

A Comparison Between Recent and Prospective Critical Success Factors in Lithuanian Printing Industry

Viltė Auruškevičienė
Laura Šalčiuvienė
Rūta Kazlauskaitė
Andrius Trifanovas

The paper looks into the problem of identifying critical success factors in an industry. Though by definition all business organisations aim to be successful, companies within an industry differ a lot as regards their level of success. What makes some firms highly successful, when others have rather moderate success within the same industry? Can the above problems be explained by the wrong choice of strategic alternatives or inadequate strategy implementation? An empirical research of the Lithuanian printing industry was carried out with the purpose of identifying and differentiating the dominant success factors that are critical for the creation of competitive advantages.

Key Words: critical success factors, sustainable competitive advantage, printing industry

JEL Classification: L10, M30

Introduction

Though by definition all business organisations aim to be successful, companies within an industry differ a lot as regards their level of success. What makes some firms highly successful, when others have rather moderate success within the same industry? Can the above problems be explained by the wrong choice of strategic alternatives or inadequate strategy implementation?

According to Aaker (1989), the essence of strategic management rests

Dr Viltė Auruškevičienė is an Associate Professor at the ISM University of Management and Economics, Lithuania.

Dr Laura Šalčiuvienė is a Lecturer at the Manchester Metropolitan University, United Kingdom.

Rūta Kazlauskaitė is an Associate Professor at the ISM University of Management and Economics, Lithuania.

Andrius Trifanovas is a General Manager at Nuera Ltd, Lithuania.

on the ability to develop and maintain meaningful assets and on skills, and the selection of competitive strategies and arenas that would enable the above assets to form sustainable competitive advantages, which in turn should be created in view of critical success factors (CSFs). Most industries have a set of critical success factors that are determined by each industry's specific features and characteristics. A fit between competitive advantages and critical success factors of a particular industry may form a firm foundation for a firm's successful performance in that industry.

Identification of critical success factors in a particular industry is a valuable practice for a number of reasons. First of all, it leads to a better understanding of the competitive environment, which in turn may assist in making decisions related to new product development and marketing activities. According to Ketelhohn (1998), understanding and development of critical success factors enables a firm to make a successful entry into an industry, find a different position among other firms and successfully combine creation of the perceived value and cost reduction.

Vasconcellos, Sousa, and Hambrick (1989) carried out research which was aimed at testing the following two hypotheses:

1. critical success factors vary from one industry to another;
2. firms with strengths that are identical to the industry's success factors operate considerably more successfully within it.

Research carried out by an expert group on critical success factor rating in six industries supported the above hypothesis. Other expert groups from the same industries provided additional data that revealed a strong correlation between a firm's profitability and the fit of its strengths to an industry's critical success factors.

Scientific problem. The scientific problem may be formulated as a question: is there any difference in the perceived significance of current and prospective critical success factors among successful and unsuccessful companies?

Research object – critical success factors.

Research objective is to identify critical success factors leading to the creation of sustainable competitive advantage in a particular industry through a comparison and analysis of differences in the perceived significance of critical success factors among successful and unsuccessful firms.

Research methods. In parallel to its objective, the paper first provides an analysis of scientific literature on critical success factors, which then is

followed by an analysis of empirical research findings. Since critical success factors are industry specific, the paper focuses on the analysis of a particular industry, i. e. the Lithuanian printing industry. The above empirical research consisted of two parts: a qualitative research – interview with printing industry experts, which led to a primary list of critical success factors in an industry, and a qualitative research – survey of printing companies' managers.

The concept of Critical Success Factors

ORIGIN AND DEFINITION OF THE CONCEPT OF CRITICAL SUCCESS FACTORS

The concept of critical success factors was introduced in 1961 by Ronald Daniel (Daniel 1961). The author employed the above concept to identify information that is necessary in performing managerial duties. According to him, a firm's information system should focus on 'success factors' (Daniel 1961, 116). He also proposed that in most industries success is determined by three to six success factors. The above tasks should be carried out with particular care to ensure a company's success.

Anthony, Dearden, and Vancil (1972) further developed Daniel's concept by introducing the term 'critical success factors'. The above authors uplifted the above concept to the managerial level and demonstrated that at this level critical success factors vary from one company to another and one manager to another.

In the search for new methods of meeting the information needs of top level management, Rockart (1979) defined critical success factors as 'the limited number of areas in which results, if they are satisfactory, will ensure successful competitive performance for an organization' (Rockart 1979, 85). If the results in these areas are not satisfactory, performance of an organisation will fall short of expectations.

