

BALANCED SCORECARD - SURPASSED METHOD? (A STUDY FOCUSED ON DYNAMIC BALANCED SCORECARD)

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Abstract: *Balanced Scorecard method is with no doubt a modern tool for evaluating and measuring of competitiveness of a company. Aim of this study is to answer a question, whether has BSC method been surpassed? As a source of relevant data were used scientific studies similar to this one which were elaborated in Japan, China and the USA. These studies refer to simple fact - original concept of BSC needs to undertake a dynamization process to keep up with turbulent environment of our world. Other goals of this study are analysis and evaluation of disadvantages of BSC method, possible effect of above mentioned dynamization for individual companies or comparison of implementation processes of BSC and DBSC.*

Keywords: *Balanced Scorecard, Dynamic Balanced Scorecard, Competitiveness, Competitive Advantage Measurement*

1. Introduction

Measurement of competitiveness and competitive advantage has become very important activity for almost every company. Data acquired on output of this process can even affect their strategy. Balanced Scorecard (hereinafter as "BSC") belongs to this group of methods. BSC [5] was created by Robert S. Kaplan and David P. Norton in in 1990's. Novelty of this method was utilization of three new non-financial factors (and one financial factor). Overall there are used four nowadays well known perspectives:

- Financial perspective
- Customers
- Internal Processes
- Learning & Growth

Source: [5]

These perspectives can be further divided into partial goals which are set by individual companies according to their business situation, strategy and needs. Fulfillment of these goals leads to incidence of causal relationships ("action - reaction") between four basic perspectives and gradual activation of the main goal (usually financial character). Long-term goals in BSC are usually set for a time period of 3 - 5 years, short-term goals are mostly set for a time period of one year. This method has been generally acknowledged as an effective tool for management and strategic planning and it has been successfully implemented in many companies around the world. Its greatest benefits can be summed up into several points:

1. effective tool for communication and promotion of vision and strategy of a company,
2. creates clear model with defined key factors of success and relationships among them,
3. gives complex view on partial and main goals fulfillment,
4. simplifies communication and orientation within strategy of a company,
5. helps with data collection.

Source: [5] and self-elaboration

2. Dynamization of BSC

Before the dynamization process can be discussed, certain disadvantages of traditional BSC should be mentioned.

2.1 Weak points of BSC

Every new method dates during time and though BSC is very effective and has many benefits, there were found some disadvantages, which create space for further improvement. From these disadvantages there are three major:

1. causal relationships "action - reaction",
2. effect uncertainty and time delay,
3. quantification of relationships.

Source: [1,2,9]

2.1.1 Causal relationships "action - reaction"

Positive effects achieved by fulfillment of partial goals are conditioned by causal relationships. But determination of real impact of these relationships is almost impossible [9]. According to the principle of bounded rationality by Herbert A. Simon, human intuition is insufficient of confident mental simulation of situation, when there exist more dependent causal events (see BSC strategic map). Further to this aspect, there exist many side effects, which influence causal relationships both ex ante and ex post. Fulfillment of certain goal may lead to whole chain of effects and skillful manager must count with all of them to achieve success.

Employee training	►	Customers +	►	Decrease in quality and speed of services	►	Customers -	►	...
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Illustration 1: Goal: Increase in sales volume (self-elaboration).

2.1.2 Effect uncertainty and time delay

When spoken about effect uncertainty, in question is above all its size. Thanks to modern probability methods, it is relatively possible to assess the effect of individual processes, but it is not possible to identify any crucial information about impact on main goal. Time delay represents other kind of problem, which can create uncertainty. With some processes it is not possible to identify, when exactly will some effect come. It can often happen that expected effect is delayed. This situation can become a serious problem and managers agreed that it should be eliminated. See following Fig.:

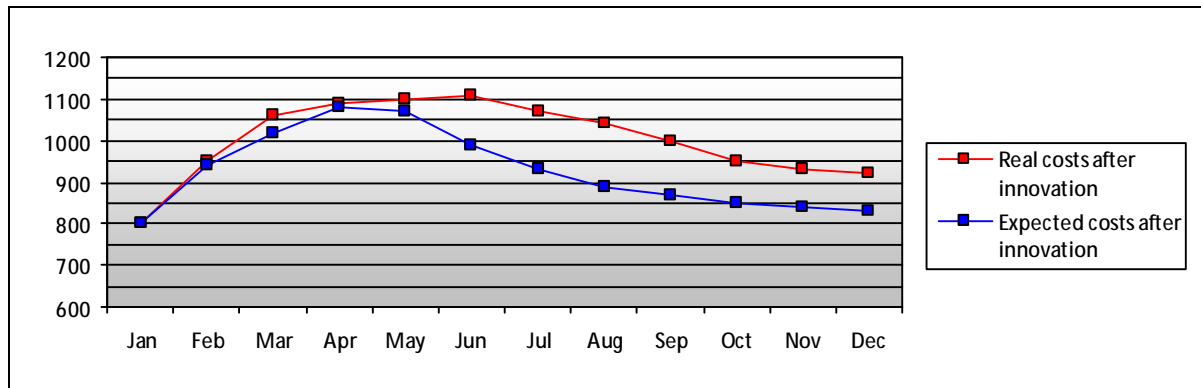


Fig. 1: Difference between managers' expectations and real development (self-elaboration).

In this Fig. we can see that managers of some imaginary company expect significant decrease in overall costs in May, but real development is different. Costs continue to grow till June and this fact can have negative impact on company's competitiveness. It is necessary to say that this disadvantage can be connected with individual experience of managers and configuration of real indicators.

2.1.3 Absence of relationships quantification

Focusing on relationships among individual goals or perspectives can lead to conclusion that they inform only about development trend. Some authors [6] consider this fact deficient and propose that individual relationships should be displayed with as much relevant information as possible. In this manner could be achieved significant minimalization of overall risk within first two disadvantages of BSC.

2.2 Dynamic Balanced Scorecard

According to many authors could disadvantages of BSC concept be exceeded by dynamization process. This process can also help in achieving results which are more precise. Dynamic Balanced Scorecard (hereinafter as "DBSC") should be adapted to every individual company and its parameters. It should be able to answer questions "What if...?", appropriately react according to changing environment and conditions, minimize time delay, offer complex view on strategic map, remain transparent and

easy-handle management tool [10]. Though development of DBSC is still at the very beginning, scientific studies describe first cases and models:

- Ghanghi General hospital (Singapore)
- BSC and System Dynamics
- BSC and Fuzzy Cognitive Maps

2.2.1 Ghanghi General hospital

This hospital in Singapore made its own step towards dynamization of BSC in terms of connection with company's vision and strategy, i.e. to offer better, faster and cheaper services to all patients. From four basic perspectives remained only the first one - financial, other three are replaced by parts of company's business vision:

- Financial perspective
- "Better" perspective
- "Faster" perspective
- "Cheaper" perspective

Source: [9]

Further steps of this organization lead to detailed mapping of flows within the hospital and altering them to match with DBSC method if necessary. This organization used bubble diagrams with gradually elaborative relationships to display whole method graphically. These relationships were marked + or - (according to their influence on main goal). This helped to get more precise results and higher competitiveness of the hospital.

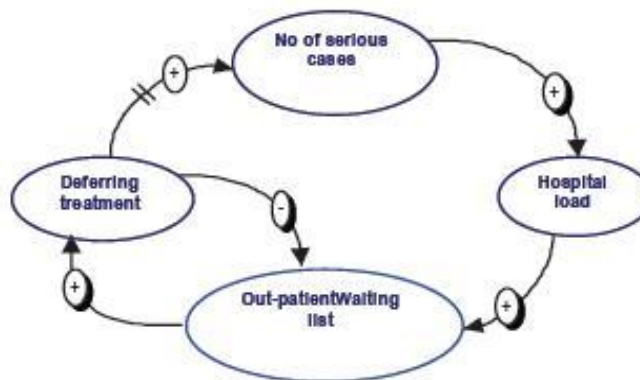


Fig. 1: Bubble diagram used in Ghanghi hospital

Source: [9]

2.2.2 BSC and System Dynamics

Another option of dynamization is according to some authors [10],[7] combination of BSC and System Dynamics method. This method is focused on displaying of individual activities and flows (information and knowledge, resources, finance, etc.) within an organization. Original strategic map is again advanced - it contents side effects and markers + and - which specify, if the effect is positive and negative (see image 3). System Dynamics model then applies effects described in strategic map on flows within organization and offers more precise and complex information (see image 2).

