

Dorota Jelonek

Częstochowa University of Technology, Częstochowa, Poland
e-mail: jelonek@zim.pcz.czyst.pl

**STRATEGY MAPS AS A TOOL FOR BUSINESS-IT
STRATEGIC ALIGNMENT**

Abstract: The aim of the paper is the presentation of strategy maps as a tool which can be used in the alignment of business strategy and the IT strategy in the enterprise. The effect of the literature studies is the presentation of the classical BSC card elaborated by Kaplan and Norton and its several modifications taking into account additional perspectives which are worth consideration in the creation of maps of strategy depending on the specificity of the enterprise. Presented examples of maps of business strategy and IT strategy can be an inspiration for particular acts of the alignment of business and IT strategy undertaken by enterprises.

Keywords: business strategy, IT strategy, strategic alignment, strategy maps.

1. Introduction

Aligning IT strategy and business strategy is still one of the top issues which business executives and CIOs try to resolve. As modern corporations have to operate in increasingly dynamic and turbulent environments, strategy formulation needs to be forward-looking and change-orientated [Hamel, Prahalad 1994]. Organizations need to be not only responsive to changes within their current operating environments but also predictive of such changes, in order to identify and capture future opportunity share. The problem of business-IT alignment most often is considered with the strategic alignment model (SAM) by Henderson and Venkatraman [1993] and models for measurement of maturity of strategic alignment [Luftman 2000]. The good supplement of the mentioned models can be maps of strategy proposed by Kaplan and Norton [1996b]. Strategy maps are derived from the Balanced Scorecard. Using the four established perspectives as a starting point, the strategy map shows the cause and effect linkages between the four perspectives. The aim of the paper is the presentation of strategy maps as a tool which can be used in the alignment of business strategy and the IT strategy in an enterprise. Strategy maps are one way to shore up communication about business strategy and IT strategy with a visual representation, they describe how the organization creates value, and help to align business strategy and IT strategy.

2. IT strategy

Information technology (IT) plays a significant strategic role within organizations [Henderson, Venkatraman 1993]. Considerations of strategic importance of IT in an organization can be made from two standpoints: first of them is a strategic approach and planning, the other is a strategic application of IT. Strategic approach and planning of the role of IT in enterprises should make managers realize the importance of information to management of enterprises, with particular focus on information about changes that occur in business environment. Strategic application of IT means implementation of solutions which directly impact on getting a competitive edge in the market by the enterprise. This is possible through application of new technologies and those solutions which will facilitate functioning of the selected areas of enterprise's activities so that the enterprise strengthens its market positions and improves its performance.

An IT strategy that considers technology a mere support tool for delivery of business processes is no longer sustainable. IT strategy and architecture must reinforce IT as a key enabler for business growth – closely aligning with your business strategy. Certainly, the IT strategy may be perceived as one of many functional strategies in the enterprise as it is presented in Figure 1. IT strategy as a functional strategy has to be aligned with the strategies of the other functions departments.

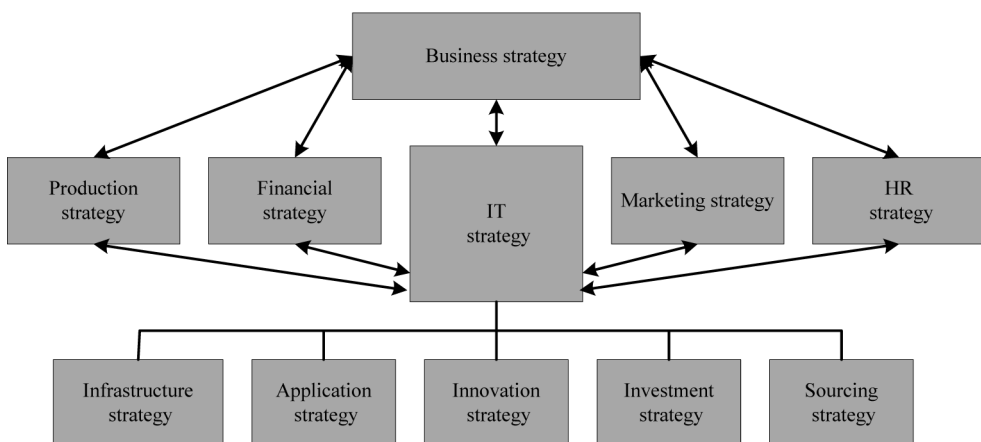


Figure 1. Alignment of IT strategy with business strategy and with other functional strategies

