VILNIUS UNIVERSITY

Gediminas

RUMŠAS

Strategic Information Systems Planning Factors Creating Value for Organizations

DOCTORAL DISSERTATION SUMMARY

Social Science,
Management S 003

VILNIUS 2019

This dissertation was written during 2011–2018 at Vilnius University.

Academic supervisor – Prof. Dr. Rimvydas Skyrius (Vilnius University, Social Sciencies, Management, S 003).

This doctoral dissertation will be defended at a public meeting of the Dissertation Defence Panel:

Chairman – Prof. Habil. Dr. Danuta Diskienė (Vilnius University, Social Sciencies, Management, S 003).

Members:

Prof. Dr. Vytautas Dikčius (Vilnius University, Social Sciencies, Management, S 003);

Assoc. Prof. Dr. Gintarė Giriūnienė (Mykolas Romeris University, Social Sciencies, Management, S 003).

Adjunct Prof. Dr. Rossella Del Prete (University of Sannio , Italy, Social Sciencies, Economics, S 004);

Prof. Dr. Aida Mačerinskienė (Vilnius University, Social Sciencies, Management, S 003).

The dissertation will be defended at a public meeting of the Dissertation Defence Panel at 10:00 on September 23, 2019 in Meeting Room 701 of the Faculty of Economics and Business Administration.

Address: 9 Saulėtekio Ave (II Building), LT-10222, Vilnius, Lithuania. Phone No.: +370 5 236 6126; email: evaf@evaf.vu.lt.

The text of this dissertation can be accessed through the libraries of Vilnius University, as well as on the website of Vilnius University: www.vu.lt/lt/naujienos/ivykiu-kalendorius.

VILNIAUS UNIVERSITETAS

Gediminas

RUMŠAS

Organizacijoms naudą kuriantys informacinių sistemų strateginio planavimo veiksniai

DAKTARO DISERTACIJOS SANTRAUKA

Socialiniai mokslai,
vadyba S 003

VILNIUS 2019

Disertacija rengta 2011 – 2018 metais Vilniaus universitete.

Mokslinis vadovas – prof. dr. Rimvydas Skyrius (Vilniaus universitetas, socialiniai mokslai, vadyba, S 003).

Gynimo taryba:

Pirmininkė – Prof. dr. Danuta Diskienė (Vilniaus universitetas, socialiniai mokslai, vadyba, S 003).

Nariai:

Prof. dr. Vytautas Dikčius (Vilniaus universitetas, socialiniai mokslai, vadyba, S 003);

Doc. dr. Gintarė Giriūnienė (Mykolo Romerio universitetas, socialiniai mokslai, vadyba, S 003);

Prof. dr. Aida Mačerinskienė (Vilniaus universitetas, socialiniai mokslai, vadyba, S 003);

Prof. dr. Rossella Del Prete (Sannio universitetas, Italija, socialiniai mokslai, ekonomika, S 004).

Disertacija bus ginama viešai, gynimo komisijoje 2019 m. rugsėjo 23 d. 10 val. 701 auditorijoje, Ekonomikos ir verslo administravimo fakultete.

Adresas: Saulėtekio al. 9 (II rūmai), LT-10222, Vilnius, Lietuva

Tel. +370 5 236 6126; el. paštas: evaf@evaf.vu.lt:

Ši disertacija gali būti pasiekima Vilniaus universiteto bibliotekoje, taip pat Vilniaus universiteto tinklalapyje: www.vu.lt/lt/naujienos/ivykiu-kalendorius

Relevance of the topic. In many studies on information systems it is proven that information systems (IS) management (ability to plan, develop, and implement information systems) is one of sources for developing and sustaining a competitive advantage. The proper implementation and use of IS as a business tool brings tangible benefits, such as better management awareness, business trends, proper competition evaluation. Strategic IS planning has a crucial impact on competition. Companies with an IS strategy successfully outperform companies without it. Strategic IS planning contributes to:

- An automation of business processes and decreasing operating costs;
- Increased organizational efficiency;
- Business agility – the ability to adapt to a changing environment.

Strategic IS planning is becoming an important business component, forming (and sometimes driving) business strategy and increasingly also affecting other business activities. Nevertheless, today, research on strategic IS planning is usually limited to a grounded theory and an analysis and generalization of other scientists' findings, and it is rather poorly researched using quantitative methods.

On the other hand, the market's interest in strategic IS planning is growing dramatically: according to Google Trends, this area has grown rapidly over the past few years and has become similar to a business strategy. Additionally, according to Gartner organization[1], global spending on IT solutions is growing at least 3% each year and is projected to amount to more than 3.8 billion USD in 2019. In 2015, during a strategic IS planning survey conducted in Lithuania, which provides the context of this dissertation, it was found that 75% of the surveyed large Lithuanian organizations had an IS strategy. Therefore,

---

[1] https://www.gartner.com/en/newsroom/press-releases/2019-04-17-gartner-says-global-it-spending-to-grow-1-1-percent-i

the preparation, use, and development of an IS strategy is extremely important to a large number of organizations that make strategic decisions on investments in information systems.

The scientific problem and the level of the topic's examination. This dissertation reviews different aspects of strategic IS planning, which is analyzed in scientific literature: development, application challenges, driving forces, success factors, and the assessment of results and benefits.

A literature analysis has shown that strategic IS planning in scientific literature is rich in models, generalizations, and conclusions based on analyses and comparisons of other authors' findings, but very little has been done to quantify or deny any of the theories (Ciborra 1997). In order to precisely understand strategic IS planning processes and the actual practice, scientists have to utilize quantitative methods as well: it is necessary to harmonize theoretical models with quantitative and qualitative methods while studying these processes. According to some authors (Galliers, Markus, & Newell 2006), ethnography, based theory, and real action research should be adapted to the topic of strategic IS planning.

The aim of this dissertation is to summarize the strategic IS planning factors described in the scientific literature, to structure the whole set of factors that can influence the benefits of strategic IS planning for organizations, and to select the factors that influence each of the strategic IS planning benefits.

The scientific novelty of the study. This dissertation analyzes the scientific theory of strategic IS planning and systematizes the practical problems identified in scientific literature. Cause-effect relationships of the problems were determined, and the practical relevance of the problems was confirmed by qualitative research. Also, incentives (driving forces) to perform IS strategic planning have been identified and defined in the thesis. Great attention was paid to analyzing and

summarizing the researches by measuring the benefits of strategic IS planning to organizations.

After analyzing the research performed by other authors, this paper contains a complete set of strategic planning factors mentioned in other authors' works. Until now, individual authors have studied the benefits of different IS strategic planning factors for organizations. Many authors studied the impact of strategic IS planning on organizations (Earl 1993; Pita, Cheong, & Corbitt 2008; Warr 2006). Some of the authors focused on the strategic steps of the IS planning process and its impact on organizations (Bechor, Neumann, Zviran, & Glezer 2010; Newkirk, Lederer, & Srinivasan 2003). Other authors studied aspects of process formalism, creativity, and periodicity (Doherty, Marples, & Suhaimi 1999). Finally, there were authors focused on the participants of strategic IS planning and their beneficial impact for organizations (Allen & Wilson 2003; Nordstrom & Soderstrom 2003). However, so far no attempt has been made to combine the factors studied by all these authors into a broader picture and to identify their interaction.

