of the relationship between ElNor and third-party service companies are innately symbiotic. However, this also produces a new complexity to the stakeholder model. In terms of business operations this means that employees in the retail stores will need to "push" for aftersales to allow the third-parties to remain relevant, and Elnor to be competitively unique.

1.2 Stakeholder analysis

As the leading retailer of consumer electronics in Norway, ElNor has ties to all segments of the retail chain. In addition to having just under 50% of the market share in Norway, they also have expanded their operations to the rest of Scandinavia. The organization's stakeholder structure is therefore complex, but the key stakeholders are as listed in *Table 1.*

1.2.1 The Savage model for classifying stakeholders

The Savage model, shown in *Table 2*, classifies stakeholders into four categories: *mixed blessing, supportive, non-supportive* and *marginal*. These categories show how a stakeholder affects and interacts with the organization, on a scale from high to low impact, and high to low cooperation. Suppliers and employees are often found in *mixed blessing,* the class with the highest degree of impact and cooperation. ElNor's calibration services are done by alliance partners. These are therefore placed in *mixed blessing* as they are a central part of ElNor's business model in providing an extended service for their customers.

1.2.2 Most important stakeholders

The improvement team have identified the five most important and influential stakeholders for ElNor as their customers, employees, alliance partners, suppliers and competitors.

1.2.2.1 Customers

The customers are at the center of ElNor's business strategy. They wish to provide extra services for their customers, such as complete software solutions for computers, or TV calibration by third-party companies. They also emphasise the importance of having knowledgeable retail employees in all stores who can provide the customer with the best experience possible.

Customers can be segmented in age groups, with the segments having different expectations to ElNor. The elder customer segment will value personal service and complete packages more, as many prefer physical stores rather than online shopping. In contrast, the younger segment will value the usability of ElNor's online store and having an updated product range. The solution the electronics company offers today, with both online and physical stores, is tailored to fit all age segments. The competitiveness of ElNor is therefore dependent upon the overall quality of their electronic products, packages and after-sales services. The price will also have to be competitive to keep the already existing customers. With today's focus on sustainability, one might also expect customers to care about ElNor's business ethics and focus on environmental and humanitarian issues.

1.2.2.2 Retail employees

ElNor's retail employees are the organization's face outwards. They are responsible for the customer experience from the moment the customer enters a store to the moment they leave. What happens during this time frame will, in many cases, determine whether the customer chooses to come back or not. ElNor focuses on being customer-centric, and therefore provides their employees with courses and information to further build their knowledge. By providing this, they expect their employees to be the experts the customers seek when entering their stores.

In return an employee should expect reasonable wages and working hours from their employer. By providing a good working environment, the employees might stay with the organization longer, and the cost of employee turnover is reduced. This benefits the owners, management and the employees. The retail employees might also expect a bonus program for high sales numbers, which over time makes the employer more attractive in the job market.

1.2.2.3 Alliance partners

ElNor's alliance partners are important as the company is relying on them fulfilling their vision *"To be the earth's most customer-centric retail chain"*. The alliance partners here being third-party companies performing services such as TV-calibration companies, external insurance

providers etc. In this case, these stakeholders must have a tight relationship with ElNor as they perform their services directly to their customers.

The partners are supposed to give ElNor an advantage as opposed to online stores, and are therefore an important asset in making a financial impact. Therefore it is reasonable to assume that ElNor has invested a decent amount in making relationships and agreements with their alliance partners. However, a lot of these can most likely perform their services without the help of ElNor. This means that while there are good opportunities for cooperating, the alliance partners have potential to impact ElNor due to their dependency for their services.

As mentioned before, the alliance partners and ElNor have a tight relationship. Along with a direct dialog, the partners can propose requirements such as ElNor providing them a certain amount of customers they can perform their services, or advertising them to their customers. The main point is that due to the dependent relationship, they would have to agree upon most of the requirements made from these types of stakeholders, since they can't afford to lose them.

1.2.2.4 Suppliers

Even though ElNor's vision is to be customer-centric by offering services from third-party collaborators, the basis of their business model is still selling consumer electronics. Therefore, ElNor is highly dependent on their suppliers.

Due to the diverse range of products offered by ElNor, they most likely have a wide range of suppliers. They are most likely a huge customer of them as well due to ElNor's size. This would mean that in general the suppliers see ElNor as an important client. This does not apply to every supplier - whereas some sell a large number of products to ElNor, others might sell products that are "must-have" or they are the only one selling that type of product.

ElNor expects suppliers to deliver finished and functional products on time. This is especially important when the market share of web stores is increasing, and customers buying online are getting accustomed to short delivery time. The suppliers might for instance expect ElNor to sell and maybe advertise their product.
There are also a lot of silent assumptions between ElNor and its suppliers. The suppliers expect ElNor to not go bankrupt, not be involved in any criminal activity, or in any other way harm the supplier publicly or financially.

1.2.2.5 Competitors

ElNor and their competitors are in low cooperation. They compete for market shares while also wanting competition and a broad market to be able to meet the customers demand. The competitors therefore expect ElNor to have competitive prices, and obey the market competition laws.

There are many actors in the industry and thereby many competitors, both online stores and physical stores. The online stores are able to operate without store locations and extensive personnel, while the other physical stores will be able to compete aligned with ElNor on customer service and offer additional services. The actors are competing on price and the best additional services for the customers. There are internal and external issues that may impact the competitor's strategic objectives. While online stores are working to achieve the lowest prices possible and thereby cutting down on customer service, physical stores need to provide the best customer service and additional services available to defend higher prices than the online stores. The online stores will also be able to provide lower prices because of lower costs in location-rental and costs of employees. Competing online stores have a limited option to increase their customer services because the lack of on-sight service personnel, while competing physical stores will have the same opportunities to provide high customer service as ElNor.

ElNor's market-share has decreased from 70% to 50% in a decade, probably because of the easy access to information and stores online. ElNor's competitors will gain a higher or lower market-share based on ElNor's evolution, and thereby greatly will influence their competitors financial situation. The competitors expectations towards ElNor - and the other way - will be to access and monitor prices and customer reviews to evaluate products based on customer experiences and achieve competitive prices.

1.2.2.6 Expectations from other stakeholders

Owners and management provide leadership and guidance for the organization. Owners are more involved in ElNor's economic status and future prospects, while the management controls ElNor's employees, day-to-day strategics and financial operations. Both management and owners have expectations regarding ElNor's market position and economic growth, as well as to maintain a good organization-wide workflow and working environment. Management organizes and oversees ElNor's marketing, and will therefore also have high expectations regarding the impact of these campaigns.

Non-governmental organizations cover different subjects, but will in general expect ElNor to incorporate environmental-friendly and humanitarian policies in their strategy and act accordingly.

1.2.3 The Kano model

The Kano model is a useful tool to map the expectations of the organization's stakeholders. The model introduces three categories for the qualities a stakeholder might expect from an organization: basic, performance and excitement.

The performance qualities can both satisfy and dissatisfy the customer depending on how well they are executed. They are at the top of the customer's mind, and will be the main factors evaluated when looking at the product. They are often referred to as "what's important".

Basic qualities are those that are always present, but do not directly cause satisfaction. They are often taken for granted by the customers. If absent, they will cause great dissatisfaction. *Excitement qualities* are referred to as "delighters" by Kano, these are the factors that make you stand out from the competition. They delight the customer when present, but do not cause immediate dissatisfaction when absent.

We have chosen to use three age segments for the customers, as their expectations will vary between these segments. The other key stakeholders are listed with their main expectations, elaborated in section *1.1.2 Most important stakeholders*. The result from using the Kano Model to classify stakeholder expectations is shown in *Table 2*.

1.3 Business process identification

Throughout the work of identifying ElNor's business processes and categorizing them, it has been considered those written in the rapport, as well as made assumptions regarding some processes that fits in ElNor. This is just to get a complete picture of ElNor's business, and will be addressed.

Identifying business processes has the importance of making it easier to point out which processes are necessary in fulfilling the stakeholders expectations. Differentiating between primary processes and secondary processes is one key step to obtaining knowledge of the business processes in a company. In short manners, primary processes are directly value-generating, while secondary processes being activities which make the primary processes possible to execute.

From *Figure 1*, one can see that the processes directly mentioned in the case are all primary processes. Additionally, primary processes such as order processing, procurement and market development are added as it is considered important processes in ElNor's supply chain. Furthermore, the processes categorized under secondary processes are necessary for ElNor to support the primary processes. Even though most of these processes are not addressed in the case, they are just as important for ElNor to achieve their business goals.

1.4 Business process mapping and documentation

Documenting an organization's processes in a flow chart gives a clearer image of how the business processes tie together. We have chosen to map the sales process in *Figure 2* and how it propagates through the different departments of the organization. Visualizing the workflow in this manner can be useful when choosing performance indicators.