Rockart (1979) introduced four primary sources of critical success factors: the structure of a particular industry; competitive strategy, position in the industry, and location; environmental and temporal factors.

Munro and Wheeler (1980) applied the concept of critical success factors in their research on the managerial needs for information. According to them, the concept of critical success factors may be successfully employed to direct a company's effort towards the formation of a strategic plan. Furthermore, the concept may be applied not just merely for the selection of appropriate strategies, but also for the identification of major problems that arise in the strategy implementation process.

Dickinson, Ferguson, and Sircar (1984a) studied critical success factors in relationship to the design of management information systems. The authors offered a rather comprehensive definition of critical success factors, which comprises all levels of critical success factors. According to them, critical success factors can be defined as events, circumstances, conditions, or activities that, due to their significance, demand special attention (Dickinson, Ferguson, and Sircar 1984a). Critical success factors can be internal or external, and may have a positive or negative impact on a company's success. Their distinctive feature is the need for a special awareness or early warning system to avoid unpleasant surprises or missed opportunities.

CRITICAL SUCCESS FACTORS: ADVANTAGES AND DISADVANTAGES

Dickinson, Ferguson, and Sircar (1984a) distinguished the following three advantages of critical success factors: operational value, comprehensiveness, and flexibility. In another work, Dickinson, Ferguson, and Sircar (1984b) studied the applicability of critical success factor approach to small businesses and stated that analysis of the critical success factors may be effective at various levels: evaluation of the chances of a start up, planning process of a company's further activities, and effective implementation of planned activities.

Boynton and Zmud (1984) approached the analysis of critical success factors' advantages and disadvantages on the basis of two case studies and an overview of earlier research results. They pointed out two advantages of the critical success factors approach that mostly contribute to its success: firstly, the fact that it has gained recognition among top level management, and, secondly, its input in promoting and easing structural analysis and planning processes. First, the critical success factors approach focuses on a set of critical success factors, whereas later on the analyst goes deeper into each of them, constantly checking on their thoroughness and appropriateness.

Boynton, Shank and Zmud (1985) analysed the application of the critical success factors approach in the planning of the management information system (MIS). Their research results exceeded expectations and demonstrated that the critical success factors approach can be successfully applied not only in MIS planning but also in information resource planning, strategic planning, and individual goal setting. This approach brings top management closer to other members of the organization,

and assists in matching personal and departmental goals to overall organizational goals. The above research also proved the usefulness and intuitive character of the critical success factors approach. It enables natural interrelating of tactical and strategic planning and promotes structural analysis processes.

CRITICAL SUCCESS FACTORS CLASSIFICATION

In their study of the dependence of critical success factors on the hierarchical nature of an organisation and the level at which strategic decisions are made, Bullen and Rockart (1986) distinguished industry, corporate, sub-organisational, and individual success factors, which may be viewed as a critical success factors hierarchy. According to the assumption that business success is the attainment of pre-set goals, critical success factors become its prerequisites, which are strongly interrelated with business goals. In a hierarchical structure of the kind, business goals are dependent on certain factors that in their turn are dependent on other factors, which creates a logical dependency hierarchy.

The above hierarchical classification is just one approach to critical success factors grouping. Brotherton, Heinhuis, Medema and Miller (2003) distinguish internal and external critical success factors. The first are determined by the characteristics of a company's internal environment, i. e. its products, processes, people, and structures. These critical success factors reflect a company's core capabilities and competencies that are critical to its competitive advantages. The other group, i. e. external success factors, is conditioned by a company's external environment. According to Brotherton and Shaw (1996), external critical success factors are more difficult to control than the internal ones, though they may be measured and controlled to a certain degree. Critical success factors may also be viewed from their universality perspective. Accordingly they can be grouped into context specific and generic, the latter being common to a given combination of industry, market and broader environment conditions (Geller 1985). Grunert and Ellergard (1993) classified critical success factors into 'conjunctive or compensatory' and 'perceived or actual'. Ketelhohn (1998) studied differences between industry and operational critical success factors, which reflect the above-mentioned Brotherton, Heinhuis, Medema and Miller's (2003) context specific-generic dichotomy.