Additionally, this dissertation summarizes studies conducted by other authors on the value IS generates to organizations. According to some authors, value gained from strategic IS planning can be measured by measuring how well planned goals are being achieved (Bechor, Neumann, Zviran, & Glezer 2010; Warr 2006). Other authors measured the success of strategic IS planning by measuring improvement in IS capabilities (Bechor, Neumann, Zviran, & Glezer 2010; Newkirk, Lederer, & Srinivasan 2003), such as: anticipating business change, creating a competitive advantage, compatibility of the IT and business plan, installing the right IT architecture, improving employee satisfaction, improving customer satisfaction, and increased leadership support. Finally, some authors used measurements of the improvement of IT skills in an organization. Possible IT skills to

7

improve are (Bharadwaj 2000; Dehning & Stratopoulos 2003): understanding users' information needs, a better perception of problem areas, identifying new ideas and opportunities, better coordination in decision-making, the introduction of a procedure for prioritizing IT projects, a better control of IT resources (people, software, and hardware). However, so far no attempt has been made to combine the factors studied by all these authors into a broader picture and to identify their interaction.

This dissertation seeks to fill this gap and systematize all other factors related to strategic IS planning by other authors. These factors are grouped together and quantified; logistic regression models were developed to determine the impact of these factors on the benefits of IS generated for organizations.

The main **problem** to be solved in this dissertation is the systematization of the strategic IS planning factors, which influence an organization's value received from information systems.

Object of research. Factors of strategic information systems planning in organizations.

Aim and tasks. To determine the influence of information system strategic planning factors on the benefits of information systems in organizations. Tasks:

1. To analyze research on the value of strategic IS for organizations and identify criteria for evaluating generated value.
2. Determine strategic IS planning factors influencing the IS value to organizations.
3. Design and evaluate models of the influence of strategic IS planning factors on the value generated to the organization.
4. Provide recommendations for strategic IS planning factors that promote the creation of value for organizations.

Statements to Defended. The thesis will defend the following statements:

1. Strategic IS planning has a positive impact on the value derived from IS in organizations.

2. The completeness of the strategic IS planning process has an impact on the value derived from IS in organizations.

3. The involvement of strategic ISP participants has an impact on the value derived from IS in organizations.

4. The periodicity of strategic IS planning has an impact on the value derived from IS in organizations.

The applied significance of the work. The dissertation has proved that strategic IS planning factors have a probability to create a source of value for organizations. Developed models allow to formulate practical recommendations for today's large organizations regarding which aspects of IS strategic planning can increase the probability of getting one or the other source of value. According to the developed logistic regression models, specific recommendations have been formed: the goals, steps of the process, the involvement of participants, and other factors that contribute to the creation of value to the organization. Organizations can adjust their strategic IS planning according to their needs (for example, a better understanding of information needs or the creation of a competitive advantage) but must pay appropriate attention to specific factors: the strategic IS planning process, its specific steps, the involvement of participants, or others.

Research limitations. The first limitation of this study is related to the research model. In order to cover as many important factors as possible, which were mentioned and used in other scientific studies, a a very extensive research model has been developed. For this reason, a filtering of factors was required in the model, and different combinations had to be attempted manually that would iteratively improve the models to determine the most appropriate model for explaining value delivery from strategic IS planning. Because the

modeling was done manually, a few significant factors might have been missed.

The second limitation is that, due to the relatively low response rate, it is not possible to ensure that the results are repeatable in all major Lithuanian organizations. Also, due to the relatively small sample, the error of the study is relatively higher, which is influenced by the accuracy of the final obtained results. The calculated margin of error for the study is 7.55%.

The third restriction concerns the respondents. While individuals occupying the position of Head of the Information Technology Division (hereinafter – IT Managers) are the best source for exploring the process of strategic IS planning, its results and impact on business, they are still involved in and responsible for the IS management in an organization and wish to "appear" on the better side than they are. This makes it necessary to compare the views of IT managers and business executives of the same company.

Finally, the survey was conducted only in Lithuanian companies, which limits the reliability of the research as it is impossible to assess the influence of cultural differences; the size of the enterprises is relative and possibly analyzed in a relatively small global context.

Structure of dissertation. The dissertation consists of an introduction, three chapters (theory, methodology, and empirical findings), conclusions, references, and appendices. The first chapter summarizes the research of other authors related to the factors of strategic IS planning. All the factors of strategic IS planning are collected and described in this chapter, and are combined into a conceptual research model. The second chapter describes the research methodology: the conceptual model is elaborated by developing research models for every dependent variable. This chapter describes the organization of the research, the methods used, the research sample, and the research restrictions. The third chapter summarizes

the results of the quantitative analysis of the data and the models of the factors influencing each source (logistic regression equations). Finally, recommendations are made to organizations on the implementation of the strategic IS planning process.

1. THE ROLE AND FACTORS OF STRATEGIC PLANNING

There are many different definitions and terms related to business, information systems, and information technology planning and strategy in scientific information systems research. In this work, **Strategic Information Systems Planning** is the **activity** of an organization during which **the main problems of the organization and its environment are analyzed and a long-term plan for the improvement of information systems is prepared**. The final result of this process is the future architecture of the information systems, an IS project portfolio, and a justification for the required investments.

In this defined area of strategic IS planning, the scientific literature identifies some outstanding research issues:

- Many theories assume that the reader knows what IS strategic planning is and does not clearly define what the definition of IS strategic planning stands for. These terms are very different but widely used: IS Planning, Information Technology (IT) Planning, Strategic IS Planning, IS Strategy, IT Strategy, etc. (Karpovsky, Hallanoro, & Galliers 2014).
- A "strategy" is the result of a process, and "strategic IS planning" is a continuous, never-ending process (Galliers 2006; Galliers & Leidner 2009). There is also no clear definition of whether it is an intellectual, social process (Peppard, Galliers, & Thorogood 2014).
- One of the most influential authors in the topic of strategic IS planning, Michael Earl (Earl 1993) has stated that the elements of all conceptual models are "hypothetical," "speculative," and that the theory of strategic IS planning itself is far from practice.

- No matter how well-defined the IS strategic plan is, it is noticeable in the market that there are deviations, surprises, or opportunistic improvements in implementation of such plans. Therefore, the plan itself is just a frame, and the specific decisions made by managers are improvisational, taking into account certain instantaneous circumstances (Ciborra 1996). It is therefore extremely difficult to assess what IS strategic decisions have brought about, and what happened to the other circumstances.
- In order to precisely understand strategic IS planning processes and the actual practice, researchers must go beyond the work of other scientists but also to conduct research: they must investigate the coherence of theoretical models and utilize quantitative and qualitative methods in researching these processes. Some authors (Galliers, Markus, & Newell 2006) argue that ethnography, based theory, and real action research could be more suitable for these studies.