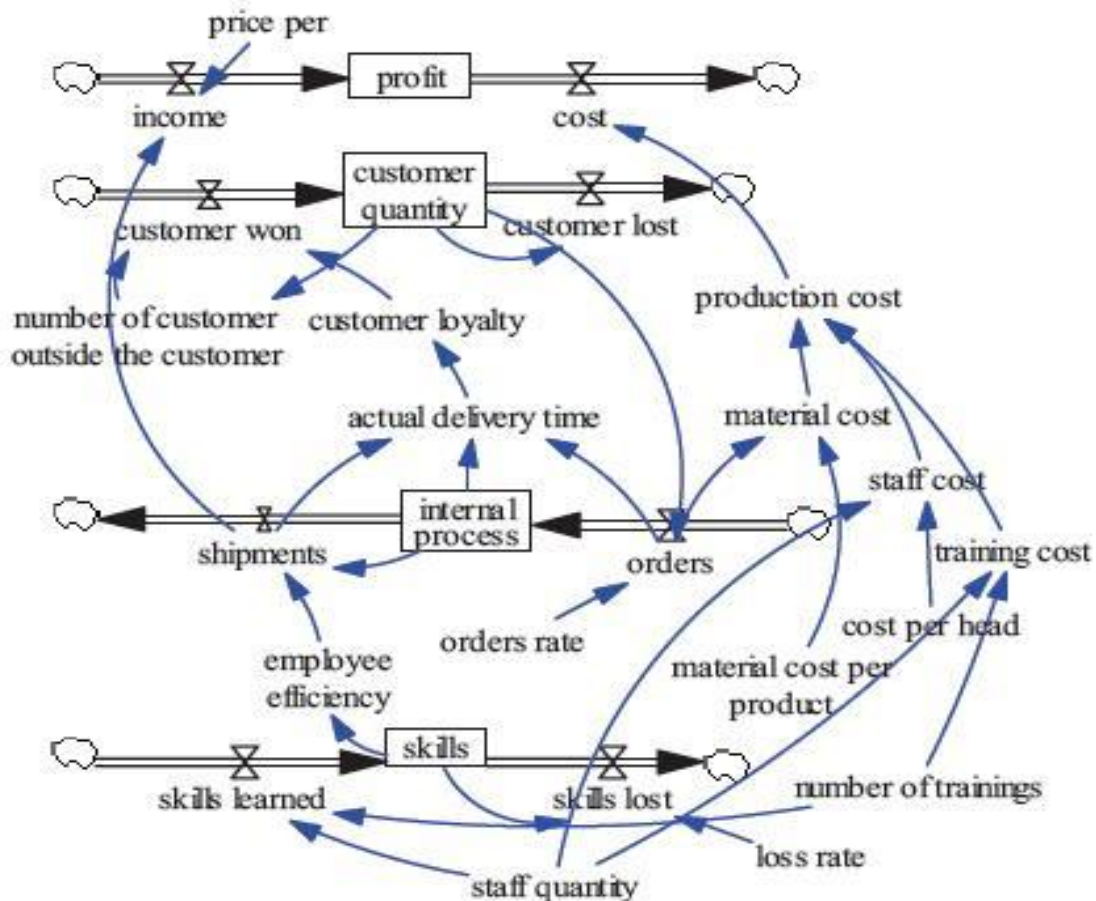


Fig. 2: System Dynamics model

Source: [7]

