

BALANCED SCORECARD AND *LEAN* BUSINESS CONCEPT

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Abstract. *Changing modern business environment necessarily triggers the need to constantly search for new business concepts, management modes, and performance measurement systems. In recent decades, lean business concept has been widely applied in companies. This concept focuses on creating value for customers. The value refers to the delivery of products and services with all the characteristics required by customers, just in time, and at the lowest price possible. As the basic task of the company is to satisfy different needs, it is understandable that the company success will depend on the success in satisfying its customers' needs. In this sense, the research subject in this paper is defining a possible system of performance measures in companies that apply lean business concept. The research results show that Balanced Scorecard can be applied in companies that apply the basic lean principles. This is because it primarily takes into account the value delivered to customers, and, based on this value, forms performance measures within the given perspectives. Also, an important aspect of Balanced Scorecard refers to internal processes and learning and growth, which lean concept is particularly concerned with.*

Key words: *Balanced Scorecard, Lean concept, performance measures*

JEL Classification: M41

INTRODUCTION

Modern companies that strive to deliver the required value to customers while searching for perfection apply, among other things, *lean* business concept. *Lean* business concept involves eliminating all forms of waste from business processes so that the customer gets the required value. The goal is to establish a continuous flow of operations without interruption and delay, and reduce operating costs.

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In new business conditions, characterized by the application of basic *lean* business concept principles, designing an efficient performance measurement system is one of the prerequisites for successful business and preserving the competitive advantage. In such business conditions, orientation to financial performance measures only is insufficient to effectively manage the company, so managers must also focus their attention on non-financial performance measures. The number and variety of performance measures depend on the characteristics of the company's business. In this sense, a company should develop its own performance measurement system. Taking into account both financial and non-financial performance measures and the basic principles of *lean* business concept, Balanced Scorecard comes to the fore.

Balanced Scorecard enables translating the company strategy into concrete actions and performance measures through four balanced interrelated perspectives: financial, customer, internal processes, and learning and growth perspective. As such, Balanced Scorecard is suitable for use in both production and service companies.

In this sense, the paper is divided into three parts. The first part points to basic principles of *lean* business concept. The second part explains Balanced Scorecard perspectives, and points to its compatibility with the basic principles of *lean* business concept. Finally, using the example of a telecommunication service provider, key performance measures are introduced, with the application of Balanced Scorecard.

1. *LEAN* BUSINESS CONCEPT

Lean business concept creates business processes that generate greater value for customers, increasing the speed of performance, minimizing waste and balancing the flows of materials, information, and money. It is long, hard and time-consuming work, but the result of its implementation is sure success. To yield long-term effects, changes occurring in a company as a result of *lean* concept application must include organizational structure, business culture, and performance reporting system. This does not mean abandoning the existing organizational structure, business culture, and reporting systems, but their continuous improvement, because organization, culture, and reporting identified indicate advantages, disadvantages, potential business problems, and areas where some of the *lean* techniques and practices need to be applied (Al-Ashaab et al., 2016). *Lean* business concept is not universal and cannot be applied in every company in the same way (Sekerez, 2009). Company managers and employees determine areas in which changes will be introduced.

To secure the benefits of applying *lean* business concept, the following principles must be respected (Womack & Jones, 2003; Olesen et al., 2015):

- Specify value,
- Value Stream,
- Flow,
- Pull system,
- Perfection.

The starting point of *lean* business concept is **value** definition. The value of a product or service is defined by the value end-user. The delivered product or service must satisfy the customer's needs in terms of price, functionality, quality, costs, and the like. Value is created by manufacturers or service providers. Producing value is the reason for the

existence of a company. The company creates value if it reduces internal waste, in terms of non-value-added activities and their associated costs, thereby increasing the total value delivered to customers. Further increase in the value created can be achieved by adding new features to products which customers are interested in, in shorter delivery time and in the scope needed (Hines et al., 2004).