An IS strategy is more than just an information technology strategy. Essential differences have been identified by Earl in 1989: an IS strategy is more prepared by business representatives to meet the future goals and performance needs strategy (Earl 1989). An Information Systems Strategy defines information needs and information service requirements, and an IT strategy aims to provide the IT infrastructure, software, and services to meet the needs and requirements of an organization. Meanwhile, the digital strategy is understood as being closer to a business strategy, or a strategy that almost replaces it, focusing on the use of information technology to change the business model. The concept of an IS strategy will continue to be used in this context. Such a solution allows its users to go deeper into IT and business relationships and measure the impact of IS strategies through the benefits their organizations create. The business

strategy, in this context, is the source for the strategic IS planning process, and the prepared IS strategy coordination, as well as the results of the implementation of an IS strategy, influence the business strategy.

in summarizing the various scientific sources, it could be said that strategic IS planning ensures that information systems are developed to meet the strategic goals and user information needs of current and future organizations. IS helps to automate functions, reduce operating costs, contribute to increased revenue, but most importantly, it can be a source of continuous competitive advantage for business. An IS strategy allows users to plan their IS initiatives for a selected period and combine these plans with their organizations' strategies: it can contribute to the growth, transformation, and development of new products, a choice of a different business model, vitality, flexibility, and adaptability in the market. Likewise, changes in the IS also lead to changes in the entire organization.

Galliers's (Galliers 2011) research has found that strategic IS planning has a significant impact on the benefits created for the organization of information systems. Chen and colleagues (Chen, Mocker, Preston, & Teubner 2010) have argued that organizations are affected by strategic IS planning decisions.

Strategic IS planning is assigned into these factors groups:

IS Management Outcomes. Each organization has different expectations of IS, so their strategic IS planning may vary and result in uneven outcomes.

Strategic IS Planning Approach. The approach has been used in several quantitative corporate strategic planning studies (Earl 1993; (Teo & King 1997; Bechor, Neumann, Zviran, & Glezer 2010).

Process Completeness. Each strategic IS planning process is individual, but it is possible to distinguish typical phases and tasks.

The process steps outlined in the scientific literature are described and used by many authors (Hoffer, Anson, Bostrom, & Michaele 1990; Pant & Hsu 1999; Mentzas 1997; Newkirk, Lederer, & Srinivasan 2003; Ward & Peppard 2002; Cuenca, Boza, & Ortiz 2011).

Process Creativity. This factor defines how formal or creative is the process. Process creativity or formality are defined and used by many authors (Lederer & Salmela 1996; Segars & Grover 1999; Brown & Brown 2011; Osman, Beltagi, & Hardaker 2015; Salmela, Lederer, & Reponen 2000; Sambarmuthy, Zmud, & Byrd 1994; Doherty, Marples, & Suhaimi 1999; Brown & Brown 2011; Lederer & Sethi 1992b; Chan & Reich 2007).

Frequency. The frequency of strategic IS planning defines whether strategic IS planning is a random or recurring (at a certain frequency) process (Brown 2008; Segars & Grover 1999; Doherty, Marples, & Suhaimi 1999).

Participants. A factor that describes the involvement of participants. Senior management, business representatives (unit managers and specialists), IT managers, IT professionals, and external parties may participate in strategic IS planning (Brown & Brown 2011; Luftman, Papp, & Brier 1999; Reich & Benbasat 2000; Teo & Ang 1999; Hartono, Lederer, Sethi, & Zhuang 2003; Allen & Wilson 2003; Nordstrom & Soderstrom 2003; Davies 1993; Brown 2008).

In summarizing other authors, it could be stated that the greatest importance in strategic IS planning lies at the involvement of top management, the planning process itself, and the strategic IS planning competence within an organization. It is also necessary to emphasize that the success of strategic IS planning depends not only on the insight into the IS or technology, but on the knowledge and understanding of the business strategy. These factors are used to construct a research model in the next section of this dissertation.

One of the most difficult problems in strategic IS planning is to measure whether it provides the intended value to the organization. A successful use of IS in modern organizations plays an important role in achieving organizational goals (Sabegh & Motlagh 2012).

The success area of measuring strategic IS planning covers a wide range of aspects: from the planning process, the assessment of the planning result, to the specific assessment of the implemented IS projects. Many of the authors disagree on how to evaluate the results of strategic IS planning: whether they are measured by IT indicators, business indicators, strategic indicators, or derivatives (e.g., business and IT compatibility). There is a lot of research in the scientific literature on the compatibility of an IS strategy and a business strategy, but there are a number of scientists claiming that scientific literature on the compatibility of IS and business strategies does not capture real-life situations today (Galliers, Markus, & Newell 2006; Ciborra 1992). And research does not always take into account the fact that not all companies have a clear or complete business strategy, which is why it is impossible to reconcile IS and business strategies in such companies. There is a broad consensus that the self-assessment of IS design compatibility with a business is relatively less beneficial than measuring strategic IS benefits with business valuation indicators. Nevertheless, it should be noted that without an assessment of the value of strategic IS planning, it makes no sense to analyze this subject. Therefore, in the context of this work, it measures the value of business through improved information system capabilities (improved information system activities bring direct benefits to the employees of the organization) and how much IS strategic planning has allowed to improve IT activities (improved IT activities allow for more efficient and effective use of IT resources). In this regard, the following groups of strategic planning benefit assessment factors have been identified:

16

- **Achieving Planning Goals**. This factor shows whether strategic IS planning has succeeded: whether the results obtained are in line with those planned at the beginning (Bechor, Neumann, Zviran, & Glezer 2010; Warr 2006). This factor shows an IT manager's assessment of how the strategic IS planning result matched the organization's expectations.
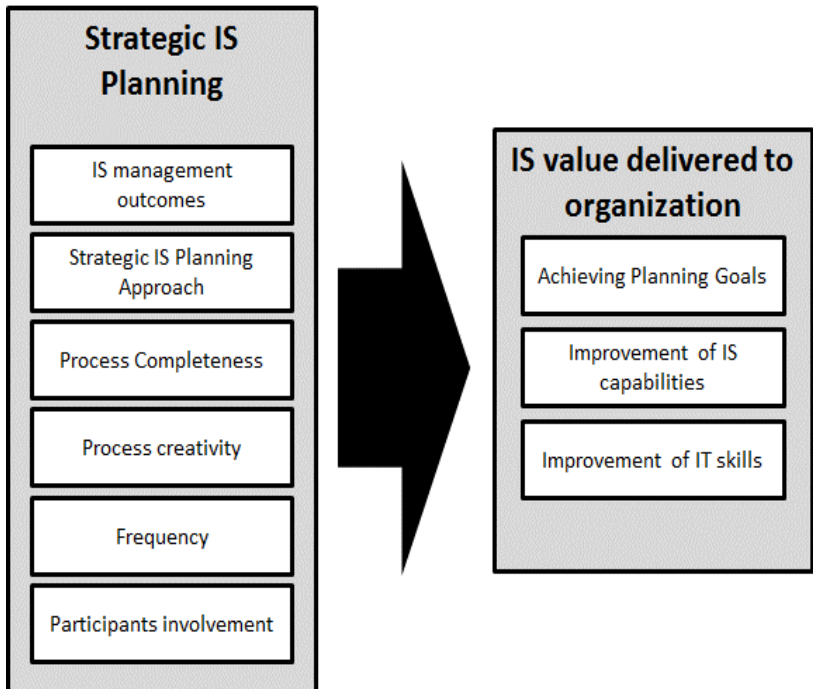
Picture 1. A conceptual model of strategic IS planning factors.