Starting with the lowest hierarchical level of critical success factors, i. e. individual managers, the critical success factor approach may be helpful

in defining major tasks, their selection from the multitude of everyday tasks that a manager has to perform, and setting priorities in a way that would enable the manager to focus on the core activities. Similarly, a managerial group may define their organisational critical success factors, and organisations within the same industry may identify industry critical success factors.

Bullen (1995) provided an example of the critical success factor approach application in an American high-technology engineering company, which serves as a good illustration of the possible benefits of the process for an organisation. At a critical success factors review meeting, the company's top management had to introduce their personal critical success factor lists. After CEO presented his critical success factors, the other managers were most surprised to find out that most of CEO's critical success factors were operational and almost identical to theirs. It became clear to everyone that the CEO, who was the company founder as well, was not willing to give up his control of everyday activities, which inhibited activities of the top management team without their clear recognition of it. Due to a clear focus on what each person considered vital, the critical success factor process revealed a conflict and enabled the top management team to find a constructive solution to the above problem. The above example also emphasises the significance of the critical success factors perceived significance. It is only natural that individuals have different views on the same matters. The top management, however, must not forget that, and from time to time get together to analyse and accommodate differences in the individually perceived significance of critical success factors.

CRITICAL SUCCESS FACTORS AND SUSTAINABLE COMPETITIVE ADVANTAGES

Grant (1998) suggests that critical success factors of an industry provide possibilities for creating competitive advantages. The identification of critical success factors reveals the potential for competitive advantages in a given industry. In order to survive in a market and prosper, an organisation must meet two criteria: offer a product/service that matches the demand and withstand the competition. According to Grant (1998), identification of critical success factors shall start with two key questions: what do our customers want and how can the company survive the competition?

According to Aaker (2001), critical success factors that most rivals in a

given industry possesses, and the absence of which may weaken an organisation's position in the market, make strategic necessities; whereas assets and competencies that enable a company to stand out from among its rivals and to outdo them form strategic strengths.

Critical Success Factor Research Methodology

There is no universal critical success factor research method. Rockart (1979) proposed a three to six hour interview with company executives as a critical success factor data collection method; however, this approach focused on managerial information needs and did not attempt to look into the strategic planning issues and their solutions. With the growth of the problematic and organisational scope of critical success factors, consultants and researchers used numerous critical success factor methods such as 'onion technique' interviews, analysis of related organisational activities, *a priori* list of critical success factors based on literature sources, mailed questionnaires, interviews in combination with subsequent questionnaires. Jenster (1987) supported the idea that critical success factor identification should be exclusively a CEO prerogative. Gengler, Peffer and Tuunanen (2003) claimed critical success factors to be one of a few approaches and methods applied in the planning profiling, which comprise company data simulation, company process simulation, application and database profiles, feasibility and risk analysis, exploratory research and interview.

Leidecker and Bruno (1984) suggested a number of methods for critical success factor identification: environment scanning, structural analysis of an industry, industry expert opinion, analysis of the competition, best practice analysis, company internal environment analysis, factor identification based on intuition, and profit impact of market strategy (PIMS) data analysis, which are further briefly described.

Environment scanning. This method is applied to forecast economic, political, and social forces surrounding and influencing activities of an organisation. Organisations often combine this method with the SWOT analysis. However, one of the method's limitations is its rather complicated application. A broader version of the method is the PESTEL system according to which environmental factors may be divided into political, economic, social, technological, environmental, and legal. As the system application requires plentiful resources, only large companies are able to use it.

Structural analysis of an industry. Analysis of the kind is usually based

on Porter's five forces of competition framework, comprising the following five components: entry barriers, substitutes, bargaining power of buyers and suppliers, and rivalry among existing firms. Analysis of each of these factors and their interrelationship may provide an organisation with a lot of useful data for critical success factors identification. This method is usually applied to identify general industry critical success factors and is not appropriate for individual company critical success factor identification.

Industry expert opinion. This method depends on the subjective opinion of individuals with rich work experience and comprehensive industry knowledge. Despite its subjectivity, the intuition of highly experienced experts often serves as a good source of critical success factors, which used along with other more objective methods provides lots of valuable information for critical success factor analysis.

Analysis of the competition. This method focuses on the competitive environment: how do companies compete, what are their competitive strategies, etc. The main drawback of the method is inability to provide any data on critical success factors not pertaining to rivalry among the companies.

Best practice analysis. This method is highly valuable in industries with one or two major market players. Critical success factors are identified through the determination of a company's most successful practices. However, due to a methodologically limited field of analysis, the method may inhibit identification of other critical success factors.