Identifying values in *lean* business concept implies understanding all the activities that are performed in a company to produce a particular product, and optimizing the entire process. Business processes carried out in a company must be considered from the end-customer perspective. Observing the processes in this way helps identify three types of activities in a company. These are: value-added activities, non-value-added activities that cannot be omitted from business processes, and non-value-added activities that can be omitted from business processes (Schiman & Brewton, 2009, p. 10). Establishing a Value stream makes the balance between activities performed and the reasons why they are being performed. **Value stream** means a set of specific activities that are necessary to accomplish three main business tasks of a company. These tasks relate to: solving business problems, information management, and physical transformation (Womack & Jones, 2003, p. 11). Identifying Value stream for each product or family of products requires a lot of effort, but this process removes large amounts of waste in a company. What is important when identifying Value stream is that they can be managed as a whole and used to measure the result achieved. In this way, conditions will be provided in which the company does not compete with competition, but focuses its efforts on achieving perfection by identifying and eliminating activities that are considered excessive. Established value streams in a company relate to the entire business process, not just to individual segments. When determining value streams in a company, Value stream mapping has an important role (Andrade et al., 2016).

Once the value and value streams are identified, it is possible to connect all value-added activities into an **uninterrupted flow**. This implies providing conditions for the uninterrupted flow of information, material, and other resources without delay, continuously, one by one. In this sense, this principle of *lean* business concept aims at eliminating all unnecessary waste on the resource path through the company.

The next principle of *lean* business concept is to bring the product flow in line with customer requirements (**pull system**). There are two well-known systems for harmonizing product flow and customer requirements push and pull system. The application of the *push* system means that more work should be done to fill the warehouse with the finished products (Melton, 2005, p. 666). Unlike the *push* system, the *pull* system requires one-piece processing. *Pull* system focuses on customer demands, and, as such, tends to provide conditions for the acquisition of resources, data, and information and the production of products to start when a signal from the market is received. This implies that production begins when a customer needs a product. The introduction of the *pull* system allows the company to have the appropriate level of inventory to deliver the required value at the time when there is a need for it. In fact, the difference between *push* and *pull* systems is precisely in the signal that initiates supply or production. *Kanban* is used as a convenient signal for production in *lean* business conditions according to *pull* principle.

The last principle of *lean* business concept is **tendency towards perfection**. Advocates of *lean* business concept tend to think that first it is necessary to make the tasks and activities in the company “right” (to perform them in the right way, without interruption and waste), and only then to start optimizing them. It is clear that when the value and Value stream in the company are identified and their uninterrupted process ensured, the process of

lean transformation does not end. This means that the process of reducing effort, time, space, costs, and business errors never ends. When the company wins customers' attention, it wants to retain it indefinitely, anticipating future needs and creating products that will meet their needs, thus building the image of a sensitive company and creating its image on the market as a faster producer of products, better than competitors' (Novićević et al., 2013, p. 151).

Lean business concept presented in this way differs in relation to traditionally accepted business principles. Table 1 gives a comparative overview of traditional and *lean* business concepts.

Table 1 Traditional and *lean* business concept

Traditional concept	<i>Lean</i> concept
Complex processes	Simple and easily detectable processes
Improvements are made on the basis of financial statements	Improvements are made on the basis of process observation
Improvements are made by accelerating value-added activities	Improvements are made by reducing non-value-added activities
<i>Push</i> business system	<i>Pull</i> business system
Serial flows	Flows in the company occur one by one – simultaneously
Control as inspection	Control as prevention
Managers answer questions about process improvement	Managers ask questions to employees to improve processes

Source: Womack. & Jones, 2003; Schimann & Brewton, 2009.

The traditional business concept applied to complex and demanding processes. Complex business processes caused a number of business problems, and control in mass production conditions was greatly hampered. Traditional business concept focused on providing benefits to equity holders. However, such an orientation in terms of applying *lean* business concept is unacceptable. Traditional business concept was designed for mass production conditions and worked in such conditions for many years. However, numerous changes both in and outside the company have led to traditional business concept becoming inadequate for application in a dynamic and highly competitive business environment. Business processes in companies that apply *lean* business concept are documented and easy to see. These business processes are easier to manage and control. When business processes are easy to see, management is considerably easier too. *Lean* business concept shortens lead time, so improving business processes can be done by eliminating non-value-added processes and activities (Womack & Jones, 1994). Such efforts result in *lean* processes, which ensure high-quality products for customers at low prices, just in time and without keeping inventory. *Pull* system replaced serial flows, thus creating the basis for the implementation of controls for the purpose of preventive action, rather than inspection.