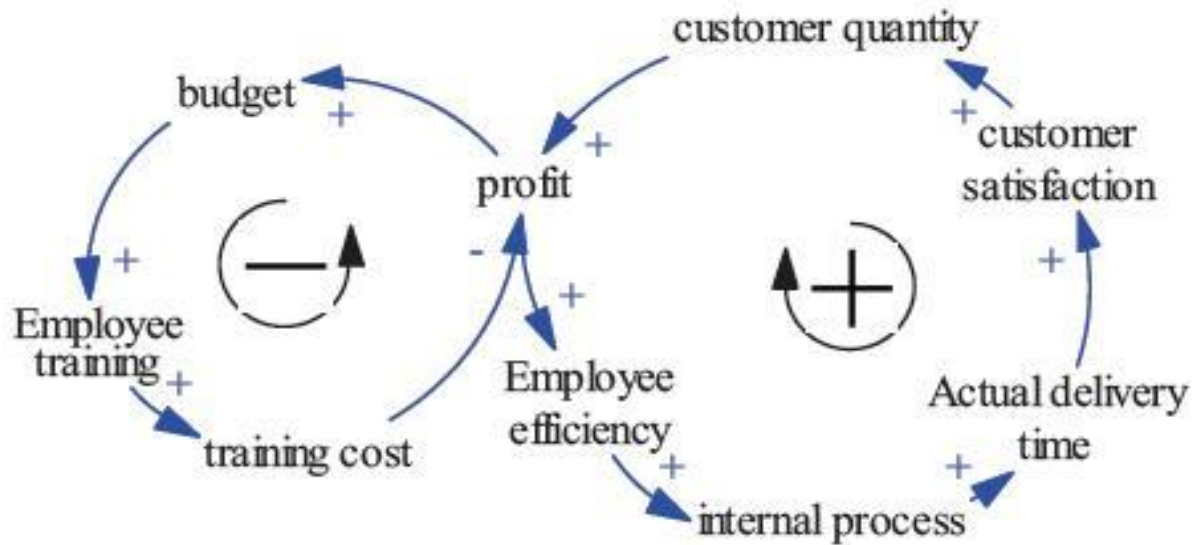


Fig. 3: Influence of individual factors on target goal – profit

Source [7]

Table 1: Entire implementation process of System Dynamics can be divided into 2 stages or 7 steps:

Stage	Content and tasks
1.qualitative	<ul style="list-style-type: none"> - creation of qualitative conceptual model (management) - creation of strategic map - detailed analysis of indicators, possible relationships and effects
2.quantitative	<ul style="list-style-type: none"> - application of causal relationships "action - reaction" into the strategic map - creation of simulation model - continual simulation - model development
Step	Content and tasks
1	Detailed understanding of organization and its processes (vision, structure, relationships, flows of resources, creation of value etc.).
2	Transmission of company's strategic goals into operational goals => indicators setup => transmission to BSC => creation of strategic map.
3	Implementation of causal relationships "action - reaction" into the strategic map.
4	Creation of quantitative model for four basic perspectives of BSC - factors and relationships description.
5	Control of functionality.
6	First simulation and following analysis. Continual development. <i>Does this model match reality? Where are deviations? Is it possible to remove them?</i>
7	Model re-design - for better and more precise results.

Source: [7]

2.2.3 BSC and Fuzzy Cognitive Maps

Dynamization of BSC can be also achieved by usage of mathematical methods [6]. This system of mutually connected key indicators provides information about effects on main goal. It counts with weighted evaluation (W) of individual relationships. Weighted evaluation should be set by some qualified expert after precise analysis and long-term observation - weights can take three possible states: $W > 0$, $W < 0$ a $W = 0$ and values $(-1;1)$.