IT strategy defines vision, mission and objectives of the implemented solutions of information technologies in relation to the strategic goals of an enterprise, method of implementation and it identifies the resources and IT services necessary to create the value for the enterprise. In particular, IT strategy should concern:

- technological infrastructure (equipment, web solutions, operating systems, databases, mobile technologies, etc.),
- application and information technology systems used during execution of business, information and decision processes,
- IT innovation strategy (propagation of utilization of new technologies, e.g., Internet and mobile technologies),
- investment strategy,
- development of knowledge and competence among employees in IT departments,
- protection of integrity and safety of information resources,
- striving for integration.

Initiatives connected with implementation and utilization of IT are implemented within longer time and should result directly from the developed IT strategy for the given enterprise. Great benefits from application of this approach include widespread knowledge of the plans of further development of IT, definition of the list of priority projects and the order of implementation of each solution, demonstrating usefulness of the proposed solutions, e.g., in the area of knowledge management, which is increasingly more important to managers. Formulation of IT strategies is a perfect opportunity for managers from different divisions and levels to talk with IT division managers and share information about the course of business processes or new information needs. Cooperation of managers from different divisions with employees from IT departments and consultation of the plans of IT infrastructure development are also of great importance.

One of the goals of IT strategies should be to properly select employees with specific skills (competence) and ensuring that employees have opportunities to improve their skills, e.g. through participation in trainings.

Peppard, Ward and Daniel [2007] identified the list of principles realizing benefits from IT. They emphasized, among other things, that IT has no inherent value. Just having technology does not confer any benefits or create value; benefits arise when IT enables people do things differently; only business managers and users can release business benefits.

3. Alignment of IT strategy with business strategy

As explained by Henderson and Venkatraman [1993], it is important that information technology can be aligned with business strategy. They indicated that to realize a successful strategic alignment of IT with the business strategy, organizations should address components such as business strategy, IT strategy, organizational infrastructure and technological infrastructure. These authors distinguish in Strategic Alignment Model two levels: strategic fit and functional integration. Strategic fit is the external relationship concerned with the harmonization of business strategy choices (e.g. business scope, partnerships, alliances) and strategic choices concerning

IS/IT deployment. Functional integration is the corresponding internal relationship concerned with organizational infrastructure and processes and IS/IT infrastructure and processes [Henderson, Venkatraman 1993]. Besides instructions showing how to use this model in practice, it is still more conceptual solution than practical one (see more: [Jelonek 2009; Orzechowski 2008]).

Definition of alignment presented by Luftman [2000] describes business-IT alignment as applying IT in an appropriate and timely way in harmony with business strategies, goals and needs. The same study contains also the operational definition of business-IT alignment is the actual implementation of the following processes:

- set the goals and establish a team,
- understand the business-IT linkage,
- analyze and prioritize gaps,
- specify the actions (project management),
- choose and evaluate success criteria,
- sustain alignment.

Presented by J.N. Luftman [1996] Strategic Alignment Maturity Model (SAMM) enables in a practical way measurement of business-IT alignment. The author defines six areas of strategic alignment: governance, value measurements, partnership, communications, skills, scope, and architecture. The measurement of the business-IT alignment relies on the estimation of the degree of the maturity of processes in every of distinguished areas according to the established scale. In practice this model demands of course certain modifications depending on the specificity of the business activity of every enterprise.

The other approach in the pursuit to achievement of the business-IT strategic alignment can be the usage of maps of the strategy by R.S. Kaplan and D.P. Norton [1996b]. Building of the map of the strategy forces the enterprise to the clear formulation and the presentation of strategy, it permits to fit investments into people, into informational technologies and, e.g., the organizational capital so that attain the best results. This is the very important advantage of these tools, especially in the context of findings of the consulting firm Renaissance Solutions. In a survey conducted by Renaissance Solutions in association with Robert S. Kaplan of the Harvard Business School, it was found that less than 60% of senior managers and less than 10% of the total personnel believed that they had a clear understanding of their company's strategy. In addition, less than 30% of the senior managers who understood their company's strategy believed that it had been effectively implemented [Edwards 2001, p. 6]. The findings of this study raise a series of key issues for major organizations that need to be addressed. These can be summarized as follows [Edwards 2001, p. 6]:

1. A clear strategic vision is not enough. It requires communication with the entire organization and needs to be understood by everyone within the organization.