Factor identification based on intuition. The method relies on the intuition and insight of individuals with expert knowledge of an organisation's internal environment. It enables identification of temporal critical success factors that a company may fail to identify by means of a formal analysis. However, the method relies mainly on a subjective opinion.

PIMS data analysis. PIMS allows for identifying critical profitability factors that may be further used in the critical success factor analysis. The main advantage of the method is that it relies on empirical data; however, critical success factors identified by PIMS are of rather general character and lack specific information.

The authors of this paper support an integrated application of a number of the above methods for critical success factors identification. A combination of different methods should enable one to neutralise the drawbacks of the selected methods and provide rather objective results. Such analysis could start with a survey of industry experts, which could

result in a primary list of the industry's critical success factors that could enable further identification of the major dominant critical success factors. The application of such methods as the analysis of the competition, best practice analysis and factor analysis based on intuition may serve as a basis in the development of a questionnaire that would enable a quantitative determination of a given industry's critical success factors.

Research Design

Research hypotheses

H1: *critical success factors of the Lithuanian printing industry do not change in the course of time.*

H2: *there are significant differences in the perceived critical success factors' significance among successful and unsuccessful companies.*

Research sample. As critical success factors are industry specific, it is necessary to start with the definition of the scope of the industry under analysis, which will be based on Johnson and Scholes' (2002) definition of an industry that focuses on the prime product. The principal product of the printing industry is information transfer onto paper or any other physical substratum for commercial purposes. In other words, the principal product of the printing industry is commercial printing work.

Based on the data of the Lithuanian Department of Statistics (2004), there were 442 companies in Lithuania that fell under the publishing, printing and replication of record medium industry. As there are no specific data on the number of companies in the printing industry, the primary task was to define the research population. Companies were ascribed to the industry under research according to the following criteria:

1. The company does printing work itself or is engaged in secondary printing activities, such as bookbinding, production of plates, and photographic typesetting, which make a concurrent part of the printing industry.
2. Primary activities of the company shall be generating revenue, no less than half of which shall comprise income from sales.

The above selection criteria helped to eliminate companies that were not directly related to printing activities or undertook printing as a side activity. The primary company selection was executed based on the data provided in the online catalogue 'The Whole of Lithuania'. 108 companies were selected in line with the pre-set criteria. Based on the national statistics, 9 per cent of the above 108 companies fall under the category

of large-scale companies (over 250 employees), 15 per cent – medium-size companies (50–250 employees), and the rest are small-size companies (under 50 employees). Since the selection data related to a relatively small population, it was decided to survey top management of all the companies falling within the population.

Questionnaire design. To make a primary – unranked in order of importance – list of printing industry critical success factors, interviews were executed with experts from seven Lithuanian printing companies, two of which were CEOs of large printing companies, three were owners – general managers of SMEs, and two were specialists with many years of work experience in the printing industry. The above expert selection allowed for collection of miscellaneous information based on different experience in the same industry.

The above experts were given open questions. Following to Grant (1998), critical success factors were formulated in respect to the generalisation of replies to the following two questions:

1. What do customers of the printing industry want?
2. How does a company survive the competition?

Analysis of the expert responses led to a list comprising twelve critical success factors of the Lithuanian printing industry, which are as follows: long lasting relationship with clients, timely service/product development, reputation and reliability, new product/service development, geographical location, implementation of new technologies (latest electrostatic equipment, direct computerized control of printing machines, etc), active search for new clients, equipment upgrading (most of the equipment can only be used for specific purposes, besides there is practically no market for used equipment, which makes equipment upgrading more difficult and costly), order delivery time, employee qualification (Lithuanian printing companies have to train their labor themselves, which is highly time-consuming and necessitates possession of qualified and experienced staff capable of training others), service complexity, increase of production capacity. The above factors are listed in random order; they are not ranked as to the respondents' perceived significance.

It is also noteworthy that the respondents denied the significance of such widely acclaimed success factors as product and brand differentiation, access distribution channels, and good relationship with suppliers. Industry experts state that the above factors are not significant in the Lithuanian printing industry because the produce in the industry is by

large not differentiated, and brands do not play a major role. The larger part of product costs comprises the cost of materials (about 34 per cent), paper being the dominant one. Paper is a commodity good and its price is regulated by the world market, so suppliers cannot be taken as a success factor in the Lithuanian printing industry. As to distribution, it is usually done by publishers, thus access to distribution channels is of minor significance in the industry.

