

# Balanced Scorecard for Olvi Plc

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<p>Abstract</p> <p>Company performance measurement is the most important factor of any business. Earlier the emphasis was on the financial factor, but nowadays the nonfinancial factors have emerged more. Balanced Scorecard is used to monitor business operations, because it has four different perspectives that originate from critical success factors.</p> <p>The thesis is divided into two parts. The first part includes the theory of Balanced Scorecard and other examples. The second part is a case study and it includes the designing of the Balanced Scorecard for Olvi Plc.</p> <p>Balanced Scorecard is generally used among managers and executive directors, but in this case the aim was to design a Scorecard for operational level, but in a way that it could also be used in executive reporting.</p> <p>As a result of this thesis the Balanced Scorecard has been successfully implemented into the company to the operational and management level.</p>			
Keywords Balanced Scorecard, BSC, performance measurement			

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## LIST OF ABBREVIATIONS

BAT	Best Available Techniques. Reduce environmental impact by using latest technology
BoE	The Brewers of Europe organization
BSC	Balanced Scorecard
CRM	Customer Relationship Management
CSF	Critical Success Factor
EEl	Energy Efficiency Index. A calculation system referred to other operators or competitors benchmarked index
EP2M	Effective Progress and Performance Measurement
ERP	Enterprise Resource Planning system
EVA	Economy Value Added. An estimate of a company's economic profit
EVIRA	Finnish Food Safety Author
FTR	First Time Right. An index of the production performance
HACCP	Hazard Analysis and Critical Control Point
HRM	Human Resource Management
KPI	Key Performance Indicator
PLC	Programmable Logic Control
PPS	Performance Pyramid System. A performance measurement system
SEC	Specific Energy Consumption. A calculation system where energy consumption is compared to production volume
SWOT	An analysis to evaluate business' Strengths, Weaknesses, Opportunities and Threats
TQM	Total Quality Management

## 1 PREFACE

The starting point in this project was to map existing measuring systems and to unify reporting methods at Olvi Plc. There were several useful existing reporting methods that were not unified and needed updating or they were not useful anymore. The project's aim was to create up to date reporting, where indicators were relevant and practical. One key factor was that reporting should be easy and simple, so it would become an everyday tool for Managers, Team Leaders and Supervisors. For that reason actual and direct costing indicators were left out from the study, because they were indirectly pertained to measured matters.

The main target of this thesis was to unify and update reporting and to create a balanced scorecard for Olvi PLC. At the beginning the situation was quite scattered. There were many separate and even unnecessary reporting systems that had lost their relevance during the years. The work started with survey of existing measuring and reporting system. This survey was carried out by interviews, conversations and observation.

The case study began with open interviews and validating the existing report system. Each Department Manager introduced the department's own Key Performance Indicators (KPI) to the writer and suggested if indicator was relevant or if new indicators were needed. Constant measuring is a key factor in constant improvement. This project was only the first step and it will be followed by feedback collected from the end users and continuous reporting tool improvement.

This study has two parts: the first part is focused on Balanced Scorecard and other performance indicator theories. The second part is empirical and it contains designing and the making of the scorecard.

## 2 BALANCED SCORECARD AND OTHER EXAMPLES

Traditional performance measuring is heavily based on accounting and costing. This creates one sided vision of the company's present situation and relies on the past. The Balanced Scorecard (BSC) developers Robert Kaplan and David Norton based the idea of BSC, that immaterial resources, such as motivation, know-how, process performance etc. should also be measured. Also the idea was to create a system that gave more accurate information of the present situation and the future rather than the past.

Kaplan and Norton have used an anecdote that describes the BSC as an airplane dashboard. As a pilot that flies a plane, the management needs multiple indicators to define the present situation and direction of the company. In order to make profitable decisions for the future management should have information if the decisions made were right or if the original direction should be changed. In this sense the BSC is an alarm system which goes off when the company is heading to a wrong direction.

In Finland the BSC system reached its peak in the end of the 90's, but it is still very a widely used measuring and reporting system. Setting up the measuring system, choosing the right indicator and eliminating the unessential meters are crucial in the BSC project. If management chooses indicators or meters that do not correlate with the strategy how could they measure and manage the objectives. It is important to set the initiatives right and to consider the facts such as: Which and where indicators are used? How to ensure that measuring accomplishes better results? How the reporting and maintaining the system is handled? And finally, one very important reminder: There are no measuring systems to set things right if the strategy is not clear.

## 2.1 Key Elements of Balanced Scorecard

### 2.1.1 Vision and Strategy

Vision is a view of a state or situation where the company is supposed to be after a period of time. It is a state that is desirable and possible but cannot be reached by the present way of doing things. A good vision is bound to time; if not, there is a great risk that the vision becomes a hallucination. Vision can be set far away, but then there should be inter targets to be achieved. With inter targets deviations are managed and it is easier to take proactive actions. (Kaplan & Norton 1996b, Olve & al. 1998)

Strategy is a way to achieve vision. In literature there are many different interpretations and definitions to it. This thesis addresses the strategy of the BSC point of view. Companies usually have separate strategies for different operations: Human Resources, Marketing, Research and Development, Information Technology and Production. Not one of these strategies could function by itself as a BSC strategy. Olve & al. (1998) state, that vision and strategy should be unanimous to all operations. This means combining and blending separate strategies into a balanced strategy. To be able to do this executive management has to consider what is best for the whole company, not just one operation or sub-optimization. Furthermore unanimous perspective shows resource deficiencies and enables management to be proactive instead of reactive.

### 2.1.2 Balanced Scorecard perspectives

Kaplan and Norton (1992) designed a performance measurement model that included financial and non-financial measures, and it is based on four different perspectives. The figure below (FIGURE 1.) presents these perspectives.



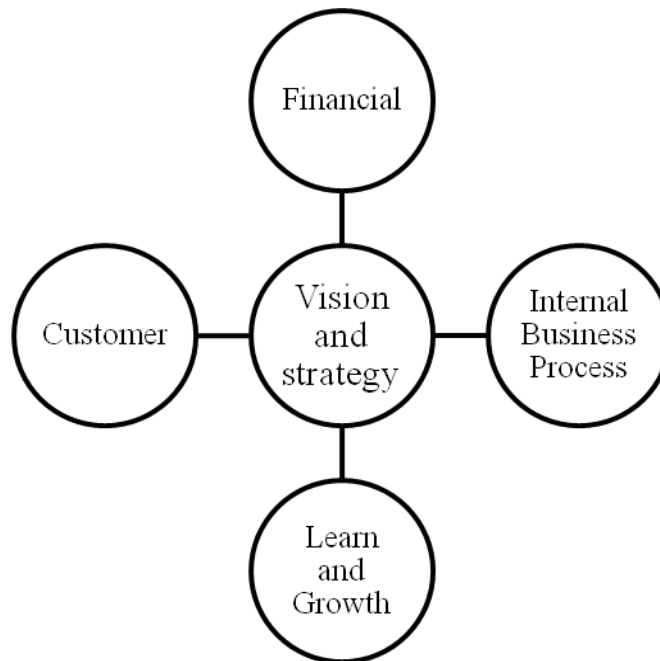


FIGURE 1. Four perspectives of the original Balanced Scorecard (Kaplan, Robert S. & Norton, David P. 1996b)

### **Financial Perspective**

Financial data is one of the keystones regarding all business areas. There is, in many cases, more than enough financial data available. Processing financial data is problematic and time consuming and due to processing the data is already “old” when it is ready. According to Kaplan and Norton financial meters have two roles in BSC. Meters describe how well the strategy succeeded and on the other hand they are used to set the objective for other meters. These objectives vary by the company life cycle. The growth stage, established stage and exit stage:

**Growth stage:** If a company is at its growth stage different sales volume metrics are used to measure the market share and growth.

**Established stage:** various profitability metrics are used. Management is more interested in the company’s ratio comparing profits to the costs of earning those profits than sales volume.

**Exit stage:** At this stage the focus is on cash flow. If the company is for sale the owner naturally is looking for maximum price but if the company is closing out they want to minimize the loss.

### **Internal Business Process Perspective**

These metrics describe the processes that a company must manage well in order to keep owners and customers satisfied. Management should define the key processes for customer satisfaction improvement and define the metrics to measure these processes but most of the times companies choose metrics for operative processes (Malmi & al. 2006, 28)

Internal business metrics are mostly supply chain related. Most manufacturing companies measure for example throughput time, machine time, volume and quality. Depending on strategy these processes could include after sales processes such as integrated customer satisfaction surveys or maintenance services. Innovation processes could be measured by spending and cost in research and development, employees' contribution and motivation or number of patents (Olve & al. 1997, 239).

### **Learn and Growth Perspective**

This perspective defines the future needs for infrastructure to develop in the future. If simplified it could be said that organizational learning and growth becomes from three different sources: people, procedures and system. (Olve & al. 1997, 29) This immaterial capital is divided in three different categories (Kaplan & Norton, 2004b, 201-299) Human capital, information capital and organizational capital.

Human capital consists of employees' know-how, skills and education. Information capital includes company's databases and systems. Organizational capital includes employee commitment, leadership, teamwork and the whole organization culture. Typical indicators for learn and growth perspective are well being surveys and productivity surveys. In addition this perspective should have proactive indicators such as the number or hours of personnel training courses.

### **Customer Perspective**

Typical customer perspective indicator measures are customer satisfaction, market share, customer loyalty, number of customer. These are basic indicators that occur almost in each scorecard and therefore these indicators do not describe company's unique competitive edge. (Kaplan & Norton 1996a, 63-70.) Proactive indicators should in this case describe present situation and future. This could be measured by brand awareness and loyalty. (Olve & al. 1997, 238)

Additional indicator for customer perspective is according to Kaplan and Norton (1996a, 73-85) based on three different attributes: Product and Service Attributes, Customer Relationship and Image and Reputation. The Product and service attribute is related to quality and price. Customer relationship attribute is related to delivering quality and delivery time and it can also be related to buying experience. Image and reputation aspect is also related to buying aspect. Image is as important as good commodity or service quality for a company.

## 2.2 Strategic Management and BSC

Kaplan and Norton (2004) describe Balanced Scorecard as a part of a Strategic Management System where short term activities are bound to long term objectives. The system has four processes:

- Translating the vision
- Communicating and linking
- Business planning
- Feedback and learning

These processes are introduced in the FIGURE 2. Translating the vision is implementing the vision. The keys to effective implementation are: executive support, communication and employee involvement. If executives are not committed, employees will feel misled and fooled. Executives must lead an example and be unanimous with strategy.