2. When a strategic vision is in place, it typically has little or no impact on the operating goals of departments and individuals. It must be tied to the goals and

objectives of the individuals and departments concerned. There needs to be goal congruence in the entire organization.

3. Day-to-day decisions ignore the strategic plan. The plan must be broken down into objectives and initiatives that have a direct relevance to the day-to-day activities of personnel. The task at hand is the task in the hand – it gets the attention.

4. Companies fail to collect the right information to monitor progress toward their strategic goals. It requires the right data and input to provide effective measurement of objectives. Data must become information in order to be effective.

5. Companies do not identify their mistakes or learn from them. If an objective is not attained, the reason for the failure must be clearly understood, and initiatives must be taken to modify the objective or change the approach. Negative results do not always initiate change.

The Balanced Scorecard and strategy maps are a management approach that addresses these precise issues of business strategy and IT strategy. The differing roles of balanced scorecard and strategy maps are shown in Figure 2.

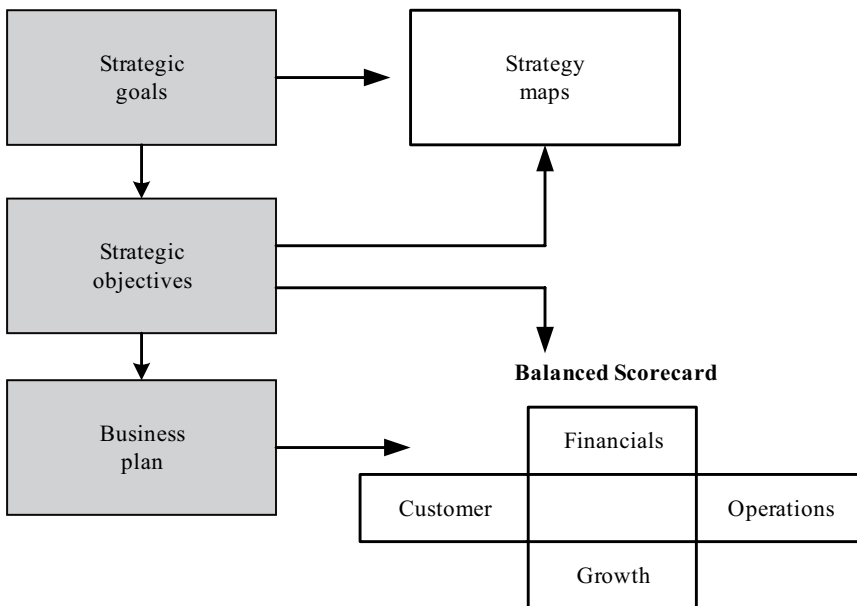


Figure 2. The differing roles of planning tools

Source: own study based on [Andersen et al. 2000].

The Balanced Scorecard is primarily a mechanism for strategy implementation, not for strategy formulation [Kaplan, Norton 1996a, p. 78]. Good tools for strategy formulation are strategy maps.

4. Balanced Scorecard

The Balanced Scorecard (BSC) is a performance measurement framework developed by R.S. Kaplan and D.P. Norton in the early 1990s. The BSC promotes the use of various measures to monitor the progress of strategy implementation. The main advantage of the Balanced Scorecard is the usage of multiple financial and non-financial measures which can be classified into four perspectives: financial, customer, internal business processes, and learning and growth.

The financial perspective monitors the traditional monetary measures which are familiar to most people. These include measures such as revenue growth and mix, cost reduction/productivity gains and utilization of assets and strategic investment. The issue of revenue growth and mix is concentrated on developing new sources of revenue and profitability. The issue of cost reduction/productivity gains seeks the efficient execution of operational activities, reducing costs of products and services, sharing common resources with other units of the business. The issue of utilization of assets and strategic investment intends to reduce the levels of capital investment required to support given volume and mix in the business unit [Shimizu et al. 2006, p. 145].