- **Improvement of IS capabilities**. This factor indicates whether strategic IS planning has enabled the creation of IS value (Bechor, Neumann, Zviran, & Glezer 2010; Newkirk, Lederer, & Srinivasan 2003; Segars & Grover 1999). This

17

factor shows the assessment of the IT manager or whether each of these benefits has been created.

- **Improvement of IT skills**. The factor shows how strategic IS planning has improved IT skills in an organization (Bechor, Neumann, Zviran, & Glezer 2010; Bharadwaj 2000; Dehning & Stratopoulos 2003). Various authors (Dehning & Stratopoulos 2003; Mata, Fuerst, & Barney 1995) use IT skills as the IT managers' ability to understand and assess business needs, ability to work with business leaders, ensure IS performance, and anticipate future needs.

  This factor shows the assessment of the IT manager or whether each of these IT performance improvement sources have been created.

By adding these factor groups to the conceptual model, the resulting model is presented in the figure below.

2. METHODOLOGY OF THE STRATEGIC IS PLANNING RESEARCH

This dissertation aims to identify significant factors in the IS planning process that bring benefits to organizations. The main goal of exploratory empirical research is to identify strategic planning factors that influence the success of strategic IS planning, the sources of value generated by information systems, and the improvement of IT skills for large organizations. This dissertation aims is to examine the theoretical and empirical knowledge-based models of the benefits of strategic IS planning.

For each of the specified IS value for organization variables, a research model is constructed. A research model for the first IS benefit assessment criterion – to achieve planning goals – is given below. Analog models are used for the improvement of IS capabilities and the improvement of IT skills.
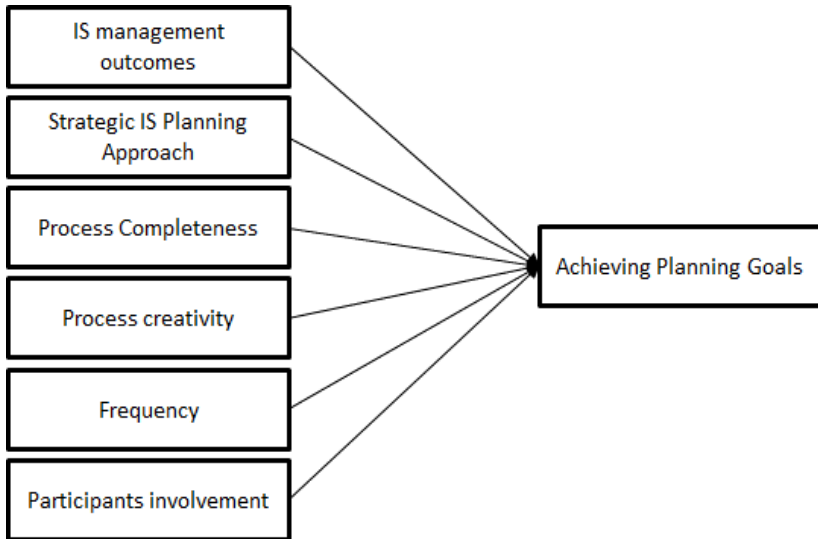
Picture 2. A research model for strategic IS planning factors.

In order to measure strategic IS planning factors, the groups of factors were rearranged into specific measurable variables.

IS management outcomes. There are several different, sometimes inconsistent, outcomes that can be achieved (Earl 1993):

- Minimum IT costs;
- Efficiency of financial, physical, and human resource management
- Organization agility (ability to implement change),
- Organizational growth.

Organizations can seek one of these outcomes, but they can also be the combination of a few.

Strategic IS Planning Approach. In summarizing the strategic IS planning approach mentioned by different authors, the following main, historically established approaches can be distinguished:

• Strategic IS planning is conducted independently, business plans have a minimal impact on IT strategic planning.

• Business strategic plans define key strategic directions of the strategic IS plan; strategic IS planning aims to ensure the implementation of business strategic plans.

• Strategic IS planning is defined according to the direction and constraints set by business strategic plans but has a noticeable impact on business strategic plans as well.

• Business and IT strategic plans are developed together to form an integrated digital business strategy.

Process Completeness. The process is characterized by individual tasks in it. Based on the work of other researches, the process can be divided into the following tasks:

1. Determining key planning issues;
2. Defining strategic IS planning objectives;
3. Gaining top management support;
4. Analysis of the current business situation;
5. Analysis of current information systems;
6. Analysis of the external environment;
7. Analysis of recent IT trends;
8. Identifying major IT objectives;
9. Identifying opportunities for improvement;
10. Identification of high level IT strategic directions;
11. Identification of new business processes;
12. Developing a new IT architecture;
13. Identification of new IT projects;
14. Preparation of a strategy implementation plan;

15. Developing a change management action plan;

16. Definition of the evaluation and monitoring system;

17. Informing stakeholders / explaining IS strategy.

The survey used all the tasks mentioned in the scientific literature, in addition to the results of the pilot interviews, including the task of informing stakeholders and explaining the prepared IS strategy.
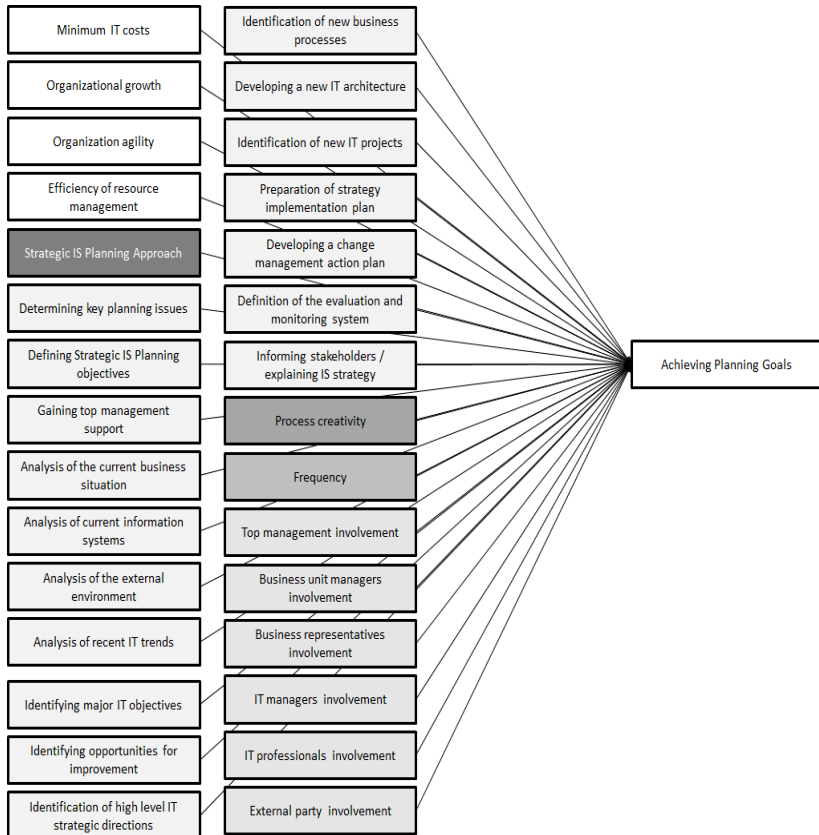
Process creativity. This factor defines how formal or creative the process is. A quantitative study by Osman (Osman, Beltagi, & Hardaker 2015) used the question of how creative and how formal can the process of strategic IS planning be.