2 Developing business performance properties

2.1 Quantifying the stakeholder's performance requirements

ElNor has quite a complex stakeholder model, as shown in the stakeholder analysis. The stakeholders have quite different expectations to the organization, determined by their relationship with ElNor. By ranking the stakeholders and their respective requirements, one can form a more general set of performance requirements to go by when developing performance indicators.

The process of ranking stakeholders and their expectations is done by identifying the central stakeholders and assigning them an importance grade on a scale from 1 to 10. This scale shows how important the expectation is to ElNor. The most important stakeholders will then have their expectations listed, classified as a performance requirement and ranked on an importance scale as well. The requirements will also be marked as *basic*, *performance* or *expectation qualities* in accordance with the Kano Model.

The ranking results show a correlation between the previously identified key stakeholders and the most important stakeholders ranked here. We will therefore look into the expectations of these five stakeholders in the expectation ranking session. The result of this process is listed in *Table 3-8*. Some stakeholders from the stakeholder identification have been paired due to similarities in expectations.

2.2 Strategic performance requirements

To develop strategic performance requirements can be challenging if the business strategy is not clearly defined. Since there is no access to a clearly stated in-depth strategy for ElNor, the strategic performance requirements are based on their main goal and range of services.

ElNor aims on becoming more customer-centric by offering customers a wide range of complete solutions, in-store support and third-party services. The customer experience in their physical stores is greatly valued, and it is clear that a large part of ElNor's strategy is to make the stores worth visiting. This is done by providing an experience that surpasses any other electronics store. It is also worth mentioning that they need to remain competitive on the online electronics market, as this takes up an increasing part of the market shares. Being aware of the environmental impact of the consumer market and adapting to this might also give them an advantage, and should be taken into consideration in the years to come. This can be formulated as the strategic performance requirements found in *Table 10*. Furthermore the company might approach their vision by becoming more cost-efficient and regaining market shares. This will be discussed in later parts of the report.

2.3 Integrating the different performance requirements

Customer expectations and requirements constitute the goal of the *quality function deployment (QFD)* analysis. Without deliberating too much about how a QFD is created, as this is well explained in (*Andersen and Fagerhaug, 2001*), the main purpose is to develop a common understanding about priorities within the company. Presumably there are many different views and opinions regarding what direction ElNor should take for the future. Hence, QFD gives ElNor a way to integrate all the resulting performance requirements and how they are related. *Figure 3* shows how the team believes the performance requirements should be prioritized and reflect the company's vision and goals.

The result from the QFD tool postulates that the company should prioritize the sales and marketing, as well as financial management to succeed. By weighing the customer demands against each other, to find a suitable and optimal solution, it is shown that information management is not as important. This makes sense because information management is a small department and also a subgroup of operation and logistics. The figure has produced what design features and how to prioritize to maximize the satisfaction of all the requirements.

3 Understanding the current performance measurement system

ElNor's current performance measurement system is not clearly stated. We have therefore made the following suppositions that are based on their current strategy and business processes.

It is reasonable to believe that ElNor sees their market share as a clear performance indicator on how well their overall business is going. The market share is a rough indicator, and does not give insight into the details of ElNor's operations and financial status. The data collection for this indicator is probably not done by the organization, but rather by authorities.

It is stated that each department in the organization is responsible for inventory placement and promotion in-store. Employees are also encouraged to generate profit for the store by selling extra services or alternatively better products than the customer intended. There is reason to believe that the sales numbers for each department are seen as a performance indicator, and that these numbers are gathered automatically through the sales data.

ElNor had such a high market share in the 90's due to their responsive logistics department and large purchases. This resulted in cost-efficient supplement deals regarding both price and warranty and repair terms. This is the standard in the electronics market today, and is no longer a competitive advantage for ElNor. They now have to compete with web stores on both delivery time and price, while keeping the physical stores operative and profitable. To be able to keep track with web exclusive stores, the team have reason to believe that ElNor has or has had a performance indicator regarding the time from order placement to product delivery.

4. Developing Key Performance Indicators

There are hundreds of economic, political and social key performance indicators (KPI) for development within an organization such as ElNor. These vary from hard economic indicators to poverty and economic inequality indicators. This state-of-the-art performance measurement system will consist of nine *key performance indicators* used to measure the performance of ElNor. There will of course be many indicators underlying these nine. However, the reflections around the KPIs should be more than sufficient to obtain the overall purpose regarding the performance measurement system. When discussing what indicators to apply the system, the vision should be the motivation. As stated many times before, *"To be the earth's most customer-centric retail chain"* is their vision and is to be achieved through three central goals: *Reclaim market strength, environment focused decision-making and becoming a more cost-efficient organization regarding internal processes.* The indicators will measure these goals to give the company an indicator on reaching this vision. *Figure* 4 shows how the vision, goals and key performance indicators are connected.

4.1 Reclaim market strength

As time is changing customer behaviour does too. The retail apocalypse is a very real phenomenon seen in all developed and partially developing countries. This is considered to be caused by online retailers who are able to operate with a low fixed cost. However, the analysis in section *1 Business structure and process understanding and mapping* shows a demand for hybrid retailers. In this goal the development team will mainly focus on consumer demographics and how this has influenced ElNor's strength and market position. Specifically, the insufficient growth of younger (age < 30) customers. On behalf of ElNor, it has been noted the inquiry: How to regain lost market shares. To obtain this main goal the development team advise the following key performance indicators.

4.1.1 Unique customer base growth

One of the indicators the improvements team evaluates as important is the unique customer base growth and will indicate the relevance of the corporation. Recognising market support and trends is crucial in any competitive niche. By gathering this information it may help ElNors to convert one-time-buyers into loyal customers. To further measure ElNor's customers the company allows for higher accuracy on market campaigns, by viewing the correlation. Strengths of this key performance indicator, when operational, is showing both how loyal our customers are and growth/ loss rates of new customers over a timespan of convenience.

4.1.2 Delivery performance

Delivery performance measures precisely what it implies. Numbers of deliveries made on agreed upon time divided by the total number of deliveries. This is both a hard and a financial measurement considered to be value adding to both the business and the costumer. This key performance indicator is directly descended from ElNor's vision. To be able to maintain and grow the market share of younger (< 30) online buyers, this key performance indicator should be handled as high, and in the same fashion as quality and price. Assuming that calculating this performance allows ElNor to activate streamlined processes to shorten the delivery time and save overhanging costs, by introducing a lean mindset where "waste" in lead- time and nonvalue adding transport is reduced.

4.1.3 Conversion marketing

Conversion marketing: site visitors who are paying customers. Considering CRO (conversion rate optimization) marketing, conversion is an evident pick. However, conversion might be a bit too generic to depend on solely. This key performance indicator should be viewed jointly with *bounce rates* (rates on visitors who return empty i.e no sale) and *average time spent on page.* Evaluating conversion rates gives ElNor an opportunity to consider their market position in respect to competitors in a soft manner, and marketing campaigns hard. In other words, by counting "hits" and sales on a specific product gives ElNor a better understanding of market demand, dynamics and pricing. To illustrate this additionally, take case i. there are visitors, but there are no sales, and ii. all visitors are paying customers. In these cases, there is a market demand of the product in question. However, the pricing is flawed and inaccurate by being either too high or too low. To conclude this argument, knowing this helps ElNor price their products properly in respect to the competition, order accurate quantities, and analyse demand .

4.2 Environment focused decision-making

Environmental awareness is of huge importance in industrial countries. Therefore, ElNor as a big retail company should propose clear values towards this topic. In compliance with their own vision, seeing that their customers rate the external environment so highly, it is fair to say that ensuring environmental focus is customer-centric. We recommend ElNor to have a goal being an environmental-focused organization. Having performance indicators specifically aimed towards "green" focus can help the organization to be aware of what financial aspects being environmentally friendly actually brings.

4.2.1 Environmental-friendly product sales ratio

Environmental friendly product sales ratio also measure exactly what it implies. Environmentally friendly products sold divided on total amount of products sold. Without deliberating too much

about how to gather this data, the measurement should be based on products where there exist "green" options. Comparing the different amount of these with the amount of other products available for the customer, is also necessary for a solid measurement. The main purpose of this indicator is to get more knowledge about how the customers think and act when environmental-friendly products are available for them. The measurement relates to the primary process, sales. Being specifically both a *hard* and a *financial* measure, this indicator could result in direct value without necessarily being too resource-heavy. Make no mistake that this indicator does not solely explain the customers relation regarding environmental-friendly products. Factors like price, quality etc. also plays a part when customers are deciding what product to buy. However, it can to a certain extent indicate how important "green-ness" is for customers compared to other factors.