Communication should be two way communication, not only information from executives but actual communication between executives, managers and employees. Each management layer should formulate their objectives and then mobilize the information in the next level. To strengthen employees' will to work toward mutual goal scorecard objectives can be linked to a rewarding system. But before rewarding is applied, executives must be sure, that they have set right indicators/measures on the scorecard.

Most organizations have separate units and departments for budgeting and resource allocation and strategic planning. Executive management plans a strategy for next five or ten years and at the same time finance staff is planning investments and targets for next fiscal years. These two operations should be combined so the company can assure that its budgeted levels with the strategy. Intermediate

and final targets for the objectives should be set at this point. (Kaplan & Norton 1996b, 82-84.)

Feedback and learning provide tools for continual improvement. How can an organization improve if feedback is not given? In positive feedback an initial change brings an additional change in same direction. It increases the organizations' desired behavior. In negative feedback the change is in different direction. Negative feedback must always come with argument or reasoning, otherwise the object does not know what went wrong. This process culminates in with immaterial capital. Kaplan and Norton (2004, 203-204) have divided this immaterial capital into three parts; human, informational and organizational capital. All these must be liked and integrated into inner processes and strategy. For example, an organization is investing in personnel education. There are two alternatives Total Quality Management (TQM) and Customer Relationship Management (CRM). Which alternative gives the best result? If a traditional manufacturing company is looking for developing their operative processes they would choose TQM, but if they are a software or consulting company they would benefit from CRM.

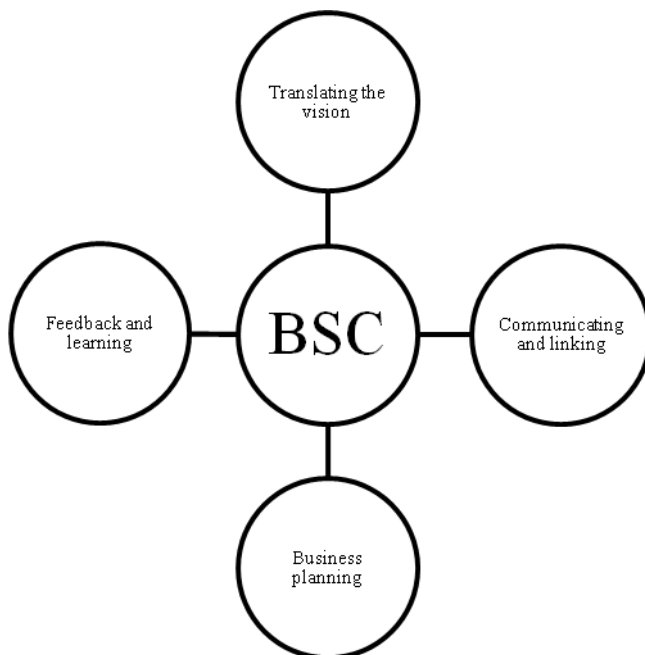


FIGURE 2. Managing strategies: four processes (Kaplan & Norton 1996)

To be successful, strategies must be questioned from time to time. Most companies operate in a dynamic market, which means that the strategy they set ten years ago is no longer valid. Strategy maintenance and updating ensures that the company has the right target.

### 2.3 Criticism

Originally the BSC was created for operational measuring to elevate non financial measuring up to same level as financial measuring. (Malmi & al. 2006, 96.) Kaplan and Norton model is criticized to be made for American corporate culture and therefore it is not suitable for Europe or other continents, although cultural differences should be conquered, because international interaction is growing fast.

Choosing the right indicators and defining them is hard work. If the ground work is done poorly and wrong indicators are chosen the result cannot be valid and reliable and they diminish the functionality of BSC. During BSC developing project the company strategy has a leading role and if the management cannot define the strategy, the BSC has no structure where it can be founded.

Another critic is that the BSC is more focused on management than personnel. If personnel do not adopt the idea their engagement is weak to the project. Personnel will have resistance to change at some point of the BSC project and if the change management is not done properly the BSC is welcomed as the “next new thing” and it will be silently swept under the carpet.

Implementing the Balanced Scorecard is a complex project. Important factors are personnel engagement and appropriate change management. These factors cannot be stressed enough. The Balanced Scorecard is basically used to change people’s behavior; therefore there must be open communication, information and education for a successful BSC project.

### 2.4 Other measuring systems

Balanced scorecard has been applied in many different ways. Different organizations have adapted the original idea to their own purposes. This has evolved different measuring systems: Stakeholders / Constituent scorecards and Key Performance Indicators (KPI) to mention a couple. The first indicator focuses on stakeholder’s owner(s), personnel and customer perspective the problem is that there is no target or object to be achieved. (Malmi & al. 2006, 34) This indicator is

focused on causation; if we have more qualified personnel, we will have better lead time and our delivery reliability is better, therefore our customer is happier and we have better economy value added (EVA).

Key Performance Indicator is the most used indicator. It contains essential indicators for the organization or company. (Malmi & al. 2006, 35.) KPI is more of a lag indicator, it indicates long term trend, but does not predict it. Each BSC perspective has measurable critical success factors and each perspective needs more than one factor to be measured. It is important to limit indicator amount, because if there are too many indicators it is hard for the personnel to focus on key indicators and develop them.

#### 2.4.1 Effective Progress and Performance Measurement

Christopher Adams and Peter Roberts developed a model called Effective Progress and Performance Measurement (EP2M). This model is introduced in FIGURE 3. According to Adams and Roberts the focus should be on:

- Serving customers and markets
  - measuring external (customer) service
- Enhancement of internal processes
  - how to enhance productivity and efficiency
- Strategy and change management
  - change management concretizes strategy and speeds up the changes
- Freedom of actions
  - Freedom adds creativity and commitment

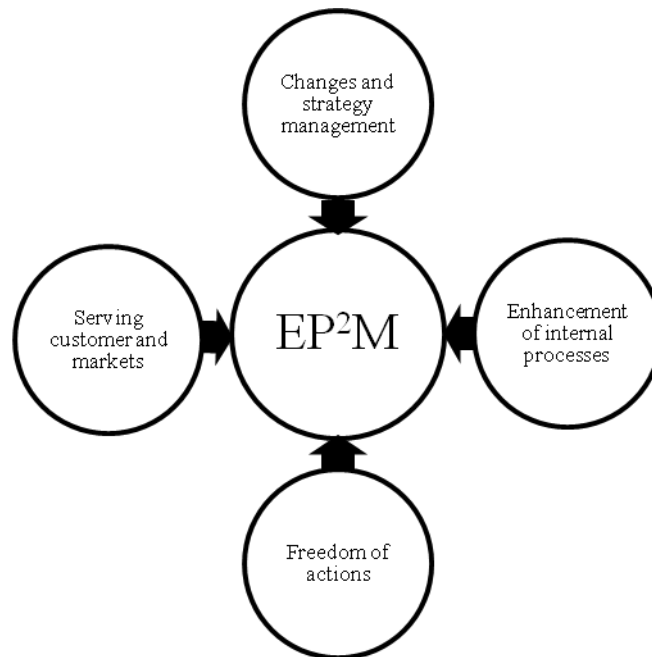


FIGURE 3. Effective Progress and Performance Measurement (Olve & al. 1998)

This model has two consecutive stages: Strategy development and strategy implementation. Strategy development answers the question “What needs to be done?” Strategy implementation answers two questions: “How do we achieve goals?” and “Who will achieve them?” This model considers that only constant factor is change and company culture reinforces this kind of behavior.

#### 2.4.2 Performance Pyramid System

The next figure (FIGURE 4.) presents Performance Pyramid System (PPS) which was developed by McNair, Lynch and Cross in 1990. In this system the basic idea is a customer orientated model, connected to company strategy, and completed by financial indicator with non financial indicator. Efficiency pyramid is based on total quality management, industrial engineering and counting base on actions.

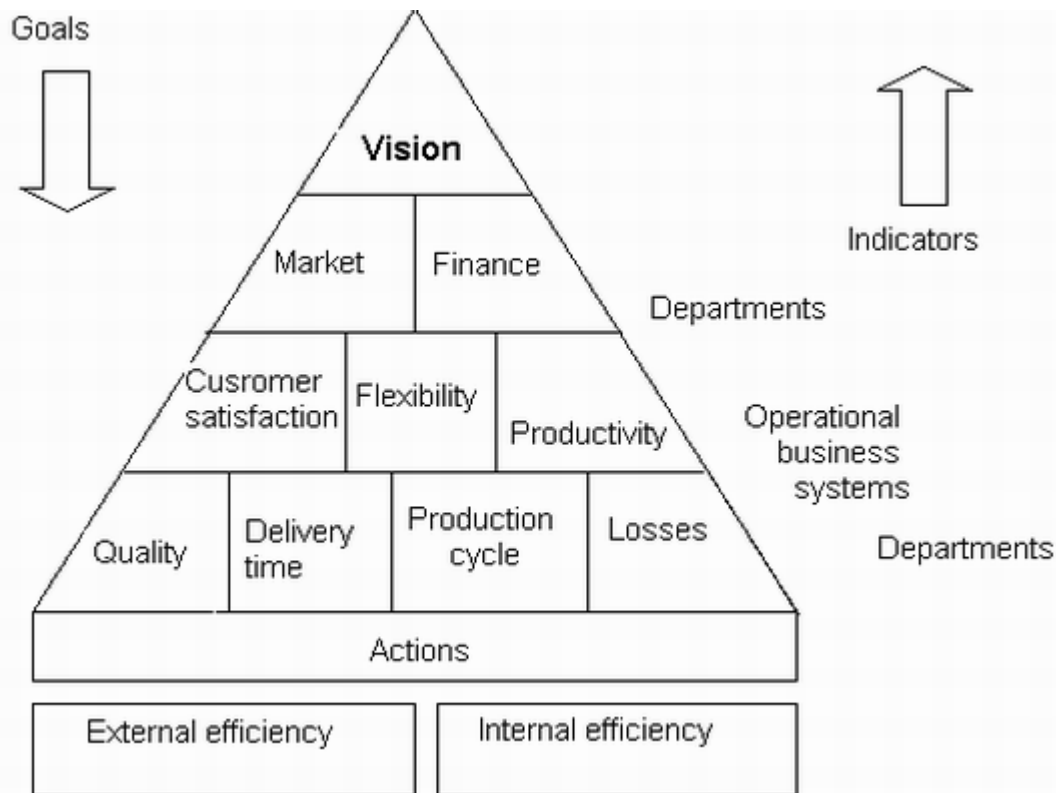


FIGURE 4. Efficiency pyramid Lynch et al. (Olve & al. 1998, 27)

A company is divided into four layers. In the highest layer executives define the vision, in the second layer market and financial targets are set for the business area. The third layer sets targets for lower layer and it functions as link between upper and lower layers. Fourth layer includes operational targets. Measuring occurs more frequently in the fourth layer. In the upper layer measuring is less frequent and it is focused on financial indicators. (Olve & al. 1998, 27-28)

The strength of this model is that it bonds together the business process perspective with the hierarchical view of business performance measurement. It also shows the difference between measures that interest the customer - such as customer satisfaction, quality and delivery and indicators that interest the company such as productivity, cycle time and waste.