Frequency. The frequency of strategic IS planning defines whether it is a random or recurring (at a certain frequency) process. The recurring process can take place at a certain frequency, usually measured in a years.

Participants. A factor that describes the involvement of participants. It consists of the following variables, measuring the involvement of: top management, business unit managers, business representatives, IT managers, IT professionals, and an external party. Distinctive roles of the involved persons are: the initiator of strategic IS planning, the participant of the process, the information provider.

An exemplary detailed research model for the first IS benefit assessment factor – achievement of planned goals – is provided below. Using the same approach, models are created for each of the sources of IS capability improvement: i) Gaining a competitive advantage from IT; ii) Anticipating changes and trends in the industry; iii) Aligning IT with business needs; iv) Implementing appropriate IT architecture; v) Increasing user satisfaction with IT services; vi) Increasing client satisfaction; vii) Increasing top management's commitment to IT. Additionally, models for IT skill improvements were created for each IT skill: i) Better understanding of user needs

and requirements; ii) Understanding key problem areas; iii) Improving coordination of decision-making; iv) Identifying new ideas and opportunities; v) Establishing uniform basis for prioritizing IT projects; vi) Improving control of human, software, and hardware resources

Minimum IT costs		Identification of new business processes
Organizational growth		Developing a new IT architecture
Organization agility		Identification of new IT projects
Efficiency of resource management		Preparation of strategy implementation plan
Strategic IS Planning Approach		Developing a change management action plan
Determining key planning issues		Definition of the evaluation and monitoring system
Defining Strategic IS Planning objectives		Informing stakeholders / explaining IS strategy
Gaining top management support		Process creativity
Analysis of the current business situation		Frequency
Analysis of current information systems		Top management involvement
Analysis of the external environment		Business unit managers involvement
Analysis of recent IT trends		Business representatives involvement
Identifying major IT objectives		IT managers involvement
Identifying opportunities for improvement		IT professionals involvement
Identification of high level IT strategic directions		External party involvement

Achieving Planning Goals

Picture 3. A detailed research model for strategic IS planning factors.

Based on the identified factors, the following hypotheses were raised:

23

H1. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process creativity, Frequency, and Participants have influence on achieving planned goals.

H2. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process creativity, Frequency, and Participants have influence on anticipating changes and trends in the industry.

H3. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process creativity, Frequency, and Participants have influence on gaining a competitive advantage from IT.

H4. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process creativity, Frequency and Participants have influence on aligning IT with business needs.

H5. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process creativity, Frequency, and Participants have influence on implementing appropriate IT architecture.

H6. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process creativity, Frequency, and Participants have influence on increasing user satisfaction with IT services.

H7. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process creativity, Frequency, and Participants have influence on increasing client satisfaction.

H8. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process creativity, Frequency, and Participants have influence on increasing top management commitment to IT.

H9. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process creativity, Frequency, and Participants have influence on better understanding of user needs and requirements.

H10. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process creativity, Frequency, and Participants have influence on understanding key problem areas.

H11. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process creativity, Frequency, and Participants have influence on identifying new ideas and opportunities.

H12. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process creativity, Frequency, and Participants have influence on improving coordination of decision making.

H13. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process creativity, Frequency, and Participants have influence on establishing uniform basis for prioritizing IT projects.

H14. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process creativity, Frequency, and Participants have influence on improving control of human, software and hardware resources.

All of these complex hypotheses were divided into the following 30 sub-hypotheses for every independent factor affecting value creation for organizations.

The research conducted to confirm or deny these hypotheses is described in the next section. The research consists of 3 main phases:

- **I. Qualitative research** of strategic IS planning and problem solving, during which five in-depth interviews with experts were conducted. The purpose of the interviews was to identify the typical challenges of strategic IS planning. The semi-structured interviews covered various aspects of strategic IS planning: planning periodicity, plan renewals, planning depth, responsibility and evaluation of value created. A qualitative study has been selected, as this approach has led to a better understanding of the phenomenon being studied. The research allowed to substantiate the relevance of strategic IS planning to modern organizations.

- **II. A quantitative research** of strategic IS planning factors influence on value for organization. During the research, a survey

questionnaire was developed based on the research model that was created. The questionnaire was tested in semi-structured interviews with 5 IT and business executives in large business organizations. Individual expert assessments were done to evaluate the concepts and methods used and their comprehensibility to the respondents of the main study. IT managers were from different business sectors: trade, construction, technology, public, and transport. This choice of different areas has made it possible to ensure that the diversity of the circumstances in which the companies operate is covered. According to their comments, the questionnaire was adjusted so that the duration of one questionnaire would not exceed 20 minutes.

The quantitative questionnaire survey was chosen as it is the most appropriate way to collect data that would allow a statistical justification of causal relationships between phenomena. The questionnaire survey allowed ensuring the availability of the questionnaire and the anonymity of the respondents as well as avoiding the influence of the researcher on the respondents. Also, the data collected by the questionnaire are structured and suitable for quantitative data analysis.

- **III. Analysis of Quantitative Research Results**. The data obtained in the quantitative study were analyzed by SPSS software. Methods used were the descriptive statistical methods for data analysis (Regression Analysis, Data Normalization, Spread Analysis). Stages of quantitative analysis:

1. The data collected were used to create binary logistic regression models for each dependent variable.

2. In order to determine whether the model was good, each model was tested for: probability ratio criterion χ^2, Hosmer-Lemeshow test, and Nagelkerke R^2.

3. If the model had fit the data well, the factors used in the model, their β coefficients, the Wald test, and the probabilities for each factor were described.

4. In order to understand the relationship between independent variables, β coefficients were standardized according to King's proposed method (King 2007).

5. Finally, the ROC curve was created for each binary logistic regression model to verify the results of the proposed binary logistic model.

The IBM SPSS Statistics Version 25 software was used to process the test data. Calculations of the normalization of logistic regression equations were performed with Microsoft Excel 2013 software.

The data was obtained by surveying the IT managers of Lithuanian organizations with a high turnover (more than 7m EUR per year). Organizations were selected based on the VŽ Top 1000 list (Verslo žinios, 2016) and Lithuanian public institutions budget data. Including public institutions with an annual budget of over EUR 7 million EUR, it was identified that 1350 organizations in Lithuania meet the research criteria.

Seven hundred respondents were reached by phone. Of these, 171 questionnaires were collected, of which 150 questionnaires met the size of the organization criteria. The percentage of 11% responses is typical of IT managers (Bechor, Neumann, Zviran, & Glezer 2010). It should be noted that the survey collects very confidential IT management data, especially regarding IT priorities, IT budget structure, and IS strategy to create competitive advantages or other sources of value. For this reason, IT managers may not want to openly disclose their organizations' data.

The survey was conducted from September 26 to November 14, 2017. When the call was made, an attempt was made to question the respondent immediately or to agree on another time for the interview.