4.2.2 Percentage of environmentally aware suppliers

Percentage of environmentally aware suppliers is supposed to indicate how ElNor's suppliers are acting towards the environment, then specifically external emissions during their operations. The ethical aspect of ElNor being fully aware of their influence upon the environment, as a large enterprise, is for sure important. What might be even more interesting is the financial aspect of what this awareness can bring. Making a reasonable assumption that environmental awareness is going to be even more important in the future, measurements regarding the indicator can be classified as competence measures. Seeing that an increasing amount of customers demand products being made in the cleanest way possible, the importance of having solid control over the carbon footprint for the products being sold is huge. Avoiding media scandals and bad publicity is definitely preferred for a company like ElNor which is trying to regain its market shares among younger people, who are arguably the ones who care about this topic the most. In addition to the preventive causes, measurements and knowledge regarding this indicator can later be valuable in gaining competitive market advantages.

4.2.3 Cost percentage of environmental-hostile processes

Cost percentage of environmental-hostile processes is both meant to get an overview of what processes that are specially environmentally unfriendly, in lack of a better term, as well as financially unnecessary. The measurements required here are definitely organization-wide, every process and action from flight habits among leaders to how much paper each department buys indicates that the measurements are quite heavy on resources. However, it is well worth considering the double-value potential in measuring this indicator. Financially wise, finding and cutting unnecessary costly processes is in itself important. This will be elaborated further under the next goal. Combining this with the purpose of internally being more environmentally focused, can potentially kill two birds with one stone. The "green" focus should permeate the whole organization. It should measure internal processes and actions that potentially could be unnecessary and environmental-hostile. This is a step towards more knowledge about how to develop these processes for the better.

4.3 Cost-efficiency

We know for a fact that the customer is developing towards a more digitized way of shopping. Future generations are enlarging and a company's focus needs to change with it. This trend forces companies to investigate their expenses in order to make more room for changes. Reducing cost on internal processes will help ElNor on *becoming a more cost-efficient organization.* This is considered as an essential goal to reach the vision of ElNor. By reducing unnecessary costs, the company may choose to push down their prices for the purpose of increasing customer satisfaction. Furthermore, the development team assumes that customer satisfaction relies on price, quality, good customer service and availability of products. By reducing costs, the company has more resources to invest in these qualities. This gives the system the functionality for detecting *blue savings*.

By expediting the process of implementing the measurements indicators, *store profit, transportation costs* and *overhead costs.* These indicators should help ElNor to reach their goal and close the gap to accomplishing their vision. Traditionally economists in an organization have used financial indicators to run and manage their businesses. These hard indicators are also often cheaper then soft measurements indicators. However management by numbers have been a deadly disease that has ruined many enterprises in the Western world (Deming, 1986). They are categorized as r*esult measurements* and can affect other *diagnostic measurement indicators* and will give the organisation an understanding of what they have accomplished. These indicators will be explained and examined in more detail.

4.3.1 Store profit

The first and maybe most important indicator, is the *hard* measure of *profit per store* or the *store profit.* By focusing on this financial measurement, as a direct link to the company's financial result, might result in great savings. This is also considered as a *green saving* though it is very visible in the accounting system. As the financial department investigates the profit or loss for each store and among other factors, the decision to open or close a store must be determined. Today there is a down trend in the visit-ratio of the actual retail stores, in part because of the rising popularity of online shopping. This might be an indirect indicator that is relevant when ElNor has to make a decision whether to close down a retail store. This decision should be discussed thoroughly, because great economic savings might be achieved. Huge costs are related to operating a retail store. The result measure will indicate how the organization is achieving and says what each store has accomplished.

4.3.2 Transportation costs

The cost for transportation regarding inbound and outbound logistics can be a good indication of how to evaluate the success of the organization. More specifically, it shows how cost-efficient ElNor is on transportation. Transportation is a central process throughout the supply chain and is

therefore essential to optimize. The fact that the company has outsourced the delivery from supplier to retail and from the retail-warehouse to online customer makes this an external controlled part of the chain, based on the assumption that all transport is outsourced. It is important to consider that involving a third party may result in higher expenses. When the company has transportation outside the agreed contract, for instance due to unplanned orders. Unplanned orders are often to meet customer satisfaction.

This indicator will help the company's decision management. When transportation costs increase beyond the budgets over long term, it should encourage the management to reevaluate their transportation strategy. Should they continue outsourcing, change vendors, manage transportation in-house or a hybrid solution? The development performance indicator will help ElNor with such decisions regarding transportation solutions to reduce unnecessary costs.

4.3.3 Overhead savings or loss

The improvement project team obviously saw cost reduction as a huge asset for ElNor. To further measure the overhead or administrative costs will help the company to get an indication of how cost-efficient they are. Overhead costs refers to the ongoing business expenses. More over the expenses not directly attributed to creating the service. This is a good indicator because it is important for budgeting purposes, but also for determining how much a ElNor should charge for the products to make a profit (Tuovila, 2019)

Based on assumptions the financial department estimates yearly the overall incomes and expenses. These prognoses define ElNors overhead budget for the year. In the same way as transportation costs, this indicator is also determined by reaching their budget or not. Over-budgeting will indicate that the company must take action and reevaluate their costs. This can be done by evaluating outsourcing versus in-house contracts, such as IT-departments, marketing and other consultants. Investigating these administration costs and discovering whether the expenses are cost effective or not will undoubtedly allow a company to reduce its overall expenses.

5 Deciding how to collect the required data

Having explained and elaborated the *key performance indicators* in the last step, we will furthermore examine how to collect the data required. However, do not be mistaken, while discussing and choosing the indicators in the previous chapter, the topic of how to actually collect data for the chosen indicators was frequently brought up. In other words, chapter 4 and 5 have thoughtfully been treated in parallel.

Further on, as for the representation of this step, the key performance indicators will be elaborated by dividing by the set of goals. This implies that throughout this step, each goal and its underlying indicators will be individually examined before moving on to the next step. Issues that concern

multiple indicators will be stated. The team will now describe how each indicator will be measured and include availability, costs, accuracy, frequency and storing.

5.1 How to share data, ERP system

Today ElNor faces a number of challenges affecting the business. As -is, departments have different geographical positions with unique systems which makes it quite challenging for the company to maintain continuous information, and data sharing capabilities. Data availability and communication is crucial to enable companies to collaborate at an every level throughout the value chain.

Enterprise Resource Planning (ERP) system is a common platform for data sharing. Deciding whether or not to implement an ERP software is a major decision that leads to large changes in the value chain communication and data collaboration. ElNor wants to make several strategic changes going forward to meet the customer's needs. By increasing standardization, optimizing the value chain, greater integration of departments and internal competence building, this can help the company succeed in improved flow. Through these approaches the development team want i.a., to reduce the cost level in the company and make information available to a greater extent. An ERP system will support the strategic changes to pursue the vision, by making information and data more easily accessible to everyone.

The high degree of automated processes combined with increased availability of updated information will make this transition more efficient and scalable. One of the greatest strengths of such a system is that it can be integrated across the department platform and its ability to process large volumes of data, enabling more synergies to be extracted across the enterprise. Electronic information processing reduces the potential for human error and enables real-time information sharing, rather than weekly manual handovers.

Today's sophisticated and state-of-the-art Enterprise Resource Planning systems provide security that can prevent attacks on the platform. The data is housed inside a very secure data center, usually employing multiple levels of firewall and up to date security, whereas most smaller businesses have network and server infrastructure that is much more vulnerable to intruders. Realistically, the data is much safer and more secure in a cloud computing ERP environment than in-house (Canes, 2019).

By improving communication across departments, this will help maintain and improve the focus of ElNor, namely that the customer is at the center. This will give both the company and the customer greater visibility, thus increasing the level of service and customer experience. This centralized, “user-friendly” and scalable system also has opportunities for further customization as needed. As mentioned, there are many benefits to such a system, including increased productivity, efficiency, and communication flow, as well as reduced costs. This is done by

centralizing all information from the network in a database. By storing data in such a structured and orderly way, ElNor's employees and partners can effectively extract relevant information. The flow of information is essential throughout the supply chain to coordinate and optimize the network.

5.2 Reclaim market strength

5.2.1 Unique Customer Base Growth

Knowledge is always respected as key in any business. Considering the market dynamics, forecasting demand is always bound to the knowledge of the customer base. The customer base is hard measured in the stores and on ElNors website store. The development team advise ElNor to try a model where each customer is asked to leave their email/phone number (to be used as a distinct key/id), name, and date of birth details to the salesperson. The customer will receive a convenient electronic bill of sale (stored in an ERP- system) as well as the optional paper one. Needless to say, the customer will not have to repeat this for each sale, just one of them the next time. The cost of implementing this mode is quite niglechble in terms of software development. The system ElNor is to use the phone number as a unique customer identification.