The questionnaire was developed on the basis of the twelve success factors identified in the qualitative research. It comprised four groups of questions. The first two were developed on the basis of the critical success factors list made after the expert interviews. In the first part of the questionnaire, respondents were asked to indicate the present significance of the critical success factors on a Likert-type ten-point scale, where 1 stood for 'totally irrelevant' and 10 – 'extremely significant'. The second group of questions was aimed at the evaluation of the significance of the analogous critical success factors for the respondent's business success in five to seven years on the same measurement scale. The 5–7 year period was selected intentionally – it is a typical time-span of lease agreements on the purchase of high-tech equipment, which is a popular way of purchasing equipment among companies in the Lithuanian printing industry. Besides, strategic plans of companies usually rest on the above time-span too. A comparative analysis of the questionnaire data was thought to provide a basis for the identification of tendencies in critical success factors changes, if there were any, thus supporting or rejecting the first hypothesis.

In the third part of the questionnaire, respondents were asked to indicate their company success level on a ten-point Likert-type scale, where 1 stood for 'not very successful' and 10 – 'highly successful'. The above question was one of the few that led to the identification of successful and unsuccessful companies.

The fourth part of the questionnaire looked into the company profile and objective evaluation of its level of success. Each company was described in terms of the following factors: employee number, yearly turnover, production and export proportion among all production. Company success was measured against the dynamics of the employee number, turnover and profitability, and the level of investment.

Data collection. The quantitative research was carried out by mailing questionnaires to the respondents. Questionnaires were posted to all 108 companies in the Lithuanian printing industry. To raise the re-

TABLE 1 Distribution of respondents' companies under various criteria

Criterion	Number of companies	Percentage
<i>Employee number</i>		
Under 50	17	68
51–250	6	24
Over 250	2	8
<i>Yearly turnover</i>		
Under 1 mio €	12	47
1–3 mio €	9	35
3–7 mio €	2	9
Over 7 mio €	2	9
<i>Export percentage</i>		
Under 20%	11	44
Up to 20%	11	44
20–50%	0	0
Over 50%	3	12

response rate, respondents were guaranteed anonymity and were provided a prepaid return envelope. Filled-in questionnaires could also be returned by fax (the number indicated in the questionnaire). In two weeks' time, companies e-mail addresses which were of access were e-mailed reminders requesting them to fill in the questionnaire. In the six weeks after the questionnaires had been mailed to the respondents, 26 were returned, 25 of which qualified as fitting.

Table 1 presents respondents' company characteristics. The survey results show that the distribution of companies under the survey corresponds to the general industry structure as regards company size and export proportion.

Low response rate is the principal factor conditioning the limitation of this research, as it did not allow for statistical procession of some data. Thus part of the survey results may be viewed only as tendencies, and does not allow for drawing solid conclusions.

Research Results

EVALUATION OF THE PERCEIVED SIGNIFICANCE OF RECENT AND PROSPECTIVE CRITICAL SUCCESS FACTORS

Firstly, SPSS package was used to calculate the rank mean of the perceived significance of recent critical success factors and estimate the sta-

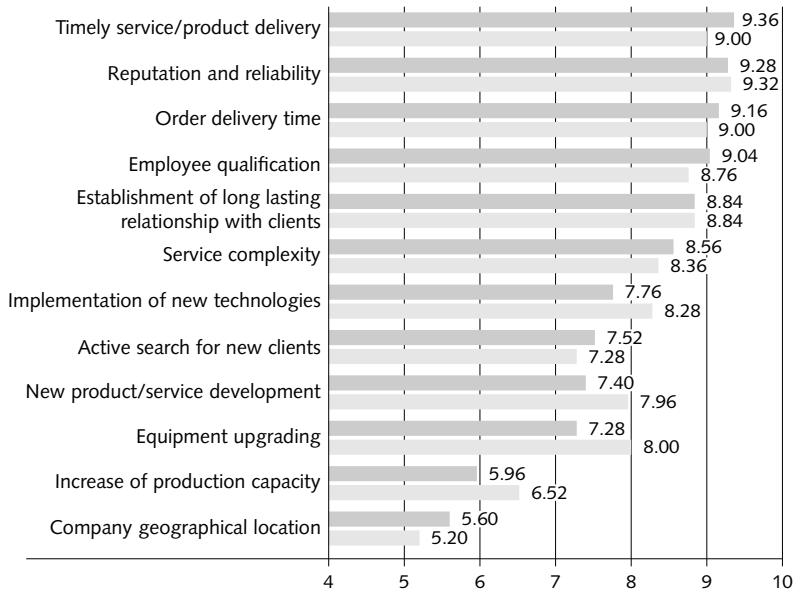


FIGURE 1 Comparison and ranking of recent and prospective critical success factors