## 2.5 Validating the indicators

Each indicator should be validated if it measures the issue it was supposed to measure. For example: Does the quantity of personnel education days correlate to quality? If the personnel knowhow is not utilized comprehensively, there is only a



little or no relevance to measured indicator. The same indicator can measure desired issue or it can be misleading. Besides validity indicator should be reliable.

Measured outcome cannot change depending on measurer or situation if the actual object is constant. For example lead time measuring: if the lead time is calculated from the order, what happens if the customer changes the order afterwards? This could include re-planning the production which can postpone production schedule. Lead time increases and indicator shows decreased deliver quality. Therefore process changes and procedure anomalies should be considered and documented beforehand.

Information availability and costs are subjects to be considered. The access of the measured data should be easy access and require only reasonable amount of processing. Data processing increases the possibility of error and it consumes time and resources. (Malmi & al. 2006, 82-84)

Quality is not the only thing to be considered; also quantity needs to be taken into account. Managing people with thirty several indicators is not possible, no matter how good the indicators are. Less than twenty indicators could be considered as a thumb rule.

Typically non financial indicators are used for measuring operative operations. This perspective gives the people possibilities to have straight and direct effect on the measured issue.

### 3 DESIGNING AND IMPLEMENTING A MEASURING SYSTEM

In the literature there are many different models concerning designing and implementing balanced scorecard. In this project designing scorecard was done in co-operation with executive management and department management, using literature as reference. Malmi & al (2006, 87-117) introduce three different models; Kaplan and Norton model, Olve and Roy model and Wetter and Toivanen model. The first, Kaplan and Norton model, is the original model, the other two models are based on the original model. Olve & al. modified the original model to suite Nordic companies better. Toivanen & al. modified their model in co-operation with Finnish consultants and industrial companies. All models share the same features; the most significant difference is the size of the company the scorecard is planned for. Kaplan and Norton model is for bigger companies and it is designed for American corporate culture.

Company size is relevant in implementing the balanced scorecard. In smaller companies it is reasonable to form a measuring system for the whole company. In bigger companies or group of companies it is better to start with a pilot project in selected department or group of departments. Another key factor in the beginning is people engagement. Engaged people are more likely to implement and develop issues in scorecard project. Effective way to achieve engagement is to inform personnel of the coming issues. Change management becomes a key issue.

This project was carried out according to Toivanen's model (Toivanen & al. 2006, 100-115). This model has ten steps:

1. Clear decision of starting up Balanced Scorecard project

The first thing is to define project resources, advantages and disadvantages. A small company can create scorecard for the whole company at once, but a bigger company should do it gradually by using pilot projects.

The starting point was to simplify separate reporting systems and to create a clear and simple view of the situation and to clarify the company vision and strategy to the operational level.

## 2. Executive management's engagement to the project

Balanced Scorecard can be used as a management tool. It enables executives to implement and monitor strategies. To be effective management cannot focus on financial aspects only. Balanced scorecard makes non-financial aspects more concrete.

The first indication came from executive management. It was their will to improve the current reporting and measuring situation. Also they wanted to have a more clear understanding of the non-financial perspective.

## 3. Clarifying company vision and strategy

Communicating the vision to the department level and simplifying the vision to separate departments. Clarifying this is important to the scorecard project, for it is the only way to keep personnel focused on the desired priorities.

Vision and strategy should be based on the company values and organizational culture features. If not, strategy and vision are minded as disconnected and random.

Executive management wanted to implement vision and strategy to the operational level. Communicating the scorecard project started with general introduction for the personnel and later on department managers have gone through the scorecard each month.

## 4. Defining company's Critical Success Factor (CSF)

Making business SWOT analysis, finding out critical success factors. CSF is the factor which makes the company better than the competitor. SWOT analysis summarizes and crystallizes the success features. SWOT analysis or SWOT matrix is used to evaluate business' Strengths, Weaknesses, Opportunities and Threats.

In this project the SWOT analysis was made already by executives during strategy and vision setting phase.

## 5. Set targets and define indicators

Kaplan and Norton suggest four perspectives, as mentioned chapter 2.1.2 Balanced Scorecard perspectives. It is possible to exclude some perspectives, but then there is a risk that measuring becomes too inconsequential. Economic indicators are comparable and they can be used when comparing separate companies or divisions.

Non-economic indicators are local and they cannot be used in comparison. Many companies have non-economic indicators; customer satisfaction, service quality, utilization rate, loss or waste, turnover.

In this project the focus was on non-economic indicators due to the fact that scorecard is designed for operational level. Because this is a pilot project the basis was to create a working model which can be extended later on.

## 6. Engage organization

The management should ensure the personnel that this project matters. One important mission is to create a monitoring tool, to help achieve common targets. BSC is not supposed to be a control tool.

During this process different organizations and people took part in designing the scorecard. Some of the indicators already existed, and there were already designated reporters for individual indicators.

## 7. Indicator elimination and complement

Most companies have too many indicators in the BSC. Eliminating the essential indicators is desirable. It is better to have too few indicators than too many, because it is easy to add indicators if needed.

This challenge arose in this project also. As mentioned before some measuring already existed and the person in charge of certain indicator considered his/her indicator important.

#### 8. Adapt indicators to organization

Since there are different layers in the organization, there needs to be different indicators for each layer. Some indicators can be the same as in the higher level, but each level should have suitable indicators of its' own.

This scorecard was designed for the operational level, as a pilot project. It includes Brewery, Filling and Warehouse. Each department has its' own individual indicators and then general indicators. The general indicators are for example: safety, hygiene/cleanliness and absence related.

#### 9. Action plan to obtain set targets

Action plan defines the actions that are needed to achieve strategy objectives and what kind of resource is needed. It also defines the timeline the target should be reached. It should also include suggestions how the BSC is linked to everyday routines.

New action plans for the year 2013 were designed according to each department's scorecard indicators. For example each department has in the action plan safety issues: near miss reporting to prevent accidents.

#### 10. Continual improvement of indicators

Commitment can be strengthened by adding feedback and reward to the balanced scorecard. But before adding these features the scorecard must be tested and verified, to have true and solid measurement result.

Information and data can be processed through many incompatible reporting systems. Balanced scorecard could be attached to an Enterprise Resource Planning (ERP) system to produce accurate and up to date information. This can simplify collecting information.

This project was the first step, hence rewarding was excluded at this point. At the early stage the scorecard is used as a feedback and reporting system, later on rewarding could be included.

Information is collected through different reporting systems, but sub projects to change this situation are being planned. One perspective to measure effectivity is to measure machine time using Programmable Logic Control (PLC) system.

## 4 CASE OLVI PLC

The project human resources were production director, three department managers and the author. Also several people who were responsible for reporting in different departments were involved as sources. The work group had an initial meeting in October 2012. This meeting was held to make sure the project had adequate resources and to inform participants of the outcoming project. Other meetings were held during the project on average once a week with individual managers and responsible reporters. There were also informal conversations with managers and employees during this project.

### 4.1 The Company

Olvi Plc is the biggest independent brewery in Finland. It was founded in 1878 by Master Brewer William Gideon Åberg and his wife Onni. The first beer was sold two years later, in 1880. At the time about 78 breweries were operating in Finland and Olvi is the only remaining brewery from that time. Kajaanin Kalja was founded in 1925 and later in 1932 the company's name was changed to Oluttehdas Oiva. Six years later in 1938 Oluttehdas Oiva and Oluttehdas in Iisalmi merged and the company was called simply Oiva. In 1952 the company name was changed again. This time it was called Olvi.

Olvi manufactures soft drinks, fitness drinks, mineral waters, energy drinks, cider, long drink and beer. The parent company Olvi plc and headquarters are located in Iisalmi, Finland and subsidiaries are located in Estonia AS A Le Coq brewery, Latvia A/S Cesu Alus brewery, Lithuania Volfas Engelman brewery and Belarus OAO Lidskoe Pivo brewery.

Estonian Brewery was acquired in 1996 and both Latvian and Lithuanian breweries were acquired in 1999. Belarusian brewery joined in 2008.



FIGURE 5. Olvi Group (Company website, 21.10.2012).

The Olvi Group employs over 2000 people. In the year 2011 Olvi group employed on average 2032 people of which 383 people worked in Finland. (Olvi Corporate Governance Statement, 2011). In 2011 Olvi Plc's turnover was 285, 2 million euro. Domestic turnover was 119, 8 million euros, turnover of the Baltic subsidiaries was in Estonia 76 million euro, Latvia 35, 2 million euro and Lithuania 29, 5 million euro. Belarus turnover was 39, 6 million euro.

Well known beer brands of the company are Olvi and Sandels. FIZZ and Sherwood are Olvi's cider brands. Under license Olvi manufactures other well known brands such as Angry Birds Tropic/Paradise/Space Comet/Lagoon, Hello Kitty Raspberry and HeviSaurus Pear soft drinks.



## 4.2 Organization

This project started as a pilot project. At first the plan was to create a scorecard to Brewery and Filling, but since Logistics had an indirect but strong impact on production via internal logistics, it was included into the project. If simplified, Brewery makes the beer and Filling department cans and packs the beer. Logistics delivers necessary material to the Filling department. It also stores and delivers the final product to the customer. At an early stage of the project it was decided that the next two organizations to be included in the Balanced Scorecard are Maintenance and Procurement, but this will happen after pilot project is ready and working. These two departments are included later on because they also have strong impact on production department. Procurement places the orders for the raw material and accessories. To maintain supply chain flowing, procurement has to operate smoothly. To secure smooth production inventory level cannot rise to the roof or the costs rise too high. Maintenance makes sure that machinery is working flawlessly. To assure this Maintenance cannot only focus on broken equipment, but it must focus on proactive maintenance.