The calculation of this will be as shown in *Formula 1* and *2*, using the conditions:

1. *ID is previously used: Is known customer*
2. *ID is new: Is new customer*

This will allow ElNor to monitor the growth and losses of their market share in terms of customers and estimated potential buyers. This is considered to be an accurate way of measuring the customer volume. To support and legitimize this KPI it is deemed that the results to be considered jointly with a known baseline of historical data and sales. The weakness of this measurement is time. Establishing a valuable data sample will be time consuming as mapping needs to be done over a significant time frame

We suppose this ratio of customer growth and losses are not volatile. The frequency of measurements should be registered on every sale and presented on a quarterly basis or on demand from marketing dept. to evaluate market response to campaigns supported by the conversion marketing rates.

5.2.2 Delivery Performance

Delivery performance is the measurement valuable for the customer and hence the goal to reclaim market shares. the availability of this data is gathered through suppliers and customers and should be easily obtainable. One is able to calculate this performance through *Formula 3*.

We expect this data collection to be slowly changing (non-volatile) and the main purpose is to use the measurement in a longer-term improvement effort. This should have a low measurement frequency and a long measurement period. The ratio should be measured every month to see if there are seasonal trends. This is mainly to control the outbound logistics and improve with small steps.

5.2.3 Conversion Ratio

Accumulating data points for the conversion ratio should be quite simple and cost efficient. ElNor will be able to calculate their conversion ratio using formula *Formula 4*.

High measurement frequencies and short measurement periods are deemed ideal for this performance indicator on daily running and decision making. As the market is changing fast, pricing needs to be flexible to stay on top of the competition. Likewise, this gives a good indication on how market campaigns move the customers attention to a specific product.

5.3 Be a more environmental-focused organization

5.3.1 Environmental friendly product sales ratio (EFP)

Environmentally friendly product sales ratio do have measurements obtained from the ERP-system. Seeing that these measurements are hard data, there will be low-to-none cost extracting the data required. By using the somewhat general *Formula 5* for calculating the ratio, and since the information is gathered from internal systems, the accuracy of the measurements should be pretty solid as well.

Further on, *high measurement frequency and long measurement period* should be suitable for this indicator. Products being sold are a huge part of the daily sales process. Even though the data of a sale is being stored every time a sale is registered, the measurement frequency is set to one day such that one can daily track the ratio. Setting the measurement period to one month should be long enough time to detect trends and variations in the measurements, while also short enough so that ElNor can respond to the measurements reasonably fast.

5.3.2 Percentage of environmentally aware suppliers

Percentage of environmentally aware suppliers is the one indicator that have measurements not automatically stored in the ERP-system. The information required to measure this indicator does in fact come from the suppliers, and their systems. Implying that ElNor has to manually gather information from the suppliers before inserting it into the ERP-system. This process is both time-consuming and resource heavy. The accuracy behind the measurements could also be questionable as the data obtained from the suppliers are *soft*. However, assuming that environmental awareness

is likewise important for suppliers as it is for ElNor, the measurements should be useful enough to indicate what it is supposed to. The general calculation is shown in *Formula 6*.

As for the frequency and period of the measurements, it holds to measure once every half a year over a period two years. Hence, *low measurement frequency and long measurement period.* Seeing that the data regarding this information does not change very rapidly, a frequency of half a year should be enough to actually obtain measurements different from the ones before. In addition, the practical aspect of asking the suppliers for this information more frequently we feel is not doable. Further on, the period of two years will give ElNor enough data to make decisions to whether a supplier, in their terms, satisfies the requirements for this particular indicator.

5.3.3 Cost percentage of environmental-hostile processes

Measurements regarding *cost percentage environmental-hostile processes* are hard data obtained from the ERP-system. However, the indicator covers a good amount of different measurements from different processes which can make it somewhat time-consuming to obtain compared to indicators with a more composed data-set. With this indicator, actually defining and deciding which processes that one are going to measure, will also be more resource-heavy as there are few-to-none processes that clearly should be measured. The accuracy though should be reasonably good as the information gathered mainly are internal costs from relevant processes. In general, a formula similar to *Formula 7* gives an overview as to how to measure the indicator.

For this particular indicator, having a *low measurement frequency and long measurement period* should satisfy the indicator's purpose. Measuring with a frequency of one month will be enough time to detect differences in the measurements without it being too costly. Doing this for a period of a quarter at the time fits well with how ElNor most likely are proposing their budgets, and therefore, there should be opportunities to adjust if necessary.

5.4 Becoming a more cost-efficient organization

The three performance indicators are, as mentioned, categorized as financial and hard. Therefore the indicators are easier to calculate, because the information is more available. This is because most of the information for the measurement indicators will be saved in the ERP-system. Therefore it is easy accessible and available for everyone with the right access. This makes accessing the indicator data a low cost process for all of the three indicators. The accounting-department has the role of providing and plotting the data and to perform the actual calculations. The information is saved as budgets and results implemented into the system.

The accuracy is also an important factor, and is more or less reliable for the indicators that support the goal *on becoming a more cost-efficient organization*. This information is accurate due to real facts in terms of sales and other related costs. On the other hand it is hard to provide accurate data

for the consequences of the entire company. Accurate costs might have indirect consequences for the company which is hard to measure, such as actual economic value of one employee.

5.4.1 Retail store profit or loss

Profit is what you earn, ie the difference between the total revenue and the total cost.
In order to make a profit on the sale of something, whether it is goods or services, it is necessary that the total revenue is greater than the total cost. Otherwise, you will have a negative profit and it is called loss. To measure the profit and loss statement for each store there are many factors taken into account. Moreover this financial and hard measurement will be calculated in two steps. First, by *Formula 8*, the Gross margin is calculated as a sub indicator. The next step is to calculate the total profit or loss as shown in *Formula 9.*

Earlier it was stated that this could indicate if the organization should close down a store or not. It should be kept in mind that there are other indicators and factors that influence this decision. The economical consequences of closing a store is not an easy estimate or calculation. Some of these might be loss in market share, lower procurement benefits and higher overhead costs.

The formula is calculated for a specific time period. Since this data is rapidly changing and the main purpose is to use the measurement in a longer-term improvement effort, it should have a high measurement frequency and a long measurement period. The profit or loss should be measured every month over a six months period. This is mainly to control income and costs to make sure the store has a profit at the end of the sixth month. On the other hand the Sales and *gross margin* has more variability. These sub indicators should be measured every day, because when these indicators are below budget extraordinary actions should be implemented. Sales and gross margin are two sub indicators that have a high effect on operational costs. It often makes a difference between a profitable store or not. This increases the company's responsiveness and will give an indication if the operational management is functioning.

5.4.2 Transportation savings or loss

When calculating the sum of all transportation costs it is totally dependant on what solution of transportation the company is using. Because of the assumed settlement the costs can be easily calculated with *Formula 10*. This formula is calculated for a specific period and is evaluated with the past periods to see what tendency and development the costs have. This should be done with a low frequency and over a long period. More specifically, it could be beneficial to make these measurements each week over a monthly period. This is because this measurement has a low volatility and is considered stabil. There is an obvious correlation between the number of sold and ordered products and the transportation frequency, which again decides the transportation costs. Another correlation is between customer satisfaction and transportation frequency. An example is a customer guarantee of one day delivery as a consequence on transportation costs. Therefore these

costs are somewhat influenced by the seasons that might vary from week to week. This frequency and period is chosen since the trend developments will appear quite clearly.

5.4.3 Overhead savings or loss

The total overhead costs is an expense with many addends. By summing all of these one gets the total overhead costs. Accounting and legal expenses, administrative salaries, insurance, licenses and government fees, property taxes, tent and utilities are some of these business expenses (Bragg, 2018). This is calculated in *Formula 11*.

This is also a stable indicator and does not change rapidly. Even though the demand increases or decreases, these costs will be approximately the same. This, as well as *total transportation costs*, are used as measurement inputs to improving processes. By having a low measurement frequency, on a monthly basis, and the same measurement period will give a good enough indication whether changes must be implemented. This, as for the transportation costs, is important to measure with this rate, because actions must be made with the same rate. However the company should also be taking yearly actions to evaluate vendors contracts and evaluate in-house versus outsourcing, so that the total cost is optimal.

6 Designing reporting and performance data presentation formats

The reports of the performance measurement system will be presented in a dashboard which collects the data in real time from the ERP-system. The employees will be presented with a report with the relevant indicators. The dashboard will be accessible through ElNor's intranet.

The reports are generated by a predefined template with the standard frequencies and periods specified for each KPI. Additionally there will be an opportunity to customize the reports, based on the employees accesses and position in the department and company. The customizable features includes the opportunities to filter and compare data on country, store locations, departments and time periods.

6.1 User access to and transparency of performance data

The system is facilitated to cause positive development. Therefore it is important to manage user accesses while also maintaining the transparency of the performance data. The departments user accesses are categorized according to *Table 11* to encourage motivation among the employees and limit the access to the data which can lead to poor work ethics. The user accesses are pre-defined to the departments and customized to coincide with their responsibilities. The main goal is to achieve a positive environment where employees understands the importance and utilities of the system. This will enhance the motivation to implement the use of the performance measurement system in their everyday work routines, and eventually lead to a continuous performance improvement. Thereby a system with a balance between transparency and user access will improve the business processes and lead to an overall better performance.