The customer perspective looks at an organization through the eyes of its customers. There is a series of generic measures such as service levels, customer satisfaction, customer retention, conquering new customers, customer profitability, and market share in the target segments, which could be useful.

The internal perspective reports on the efficiency of internal processes and procedures. Kaplan and Norton identify four levels of process of interest for this perspective [Kaplan, Norton 1992]:

- building business by innovating in products and services and by entering new markets and client segments,
- deepening the relationship with existing clients,
- obtaining operational excellence through management of supply, cost, quality and cycle time,
- utilization of assets and management capacity.

The learning and growth perspective deals with employee issues. This perspective identifies the infrastructure which the company needs to build to create learning and growth in the long term. Indicators here might contain items such as intellectual assets, market innovation, and skills development.

A balance of measures across these four perspectives is what gives the BSC its name. In order to achieve the alignment among the four perspectives, each of them should be integrated with other perspectives.

By checking the measures within each of these four categories and by controlling the balance between all four, management is able to follow the strategy implementation process also for building long-term competitive capabilities. The balanced scorecard can be used to [Wyatt-Haines 2007, p. 125]:

- to improve understanding of cause and effect to improved management decision and action,
- to align operational activities with strategic priorities,
- to prioritize strategic initiatives,
- to facilitate two-way communication of strategy and strategic issues across large organizations,
- to focus management agenda more on future strategic issues than on historic financial issues.

5. IT balanced scorecard

The IT balanced scorecard is an instrument to control the implementation of the IT strategy [Wintersteiger 2007]. It enables to transfer the IT strategy into operational control parameters [Baschin 2001]. Four perspectives suggested by Kaplan and Norton are not necessarily mandatory. Within literature, there is no consistent approach how to structure the IT balanced scorecard into perspectives. Other modifications of IT balanced scorecards are also known (Table 1).

Table 1. Approaches for IT balanced scorecards

Perspectives	Author/Authors
Financial perspective Customer perspective Internal business process perspective Learning and growth	[Kaplan, Norton 1996b]
Financial perspective Customer perspective Process perspective Personnel perspective Innovation perspective Supplier perspective	[Kütz 2003]
Corporate contribution Customer orientation Operational excellence Future orientation	[Saul 2000]
Customer information perspective Financial perspective Security perspective Internal processes perspective Future readiness perspective	[Kasper 2007]

We can consider Balanced Scorecard as a framework, a measurement system, a communication system and a process for improvement. BSC is a framework

Table 2. Validated Lists of Business Goals and IT Goals

Business Goals	IT Goals
<p>Financial Perspective</p> <ul style="list-style-type: none"> - Manage (IT-related) business risks. - Provide a good return on investment of (IT-enabled) business investments. - Improve financial transparency. - Comply with external laws and regulations. 	<p>IT Value Perspective</p> <ul style="list-style-type: none"> - Offer transparency and understanding of IT cost, benefits and risks. - Provide IT compliance with laws and regulations. - Account for and protect all IT assets. - Drive commitment and support of executive management. - Improve IT's cost-efficiency. - Align the IT strategy to the business strategy.
<p>Customer Perspective</p> <ul style="list-style-type: none"> - Improve customer orientation and service. - Establish service continuity and availability. - Offer competitive products and services. - Achieve cost optimization of service delivery. - Create agility in responding to changing business requirements. - Obtain reliable and useful information for strategic decision-making. 	<p>User Orientation Perspective</p> <ul style="list-style-type: none"> - Make sure that IT services are reliable and secure. - Provide service offerings and service levels in line with business requirements. - Translate business functional and control requirements in effective and efficient automated solutions. - Accomplish proper use of applications, information and technology solutions.
<p>Internal Perspective</p> <ul style="list-style-type: none"> - Improve and maintain business process functionality. - Improve and maintain operational and staff productivity. - Enable and manage business change. - Comply with internal policies. - Optimise business process costs. 	<p>Operational Excellence Perspective</p> <ul style="list-style-type: none"> - Maintain the security (confidentiality, integrity and availability) of information and processing infrastructure. - Deliver projects on time and on budget, meeting quality standards. - Optimize the IT infrastructure, resources and capabilities. - Provide IT agility (in response to changing business needs). - Seamlessly integrate IT solutions into business processes.
<p>Learning and Growth Perspective</p> <ul style="list-style-type: none"> - Acquire, develop and maintain skilled and motivated people. - Identify, enable and manage product and business innovation. 	<p>Future Orientation Perspective</p> <ul style="list-style-type: none"> - Acquire, develop and maintain IT skills that respond to the IT strategy. - Acquire knowledge and expertise in emerging technologies for business innovation and optimisation. - Ensure that IT demonstrates continuous improvement and readiness for future change.