Lean concept includes philosophy, culture, and business principles embedded in employee behavior, which ensures elimination of all forms of waste and obstacles in material and information flows, in order to improve business processes and deliver value required by customers. In this sense, *lean* business concept focuses on education and

training of employees, on the one hand, and on providing the highest value for customers, on the other. *Lean* business concept aims to satisfy the needs of customers and achieve the strategic goals of the company through efficient execution of business processes.

Lean concept focuses on daily incremental improvements. The advocates of *lean* concept believe that it is better to improve company operations immediately by 10%, rather than wait for the moment when operations can be improved by 100%. Waiting for the moment when business can be fully improved takes time, while market conditions are ruthlessly changing, so the company can be late with its response to demand and thus lose battle with the competition.

2. BALANCED SCORECARD – A PERFORMANCE MEASUREMENT SYSTEM WITHIN *LEAN* BUSINESS CONCEPT

Balanced Scorecard was first used by Robert Kaplan and David Norton at Harvard Business School in the early nineteen-nineties. The basic idea was to create a new performance measurement system for organizations. Combining financial and non-financial performance measures in one report, Balanced Scorecard enabled managers to get more relevant information about the activities that are performed in the company that they manage. The authors emphasized that managers needed new management tools in conditions in which knowledge and information were power. Balanced Scorecard is based on cause-effect relationship between everyday activities in the business process and strategic goals, to verify whether the company is on the right path to achieve the defined strategy.

The initial goal of Balanced Scorecard was to help managers in implementing a long-term strategy and facilitate company performance management. However, later it became a widely accepted business language in modern business conditions, contributing to better strategy implementation. By setting a system of balanced performance measures, Balanced Scorecard facilitates the implementation of company strategy, provides an effective and efficient system of performance measures, allows for successful communication of managers with employees and external stakeholders, and determines the framework for management activities.

In addition to the above, Balanced Scorecard objectives also include: translating the company strategy into a coherent set of performance measures to control the targeted achievements (Garengo & Biazzo, 2013), providing information to manage the process of value creation, securing long-term and short-term financial and non-financial performance measures, harmonizing company systems and subsystems and providing for the measurement of the impact of organizational structure elements on the overall company operations (Garengo & Biazzo, 2012).

Balanced Scorecard is an understandable framework that contains the following perspectives and tries to answer the following questions (Janjić, 2006):

- a) Financial perspective – how do stakeholders see us?
- b) Customer perspective – how should we appear before customers?
- c) Internal process perspective – what do we need to achieve?
- d) Learning and growth perspective – can we continually improve and create value?

a) Financial perspective of performance measurement defines long-term business goals of the company. This perspective focuses on shareholders, and all other measures

are causally related and result in improved financial indicators. This is because financial indicators such as income growth, cost reduction, productivity growth, risk reduction provide the necessary links that permeate all other perspectives. The main task within this area is to provide return on shareholders' investment (Vasiljevic et al., 2014). In addition to this measure, revenue and profit growth, rise in market share, cash flow and the like can be monitored.

A good information base for measuring improvement within a financial perspective is value stream costing. Value stream costing provides relevant, accurate and understandable cost information that will help managers make business decisions and effectively carry out their activities. The basic characteristics of Value stream costing are that it is (Baggaley & Maskell, 2003, p. 26):

- Focused on Value stream,
- Simple and easy to use,
- Focused on measuring Value stream performance,
- Oriented to eliminate the calculation and allocation of overhead costs, and
- Clear and understandable to all company employees.

The simplicity of Value stream costing arises from the fact that detailed data on actual company costs is not used to calculate costs. Costs are calculated at the Value stream level at the end of each week. Value stream costing is easy, simple, and understandable to most company employees, not just accountants. Data on Value stream costs presented in reports correspond to actual costs incurred in a particular week. Thus, when broken down and presented for a shorter period, costs allow for increasing the quality of financial information from the aspect of timeliness, which leads to faster decision-making (for more on value stream costing see Antić & Novičević (2013).

b) In the past, companies mostly concentrated on their internal potentials, such as product performance and technological innovation. Today, in changed business conditions, they have to shift their focus to external, i.e. customer orientation. It is clear that if a company wants to do business in the long run, it has to create products and services that have value for customers.