tistical importance of individual critical success factors' significance. Statistical analysis of the collected data employed Wilcoxon's nonparametric signed-rank test. Differences between variables were considered significant where the respective p value was lower than the allowed significance level $\alpha = 0,05$. Evaluation of the average value of each recent critical success factor significance is presented in figure 1.

Recent critical success factors are ranked from most significant to least significant. Four critical success factors were given the highest score with means exceeding 9, i. e. timely product/service delivery (mean = 9.36), reputation and reliability (9.28), order delivery time (9.16), and employee qualification (9.04). Analysis of the statistical significance of differences in the above factor value proved differences between all pairs of variables within the group to be statistically insignificant. Furthermore, the scoring of the less valued factor of long lasting relationship establishment with clients was statistically insignificant in comparison to the scoring of the factors under the first group. In comparison to the five top factors, differences in the value scoring among all other recent critical success factors, with the exception of service variety (8.56), is statistically insignificant.

Based on the results of the Wilcoxon test, the five top recent critical success factors may be ascribed to a separate group, i. e. dominant critical

TABLE 2 Statistical significance of value differences among recent and prospective critical success factors

Factors	<i>p</i>
Establishment of long lasting relationship with clients	0.851
Timely delivery of products/services	0.086
Reputation and reliability	0.854
New product/service development	0.251
Company geographical location	0.234
Implementation of new technologies	0.194
Active search for new clients	0.750
Equipment upgrading	0.157
Order delivery time	0.546
Employee qualification	0.254
Service complexity	0.501
Increase of production capacity	0.059

success factors as regards their perceived significance. The second most important group of critical success factors includes service complexity (8.56), implementation of new technologies (7.76), active search for new clients (7.52), new product (service) development (7.40), and equipment upgrading (7.28). Two critical success factors with the lowest score – production capacity increase (5.96) and geographical location (5.60) – may be considered of little significance in the contemporary Lithuanian printing industry.

Parallel SPSS estimations were done in the evaluation of the prospective critical success factors' significance. Picture 1 also depicts the arithmetical means of individual prospective critical success factors' significance.

The SPSS package was also used to estimate the Wilcoxon test for each pair of recent and prospective critical success factors (see Table 2). Results of the test demonstrate that differences in significance between recent and prospective critical success factors are statistically insignificant for all pairs of variables, i. e. from the point of view of statistical significance, the significance of recent and prospective critical success factors is equally valued. Regarding to the survey results, it may be stated that the dominant most significant critical success factors do not change in the course of time.

Research results proved the first hypothesis H₁, i. e. critical success factors of the Lithuanian printing industry do not change in the course of time.

ESTIMATION OF THE PERCEIVED CRITICAL SUCCESS FACTOR
SIGNIFICANCE AMONG SUCCESSFUL AND UNSUCCESSFUL
COMPANIES

The research aimed to analyse the perceived significance of critical success factors among successful and unsuccessful companies. Unfortunately, the very low response rate of the respondents made statistical analysis of the kind and testing of the second hypothesis impossible. Nevertheless, some general premises and tendencies may be suggested.

Table 3 provides data of the analysis of the perceived significance of recent and prospective critical success factors. This comparison helps to identify critical success factors that may serve as a basis in the competitive advantage formation.

Company success was estimated on the basis of objective criteria, such as company sales growth, profitability dynamics, and investment indexes, as well as respondents' subjective judgement. After summing up the above indicators, seven companies with the highest scores were ascribed to the group of successful companies, whereas seven with the lowest scores were grouped as unsuccessful. The analysis of the evaluation of the perceived significance of recent critical success factors revealed greatest differences in the evaluations of the following factors: new product development (difference in the means of successful and unsuccessful companies is +3.29), service complexity (+1.71), implementation of new technologies (+1.43), employee qualification (+1.29) and order delivery time (+1.15). In addition, research demonstrated that the evaluations of unsuccessful companies were parallel to the earlier defined group of dominant recent critical success factors with respect to their perceived significance. In the evaluations of successful companies, there were just three parallels of the kind. In comparison to unsuccessful companies, successful ones attach considerably more attention to new product (service) development, service complexity, and implementation of new technologies. These critical success factors do not fall under dominant as per perceived significance, though it is quite possible that namely these critical success factors ensure competitive advantage in the printing industry.