Source: [Van Grembergen et al. 2007].

for translating vision into strategy by asking and answering the following main questions:

- If we succeed, how will we look to our shareholders? (financial perspective).
- To achieve our vision, how must we look to our customers? (customer perspective).
- To satisfy our customers' value proposition, what must we excel at? (process perspective).
- If we are to succeed, what must we do to learn and improve? (growth perspective).

A Strategy Map highlights that delivering the right performance in the one perspective can only be achieved by delivering the objectives in the other perspectives. For example [*What Is a Balanced...* 2010]:

- The objectives in the learning and growth perspective (e.g. developing the right competencies) underpin the objectives in the internal process perspective (e.g. delivering high quality business processes).
- The objectives in the internal process perspective (e.g. delivering high quality business processes) underpin the objectives in the customer perspectives (e.g. gaining market share and repeat business).
- Delivering the customer objectives should then lead to the achievement of the financial objectives in the financial perspective.

Strategy maps show what an organizations wants to accomplish (financial and customer objectives) and how it plans to accomplish it (internal process and learning and growth objectives). It allows organizations to create a truly integrated set of strategic objectives.

In the settlement of strategic business aims and strategic IT aims, helpful can be findings by Van Grembergen and others [2007] who formulated the list of business and IT goals, categorised by their corresponding balance scorecard perspective (see Table 2). In practice, companies will need to formulate and develop their own lists of business and IT goals corresponding to the company's specificity.

6. IT strategy map

The core of the guideline consists of a six-step methodology to assist leaders, managers and accountants to build robust strategy maps. The six steps are:

1. Determining the overriding objective.
2. Determining the dominant value proposition.
3. Choosing the key financial strategies.
4. Choosing the key customer-related strategies.
5. Choosing the key internal business process strategies.
6. Choosing the key learning and growth strategies.

The IT strategy map is very similar to the generic business strategy map. An organization reaches business-IT alignment when the IT strategy map links to the