The focus of this perspective is on analyzing different types of customers, their level of satisfaction, and processes of distributing products and services to customers. In this regard, the heart of performance measurement within the customer perspective would be (Kaplan & Norton, 1996, p. 67):

- Market share,
- Customer retention
- Customer acquisition,
- Customer satisfaction and
- Customer profitability.

Regardless of how these areas look generic for all company types, they have to be tailored to target groups of customers, which the future company growth and business depend on.

Market share shows how much the company is penetrating the desired market. The company can achieve significant sales growth on the market that it did not designate as the target, without increasing sales on the target market. Thus, measuring the market share with target customers will send financial signals on the strategy necessary for achieving the desired results.

Customer retention along with customer acquisition allows for the discovery of customer needs. Customer satisfaction measurement gives feedback on how well the company works. However, the importance of customer satisfaction should not be overemphasized. In fact, achieving a certain level of satisfaction is not sufficient to achieve a satisfactory level of customer loyalty and profitability. Only when customers determine their purchase as complete and absolutely satisfactory can the company count again on purchase by those customers.

Value for customers is an attribute that companies provide through their products and services, to ensure loyalty and satisfaction in the target market segment. Identifying value for customers is key to understanding the way to achieve satisfaction, retain old and acquire new customers, and achieve market share. Although the value varies from customer to customer in different market segments, certain attributes occur with all customers, classified into attributes of products and services, customer relationships, and image and reputation. Product/service attributes show the functionality of products and services, their price and quality. The image and reputation that the company has with customers allow the company to define its importance for its customers. Customer relationship is a very important category for the success of products and services. It includes the delivery of products to customers, which includes both delivery time and how customers experience purchase.

Through the customer perspective, Balanced Scorecard highlights the value that is delivered to customers, which implies that the product or service has all the required qualities. As value is one of the key principles of *lean* business concept, it is clear that this performance measurement system is suitable for use in a modern business environment.

c) Internal process perspective refers to the identification of critical internal processes that must take place in a company. Critical internal processes enable the company to create value for customers in target market segments and to meet all stakeholder expectations regarding financial results. Measures in this perspective must focus on internal processes that have the greatest impact on customer satisfaction and the achievement of financial goals of companies.

Within this perspective, the company is most often considering the following issues (Novičević et al., 2006):

- How good is the company's business?
- Do the products and services offered meet customer expectations?
- What are the critical processes for achieving both customer and stakeholder satisfaction?
- What activities should a company perform?
- What activities should it retain in the future?
- What are the internal processes that a company needs to improve if it does not achieve its goals?

Performance measures in this perspective can be: production time, quality criteria, time to market, and the like (Pimentel & Major, 2014). In order to successfully achieve defined performance measures within this perspective, companies should apply one of the *lean* business concept techniques – value stream mapping. Value stream mapping is the starting point for the formation of an uninterrupted flow through all the processes in the company. Value stream map represents a picture of all the processes performed in the company, from the supply of raw materials to the delivery of the finished product to customers or the provision of services. Value stream map helps company managers (Rother & Shook, 2003, p. 4):

- Perceive the flow, not just one part of the process,
- See not only losses, but sources of losses in the Value stream,
- Build a generally understandable language about the production process,
- Bring *lean* business concept and techniques in line,
- Provide the basics for building an implementation plan,
- Establish links between flows of information and materials,
- Present a qualitative tool that shows in detail how to organize a business to form a flow, and
- Provide means of communication, business planning and business process management.

Technically, Value stream mapping is nothing but drawing material and information flow with a pen on paper. It involves monitoring product flow from suppliers to customers. At the beginning, Value stream mapping is a very difficult and demanding task. However, once a map of all processes is drawn, i.e. a map of material and information flows, it is easy to see how customer value is created, as well as the places where there are losses and non-value-added activities. It should be taken into consideration that the map represents the flow of the product through the organization rather than the map of the entire organization.