In order to eliminate the probability of a systemic error due to the non-response to the questionnaire, the methodology for comparing late respondents was used (Murphy & Briers 2001; Radhakrishna & Doamekpor 2008). According to the latest 25% of the respondents, the answers are compared with those of the previous ones. It is assumed that responding to later attempts reflects the opinion of the non-respondents after additional calls. Bechor (Bechor, Neumann, Zviran, & Glezer 2010) used a similar approach to strategic IS planning research.

The sample of 150 respondents was divided into two groups: 112 first respondents and 38 respondents. The Pearson Chi Square Test was used to compare the responses of both groups to strategic IS planning and organizational benefits. The responses of both groups did not differ statistically (with a 5% significance level). This improves the external validity of the questionnaire and adds confidence to the final conclusions.

3. RESULTS OF THE STRATEGIC PLANNING RESEARCH

The prepared binary regression model allows hypothesis **H1**. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process Creativity, Frequency, and Participants have influence on achieving planning goals to be **confirmed** for a certain **sub-hypothesies**: H1.2 (influence of the efficiency of financial, physical, and human resource management outcome) and H1.24 (influence of planning frequency). These results are in line with other researchers' (Earl, 1993; Doherty, Marples, & Suhaimi 1999) findings.

Additional conclusions were also developed: the success of strategic IS planning is also determined by the increase in IS capabilities. If, during strategic IS planning, (i) changes and trends in the industry are anticipated and (ii) user satisfaction with IT services increases, IT managers are more likely to agree that strategic IS planning achieved its planned goals.

In spite of this, it has not been possible to identify a link that has already been proven by Pita and colleagues (Pita, Cheong, & Corbitt 2008) and Doherty (Doherty, Marples, & Suhaimi 1999): their research identifies the influence of the chosen strategic IS planning approach on achieving planning goals.

The prepared binary regression model allows hypothesis **H2**. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process Creativity, Frequency, and Participants have influence on anticipating changes and trends in the industry to be **confirmed** for certain **sub-hypotheses**: H2.11 (analysis of the external environment), H2.16 (analysis of recent IT trends), H2.25 (involvement of top management), H2.26 (involvement of business

units managers), and H2.30 (involvement of an external party). This also confirms research by other scientists: Newkirk and colleagues (Newkirk, Lederer, & Srinivasan 2003) also stated that the depth of the strategic IS planning process has impact on planning success. Bechor and colleagues (Bechor, Neumann, Zviran, & Glezer 2010), Brown and Brown (2011), Harton & colleagues (Hartono, Lederer, Sethi, & Zhuang 2003), and many other scientists have emphasized and proved that the involvement of top management is a critical factor in strategic IS planning. These results also coincide with other authors who claim that in order to succeed, strategic IS planning requires representatives of all levels of the organization (Allen & Wilson 2003; Nordstrom & Soderstrom, 2003; Davies 1993). Finally, the involvement of a third party also had positive impact on the success of strategic IS planning (Brown 2008).

The prepared binary regression model allows hypothesis H3. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process Creativity, Frequency, and Participants have influence on gaining a competitive advantage from IT to be **confirmed** for certain **sub-hypotheses**: H3.13 (identification of major IT objectives), H3.25 (involvement of top management), H3.28 (involvement of an IT manager), H3.30 (involvement of an external party). In essence, this confirms Porter's statement that improved organizational IS capabilities aid in defending from competitors' actions (Porter 2008) and Chan and Reich's research that Strategic IS Planning has a profound impact on companies' competitive struggle, and companies with an IS strategy successfully outperform those who do not possess such a strategy (Chan & Reich 2007).

This is also the case with the research of other scientists: Newkirk and colleagues (Newkirk, Lederer, & Srinivasan 2003) also stated that the completeness of the strategic IS planning process has an impact on

planning success. Only Newkirk and colleagues have strongly emphasized the impact of the strategic plan implementation work on the overall success of strategic IS planning; in this work, it can be said that concrete work – the setting of IT goals – has a more accurate impact on the benefits created for the organization: it creates preconditions for creating a competitive advantage. Bechor and colleagues (Bechor, Neumann, Zviran, & Glezer 2010), Brown and Brown (2011), Harton and colleagues (Harton, Lederer, Sethi, & Zhuang 2003) and many others have pointed out and proved that the involvement of top management is a critical factor in strategic IS planning. These results also coincide with other authors, who claim it to require representatives of all levels of the organization (Allen & Wilson 2003; Nordstrom & Soderstrom 2003; Davies 1993). Finally, the involvement of a third party was proven to also have positive impact on the success of strategic IS planning (Brown 2008).

The prepared binary regression model allows hypothesis **H4**. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process Creativity, Frequency, and Participants have influence on aligning IT with business needs to be **confirmed** for certain **sub-hypotheses**: H4.9 (analysis of the current business situation), H4.10 (analysis of current information systems), H4.14. (identifying opportunities for improvement). Newkirk and colleagues (Newkirk, Lederer, & Srinivasan 2003) also stated that the completeness of a strategic IS planning process has impact on planning success. Only Newkirk and colleagues have emphasized the impact of the strategic plan implementation task on the overall success of strategic IS planning; in this dissertation, it is concluded that other tasks (related to business situation and IS analysis and the identification of improvement opportunities) have additional benefits – they create preconditions for aligning business and IS plans. The research also confirms IS and business compatibility criteria that were

formulated by Ragowsky and colleagues (Ragowsky, Licker, & Gefen 2012): the IT staff have excellent IT skills, are able to understand the core business processes, and purposefully identify users' needs.

The prepared binary regression model allows hypothesis **H5**. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process Creativity, Frequency, and Participants have influence on implementing appropriate IT architecture to be **confirmed** for certain **sub-hypotheses**: H5.9 (analysis of the current business situation), H5.19 (preparation of strategy implementation plan), H5.27 (involvement of business unit managers), H5.30 (involvement of an external party). Newkirk and colleagues (Newkirk, Lederer, & Srinivasan 2003) also stated that the completeness of the strategic IS planning process has an impact on planning success. What is more, they have emphasized the impact of the strategic plan implementation on the overall success of strategic IS planning, as evidenced by the binary logistic regression model developed in this work: a proper implementation plan is required to develop an appropriate IT architecture. The conclusion that the involvement of business employees has a negative impact on the development of proper IT architecture is new and worthy of further research. The positive effect of external involvement was previously identified by Brown (Brown 2008).

The prepared binary regression model allows hypothesis **H6**. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process Creativity, Frequency, and Participants have influence on increasing user satisfaction with IT services to be **confirmed** for certain **sub-hypotheses**: H6.9 (analysis of the current business situation), H6.22 (informing stakeholders / explaining IS strategy), H6.24 (frequency of strategic IS planning), H6.25 (involvement of top management). Newkirk and colleagues (Newkirk, Lederer, & Srinivasan 2003) also concluded that the completeness of

the strategic IS planning process has impact on planning success. The data collected allowed to clarify that the current situation analysis and the task of informing stakeholders can lead to an improvement of employee satisfaction. Doherty's (Doherty, Marples, & Suhaimi 1999) research measured the impact of frequency on the success of IS; the data collected in this dissertation suggest that frequency affects employee satisfaction. Many authors mentioned the positive impact of top management. The developed logistic regression model allows to conclude that the involvement of higher senior management has a positive impact on employee satisfaction.