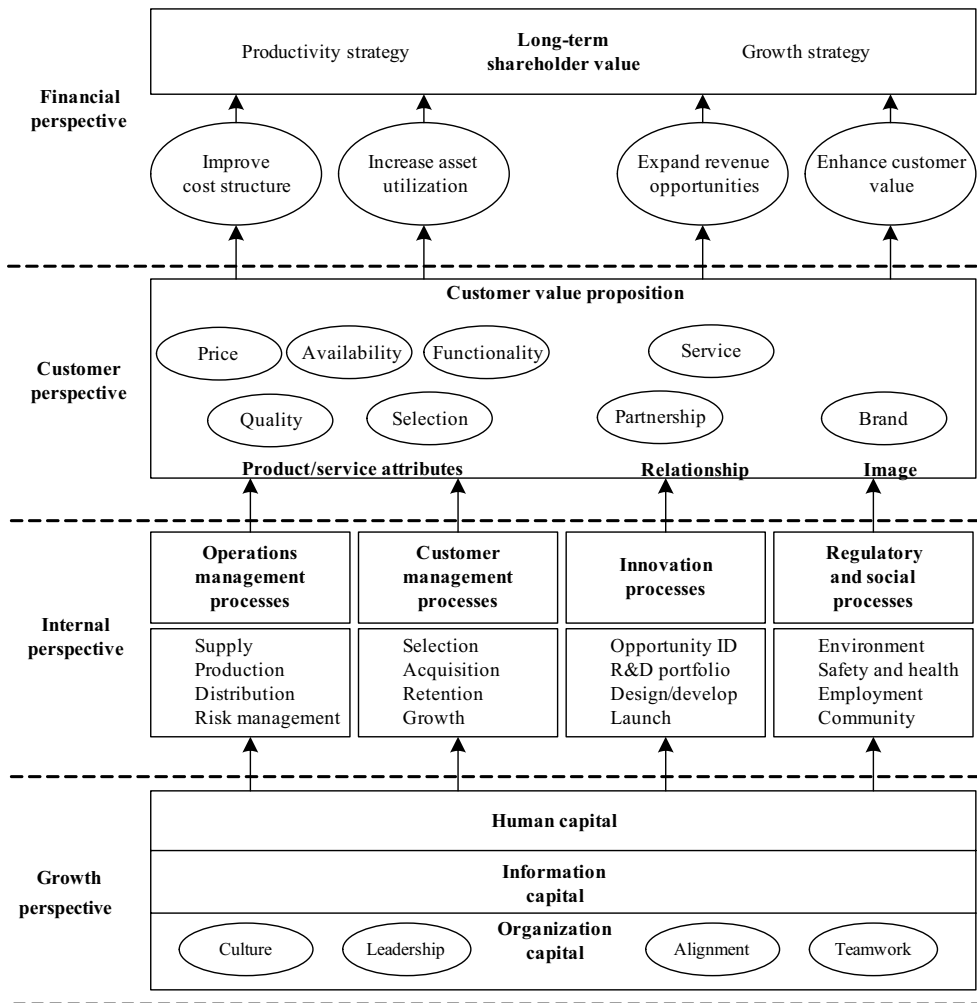


Figure 3. A Generic Strategy Map

Source: Forrester Research adapted from Robert S. Kaplan and David P. Norton [Symons et al. 2008].

business strategy map. Symons et al. [2008] suggest that, if the business strategy is primarily a productivity strategy emphasizing driving as much possible cost out of the business to provide customers with the lowest price, then IT’s strategy must reflect this. Therefore, the IT strategy should also be a productivity strategy, focused on using IT to reduce costs.

The IT strategy map follows the corresponding four IT perspectives [Symons et al. 2008]:

- IT value perspective. IT’s strategic goal is to create value via information technology. This value can come through enabling the business to develop innova-