FIGURE 6 shows an organization chart that shows which organization each department belongs to. Earlier on all five organizations (Brewery, Filling, Logistics, Procurement and Maintenance) belonged to production organization and had the same executive manager, but after personnel changes these departments were separated as shown in FIGURE 6. This does not mean that functions have changed also, but it clearly challenges operation. Information flow between departments becomes more challenging and needs special attention.

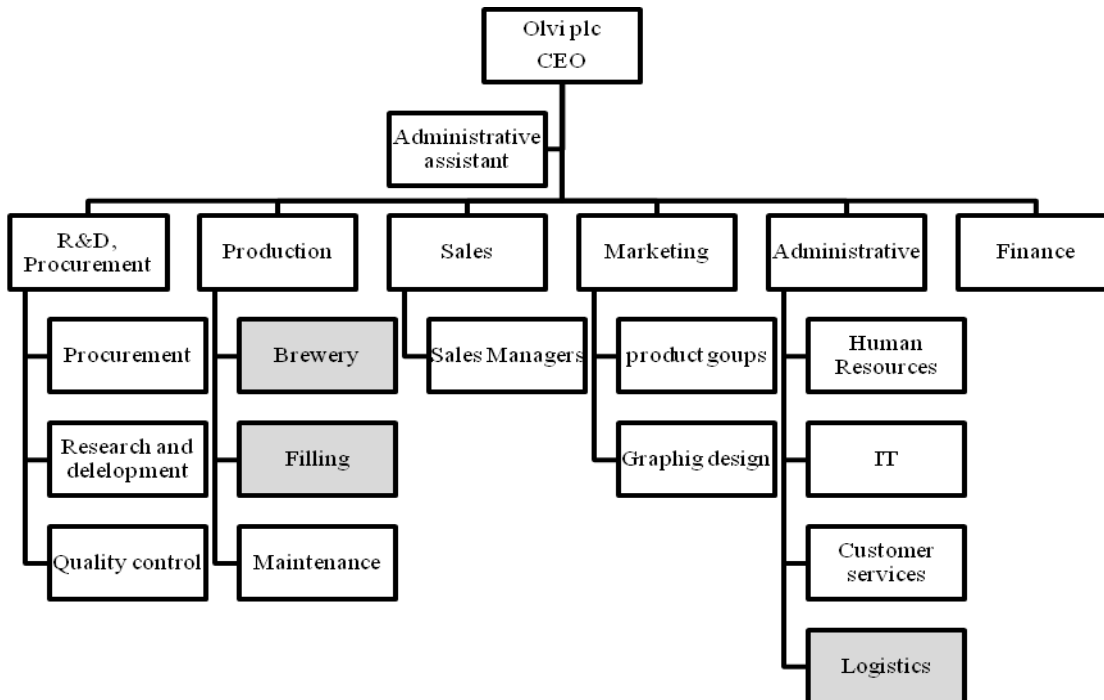


FIGURE 6. Organization chart (Company Intranet, October 2012).

### 4.3 Current situation in the company

Before this thesis project Olvi already had a quality system which illustrated the business model. In this model quality system portrays each process as an independent function. It does not deal with relations between separate functions, it ignores the actual relation. Quality system describes standard of activity in each process for it is designed to assure operation quality. By setting standards to operation quality the object is to assure customer satisfaction and it is easy to detect quality anomalies.

A strategic action plan is set each year as a part of annual planning but executive management has no means for systematic monitoring of nonfinancial indicators. For example a budget is set each year and it is followed each month, but nonfinancial objects such as delivery quality and safety issues are monthly reported, but not systematically monitored.

Each department includes separate teams. Teams have their own scorecards and individual targets and objectives. These objects are monitor on a yearly basis by Team Leaders. Performance reviews are held each year. During these discussions individual targets are set, based on team scorecards, and these targets are

monitored by foremen, but not systematically. In addition a company incentive system is used but it is merely based on financial objectives.

Personnel commitment towards scorecards and objectives varies between departments and teams because of the fact that these objectives are not monitored and they have not become a routine for everyday work. The objectives are set from “above” hence the personnel have no effect on the matter.

#### 4.4 Reasons for change

Communicating strategy can be a great challenge for the company if the strategy is too rough or approximate. In this project Olvi was aiming at enhancing strategic management and evaluation of the future. Before this project strategic management was informal, disjointed and casual, not systematic or homogeneous. The Balanced Scorecard enables separate organization functions to focus on common objectives; to reduce sub-optimization and help management to communicate the strategy better. It can also be used to change organization behavior and culture. For example production is traditionally measured by volume and product quality, but to enhance operations between warehouse and production these indicators are not sufficient. In FIGURE 7 is shown the dependence between production and warehouse. In order to improve warehouse service ability, measuring should focus on production stoppage time deduction. On the other hand, the production department should ensure that warehouse receives quality sales unit from production line, to avoid unnecessary manual repacking at the warehouse, which causes labor resource reorganization and reduced service ability.

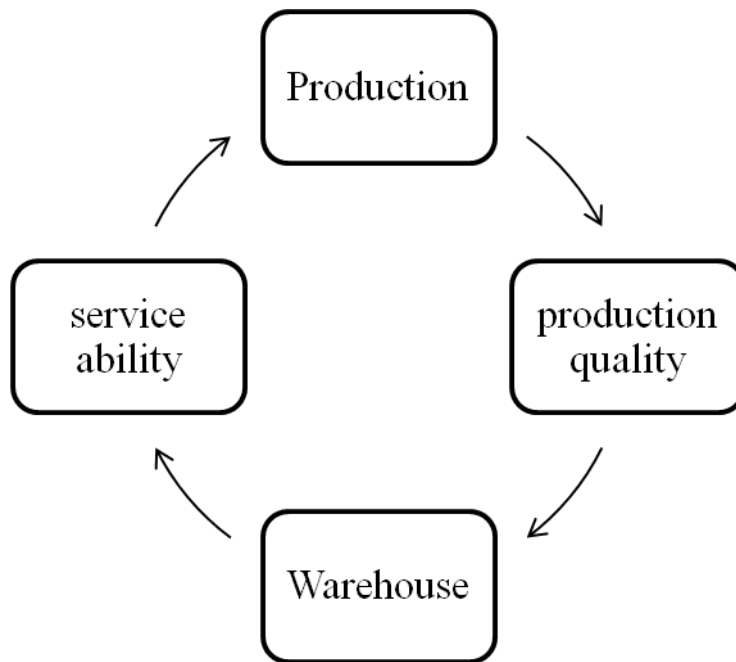


FIGURE 7. Production and warehouse dependence.

#### 4.5 Vision, mission and values

Olvi Group has shared mission and vision. Business strategies are based on similar values in all of the operating countries.

Local flexibility is approved in achieving targets, because the operating environments and competitive situations are different in each operating country. (Company website, referred October 2012)

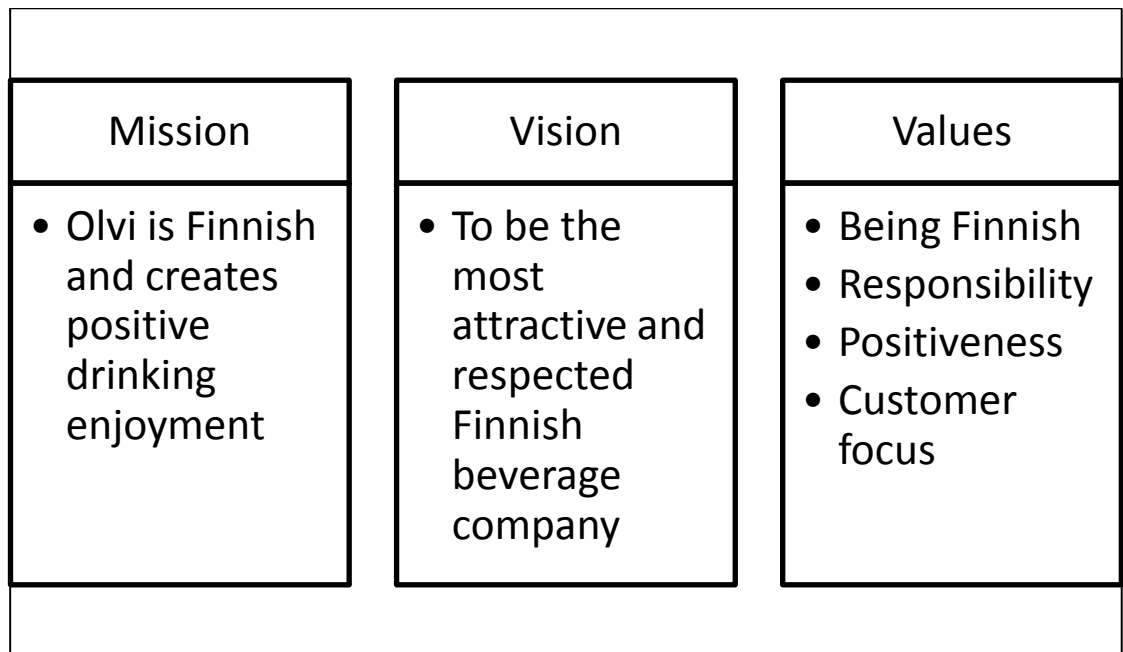


FIGURE 8. Company mission, vision and values

The company vision, mission and values are shown in FIGURE 8. Olvi vision is to develop modern policies actively in co-operation with selected European co-operation partners and Finnish customers. It is continuously reinforcing production knowledge and increasing cost-effectiveness.

Olvi is seeking growth by developing new and innovative products, while focusing on research and development on the changing trends of international consumer habits. Olvi wants to be among the best experts of the Finnish consumer. Olvi offers a Finnish alternative and manufactures products for Finnish consumers.

Olvi values responsibility in operations and expects it from every Olvi Group employee and all business partners.

By focusing on the things that are known the best, the company can make profit and fulfill commitments to personnel, shareholders, society and other interest groups. Efficient, high-quality and environmentally sound operations and a solid economy guarantee the continuity of the business.

Positiveness is Olvi's way of operating and responding to challenges. Positiveness translates company objectives into results and success. Competent and committed personnel are the most important resource for achieving good results.