Value stream mapping process takes place in four phases: preparation for mapping, mapping the present state, mapping the future state, and planning and implementation. Value stream mapping involves multidisciplinary teams, which separately show processes that add value and processes that do not add value. The number of processes in the Value stream map depends on the size and complexity of the company. Created in this way, Value stream map guides managers towards necessary process improvement and helps them focus on specific goals. After identifying the Value stream map, *lean* concept techniques are applied to improve the process. These techniques range from those aimed at reducing the set-up to those that reduce space to perform certain processes.

d) The last but not least is learning and growth perspective. It refers to the creation of an infrastructure in which the organization will be able to create value in the long run. This perspective identifies factors necessary for the present and future success of the company.

The main sources of organizational learning and growth are: people, system, and organizational procedures. The other three perspectives of Balanced Scorecard clearly show the big gap between the capabilities of people, systems, and processes, and what is required to achieve the goals. In order to eliminate this gap, companies must invest in employee education, improve the information and technology system, and harmonize procedures and organizational routines. These goals are crucial within the learning and growth perspective.

In order to create a company that operates according to *lean* business principles, it is necessary to create an organization that learns at three levels (Chiarini et al., 2016, p. 67). These levels include the individual level, the function (group) level, and the company level.

Individual learning is considered a starting point for all other learning. This learning is determined by preferences, interests, and abilities of individuals. When establishing a *lean* company, particular attention should be paid to the needs of individuals and their motivation to learn and make progress. In that sense, if an individual sees a *lean* company as the reason to eliminate the need for their work, it will be very difficult to have motivation for further learning. Focusing the company organization on Value stream indicates the existence of redundant workers and effort spent in company processes. For the success of a *lean* company, it is important that employees be fully committed to

Value stream to which they are assigned. Traditional organization of business by departments must be replaced with teams with a clear focus, to ensure smooth flow without limitations and delays.

The next learning level is the group or function level in a company. Employees with relevant knowledge are associated with the corresponding function in the company. However, the functions in the company are much more than a set of knowledge. A request for new knowledge implies a lot of time and effort to get that knowledge. Within functions, training of employees with a lower degree of professional skills is carried out, with a search for new knowledge that will improve business processes. In this way, the learning organization will be created. The focus on establishing a Value stream exceeds the need to organize a company by functions. In this sense, company division into functions must be overcome by the establishment of multifunctional teams that will lead to close cooperation within the company (Womack & Jones, 1994).

Learning at the organization level refers to all those activities that encourage the application of organizational rules, routines, and business policies. In that sense, learning at the organization level refers to the process of institutionalization and the construction of a new organizational structure (Tortorella et al., 2015).

The success in forming a *lean* company will depend directly on the ability of managers to synchronize all levels of learning and the needs of individuals participating in it. Establishing a Value stream is the best way to satisfy all these needs. By forming a *lean* company, it is possible to market products more quickly, increase sales, and develop a more efficient strategy.

Lean company is a flexible and innovative organization. It involves directing all parts of the company into one Value stream to increase productivity, improve quality and operational excellence by eliminating unnecessary resource spending. The organization of business around the Value stream is important because value streams established in a *lean* company represent new business profit centers (Katko, 2014, p. 14). The company requires fundamental changes in business organization to be accessible for all forms of cooperation. Traditional focus on narrow organizational parts and business processes in which knowledge, skills and ideas are jealously guarded must be replaced by a new way of doing business. The basic difference between narrow organizational parts and business processes, on the one hand, and value streams, on the other hand, is precisely in the fact that value streams generate revenue.

3. APPLICATION OF BSC IN TELECOMMUNICATION COMPANIES

Literature abounds in practical examples of the BSC implementation process, generally suited to large companies. Commercial application can be too expensive or too difficult for small and medium businesses, so free and publicly available software is a good way to start developing a performance measurement system in them.

In small and medium-sized businesses, vision and strategy are not always rigorously documented, organizational culture and management culture are different in relation to large companies, it is difficult to retain competent staff with resources seriously limited, and the current status is highly dependent on aspirations, goals, and experiences of owners or managers. Selection and implementation of a competitive strategy is at the heart of entrepreneurs' activities, but strategic management is still a non-conscious process. Most small and medium-sized businesses operate with poor forecasting and

planning systems and are vulnerable to business failures mainly due to poor risk management, inadequate decision-making, and implicit strategic planning.