6.2 Dashboard design

To achieve a well-presented design it is important to keep the presentation simple and focused on the important elements. The dashboard includes an integrated filter function to compare and focus the reports to the intended use. This will limit the quantity of disruptive elements and ensure a clearer visual focus area. In the main page of the dashboard shown in *Figure 5* and *Figure 6* the user will be able to see a concentrated version of the data presenting the different indicators. The user will then be able to view the most important data right away. This is shown in graphs, pie charts and percentages to represent the improvement and the opportunities for improvement in a comprehensible and clear matter. The key performance indicators are placed in context with the central goals of ElNor to create a clear correlation between them. Furthermore it will be possible to access extensive data by viewing the indicator's details page shown in *Figure 7*, where the user will be able to see their own performance data along with the chosen store's performance data. Each employee's personal performance data will only be available for themselves to reduce the risk of being a disincentive to use the performance measurement system. The difference in user

access for administrators and retail employees is shown in *Figure* 5 and *Figure* 6, respectfully. An example of how an indicator panel looks when opened, is shown in *Figure* 7. This figure is from the perspective of a retail employee, and users with different accesses will have their interface tailored to their respective responsibilities.

The dashboard will be implemented to create an easy and transparent understanding of possible improvements and show enhancement, which further on will motivate a positive work environment.

7 Testing and adjusting the performance measurement system

For a computerized system like this, it is especially important to have prototype testing of different modules throughout development. For this part of the development process it needs to be stated that testing should ideally be a part of the system under the entire development. Therefore this part of the paper will focus on how ElNor should apply testing the measurement system. For testing the correlation between goal, strategy and stakeholder satisfaction there is no singular and correct approach. In this case, this will be the first view of the results for the development efforts. On the other hand, it will not be able to undertake a real-life resting of all aspects of the system, so it is advised to focus on the main parts and accept that the time immediately after the system has been implemented must be considered some kind of an extended test and streamlining phase. In general there are many ways of testing such a system. The approach the development and project team suggests are stated thoroughly below and why this fits ElNors KPIs.

7.1 Testing execution

The system should measure the linkage from vision, strategy and stakeholder expectations down to the business process level and the corresponding performance indicators. The team is advising ElNor to test the system by using the system over a longer time period. This period of time needs to be chosen so that it is possible to see these effects starting to manifest themself. Around three months gives the company enough time to get a complete view of how the system is operating.The remaining month of the quarter, the company can use to make final changes and improvements before the actual implementation is set to start, in the beginning of the next quarter. Furthermore, it is essential that the indicators fit the company. The suitability is tested with the two following strategies:

1. Structured run-through of the business processes. This should check that there have been developed indicators to cover these processes. Dette er noe teamet vårt kan gjøre på egen hånd ifølge boken.
2. Placing artificial test data. By using such a method the user is able to test whether the defined PI is actually capable of monitoring and detecting changes. To compare the result with its solution proves that it has a functionality or not.

To make sure that the output for the system is intact with the teams intentions, a test-group can be put together. A small group, represented by employees from different departments, plays around with the system for a short time period. It might be optimal that the group is retrieved from different levels of the company to get a wide specter of members. The improvement team will prepare an evaluation sheet regarding different aspects of the system. The test-group individually fill in the sheet throughout the test-period and later merge these improvements and impressions into one final sheet. In addition, another important test is to measure to what degree the system has the ability to support its different purpose. The same method might be used, but now having them try the system for a set of different tasks. Surveys might also be used after the system is up and running for the entire organization.

After the test phase the outcome should be a set of change proposals from the test users. *How much will this change improve the system, how realistic and feasible is this change* and *what resource requirements and time is needed to make this change* are the topics the development team should be discussing when getting the proposals.

7.2 Adjustments based on testing

Whether to implement the change or not is a question that might affect other parts of the system. When making one small adjustment it can affect a number of the other suggestions or even create a need. When the suggestion is decided to be implemented the development team will make this change quickly, because employees are shown to be eager to see the changes fast. The result of this whole test is now an improved version of the proto-type.

8 Implementing the performance measurement system

Timing of a lunch of the system is always a matter to consider. To be able to “hit the ground running” ElNor should be notifying staff of the changes prior to the actual launch date. Choosing the very date to press go on the system should be considered in respect to the dates of measure. This means to choose a date who begins a period e.g. a financial quarter.

To be able to extract the most out of the key performance indicators and new strategies within the digitization process the development team recommend ElNor to hire consultants (and someone

with pedagogical background) to train and work alongside the management with the new techniques prior and post launch. This will benefit the business by building confidence and removing possible premature problems and inconveniences not yet seen. It is important to note that this system was not developed to reprimand staff and management, but to increase their efficiency and workflow, hence contributing positively to the work environment. It is also recommended gathering the retail managers to learn the new operating system to include in their training of staff i.e. salespersons i.a.

It would be naïve to think the system would be flawless from birth. Post-implementation support is important for users of the system who are bound to compile different questions, requests and solutions. Hence there is a need for a support channel to receive, communicate, and address feedback to management and developers to continuously keep the system up-to-date.

***

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10 Appendix

Tables

Table 1: Key stakeholders

Main	Including
Customers	
Management	
Employees	Retail workers, IT department and online support
Suppliers	Electronics producers and landlords of office buildings and stores
Competitors	
Owners	
Environment	
Financial institutions	
Authorities	
Alliance partners	Third party companies
NGO’s	
Media	

Table 2: Stakeholders classified using the Savage model

	High impact	**Low impact**
High cooperation	(*mixed blessing*) Management Alliance partners Suppliers Employees (retail)	(*supportive*) Employees (IT and online support)
Low cooperation	(*non-supportive*) Customers Authorities Financial institutions Competitors	(*marginal*) NGOs Media

Table 3: The Kano Model for ElNor's key stakeholders.

Category	**Basic**	**Performance**	**Excitement**
Customers under 30 years		Price	
	Updated product range		
	Web store design		
Customers aged 30-50 years		Value for money	
Customers above 50 years		Personal service	
			Complete solutions
	Quality of products		

Employees	Reasonable wages		
	Proper working hours		
		Good work environment	
			Sales bonus program
Alliance partners	Follow partnership agreement		
		Providing new customers	
		Advertising their services	
Suppliers	Selling product with profit		
			Advertising their product
	Financial stability		
Competitors	Access to pricings		
		Maintaining competitiveness	

Table 4: Ranking of stakeholders.

Stakeholder ranking session		Date: 05.03.2020
Stakeholders	**Importance**	**Rationale for ranking**
Customers	10	Accounts for all income to the organization
Management/employees	9	Conducts the organization's daily operations
Suppliers	8	Provides all shop items
Competitors	7	Keeps the market competitive
Owners	5	Not very active in daily operations, stable
Authorities	3	Regulating the market
Alliance partners	7	Provides partnership to strengthen organization

NGOs Media	2 3	Receives help from or tries to impact org. Provides positive or negative feedback

Table 5: Customer performance requirement identification

Stakeholder: Customers	Imp: 10			Date: 05.03.2020	
Expectation	**Performance requirement**	**B**	**P**	**E**	**Imp.**
Have lower prices than others	Competitive prices		x		5
Have new products in store	Updated product range	x			9
User friendly web store design	Good online user experience	x			7
Sufficient personal service	Good customer service		x		10
Solid complete solutions	Complete solution quality			x	7
Keep product quality high	Reliable product quality	x			6
Be environmentally conscious	Environmental focus			x	7

Table 6: Management/employee performance requirement identification.

Stakeholder: Management/employees	Imp: 9			Date: 05.03.2020	
Expectation	**Performance requirement**	**B**	**P**	**E**	**Imp.**
It is a good place to work	Good working environment		x		8
Good source of income	Reasonable wages and benefits	x			7

Table 7: Supplier performance requirement identification.

Stakeholder: Suppliers	Imp: 8			Date: 05.03.2020	
Expectation	**Performance requirement**	**B**	**P**	**E**	**Imp.**
Good sales numbers	Profitable distribution		x		8
Payment on time	Financial solidity	x			7
Committed to supplier	Stable partnership	x			7

Table 8: Competitor performance requirement identification.

Stakeholder: Competitors	Imp: 7			Date: 05.03.2020	
Expectation	**Performance requirement**	**B**	**P**	**E**	**Imp.**
Give access to pricings Maintain competitiveness	Abide by regulatory laws Competitive market	x	 x		9 7

Table 9: Alliance partner performance requirement identification.

Stakeholder: Alliance partners	Imp: 7			Date: 05.03.2020	
Expectation	**Performance requirement**	**B**	**P**	**E**	**Imp.**
Help sell their service Committed to service provider Profitable	Partner service marketing Stable partnership Profitable partnership	 x	 x	x	4 7 9

Table 10: Strategic performance requirements based on ElNor's business strategy.