Every Olvi Group employee has a customer, and the customer's needs are the basis of our existence. Olvi recognizes needs of the customers and guides the operations to fulfill those needs

#### 4.6 Strategy

Olvi has defined strategic action plan for the year 2012. These action plans are considered to be key factors in achieving profitable growth that is the most important strategic objective. These strategic actions are:

To be a versatile beverage company

To be able to achieve this Olvi develops new innovative products for profitable product segments and offers versatile and qualified beverages with competitive prices. Olvi also develops procedures actively in co-operation with clients and partners. The company strengthens top brands and develops determinably product brands.

Productivity and profitable growth

To ensure continuance Olvi operates productively and profitably. This means continuous development and goal orientated growth drives decision making and choices. Olvi is looking for new areas of growth focusing on growing and profitable products, but growing is considered also as controlled internationalization in local market area.

One key area of profitable growth is investing in cost efficiency and environment friendly actions in all operations; therefore Olvi utilizes Olvi Group assets and potentials.

## Valued and developing company

Olvi operates responsibly and treasures the company image. Continuous process development, high class customer service and quality products ensure that Olvi is the most developed and value adding company. Also active development in managing, education and compensation systems ensure personnel well being and know-how and offers safe working environment.

Olvi is aiming at reacting flexibly and fast to operational environment changes. This requires competent personnel and agile supply chain.

## 4.7 Strategy map

Olve & al. (1998) state that strategy map is valuable tool for designing balanced scorecard. Kaplan and Norton state that Strategy map gives employees a clear vision of how their jobs are linked to the organization objectives and enables the personnel to work towards desired goals the same time the final objective. To keep the vision constantly as a goal of strategic planning, it can be placed as the headline of the strategy map.

The strategy map planning starts with selecting the most important perspectives for the company. These four basic perspectives are Financial, Customer, Internal and Learning and Growth perspectives, but sometimes there can be other perspectives such as Networking and Environmental perspectives.

Each perspective should include the most important objectives for the company one to four per each perspective. These objectives are marked as an oval figure on the strategy map under the perspective in question. In addition to each strategic objective success factors and concrete means should be found to be able to achieve set goals. For example customer satisfaction is obtained by delivery reliability and quality products, these success factors are written down under strategic objectives.

## Strategy map

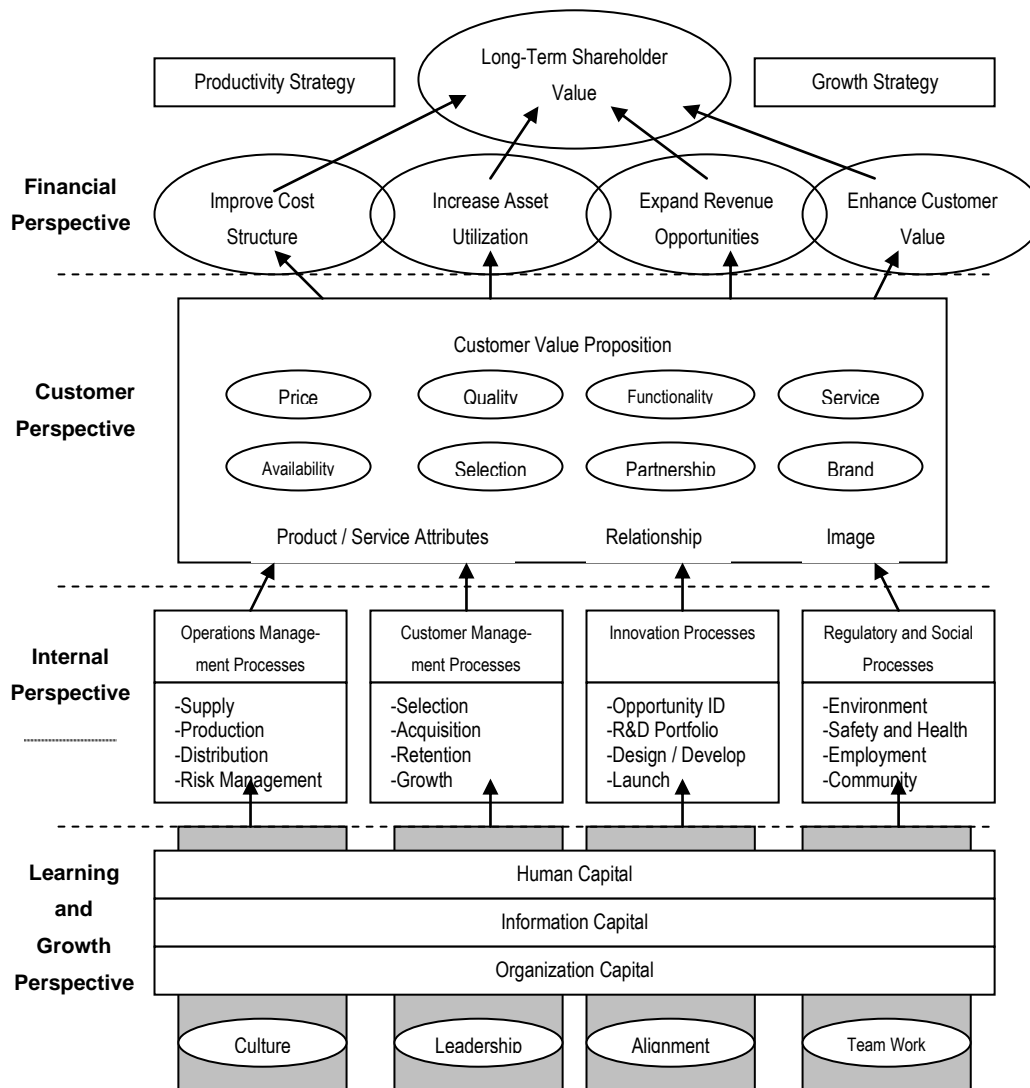


FIGURE 9. Strategy map by Kaplan and Norton 2004b, 33.

In this thesis Strategy map for Olvi is not included, but if simplified it could look like in FIGURE 10.



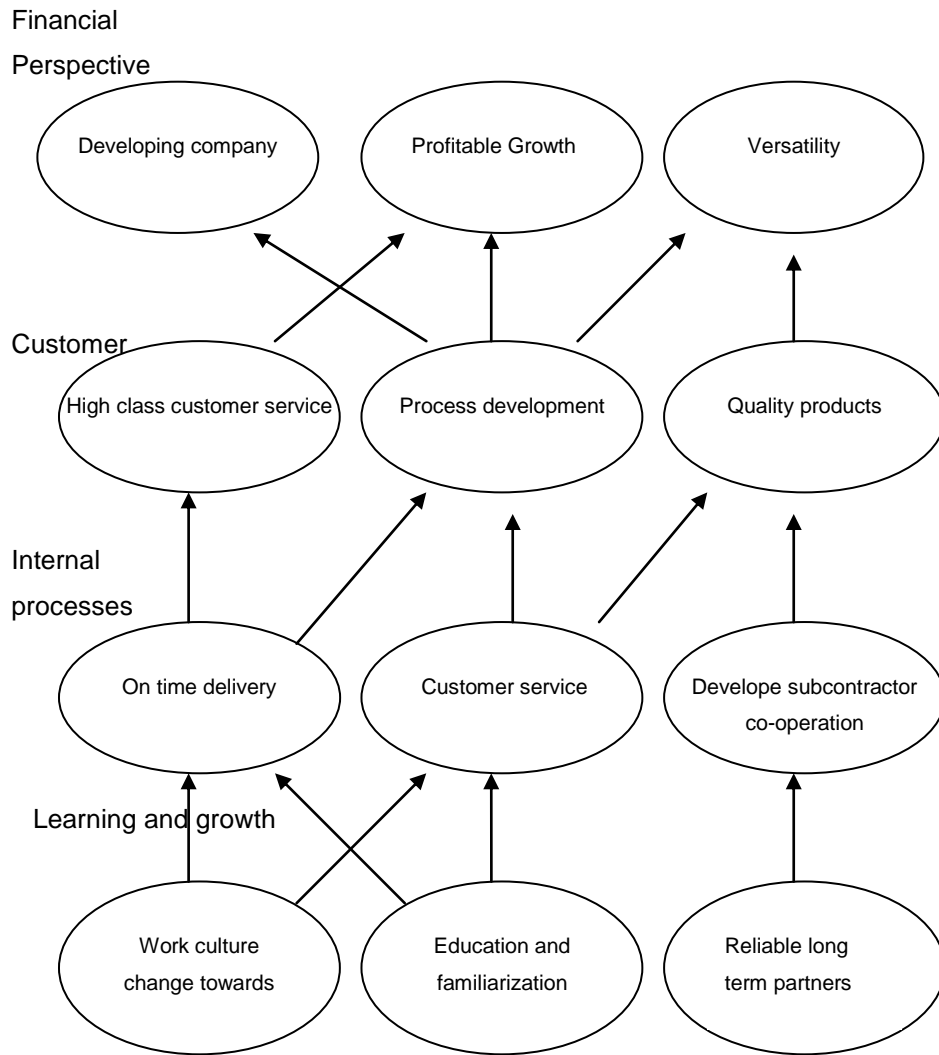


FIGURE 10. Strategy map for Olvi.

## 5 BALANCED SCORECARD FOR OLVI

To be able to use scorecard as a control system the objects should be implicated from vision and strategy. Nowadays BSC is seen more of a strategic control system rather than performance measuring system, which it was originally designed for. In this case BSC perspectives are wellbeing at work, quality, productivity and environment. These perspectives are implemented from company vision, values and strategy.