The prepared binary regression model allows hypothesis **H7**. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process Creativity, Frequency, and Participants have influence on increasing client satisfaction in IT to be **confirmed** for certain **sub-hypotheses**: H7.16 (identification of new business processes), H7.25 (involvement of top management). This confirms the conclusions of other scientists that strategic IS planning is an integral part of the marketing or supply chain strategy in any modern organization (Peppard, Galliers, & Thorogood 2014). Properly defined future processes contribute to the development of an appropriate IS to ensure customer satisfaction. Other contributors also stated that strategic IS planning contributed to customer satisfaction (Mith, Krishnan, & Fornell 2005; Mith, Krishnan, & Fornell 2016; Saldanha, Mithas, & Krishnan 2017). For strategic IS planning to achieve these effects, it is necessary to ensure that new business processes are created and that top management is involved in the process. Newkirk (Newkirk, Lederer, & Srinivasan 2003) investigated and measured the impact of tasks on the success of IS; the data collected in this dissertation allow us to clarify that the task of identifying new business processes has an impact on customer satisfaction.

The prepared binary regression model allows hypothesis **H8**. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process Creativity, Frequency, and Participants have influence on increasing top management's commitment to IT to be **confirmed** for certain **sub-hypotheses**: H8.9 (analysis of the current business situation), H8.18 (identification of new IT projects), H8.28 (involvement of IT managers). Newkirk (Newkirk, Lederer, & Srinivasan 2003) investigated and measured the impact of strategic IS planning work on the success of IS, and the data collected in this dissertation allows to clarify that the analysis of the current situation and the identification of new projects tasks have impact on the increase in management support. The negative impact of bigger IT manager involvement on the decline in management support is not described in other research.

In order to determine the probability of obtaining the value of the improvement of IT skills, a logistic regression analysis was performed for every hypothesis; however, no model was found for hypothesis **H9**. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process Creativity, Frequency, and Participants have influence on a better understanding of user needs and requirements in IT; **H10**. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process Creativity, Frequency, and Participants have influence on understanding key problem areas in IT; **H13**. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process Creativity, Frequency, and Participants have influence on establishing a uniform basis for prioritizing IT projects; **H14**. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process Creativity, Frequency, and Participants have influence on improving the control of human, software, and hardware resources in IT. The data

collected do not indicate that this source of the improvement of IT skills would depend on the analyzed strategic IS planning factors. For this reason, the data collected and analyzed **do not allow the hypotheses H9, H10, H13, H14 to be confirmed**. The goals of IS management, strategic planning, process detail, creativity, periodicity, and participants influence the improvement of the understanding of information needs, understanding key problem areas in IT, establishing a uniform basis for prioritizing IT projects, or improving the control of human, software, and hardware resources.

The prepared binary regression model allows hypothesis **H11**. IS Management Outcomes, Strategic IS Planning Approach, Process Completeness, Process Creativity, Frequency, and Participants have influence on identifying new ideas and opportunities in IT to be **confirmed** for certain **sub-hypotheses**: H11.10 (analysis of current information systems), H11.19 (preparation of a strategy implementation plan), H11.24 (frequency of strategic IS planning). The confirmation of this hypothesis supports the conclusions that IT management must have business-specific knowledge (Bashein & Markus 1997; Luftman, Papp, & Brier 1999; Teo & Ang 1999). According to Gartner's research, the key skill of any modern IT manager is business awareness and insight. More than 26% of business executives in all surveys named this feature as the most important (McGee 2012). Several authors have mentioned the impact of strategic IS planning on improving IT skills in their research (Bechor, Neumann, Zviran, & Glezer 2010; Bharadwaj 2000; Dehning & Stratopoulos 2003). This study makes it possible to state more precisely that strategic IS planning increases IT skills through the identification of new ideas and opportunities. Newkirk (Newkirk, Lederer, & Srinivasan 2003) investigated and measured the impact of Strategic IS Planning on the success of IS, and the data collected in this dissertation allows to conclude that the tasks of existing

information systems analysis and developing strategy implementation plans can improve IT skills. The impact of more frequent strategic IS planning on the improvement of IT capabilities has not been described in other research.

Practical recommendations for organizations. The research has shown that the expected outcomes from the IT unit have an impact on an organization's value delivered from strategic IS planning. It has been found that when an IT unit in an organization has goals to achieve minimum IT costs, it increases the likelihood of securing the top management support. However, raising the organization's financial, physical, and human resource efficiency goals for the IT unit has a negative impact on the assessment of whether the IS strategy has achieved its goals. This is probably due to the fact that this goal is extremely ambitious, and the expectations for an IS strategy in this case are very high.

In summarizing the data analysis results, it could be said that in order to create value for an organization, it is very important to execute the following tasks during strategic IS planning: an analysis of the current business situation, the identification of new business processes, a preparation of the implementation plan, and informing the stakeholders. It should be noted that none of the activities are exclusively related to the IT area but require more attention to the business aspects.

In order to improve IT skills, an analysis of the current business situation, an analysis of existing information systems, and other tasks are important. It can be said that during the preparation of IS strategy, the employees of the IT department are deepening their understanding of the business situation and the better understanding information needs of the employees. Also, an analysis of the results of the study found that the increase in the formalities of the IS planning process

adversely affects the likelihood that after the planning, the understanding of problematic areas will improve, so the process should be less formalized.

The study found that a more frequent IS planning has a positive impact on the assessment of whether strategic IS planning has achieved its goals. The main reason is the fact that an often-repeated process makes it possible to formulate clearer expectations for the process from all participants. However, a more frequent strategic IS planning has a negative impact on employee satisfaction and probability to identify new ideas and opportunities during the process. This can be explained by the frequent process of collecting and evaluating the ideas that arise for business and IT staff, and there are fewer new ideas for the next process cycle that can be further improved. In this way, as strategic planning frequency increases, the number of ideas that are still unfulfilled and have a significant impact on business is reduced.

The involvement of strategic IS planning participants has a crucial impact on the value created for an organization. After analyzing the results, it was found that a higher involvement of senior management allows us to expect that changes and trends in the industry will be anticipated during strategic IS planning, a competitive advantage will be created, and customer satisfaction will be improved. The increased involvement of middle management reduces the likelihood that changes and trends in the industry will be anticipated (probably due to the focus on daily problems and the challenges of middle management). The involvement of employees in business units has a negative impact on the probability of identifying an appropriate IT architecture during strategic IS planning but contributes to the likelihood of a better coordination between IT and business units in decision-making in the future. It was also found that the involvement of an external party in the strategic IS planning process contributes to

the identification of changes in the business sector and the development of an appropriate IT architecture.

It was also found that an assessment of whether strategic IS planning had reached its goals depends on whether other value sources were achieved: the anticipation of changes and trends in the industry, the alignment of IT and business, and the improvement of employee satisfaction.

In summary, the established relationships between the strategic IS planning factors and the benefits to an organization prove that strategic IS planning requires a great deal of attention from organizations. In view of the value sources for business that is being sought, a proper consideration is needed then, making decisions regarding: (i) the expectations of the IT unit, (ii) what work will be carried out in the strategic IS planning process, (iii) who will be involved in the process, (iv) how often will the process be carried out, and (v) how formal will it be.