During 2000 and 2001, the so-called “SAKE” system was established, a publicly funded project in Finland, where three pilot companies took part in designing their performance measurement systems. The goal of the project was to create a simple instrument for measuring performance adequate for small and medium businesses, which will help them build their own system of measures without the assistance of external consultants. The required system characteristics are specified and programmed in the Basic programming language, and up to now over 300 companies have downloaded software from the Internet or purchased a compact disk.

The case study, which will be in focus in the following segments, is based on the ongoing development project in “Telekolmio Oy”, a Finnish medium-sized company in the telecommunications services sector. “Telekolmio Oy” has divided its business into four departments: mobile and information technology, voice systems, data processing, and data security services. The company employs 104 workers and had a turnover of 16,500,000 euros in 2002. Prior to this project, it did not have a developed performance measurement system. Although the development of mobile and internet technology posed high challenges to the company, management accounting was carried out in an old way. The company needed a system that would measure the achievement of operational goals derived from strategic ones, so the first task was to accept a performance measurement system in the data security department, which would serve as a pilot project (Tenhunen et al., 2004).

The process of designing a new performance measurement system, illustrated in Figure 1, begins by defining the existing basic and accompanying processes and activities. An important starting point for designing a new system is to identify the connection between the processes themselves. Key management, sales, material management, production design and marketing staff are in charge of defining and describing the connection between the processes.

The next step is to define the vision and strategic goals of the company. Based on a *vision*, defined as “*to be a market leader in its field*”, the following strategic *values* are identified: *customer trust, team work, entrepreneurial personality, and profitable business*.

When visualizing the company *strategy* and explaining its purpose, determining the type of action or event that will lead to the desired goal, determining the causality between different performance dimensions, and eliminating unnecessary or overlapping performance measures, significant help comes from a success map, which indicates the causal relationships leading to successful business. The essence of the success map is that the quality of processes depends largely on employee skills and innovation, customer satisfaction is conditioned by process quality, and financial performance is a logical consequence of customer satisfaction. “Telekolmio Oy” has formulated and developed *functional strategies*, in order to increase business efficiency of both an organizational data security department, and company as a whole. By developing special skills, i.e. the core of competence in the data security department, managers can increase the competence of the entire company.

Respecting the vision, values, and strategy, *key success factors* have been identified, and grouped into four perspectives: financial perspective, customer perspective, process perspective, and learning and innovation perspective (Nejatian & Zarei, 2013). Consequently, key success factors are related to: *profitable business and focus on core actions, customer interface management and comprehensive customer-related project management, professional telephone line management and continuous improvement, development of interactions, technological knowledge, and innovation*.

In line with strategic values and key success factors, *strategic goals* are set. Long-term goals are determined at company level, and then for each department within the organizational structure. Within the financial perspective, goals of concentration on profitable customers and areas, *profit growth*, and *profitable growth* are defined; customer perspective focuses on goals of *personal customer consulting* and *contracts with key customers*; process perspective focuses on *efficient and high-quality standards*, *efficient project management*, and *networking with local partners*; and learning and innovation perspective involves *focusing on core competences* and *demanding applications*.

For the purpose of achieving strategic goals, working groups are formed and an *action plan* created. The plan determines the global goals of profitability, continuous improvement, and innovation, and consists of *documented management for all major projects*, *employee development planning*, *organization of co-operation between stakeholders*, and *introduction of innovation*.

Finally, the company chooses *dimensions and performance measures*. Finance, customer, internal process, and learning and innovation dimensions have been selected. The first version of the developed system of measures for the pilot department has a total of 13 measures. In the future, it will be interesting to examine whether it is possible to expand the measurement system in the value chain backwards, which will mean networking with subcontractors and their measurement or evaluation in terms of monitoring the impact on the company performance.

The selected balanced package consists of both operational and strategic performance measures, on the basis of which strategic and operational controls are carried out. The system of measures corresponding to a formulated and developed strategy and key success factors includes *profit*, *financing costs*, *return on equity and borrowed capital*, *ratio of timely services*, *market share ratio*, *ratio of sales increase*, *customer satisfaction*, *ratio of profitable activities and high-quality processes*, *inventory turnover ratio*, *staff training time*, and *development of professional skills and core competences*.