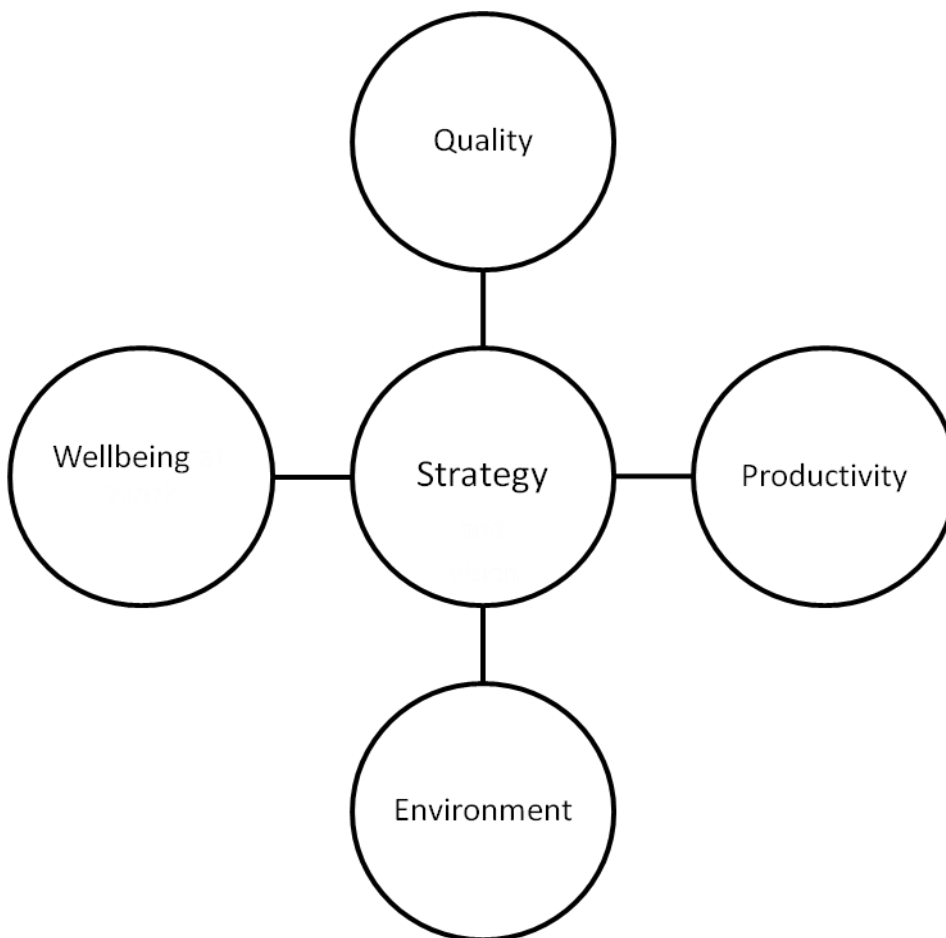


FIGURE 11. Scorecard perspectives for Olvi.

Financial perspective is excluded from this BSC for the reason that this BSC is designed for operational purposes. The project's aim was to create a report card for the managers and personnel, how well did they do in the last period. Financial numbers are accurate and reliable, but they do not necessarily provide the right

kind of information. Does the Average Joe or Jane understand the financial figures or is he/she even interested in them?

## 5.1 Wellbeing at Work

Safe working environment is everyone's right. The employer responsibilities stem from legislation such as Occupational Safety and Health Act No. 738/2002 ([www.finlex.fi](http://www.finlex.fi)):

*“The objectives of this Act are to improve the working environment and working conditions in order to ensure and maintain the working capacity of employees as well as to prevent occupational accidents and diseases and eliminate other hazards from work and the working environment to the physical and mental health, hereinafter referred to as health, of employees.”*

Work safety is a part of the company safety. Other areas of company safety are for example environment safety, information safety, premises safety and personnel. Work safety is carried out by Occupational Safety and Health and Occupational Health Care Act. But well being is more than obeying the law; it is voluntary safety management that concerns every employee.

Absence from work is very good metrics to measure wellbeing at work. In many companies managers have realized that they have an absence problem with a particular member of staff, but because of poor administrative procedures or a lack of management time or some cases tools, the management does not know exactly how much time is actually lost.

One of the company targets is diminishing the accident rate to zero. Accidents and severe accidents are measured as reactive measures and near miss reports and cleanness indexes are proactive.

## 5.2 Quality

To manage operation every organization needs quality control. Quality control is constant maintenance and improvement of performance and processes considering interest groups. This means developing features for products or services that

are according to customer expectations or exceeding them. In addition records, documentation and reporting are important to show the state of quality control, because it is hard to prove quality without documentation.

To improve quality, opinions and behavior must change. Also personnel must understand the basic know-how of quality control. Quality is divided into, Product quality, Product quality and Customer service.

The Hazard Analysis and Critical Control Points (HACCP) system defines critical control points for product or production line. The HACCP system focuses on monitoring product-safety relevant points. These points are certain work or production phases that may contain health risks. These points are also essential in eliminating, preventing or reducing the health risk to the accepted level. This procedure ensures that the product does not have potential health risks and it is safe for the consumer. ([www.evira.fi](http://www.evira.fi))

### 5.3 Productivity

Production is always a process and it is basically measured as a ratio of a volume measure of output to a volume measure of input use. Production efficiency and on the other hand productivity waste elimination have been of interest to the manufacturing industry. Productivity can be measured in many ways, but in this case the focus is on the internal performances.

### 5.4 Environment

Environment perspective is not included in the original balanced scorecard. This perspective can be called for example carbon footprint, green energy or the environmental perspective. In the future competitive advance factor is a environmental sustainability. Consumers and customers are expecting the companies to embrace “greener” values, and sustainable development has become a very important image factor for today’s companies. The environment perspective is handled here in two different ways how much energy and resources are is needed and how much waste is produced.

Olvi has volunteered to Energy Efficiency Agreements in 2009. The aim of this agreement is to achieve nine per cent energy saving by the year 2016. The target is based on the average energy consumption for 2001–2005. Another target is to speed up the deployment of new energy-efficient technology and to increase the use of renewable energy. (<http://www.energiatehokkuussopimukset.fi/en/>)

The Brewers of Europe (BoE) was founded in 1958 and its headquarters based in Brussels. The organization is the voice of the European brewing sector to the European institutions and other international organizations. At the moment members are the national brewers' associations from EU Member States, Norway, Switzerland and Turkey. In Finland we have Federation of the Brewing and Soft Drinks Industry which provides statistics from brewing and soft drinks industry. The next figures show the environment indicators used also in this project and how does the Finnish industry correlate with the European industry. (<http://www.brewersofeurope.org>)

In food industry hygiene has a key role in quality. To maintain good hygiene and quality the production lines must be kept clean. Automated sanitizing systems rinse the filling machines periodically and after production the lines and surroundings are washed thoroughly. Pasteurization process uses a significant amount of water.

There are three different packages in the beverage industry, plastic bottle, aluminum can and glass bottle. Plastic bottle is pressed using heat and compressed air and needs no water during the molding process, the aluminum can is rinsed during production process but the glass bottle is recyclable and therefore it must be washed before use. At Olvi waste water target is less than 2,2 liters / produced (packed) liter when average amount is 2.8 liters and in Europe the average amount is 4,2 liters / produced liter as seen in FIGURE 12. (<http://www.panimoliitto.fi>) referred 2.12.2012.

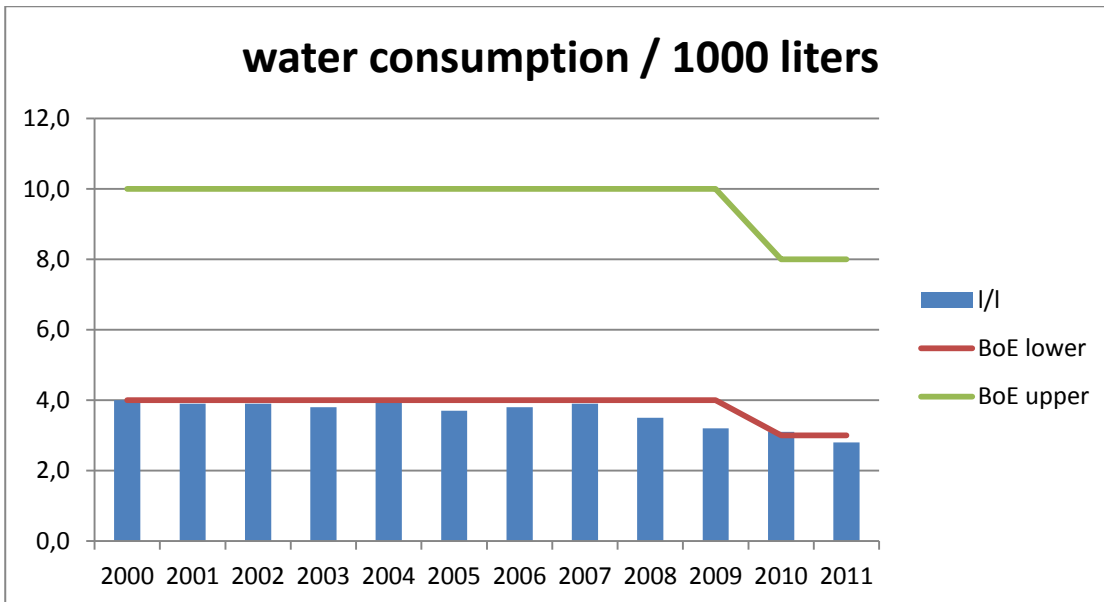


FIGURE 12. Water consumption / produced liters ( www.panimoliitto.fi).

In FIGURE 13 the electricity consumption per produced liters is shown.

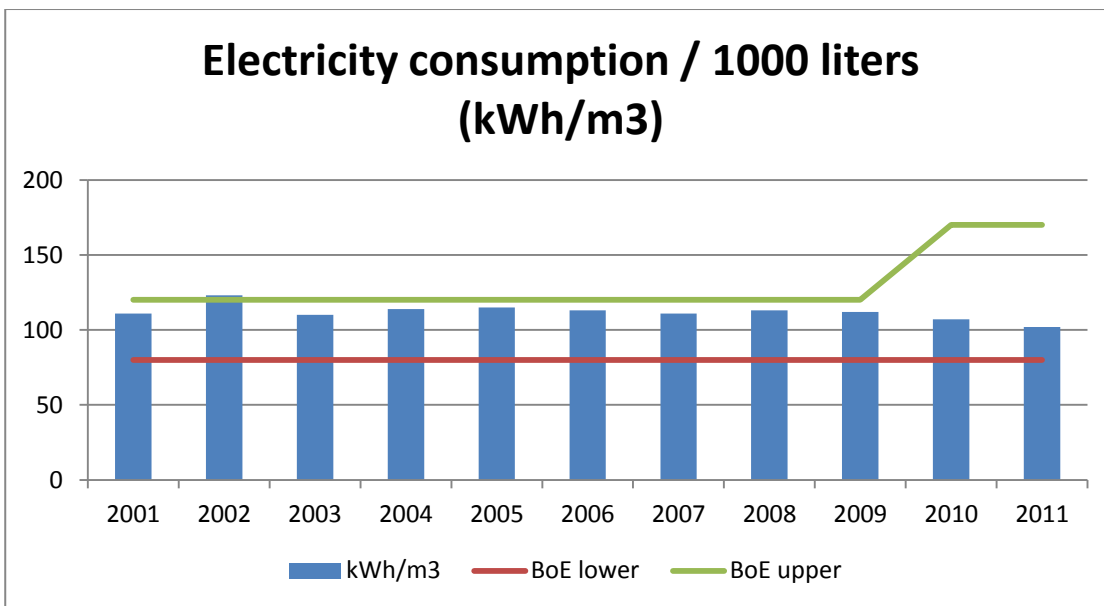


FIGURE 13. Electricity consumption / produced liters (www.panimoliitto.fi).