CONCLUSIONS

1. The role of strategic IS planning is to support an organization's current and future strategic goals. Historically, the role of strategic IS planning has been changing: from planning IT separately to the development of a common digital technology-based business strategy. Within the framework of this role, information systems that create a competitive advantage for businesses are planned and implemented during the process. Strategic IS planning results in an IS strategy that allows organizations to plan IS initiatives for a selected period and align these plans with their strategy. It possibly contributes to an organization's growth, transformation, the development of new products, an improvement of the business model, vitality, agility, flexibility, adaptability in the market, and creating other competitive advantages and organizational value sources.

2. Strategic IS planning plays a much broader role than IS audit, assessment, IS specification, or set of future IS solutions. Strategic IS planning covers all key organizational information processes supported by planned information systems. Bearing in mind that changes in information systems also lead to changes in the organization as a whole, as well as natural resistance to them, the relevance and clarity of the guidelines of strategic IS planning become extremely important.

3. Organizations face many challenges in strategic IS planning: the exclusion of top executives, a historically negative attitude toward IT departments, an absence of clear planning goals, an absence of planning practice (or methodology), a non-use of existing methods and planning tools, and others. In this context, comprehensive research is needed to investigate strategic IS planning factors and their impact on the value of IS in an organization.

4. The dissertation thoroughly defines the value of strategic IS planning: it combines measurement of IS planning goals with achievements used by Galliers, Pita, Chen, Mata, and other authors; this study utilizes the theory on improving IS capabilities and criteria for improving IT skills. This basically allowed for a more comprehensive assessment of the value of strategic IS planning, taking into account more specific business situations and objectives.
5. The research and developed logistic regression models have confirmed the influence of many strategic IS planning factors on the value IS generates for the organization. This has made it possible to clarify the research carried out by other authors, stating the impact of factors on exact value sources.
6. In this dissertation, one of the most exclusive of all strategic IS planning factors is the involvement of top management. This is in line with studied conducted by Bechor et al. (Bechor, Neumann, Zviran, & Glezer 2010), Khania et al. (Khania, Nor, Mojgan, & Hakimpoor 2012), Horton et al. (Hartono, Lederer, Sethi, & Zhuang 2003), Brown and Brown (2011), and other authors who claim that senior management's involvement in the strategic IS planning process is critical to the success of the same process.
7. The carried out research makes it possible to validate the impact of Newkirk's study (Newkirk, Lederer, & Srinivasan 2003) of the strategic IS planning process and on its created value for organizations. Also, a more in-depth assessment of strategic IS planning for organization value has made it possible to distinguish more accurately the impact of process steps on individual sources of value. Finally, it should be noted that in this work, interviews with business and IT executives prior to the quantitative study resulted in distinguishing an additional strategic IS planning task

– stakeholder information (IS strategy presentation). This was also identified as a factor contributing to employee satisfaction.

8. The research confirmed Doherty's (Doherty, Marples, & Suhaimi 1999) research on the impact of frequency on the success of strategic IS planning. On the other hand, this study did not confirm the influence of process formality (non-creativity) identified in Doherty's research on the specific sources value for organizations.

9. This dissertation has also not confirmed the impact of a strategic IS planning approach on at least one source of IS value. Despite the fact that strategic planning approaches have been analyzed by a large number of authors (Earl, Segars, Teo, Bechor, Brown, Chan, and others), this study failed to determine the impact of the chosen approach on the sources of value. It can be assumed that the approaches are more specific combinations of strategic planning factors identified in this dissertation, and therefore specific factors are more strongly affected than the derivative factor – the approach. According to the Doherty study, which explored the links between strategic IS planning approaches and other strategic IS planning factors, future research could be carried out to identify the links between strategic IS planning factors identified in this work and the approaches.

10. This research failed to confirm its hypotheses regarding the improvement of IT skills: a better understanding of user needs and requirements (H9), an understanding of key problem areas in IT (H10), the establishment of a uniform basis for prioritizing IT projects (H13), and the improved control of human, software, and hardware resources in IT (H14). This may be due to the fact that these value sources depend on other factors (the implementation of a strategy, organizational culture, etc.).

11. The research has allowed to identify and formulate practical recommendations for organizations regarding the factors that

should be addressed in strategic IS planning in order to improve certain benefits that are important for the organization. In summarizing the impact of the implementation of strategic IS process tasks, it can be said that the following tasks, related to business (not information technology) aspects, are very important: an analysis of the current business situation, the identification of new business processes, and providing information the interested parties. It is also crucial to ensure the involvement of all stakeholders, especially top management.

12. This study can be further developed in several directions. First of all, it is possible to repeat the research in different countries – to compare the impact of different cultures on the results. Also, a possible further research perspective could be aimed at linking the factors currently used and their implications to the strategic IS planning approaches widely used in scientific literature. Finally, not only the opinion of IT managers, but also the views of other business unit managers and top management on strategic planning and its benefits should be evaluated. This would provide an even broader view at the planning of strategic information systems.

LIST OF PUBLICATIONS

Publications in science journals:
- Rumšas, Gediminas; Skyrius, Rimvydas (2013). Contemporary challenges of information systems planning. *Ekonomika*, p. 134–141.
- Rumšas, Gediminas; Skyrius, Rimvydas (2014). Informacinių sistemų ir verslo suderinamumo užtikrinimo modelis. *Informacijos mokslai*, t. 67, p. 95−107.
- Skyrius, Rimvydas; Katin, Igor; Kazimianec, Michail; Nemitko, Svetlana; Rumšas, Gediminas; Žilinskas, Raimundas (2016). Factors driving business intelligence culture. *Issues in Informing Science and Information Technology*, Vol. 13, p. 171−186.

Presentations at scientific conferences:
- Rumšas, Gediminas; Skyrius, Rimvydas (2013). Contemporary challenges of information systems planning. *Ekonomika*, p. 134−141.
- Skyrius, Rimvydas; Katin, Igor; Kazimianec, Michail; Nemitko, Svetlana; Rumšas, Gediminas; Žilinskas, Raimundas (2016). Factors driving business intelligence culture. *Issues in Informing Science and Information Technology*, Vol. 13, p. 171−186.

Presentations at practical conferences:
- Rumšas, G. (2017), "Tyrimas: IT valdymo patirtis Lietuvos organizacijose 2017 m.," CIO Summit 2017, Vilnius.
- Rumšas G. (2015), "Tyrimas: IT valdymo patirtis Lietuvos organizacijose 2015 m.," CIO Summit 2015, Vilnius.

SHORT SUMMARY ABOUT THE AUTHOR

Personal Information

Name   Gediminas Rumšas
Date of birth   1984.06.19

Work experience

From 2017   Vilnius University, Vice-Dean
2009   Vilnius University, Junior Assistant
2014–2017   Civitta, Associate Partner
2011–2014   ECHO konsultacijos, Owner
2007–2011   Ernst & Young Baltic, Senior Consultant
2006–2007   Informacinės   technologijos,   Sales
                    Consultant

Education

From 2012   Phd   student   in   Management,   Vilnius
                    University
2007–2009   Master's   degree   in   management   and
                    business administration, Vilnius University
2003–2007   Bachelor's   degree   in   management   and
                    business administration, Vilnius University

NOTES

NOTES

NOTES