The analysis of the evaluation of the perceived significance of prospec-

TABLE 3 Evaluation of the critical success factor perceived value in successful and unsuccessful companies

Critical success factors	Evaluation of recent critical success factors			Evaluation of prospective critical success factors		
	A	S	I	A	S	I
Establishment of lasting relationships with clients	8.84	8.57	8.29	8.84	8.14	8.43
Timely delivery of products/services	9.36	9.29	9.14	9.00	9.29	8.43
Reputation and reliability	9.28	8.86	9.29	9.32	9.43	8.71
New product/service development	7.40	9.00	5.71	7.96	8.57	6.29
Company geographical location	5.60	6.00	5.00	5.20	5.86	4.00
Implementation of new technologies	7.76	8.14	6.71	8.28	7.86	6.71
Active search for new clients	7.52	6.86	6.57	7.28	7.57	6.57
Equipment upgrading	7.28	7.43	6.71	8.00	7.14	7.29
Order delivery time	9.16	9.29	8.14	9.00	9.57	7.57
Employee qualification	9.04	9.29	8.00	8.76	9.29	7.43
Service complexity (order acceptance to delivery)	8.56	9.00	7.29	8.36	8.00	7.00
Increase of production capacity	5.96	5.71	5.14	6.52	6.43	5.14

NOTES Five highest scores in bold; A – all companies, S – successful companies, I – unsuccessful companies.

tive critical success factors demonstrated major differences in the evaluations of these factors: new product (service) development (+2.28), order delivery time (+2.00) and employee qualification (+1.86). It should be noted that new product (service) development ranked tenth according to the means of the perceived significance estimation among prospective critical success factors of unsuccessful companies. However, in the evaluations of successful companies, this critical success factor fell under the five top critical success factors. The above critical success factor does not fall under the group of dominant critical success factors as per perceived significance, however, it is quite likely that this factor is actually one of the leading critical success factors that ensure competitive advantage and will probably remain of utmost importance in the future too.

Conclusions

Considering to the literature review provided in this paper, identification of an industry's critical success factors leads to a better understanding of

the competitive environment. The empirical research described in scientific literature (Vasconcellos, Sousa, and Hambrick 1989) demonstrates a strong correlation between company profitability and the fit between a company strengths and critical success factors of a given industry. It has also been noted that different authors tend to identify different critical success factors and often combine factors that condition surviving competition and factors ensuring a unique competitive position. The authors of this paper support Aaker's (2001) differentiation attitude, according to which critical success factors can be divided into strategic necessities and strategic strengths.

The conducted research allows for making the premise that critical success factors that are dominant in the Lithuanian printing industry are strategic necessities, as their relative significance is similarly valued by all industry companies.

A comparison of the perceived significance of critical success factors among successful and unsuccessful companies makes a clear distinction between strategic necessities and strategic strengths – dominant critical success factors are ranked similarly in both groups, whereas evaluations of a number of critical success factors that do not fall under the dominant group tend to differ considerably. Thus a conclusion may be drawn that success factors with the greatest differences in ranking between successful and unsuccessful companies are strategic strengths. The pointed out differences may also indicate inability of some companies in the given industry to identify all industry critical success factors, which also means that they do not attach sufficient significance to them. Research limitations conditioned by insufficient data for a statistical analysis inhibit a strong assertion of this conclusion. A further development of this research necessitates collection of more plentiful data that would allow for calculating the statistical significance of the above mentioned differences and would eliminate doubts regarding the validity of the above conclusions.

To sum up the analysis of the dominant industry critical success factors and differences in the perceived significance of critical success factors in successful and unsuccessful companies, the following differentiation of critical success factors in the Lithuanian printing industry may be made:

- *Strategic necessities*: timely product (service) delivery; reputation and reliability; establishment of lasting relationships with customers.

- *Strategic strengths*: new product development; service complexity; implementation of new technologies.
- *Integrated critical success factors*: order delivery time; employee qualification. Integrated critical success factors combine strategic necessities and strengths. Their presence points to the fact that part of the dominant industry factors may also serve as factors ensuring creation of competitive advantages.