This calculation system is called Specific Energy Consumption (SEC) where energy consumption is compared to production volume, area, service et cetera. Another way is to use Energy Efficiency Index (EEI), where SEC refers to other operators or competitors indexes within the same business area or the Best Available Techniques (BAT) index or another benchmarked index. (<http://www.motiva.fi>) referred 2.12.2012

Energy prices change according to consumption variation. If the company can predict or control their need of energy the price is cheaper, but if there are unpredictable consumption peaks the price of energy will be higher, therefore steady energy consumption level is more profitable. Target for the year 2012 is 110 KWh / packed 1000 liter.

Recycling waste and by products is environmentally friendly and a cost efficient actions. Landfill waste is the most expensive form of waste and the reporting comes from the waste company therefore it is followed. Personnel are strongly advised on recycling and there are marked areas around the factory that contains waste bins for different materials for example recyclable cardboard, plastic and energy waste. FIGURE 14 presents the landfill waste amount compared to produced liters.

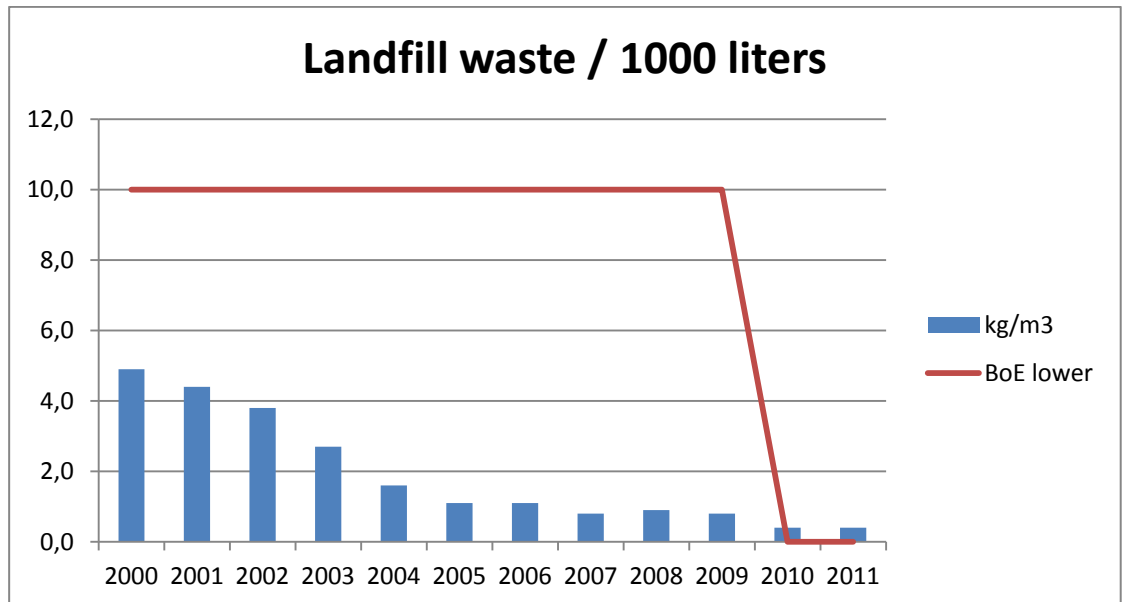


FIGURE 14. Landfill waste / produced liters ([www.panimoliitto.fi](http://www.panimoliitto.fi)).

## 6 ANALYZING

### 6.1 Vision, Strategy and Values

Company vision is the starting point of planning the Scorecard. The vision describes the desirable situation. After defining the vision the next step is to define the means to achieve the vision, defining the strategy. Vision should be realistic but it should also be goal orientated.

Olvi's vision is to create positive drinking enjoyment. The vision is simple but motivating and it is goal orientated, but because it is very general it needs defining and directions. Strategy defines long term plans and solutions for the future in changing situations that are challenging and not easy to predict.

### 6.2 Analyzing the Scorecard

According to Kaplan and Norton, scorecard should guide the personnel to work according to the strategy. Therefore the scorecard should be based on a strategy. This scorecard includes factors from strategy, but the indicators are very common and therefore they do not describe the company's competitive strategy. The scorecard is more effective, if the lower level scorecards include indicators, which are more close to the competitive strategy.

The basic rule is, that the less indicators, the better. The company scorecard includes 29 indicators and the lower level scorecards have fewer indicators. But these 29 indicators include six similar indicators only production line is different. Lower levels scorecards have fewer indicators; Logistic scorecard has 16, Brewery 23 and filling 25 indicators. Each lower level scorecard has three perspectives wellbeing, quality and productivity. Well being is measured in the same way and exactly the same well being indicators are used in every scorecard. The company scorecard has the fourth indicator; environment.

Balance between the measured indicators is a highly important factor regarding scorecard's functionality. The balance can be defined in different ways; balance between financial and nonfinancial indicators, balance between how many indica-



tors each perspective has, balance between long and short term indicators. The company level scorecard is more focused on quality and productivity measuring, but these factors are well implemented from company strategy. The company scorecard has more reactive than proactive indicators. To be future orientated there should be more forward looking indicators.

Company values are Being Finnish, Responsibility, Being Positive and Customer focus. The scorecard is in level with the values; Responsibility as in the environment perspective and being positive as in the personnel well being are specially focused.

### 6.3 Analyzing the indicators

Next the indicators are analyzed by validity, reliability and effectivity. Validity means that does the indicator measure the exact thing it was supposed to measure? For example if the measuring produced “wrong” or irrelevant results, it would be fatal for the BSC.

Is the indicator reliable? Does the environment or the person who is measuring have impact on the result? A reliable indicator provides same results whether the person or measuring environment changes.

Effective indicator answers the question does the people have impact on the measured matter. For example cleanness and order index; the personnel are in charge of the cleanness of the production line, therefore they have an effect on the indicator.

#### 6.3.1 Wellbeing at Work

Healthy and motivated and competent employees are the most important resource in the workplace. Wellbeing at work affects the organization's competitiveness, financial performance and reputation. Wellbeing indicators are introduced in FIGURE15.

<h1>Wellbeing at work</h1>	
<p><b>Absence</b></p> <ul style="list-style-type: none"> <li>• Sick leave %</li> </ul>	<p><b>Safety at Work</b></p> <ul style="list-style-type: none"> <li>• All accidents (number of pieces)</li> <li>• Severe accidents (number of pieces)</li> <li>• Near miss reports (number of pieces)</li> <li>• Lost days (number of pieces)</li> <li>• Cleanness and order index</li> </ul>

FIGURE 15. Wellbeing at work indicators.

*Sick leave %:* This is a valid and reliable indicator, because it shows sick leave absence percentage and an individual person has a direct effect on the matter. This indicator includes all lost sick days and accident related sick leave days. The percentage is calculated each month from Human Resource Management (HRM) system and it is comparable between departments. Before this project there were different practices to calculate sick leave % between separate departments. During the project the calculation was unified.

*Accidents (number of pieces):* All accidents are reported in the feedback system and the information is easily accessible later on. Work related accidents have an effect on wellbeing at work: If the working environment is safe and clean, fewer accidents occur. In this sense this indicator is very useful. Accident prevention is an important aspect of occupational health and safety monitoring work. This indicator includes all accidents with or without sick leave days. Each person has an effect on this matter; therefore it is a valid indicator.

*Severe accidents (number of pieces):* This indicator concerns accidents that cause incapacity for work or death. Since these severe accidents unfortunately happen this indicator is valid in measuring wellbeing at work. Same as in “plain” accident indicator, personnel have high impact on this matter.

*Near miss reports (number of pieces):* Balanced Scorecard needs proactive aspects and near miss report indicator is a valid indicator in this sense. The company's target is zero accidents and this is pursued by setting the current year's target to be half of the previous year's accident amount. Near miss report's target is ten times the previous year's accidents. Near miss reports decrease accident rate, which makes it a valid indicator. It is also very effective for it is directly dependant of personnel activity on the matter.

*Lost days (number of pieces):* Lost days include only "on duty" accident related lost days. It does not include spare time accidents or sick days. It merely indicates the number of days that are lost because of accident at work. This is a valid indicator, same as accident rate; because safe environment creates wellbeing at work and if the environment is safe accidents do not occur.

*Cleanness and order index:* A cleanness inspection is kept at least once a month by the Production Director. Order and cleanness is stressed, due to lack of space, especially during busy season and investment renovations. Personnel attitude has a big impact on cleanness and they are encouraged to be proactive. This indicator is relevant but it is not 100% reliable, because it is based on subjective evaluation and opinions, and the inspection results are negotiable afterwards.

### 6.3.2 Quality

Food safety and quality-related attributes are set a lot of limits. They are often based on national or international legislation. Quality is more than just a laboratory analysis; quality is also process quality as well as customer service quality. In FIGURE 16 it is shown the quality indicators that are chosen for this balanced scorecard.

<h1>Quality</h1>		
<p><b>Hygiene</b></p> <ul style="list-style-type: none"> <li>• Quality number products</li> <li>• Quality number cleanness</li> </ul>	<p><b>Product Quality</b></p> <ul style="list-style-type: none"> <li>• Out of specification, inner limits</li> <li>• Customer claim plastic bottle, glass bottle and aluminum can (number of pieces)</li> <li>• Taste index</li> <li>• Line startup standard %</li> </ul>	<p><b>Customer service</b></p> <ul style="list-style-type: none"> <li>• Reliability of internal delivery chain %</li> <li>• Delivery errors %</li> </ul>

FIGURE 16. Quality indicators.

*Quality number products % and Quality number cleanness %:* these indicators are basically combined results of Hazard Analysis and Critical Control Point (HACCP) analyses. The percentage shows how many First Time Right (FTR) startups the production line had. After washing up the line, before every startup the laboratory takes tests from HACCP points and gives a “go ahead” if tests are clear. This indicator is relevant and reliable. It measures production quality as well as product quality.