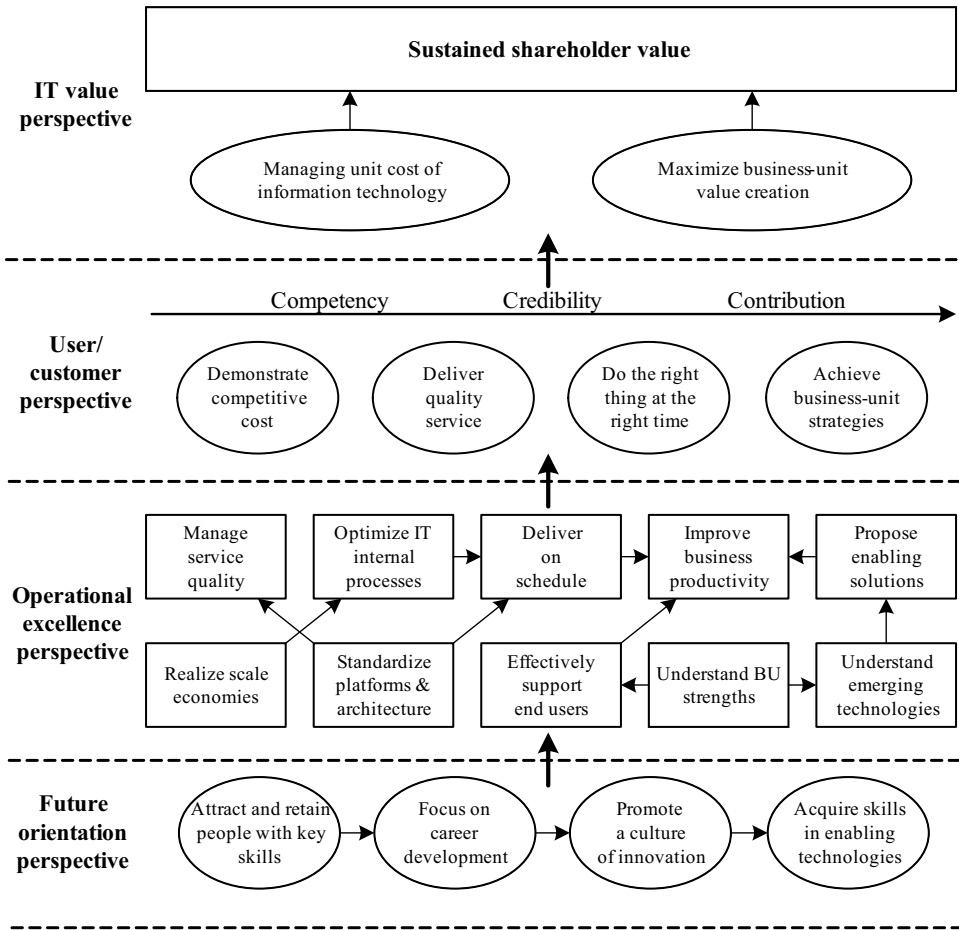


Figure 4. IT Strategy Map

Source: Forrester Research adapted from Robert S. Kaplan and David P. Norton [Symons et al. 2008].

tive products or services, expanding markets (growth strategy), or helping the business become more efficient and cost-effective (productivity strategy).

- User (customer) perspective. At the same time, IT has users it must satisfy. Satisfaction can stem from the development side by delivering new projects on time and on budget, or from the operations side by providing highly reliable and available systems, as well as high quality and timely problem resolution, through the help desk.
- Process excellence perspective. Creating business value with IT and maintaining high levels of user satisfaction require process excellence. Process excellence applies to both the applications side (project execution) and the operations side (reliability and availability) of IT.

- Future orientation capabilities perspective. Process excellence in IT requires a skilled and motivated workforce with clear goals and objectives that are aligned with the organization's strategy. Furthermore, employees must be led by capable managers and have access to the tools and information required to perform their jobs.

On Figures 3 and 4 a Generic Strategy Map and IT strategy map are presented.

The analysis of maps on Figures 3 and 4 allows to settle not only mutual business strategy and IT strategy goals, but also activities which will help to achieve these goals.

7. Summary

The alignment business-IT strategy is seen to assist an organization in three ways:

- by maximizing return on IT investment,
- by helping to achieve competitive advantage through IT,
- and by providing direction and flexibility to react to new opportunities.

It is therefore important to recognize and to apply in enterprises the tools which will help to achieve the highest level of business-IT alignment. To use strategy maps to drive business-IT alignment seems to be very good solution.

In many organizations there is no proactive dialogue between IT and the business units at the strategy level, and when they do talk it is often in different languages. Strategy maps eliminate these problems by creating a single language to proactively communicate strategy and objectives. Well elaborated strategy maps help to drive consensus around strategy, to create a common language and they are as the entry point to implementing a balanced scorecard. Well implemented Balanced Scorecards help to better align their organization with the strategic objectives and organizational processes with the strategic priorities. Cascading the Balanced Scorecard into those units will help to achieve better business-IT alignment and link strategy to operations.

References

- Andersen H.V., Lawrie G., Shulver M. (2000), *The Balanced Business Scorecard vs. The Business Excellence Model – which is the better strategic management tool?*, 2GC Working Paper, June.
- Baschin A. (2001), *Die Balanced Scorecard für Ihren Informations-Technologie-Bereich*, Campus Fachbuch, Frankfurt.
- Edwards J.B. (2001), ERP, Balanced Scorecard, and IT: How do they fit together?, *The Journal of Corporate Accounting & Finance*, July, John Wiley & Sons, pp. 3-12.
- Hamel G., Prahalad C.K. (1994), Competing for the future, *Harvard Business Review*, Vol. 72, No. 4, pp. 122-128.
- Henderson J.C., Venkatraman N. (1993), Strategic alignment: Leveraging information technology for transforming organizations, *IBM Systems Journal*, Vol. 32, No. 1, pp. 4-16.
- Jelonek D. (2009), *Strategiczna harmonizacja monitorowania otoczenia i technologii informacyjnej w przedsiębiorstwie. Studium metodologiczno-empiryczne*, Wydawnictwo Politechniki Częstochowskiej, Częstochowa.