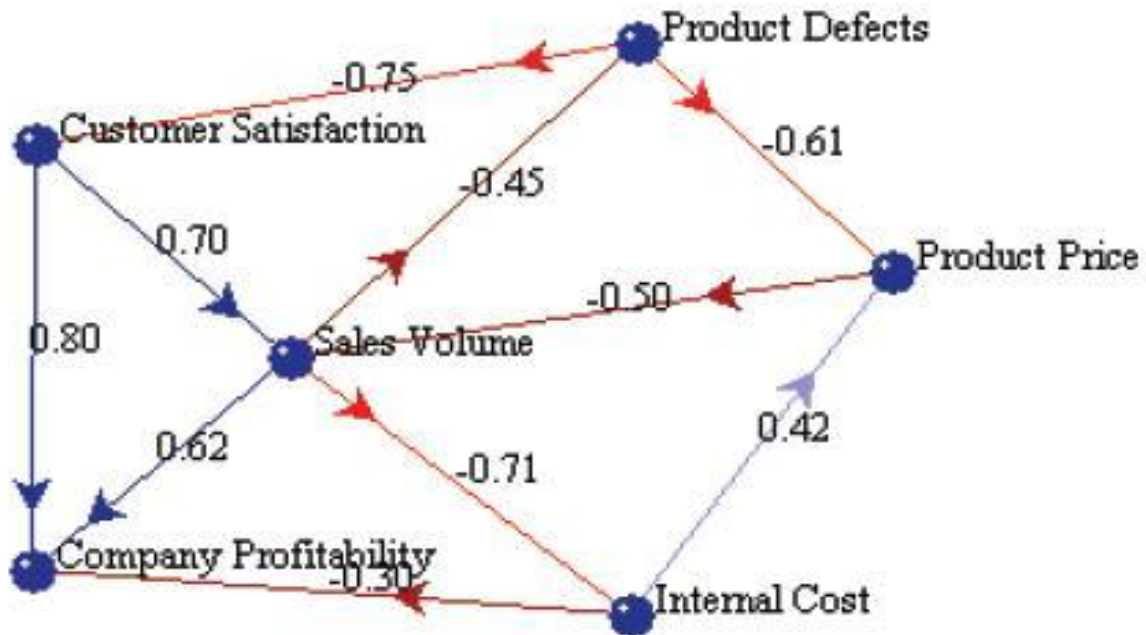


Fig. 4: Application of weighted evaluation of relationships between indicators

Source [6]

Entire process can be divided into several stages:

1. Determination of signs among individual indicators.
2. Determination of weights value (estimation).
3. Model simulation.
4. Model re-design.

Source: [6]

It can be said that main differences between DBSC and original BSC are detailed work with indicators, evaluation of relationships (can be weighted or just marked + / -) and flexibility of entire model.

2.3 Comparison

With knowledge of above mentioned facts it is necessary to continue with a question, if effective measurement of company's competitiveness is not outweighed by

high implementation and operation requirements of DBSC method. Crucial positive and negative aspects of both methods are shown in following table:

Table 2: BSC and DBSC comparison of pros and cons (self-elaboration).

Balanced Scorecard	Dynamic Balanced Scorecard
<i>Positive aspects</i>	
<ul style="list-style-type: none"> - easier implementation - faster application - positive experience - well-known method 	<ul style="list-style-type: none"> - complex conception of indicators and relationships - weighted evaluation - more precise results - flexible to company's vision and strategy
<i>Negative aspects</i>	
<ul style="list-style-type: none"> - causal relationships "action - reaction" - effect uncertainty - time delay - no relationships' quantification - possible mistakes in results 	<ul style="list-style-type: none"> - new method (not tested) - high implementation requirements (knowledge, etc.) - more abstract - correct selection of goals and indicators - correct evaluation of relationships

3. Conclusion

Dynamic Balanced Scorecard is by innovative approaches trying to solve deficiencies of original concept. As basic problems are considered causal relationships "action - reaction", uncertainty of individual effects time delay of individual effects and absence of relationships quantification. It is necessary to say that significant advantages and positives, DBSC still belongs to group of methods which are quite new and need to be tested in use. High implementation requirements, company's resources and time advise DBSC above all for large companies, where benefits achieved by its usage outweigh high costs and initiatory problems. For small and medium companies, BSC is still the very best choice.

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