Strategy: *"To be the Earth's most customer-centric retail chain"*	Date: 06.03.2020
Performance requirement	**Importance**
Be customer centric Constantly take environmentally conscious decisions Constantly be up-to-date on the latest products/software	10 6 9

Table 11: Access management

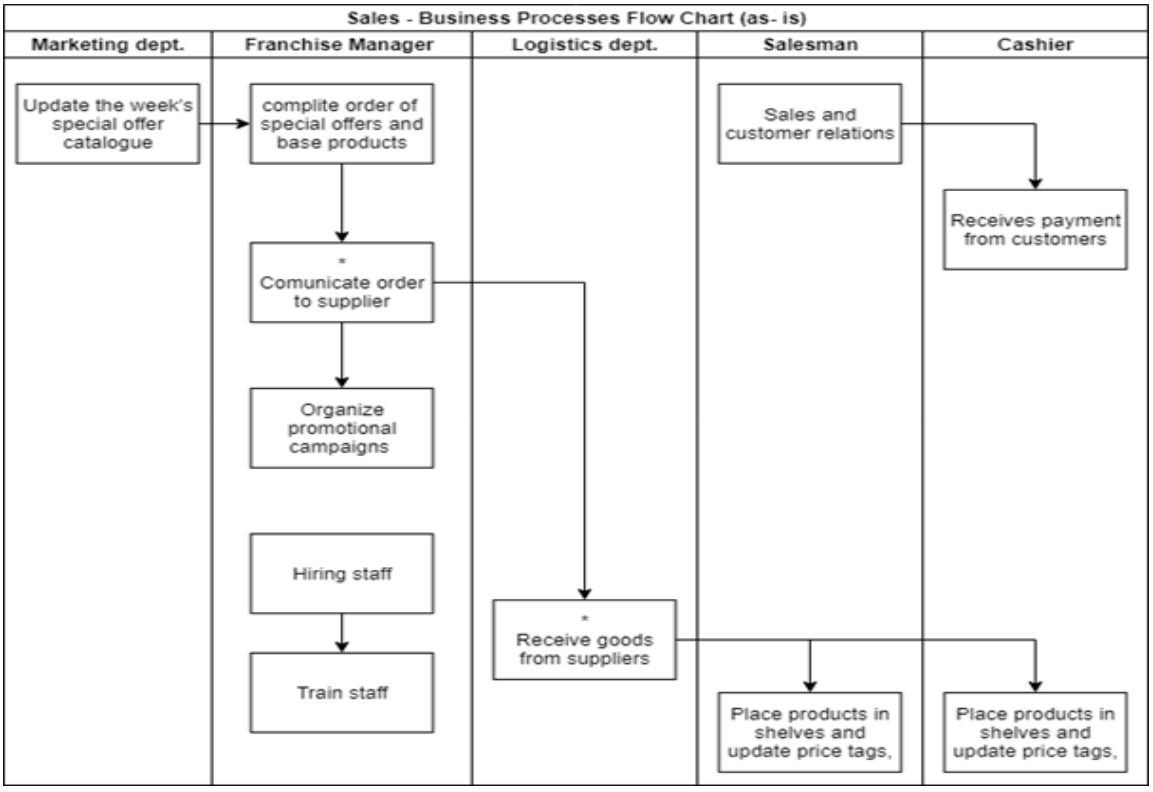
Key Performance Indicators	***Departments with access***
Delivery performance	Retail Service Logistics Owners, Administration and IT Finance and Procurement Marketing
Customer base	Retail Service

	Logistics Owners, Administration and IT Finance and Procurement Marketing
Conversion rate	Owners, Administration and IT Finance and Procurement Marketing
Ecofriendly sales	Retail Service Logistics Owners, Administration and IT Finance and Procurement
Ecofriendly suppliers	Retail Service Logistics Owners, Administration and IT Finance and Procurement
Unsustainable costs	Owners, Administration and IT Finance and Procurement
Transportation costs	Logistics Owners, Administration and IT Finance and Procurement
Overhead costs	Owners, Administration and IT Finance and Procurement
Store profit ratio	Owners, Administration and IT

Figures

Figure 1: Business processes

Figure 2: Graphical overview of the steps in the sales process at a franchise level



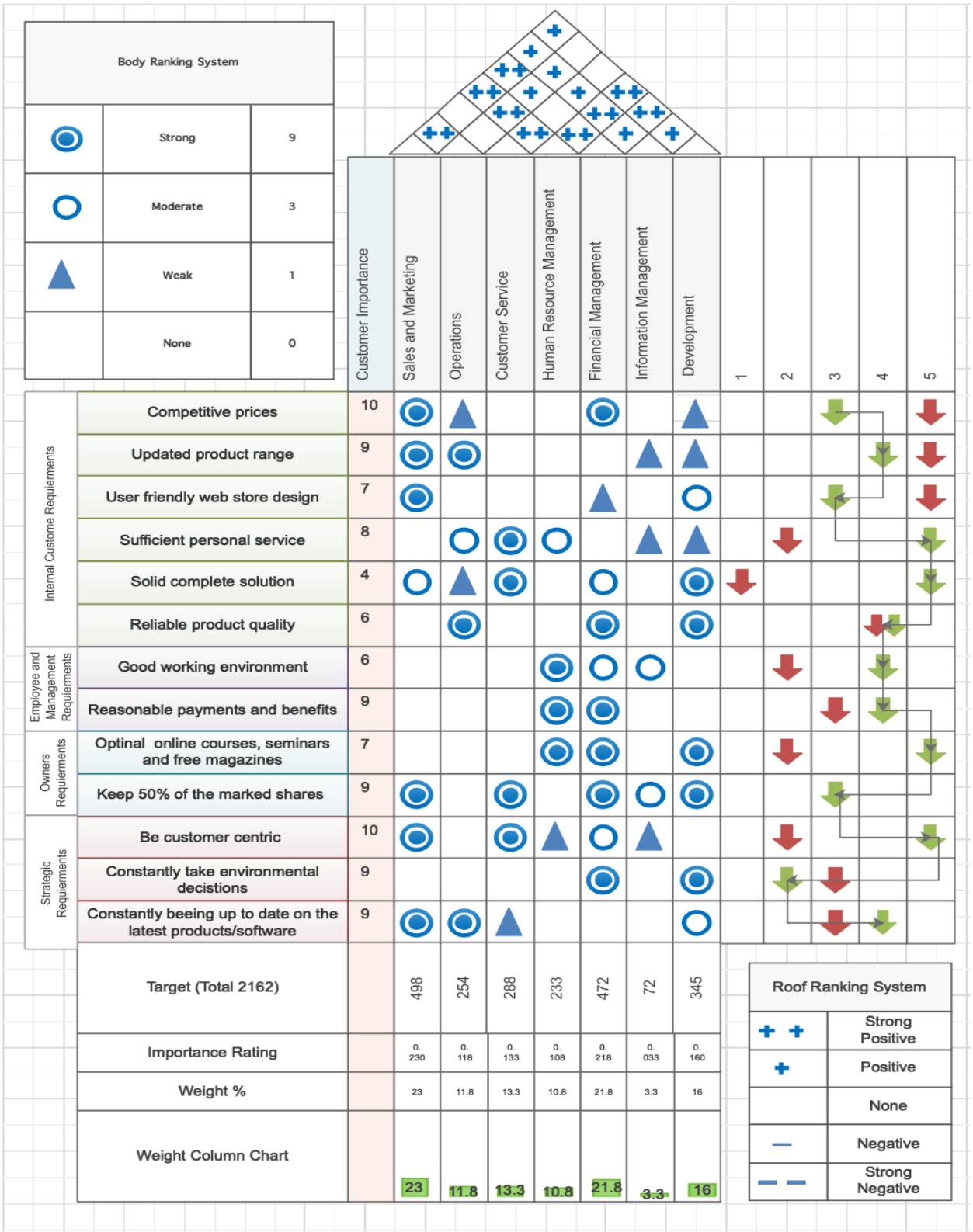

Body Ranking System
Strong 9
Moderate 3
Weak 1
None 0
Customer Importance
Sales and Marketing
Operations
Customer Service
Human Resource Management
Financial Management
Information Management
Development
1
2
3
4
5
Internal Custome Requierments
Competitive prices 10
Updated product range 9
User friendly web store design 7
Sufficient personal service 8
Solid complete solution 4
Reliable product quality 6
Employee and Management Requierments
Good working environment 6
Reasonable payments and benefits 9
Owners Requierments
Optinal online courses, seminars and free magazines 7
Keep 50% of the marked shares 9
Strategic Requierments
Be customer centric 10
Constantly take environmental decistions 9
Constantly beeing up to date on the latest products/software 9
Target (Total 2162)
498
254
288
233
472
72
345
Importance Rating
0.230
0.118
0.133
0.108
0.218
0.033
0.160
Weight %
23
11.8
13.3
10.8
21.8
3.3
16
Weight Column Chart
23
11.8
13.3
10.8
21.8
3.3
16
Roof Ranking System
Strong Positive
Positive
None
Negative
Strong Negative