- Kaplan R.S., Norton D.P. (1992), The balanced scorecard: Measures that drive performance, *Harvard Business Review*, Vol. 70, No. 1, pp. 71-79.
- Kaplan R.S., Norton D.P. (1996a), Linking the balanced scorecard to strategy, *California Management Review*, Vol. 39, No. 1, pp. 53-79.
- Kaplan R.S., Norton D.P. (1996b), *The Balanced Scorecard. Translating Strategy into Action*, McGraw-Hill Professional, Boston.
- Kasper C. (2007), *Strategisches Informationsmanagement und Balanced Scorecard*. Strategische Steuerung des Informationsmanagements mit Hilfe qualitative Kennzahlen, Wissenschaftsverlag und Kulturedition Dr. Stein, Duisburg.
- Kütz M. (2003), IT-Balanced Scorecard in IT-Controlling, [in:] *Report Balanced Scorecard in der IT. Praxisbeispiele – Methoden – Umsetzung*, Eds. R. Blomer, M. Bernhard, Symposion Publishing, Düsseldorf, pp. 49-95.
- Luftman J.N. (2000), Assessing business-IT alignment maturity, *Communications of the Association for Information Systems*, Vol. 4, No. 14, pp. 1-50.
- Luftman J.N. (1996), *Competing in the Information Age*, Oxford University Press, New York.
- Orzechowski R. (2008), *Budowanie wartości przedsiębiorstwa z wykorzystaniem IT*, Oficyna Wydawnicza Szkoły Głównej Handlowej, Warszawa.
- Peppard J., Ward J., Daniel E. (2007), Managing the realization of business benefits from IT investments, *MIS Quarterly Executive*, Vol. 6, No. 1, pp. 1-12.
- Saull R. (2000), The IT Balanced Scorecard – A roadmap to effective governance of a shared services IT organization, *Information Systems Control Journal*, Vol. 2, pp. 31-38.
- Shimizu T., Montiero de Carvalho M., Laurindo F.J.B. (2006), *Strategic Alignment Process and Decision Support Systems. Theory and Case Studies*, IRM Press, Hershey–London–Melbourne–Singapore.
- Symons C., Orlov L., Bright S., Brown K. (2008), *IT Strategy Maps: A Tool For Strategic Alignment*, Forrester Research, Tribridge, <http://www.forrester.com/rb/research> (accessed 12.06. 2010).
- Van Grembergen W., De Haes S., Van Bremp H. (2007), How does the business drive IT? Identifying, prioritising and linking business and IT goals, *Information Systems Control Journal*, Vol. 6. *What Is a Balanced Scorecard?*, <http://www.ap-institute.com/Balanced%20Scorecard.html> (accessed 10.06.2010).
- Wintersteiger W. (2007), IT-Strategien entwickeln und umsetzen, [in:] *Handbuch IT Management*, Ed. E. Tiemeyer, Hanser Verlag, München–Wien.
- Wyatt-Haines R. (2007), *Align IT. Business Impact Through IT*, John Wiley & Sons, Chichester-Hoboken.

MAPY STRATEGICZNE JAKO NARZĘDZIE W DOPASOWANIU STRATEGII BIZNESOWEJ I STRATEGII IT

Streszczenie: Celem pracy jest przedstawienie map strategii jako narzędzia, które może być wykorzystywane w dopasowaniu strategii biznesu i strategii IT w przedsiębiorstwie. Efektem przeprowadzonych studiów literaturowych jest prezentacja klasycznej karty BSC opracowanej przez Kaplana i Nortona oraz kilku jej modyfikacji uwzględniających dodatkowe perspektywy, które warto rozważyć w tworzeniu map strategii w zależności od specyfiki przedsiębiorstwa. Zaprezentowane przykłady map strategii biznesowej oraz strategii IT mogą być inspiracją dla konkretnych działań dopasowania strategii biznesu i IT podejmowanych przez przedsiębiorstwa.