An integral part of the project is the development of a performance measurement manual that contains the form for each measure, frequency of measurement, goal value, range and purpose of a particular measure. The manual also contains explanation of the sources of information on measurement and weight factors in the system. In other words, the manual provides detailed information about the designed performance measurement system.

After the completed manual, training sessions covering the business philosophy of the company and the relationship between strategic goals and the necessary activities are carried out. In the context of training, it is a real challenge to acquire complete staff for the implementation of new ways of thinking and everyday activities.

The initial idea is that the performance measurement system needs to be developed, implemented, and tested in the data security department, after which it needs to be extended to other departments at the company level. After the development of the pilot system, the company has decided to build systems for other departments as well as for the company as a whole.

The design of the performance measurement system lasted for about three months. During that time, there was full commitment to its design, development, and implementation, as well as the adequate allocation of necessary resources to the development team. The use of the finished "SAKE" application further accelerated the process. The main causes for postponing system trial run were data availability and the necessity of changing the attitudes of all employees in order to initiate comprehensive measurement.

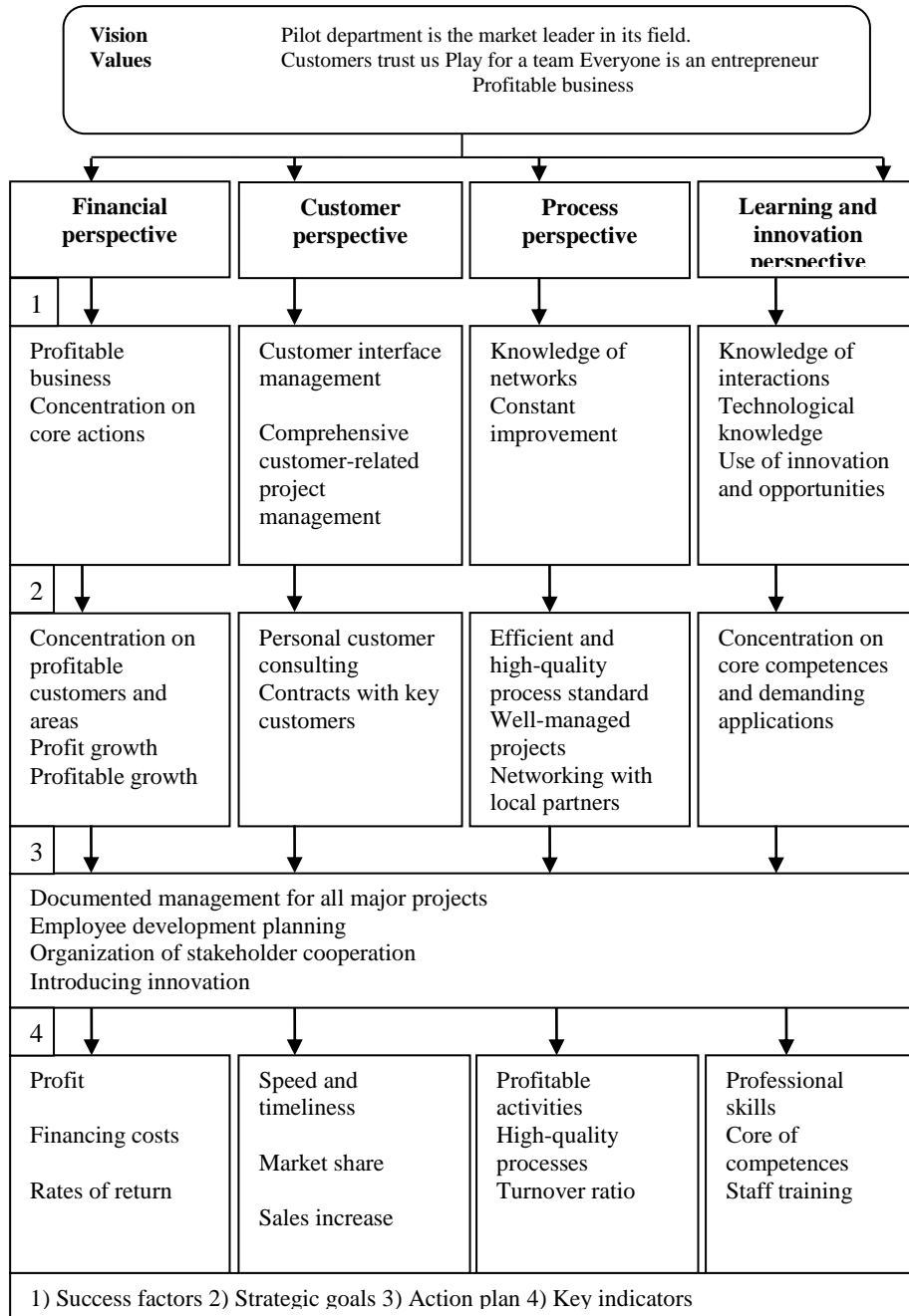


Fig. 1 Target plan of the “Telekolmio Oy” pilot department

Source: Tenhunen et al., 2004

CONCLUSION

Going through several development stages, Balanced Scorecard has become a performance measurement system that translates the company strategy into concrete actions and performance measures through four balanced interrelated perspectives: financial perspective, customer perspective, internal process perspective, and learning and growth perspective. The goal of Balanced Scorecard implementation is to achieve the highest possible functionality and relevance of strategic goals. Each of the Balanced Scorecard perspectives is closely related to *lean* business concept principles, so this system is indispensable for measuring the performance of modern companies.

Emphasizing the importance of shareholders, financial perspective defines long-term goals of the company. In order to obtain adequate data for measuring the financial success of a company, *lean* concept proposes the application of value stream costing. This cost accounting system helps managers clearly identify the information they need to make business decisions and plan further operations. This is because the purpose of value stream costing is to provide simple, clear and timely information.