Figure 4: Relationship table for vision, goal and respective indicator

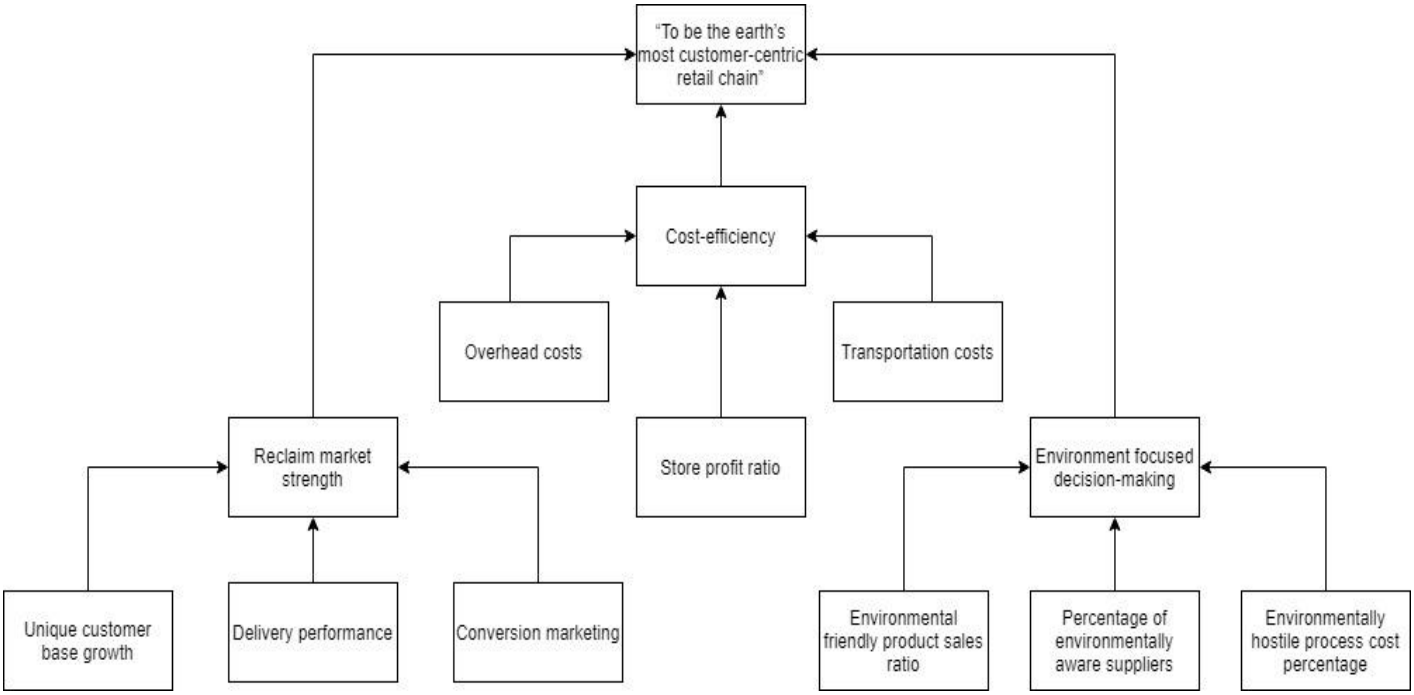


Figure 5: Performance Measurement Dashboard for Administrators

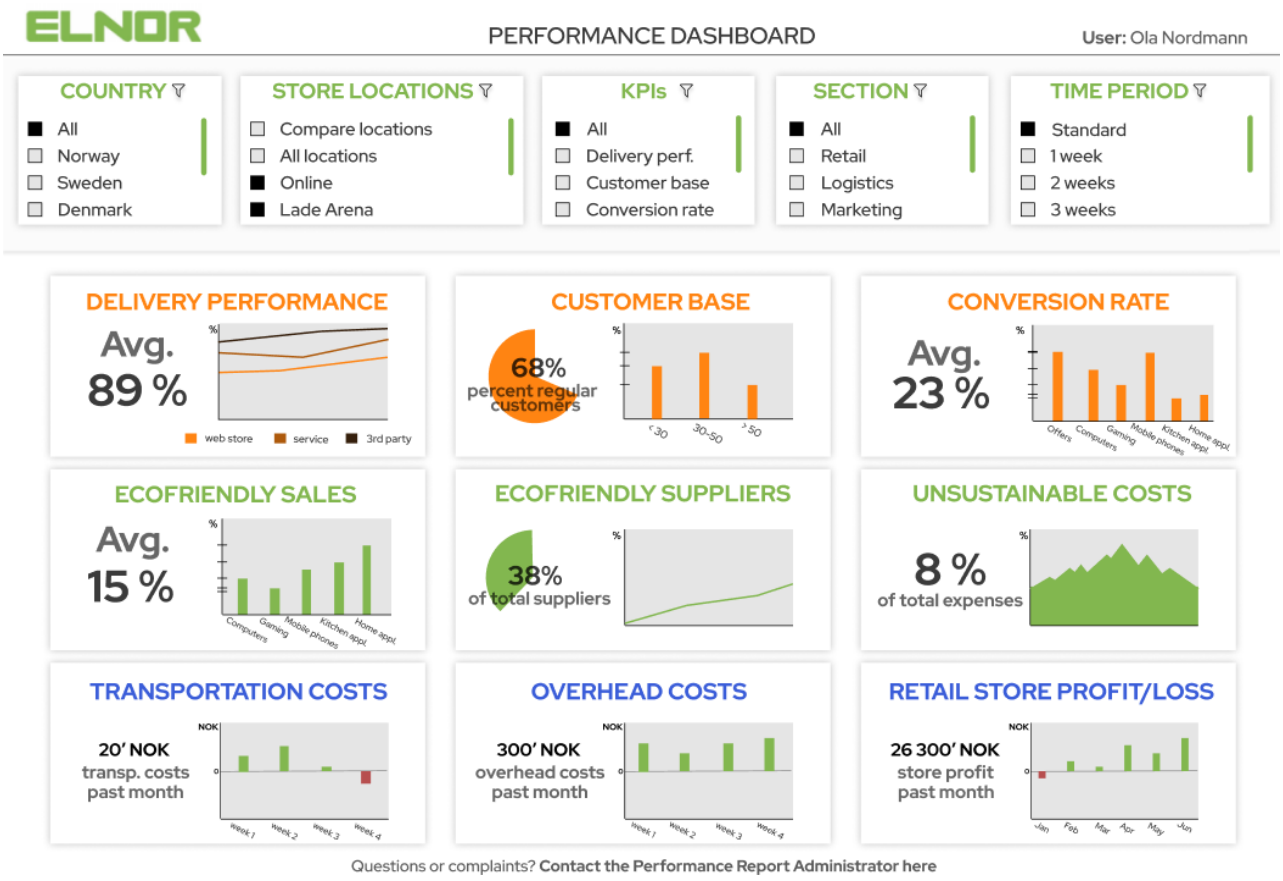

ELNOR
PERFORMANCE DASHBOARD
User: Ola Nordmann
COUNTRY
All
Norway
Sweden
Denmark
STORE LOCATIONS
Compare locations
All locations
Online
Lade Arena
KPIs
All
Delivery perf.
Customer base
Conversion rate
SECTION
All
Retail
Logistics
Marketing
TIME PERIOD
Standard
1 week
2 weeks
3 weeks
DELIVERY PERFORMANCE
Avg.
89 %
web store
service
3rd party
CUSTOMER BASE
68%
percent regular customers
< 30
30-50
> 50
CONVERSION RATE
Avg.
23 %
Offers
Computers
Gaming
Mobile phones
Kitchen appl.
Home appl.
ECOFRIENDLY SALES
Avg.
15 %
Computers
Gaming
Mobile phones
Kitchen appl.
Home appl.
ECOFRIENDLY SUPPLIERS
38%
of total suppliers
UNSUSTAINABLE COSTS
8 %
of total expenses
TRANSPORTATION COSTS
20' NOK
transp. costs
past month
week 1
week 2
week 3
week 4
OVERHEAD COSTS
300' NOK
overhead costs
past month
week 1
week 2
week 3
week 4
RETAIL STORE PROFIT/LOSS
26 300' NOK
store profit
past month
Jan
Feb
Mar
Apr
May
Jun
Questions or complaints? Contact the Performance Report Administrator here