*Out of specification, inner limits:* The sensory evaluation of the quality of the appearance, smell and taste of commercial production is not enough. In addition, products must meet the requirements set by the user's external and internal and the quality of the legal requirements. To ensure good quality the product has tighter internal limits during production. This indicator measures how well the process reaches these internal limits. This indicator is reliable and relevant in measuring product quality.

*Customer claim glass bottle / plastic bottle / aluminum can %:* These indicators measure the percentage of claims compared to produced volume. Although it is a reliable indicator in sense that it defines claim occurrence and it measures product quality per se, it is not very valid indicator because it does not indicate the severity of a claim. A claim can be insignificant “one can/bottle broken” or massive “the whole production lot is bad”. This indicator merely states that there is a claim, not the severity of the claim.

*Taste index:* This indicator is in practice sensory evaluation, measuring product quality using senses such as taste, smell and vision. This indicator is based on standard SFS 5495 Food analysis. Sensory evaluation has four different perspectives: appearance, structure, aroma and flavor. The evaluation environment has regulations according to ISO 8589 standard. These regulations ensure that environment has no effect on the evaluation and the environment is stable. The person who is evaluating is always tested, trained and approved. After qualification the person is periodically tested and evaluated to ensure good and reliable test results. The Finnish Food Safety Author (EVIRA) organizes the evaluation education.

*Line start up standard %:* This indicator measures the percentage of startups that are according to production standards. Oxygen, conductivity and brix (the sugar content of an aqueous solution) is measured in every start up. The faster these values are leveled to standard the better for the quality. These quality measures are done by laboratory personnel according to specified quality standards, therefore the indicator is reliable and because it measures production line quality it is also relevant.

*Reliability of internal delivery chain %:* this indicator measures the reliability from production planning to warehouse functions. It measures the sold liters to not picked liters. It does not include delivery errors. For example order quantity is 1000 liters and the warehouse delivers 999 liters the delivery quality percent is 99.9%. These delivery failures are caused by different reasons; the warehouse has run out of the product because of inventory errors, production errors or production planning errors, but in every case the error has occurred because of internal process.

*Delivery errors %:* This indicator is actually a part of the former indicator. One part of delivery reliability is delivery errors, but in this case these errors also include distribution errors i.e. external processes that are operated by subcontractors and internal picking errors (wrong product). This indicator measures better the whole delivery chain starting from warehouse to distributors and it measures the delivery quality from the customer's point of view.

### 6.3.3 Productivity

Productivity is a key issue in business. High productivity means profitability, growth, operational fluency and speed of delivery. A properly designed productivity will also create a good working environment and all its operations will embrace controlled can-do spirit.

<h1>Productivity</h1>	
<p><b>Productivity</b></p> <ul style="list-style-type: none"> <li>• Liters/person (whole factory)</li> <li>• Production line loss %</li> <li>• Warehouse inventory level</li> <li>• Material loss ( can and plastic)</li> </ul>	<p><b>Efficiency (production lines)</b></p> <ul style="list-style-type: none"> <li>• Efficiency L2</li> <li>• Efficiency L3</li> <li>• Efficiency L5</li> <li>• Efficiency L6</li> <li>• Efficiency L8</li> <li>• Efficiency L10</li> </ul>

FIGURE 17. Productivity indicators.

*Liters/person (whole factory):* This indicator describes the efficiency of the whole factory, it includes the personnel in the departments that are not yet included in the Balanced Scorecard. This gives an overall sight to company's situation in terms of productivity. Human Resources calculate every month the personnel quantity and report the numbers to the scorecard. The numbers are comparable later on if all departments are included in the scorecard.

*Production line loss:* In every production start a certain amount of beverage is flown to waste to level the quality and in the end the last remain of tank is also wasted due to quality reasons. The faster the quality is leveled to standard the less production loss there is. Small tanks equal small lot sizes and the beverage loss is greater therefore bigger lot sizes are better, but in a sense of productivity this is not the final truth. To be agile and profitable, the loss indicator is very useful and relevant.

*Warehouse inventory level:* Before this project the average inventory level was calculated only once a month and that was it. This calculation was not reliable because the seasonal change is intensive. Every year the production peak is just before Midsummer and warehouse inventory level is then at the highest point. If the inventory level is calculated at the end of the month, just after the Midsummer the inventory level has dropped down radically and it was not accurate. During this project the inventory level calculation changed so that inventory level is calculated once a week and then the four week average becomes the monthly average. This gives more accurate number of the monthly average.

*Material loss (Can and plastic):* Managing material or resource losses have always been key issues in improving productivity. Material losses are measured as ratio of bought items / produced items and the rest is basically wasted material, damaged or otherwise non marketable. This indicator measures the waste but it does not take a stance on if the damage occurred during transport or manufacturing.

Material purchase and usage are not simultaneous, for example; one month purchase shipment is one million cans, but the usage is 950 000 cans, the 50000 cans is not waste, because during next month the cans will be used during next production. The error occurs also vice versa; last month's inventory was +50000 cans and this month's purchase lot is 950 000, the material loss becomes negative which means that all of the sudden the material appeared from thin air. In this sense this indicator is not valid, reliable or relevant.

The reason that this indicator was taken along was that in the near future, a vision sensor system will be put to use to calculate the material loss during production, but the system needs still some updating before it can be fully used.

*Efficiency, all production lines:* Efficiency indicator measures the personnel resources and working hours put to production. Each production line has predefined efficiency rate set in the ERP system. From every production lot production personnel fill in a production report. This report includes, among other things, starting and ending time, production line failures and stoppage time.

This indicator is not reliable because the outcome depends on reporter and whether he/she remembers to fill in the form correctly. Also the person who enters

the data to ERP system can make presumptions or interpretations and therefore have impact on the matter.

An automated control system, that tracks the machinery operating time, would be more accurate than a manually reported system. It would also provide useful information for maintenance services.

#### 6.3.4 Environment

Understanding environmental legislation and the requirements, it is important for all organizations, the business and the brand can be wounded seriously of involuntary fraud. The goal of raising environmental awareness is the environmental knowledge, values, attitudes and actions of a single assembly. Environmental awareness-raising goal is to get our values and way of life time support sustainable development changes. Business life has also become more aware of the environmental aspect. The environment indicators are introduced in FIGURE 18.

<b>Environment</b>	
<p><b>Water and Energy</b></p> <ul style="list-style-type: none"> <li>• Energy consumption kWh/packed liters</li> <li>• Waste water liters/packed liters</li> </ul>	<p><b>Waste</b></p> <ul style="list-style-type: none"> <li>• Landfill waste/packed liters</li> </ul>

FIGURE 18. Environment indicators.

*Energy consumption / packed liter:* The energy consumption is calculated on monthly basis. The consumption reports come from Energy Company and the produced/packed liters are calculated every month using the same report from the ERP system. During the project I found out that there were three different ways of reporting the produced liters depending on the person and the reporting system



they used. This created differences that were corrected during the project. Produced liters are calculated from filling department's packed liters because packed liters are "profitable" liters. Every person who works at the company, from office clerk to maintenance and production has impact on this energy consumption indicator from switching the lights off to developing the process methods.

*Waste water liter / packed liter:* Waste liter report comes from the water company. The liters include all waste water and the produced liters from the ERP system. This indicator is not very valid and reliable. The waste water liters include rainwater and melted snow from the property area (Finnish term hulevesi) and therefore personnel does not have an effect on this indicator. This indicator would be better if the rainwater was excluded from the measuring.

*Landfill waste kg / packed liters:* landfill waste amounts are reported by waste company. Waste recycling can reduce the landfill waste amount. Metal, plastic and energy waste is recycled. Everyone can take part in the waste recycling from the office to the production. Landfill waste amount is therefore a relevant indicator.

## 7 CONCLUSIONS

The aim of this thesis was to build a Balanced Scorecard for Olvi to clarify the company vision and strategy for the operative organizations. This thesis adapts the company strategy and it is designed for lower level operations. This project unified and clarified existing indicators and some new indicators were set as well. The company's scorecard was the main target for this project, but in the beginning it became clear that sub scorecards were also needed. During the project the sub scorecards were developed, but they are not included in this thesis.

The Kaplan and Norton Balanced Scorecard idea was chosen as a basic element, because the idea is that in the future the BSC will be developed and extended, but the four elements well being, quality, productivity and environment would always be the same.

The company Scorecard is now used as executive management reporting tool, on monthly basis and the sub scorecards are used on the department level also on monthly basis.

In the future, when the scorecard is developed further, the indicators could be chosen to predict the future more, instead of reporting the past. Some of the indicators could be upgraded due to automation development of the production line. In conclusion the company scorecard became very useful and simple tool for reporting and monitoring the company's situation and it translates the company's strategy into operational level very functionally.

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12. Brewers of Europe <http://www.brewersofeurope.org/> Referred November 2012
13. <http://www.hartwall.fi/fi/hartwall/uutiset/2012/panimot-vahensivat-energian-ja-veden-kulutusta> Referred November 2012
14. [www.panimoliitto.fi](http://www.panimoliitto.fi) Referred November 2012

## APPENDIX 1

## BALANCED SCORECARD INDICATORS

<b>Wellbeing at Work</b>	<b>Absence</b>	Sick leave %
	<b>Safety at Work</b>	All accidents (number of pieces)
		Severe accidents (number of pieces)
		Near miss reports (number of pieces)
		Lost days (number of pieces)
		Cleanness and order index
<b>Quality</b>	<b>Hygiene</b>	Quality number products
		Quality number cleanness
	<b>Product quality</b>	Out of specification, inner limits
		Customer claim plastic bottle (number of pieces)
		Customer claim glass (number of pieces)
		Customer claim aluminum can (number of pieces)
		Taste index
		Line startup standard %
	<b>Customer service</b>	Reliability of internal delivery chain %
		Delivery errors %
<b>Productivity</b>	<b>Productivity</b>	liters / person (whole factory)
		Production line loss %
		Warehouse inventory level
		Material loss (can and plastic)
	<b>Efficiency</b>	Efficiency L2
		Efficiency L3
		Efficiency L5
		Efficiency L6
		Efficiency L8
		Efficiency L10
<b>Environment</b>	<b>Water and energy</b>	Energy consumption kWh/packed liters
		Waste water liters / packed liters
	<b>Waste</b>	Landfill waste / packed liters