Identifying value is an essential feature of *lean* business concept. The value is determined by the customer, as the end-user of this value. The value delivered to customers will determine the success of the company itself. External value determination, as a premise of a modern business environment, is also present in the Balanced Scorecard application.

Internal process perspective is closely related to customer satisfaction and the achievement of financial goals. In this sense, *lean* business concept requires the consideration of all business processes, identification of obstacles and shortcomings, and elimination of all unnecessary spending. For these purposes, it is necessary to apply a value stream map. Multidisciplinary teams are involved in Value stream mapping, separately presenting processes that add value and processes that do not add value. Value stream map guides managers towards necessary process improvement and helps them focus on specific goals.

Learning and growth are important aspects in modern companies, and, as such, they are included in the *lean* business concept and Balanced Scorecard. In this sense, it is necessary to create an organization that can permanently produce value for customers, adapting to their different requirements. The success of a company will depend directly on the ability of managers to use their knowledge and skills to bring employees in line with the company goals and to constantly strive for their own improvement.

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BALANCED SCORECARD I LEAN KONCEPT POSLOVANJA

Promene savremenog poslovnog ambijenta nužno izazivaju potrebu da se stalno traga za novim konceptima poslovanja, načinima upravljanja i sistemima mera performansi. Poslednjih decenija veoma aktuelan za primenu u preduzećima jeste lean koncept poslovanja. Ovaj koncept podrazumeva i u prvi plan ističe kreiranje vrednosti za potrošače. Pod vrednošću se podrazumeva isporuka proizvoda i usluga koji poseduju sve zahtevane karakteristike od strane potrošača u što kraćem vremenskom periodu i po što nižoj ceni. Kako je osnovni zadatak preduzeća da zadovolji različite potrebe, razumljivo je što od uspešnosti zadovoljavanja potreba potrošača zavisi i uspešnost samog preduzeća. Rezultati istraživanja pokazuju da se Balanced Scorecard može primeniti u preduzećima koja primenjuju osnovne lean principe. Ovo iz razloga što prvenstveno uvažava vrednost koja se isporučuje potrošačima, a na osnovnu te vrednosti formira i mere performansi u okviru predviđenih perspektiva. Takođe, važan aspekt Balanced Scorecard odnosi se na interne procese i učenje i rast, o čemu lean koncept posebno brine.

Ključne reči: *Balanced Scorecard, Lean koncept, mere performansi*