Research results indicate that, at the time of conducting the survey, dominant critical success factors of the Lithuanian printing industry are not liable to change in the course of time, as their perceived recent and prospective significance does not manifest any significant statistical difference. More marked differences in the means of the perceived significance of individual critical success factors may signal tendencies in their change. To sustain or refute these tendencies, further research is necessitated.

Managerial Implications

Research results demonstrated that critical success factors vary across industries (from the point of view of product and geographical location). Companies may lack financial recourses to conduct independent strategic market analysis, in which case they are recommended to merely use the critical success factor method as a means of strategic analysis. The application of the above method assists in associating short-term tactical and long-term strategic planning, and enables best allocation of effort and resources. This method can be used not only at an industry level; it is also highly practical at a business unit or organization department level as well.

References

- Aaker, D. A. 1989. Managing assets and skills: The key to a sustainable competitive advantage. *California Management Review* 31 (2): 91–106.
- Aaker, D. A. 2001. *Strategic market management*. 6th ed. New York: Wiley.
- Anthony, R. N., J. Dearden, and R. F. Vancil. 1972. *Key economic variables: management control systems*. Homewood, IL: Irwin.
- Boynton, A. C., M. E. Shank, and R. W. Zmud. 1985. Critical success factor analysis as a methodology for MIS planning. *MIS Quarterly* 9 (2): 121–30.
- Boynton, A. C., and R. W. Zmud. 1984. An assessment of critical success factors. *Sloan Management Review* 25 (4): 17–28.

- Brotherton, B., and J. Shaw. 1996. Towards an identification and classification of critical success factors in UK hotels plc. *International Journal of Hospitality Management* 15 (2): 113–35.
- Brotherton, B., E. Heinhuis, M. Medema, and K. Miller. 2003. Critical success factors in UK and Dutch hotels. *Journal of Services Research* 2 (2): 47–78.
- Bullen, C. V. 1995. Reexamining productivity CSF's. *Information Systems Management* 12 (3): 13–9.
- Bullen, C. V., and J. F. Rockart. 1986. *A primer on critical success factors*. Homewood, IL: Irwin.
- Daniel, D. R. 1961. Management information crisis. *Harvard Business Review* 39 (5): 111–21.
- Dickinson, R., C. R. Ferguson, and S. Sircar. 1984a. The critical success factors approach for the design of management information systems. *American Business Review* 1 (2): 23–9.
- . 1984b. Critical success factors and small business. *American Journal of Small Business* 8 (3): 49–58.
- Geller, A. N. 1985. Tracking the critical success factors for hotel companies. *The Cornell Hotel and Restaurant Administration Quarterly* 25 (4): 76–81.
- Gengler, C. E., K. Peffers, T. Tuunanen. 2003. Extending critical success factors methodology to facilitate broadly participative information systems planning. *Journal of Management Information Systems* 20 (1): 51–85.
- Grant, R. M. 1998. *Contemporary strategy analysis: Concepts, techniques, applications*. 3rd ed. Malden, MA: Blackwell.
- Grunert, K. G., and C. Ellegaard. 1993. The concept of critical success factors: theory and method. In *Perspectives on marketing management*, ed. M. J. Baker. Chichester: Wiley.
- Johnson, G., and K. Scholes. 2002. *Exploring corporate strategy*. 6th ed. Harlow: Pearson Education.
- Jenster, V. 1987. Using critical success factors in planning. *Long Range Planning* 20 (4): 102–9.
- Ketelhohn, W. 1998. What is a key success factor? *European Management Journal* 16 (3): 335–40.
- Leidecker, J. K., and A. V. Bruno, 1984. Identifying and using critical success factors. *Long Range Planning* 17 (1): 23–33.
- Munro, M. C., and B. R. Wheeler. 1980. Planning, critical success factors, and management information requirements. *MIS Quarterly* 4 (4): 27–39.
- Rockart, J. F. 1979. Chief executives define their own data needs. *Harvard Business Review* 57 (2): 81–94.

- Statistikos departamentas prie Lietuvos Respublikos Vyriausybės. 2004. *Įmonių finansiniai rodikliai 2003*. Vilnius: Statistikos departamentas prie Lietuvos Respublikos Vyriausybės.
- Vasconcellos, E. S., J. A. Sousa, and D. C. Hambrick. 1989. Key success factors: test of a General Theory in the mature industrial-product sector. *Strategic Management Journal* 10 (4): 367–83.