Figure 6: Performance Measurement Dashboard for Retail Store employee

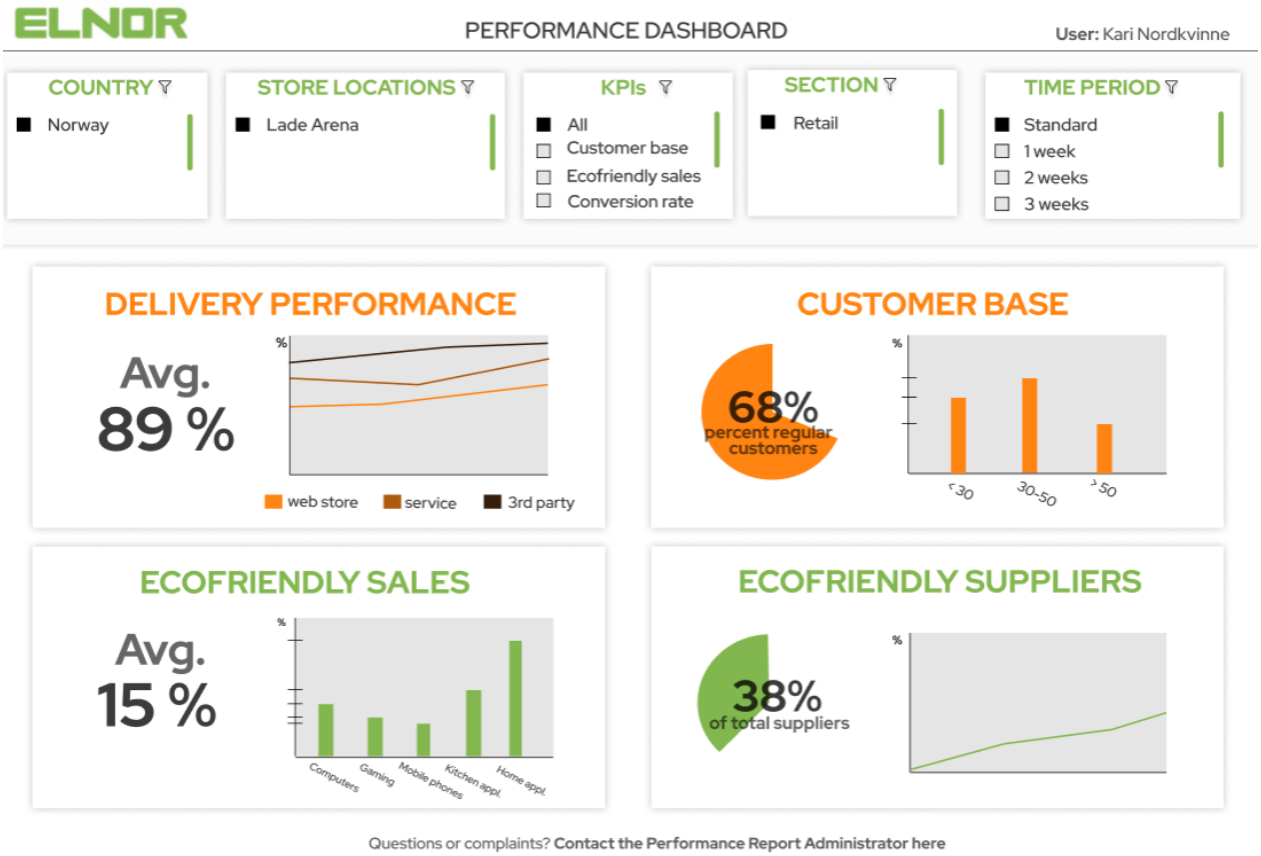
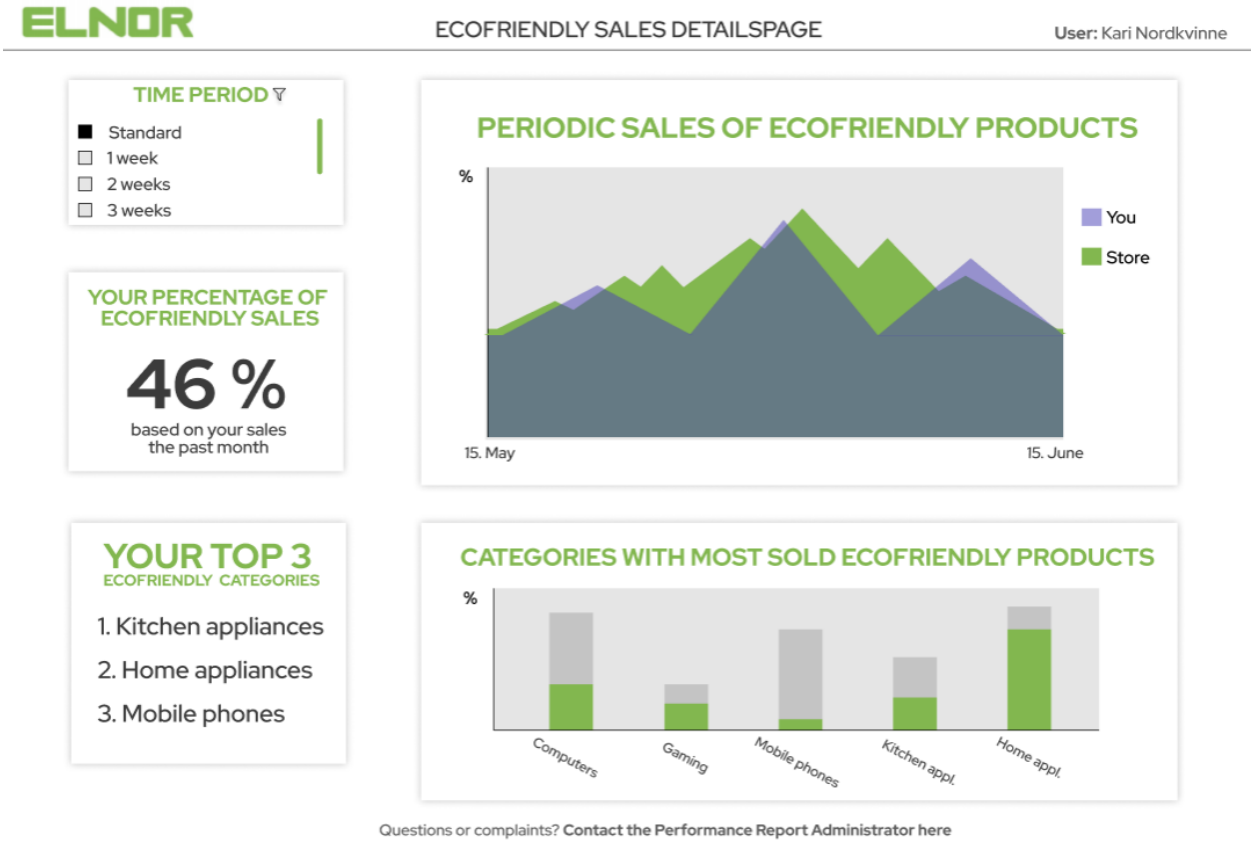


Figure 7: Performance Measurement Dashboard for specific indicator, from the perspective of a Retail Store employee



Formulas

Formula 1: Customer base

$$Customer\ base = \sum_{i=1}^{n} \quad new\ distinct\ customers\ +\ known\ active\ customers$$

Formula 2: Customer growth

$$Customer\ base\ difference =\ Customer\ base_i - Customer\ base_{i-1}$$

Formula 3: Customer base difference

$$Delivery\ performance\ =\ \frac{Number\ of\ deliveries\ made\ on\ agreed\ upon\ time}{Number\ of\ deliveries}$$

Formula 4: Conversion ratio

$$Conversion\ ratio\ =\ \frac{Number\ of\ paying\ visitors}{Hits\ on\ page}$$

Formula 5: EFP sales ratio

$$EFP\ sales\ ratio\ =\frac{Number\ of\ \ EFP\ sales}{Number\ of\ total\ sales}$$

Formula 6: Percentage of environmental aware suppliers

$$Percentage\ of\ environmentally\ aware\ suppliers = \frac{Environmentally\ aware\ suppliers}{All\ suppliers} * 100$$

Formula 7: Environmental-hostile cost percentage

$$Environmentally\ hostile\ processes\ cost\ percentage = \frac{Environmentally\ hostile\ processes\ cost}{Total\ costs} * 100$$

Formula 8: Gross margin

$$Revenue\ -\ Product\ costs\ =\ Gross\ margin$$

Formula 9: Total store profit or loss

$$Gross\ margin\ -\ Labour - Operational\ costs\ -\ Overhead\ -\ Rent = Total\ store\ profit\ or\ loss$$

Formula 10: Total transportation savings or loss

$$Transportation\ budget\ -\sum_{i=1}^{n} Outsourced\ transportation\ costs_i = Total\ transportation\ savings\ or\ loss$$

Formula 11: Total overhead savings or loss

$$Overhead\ budget\ -\sum_{i=1}^{n} Overhead\ costs_i\ = Total\ overhead\ savings$$