



THE FACTORS AFFECTING LATVIAN PUBLIC ADMINISTRATION DECISION TO OUTSOURCE INFORMATION TECHNOLOGY FUNCTION

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Abstract. Outsourcing has been widely discussed in the context of advantages and disadvantages, potential risks and problems, but very little discussed about the factors that determine public administration decision to outsource. Outsourcing now is widespread, but the main question still existed: how can we identified activities or services that must not be contracted out? More and more public administration is questioning whether is necessary to provide all services by themselves or it is possible to guarantee high quality and cost-effective results with contracting out.

This article reviews how general, public administration-specific and information technology-specific factors influence decision to outsource. All these factors separately and jointly influence public administration decision to outsource information technology function. Examining these factors therefore helps in understanding the outsourcing decision-making process.

The aim of this article is to find factor that can be used in decision making process about public administration function outsourcing in the field of information technologies. Unified comparative factors allow make the decision, taking into account short term and long term goals.

Key words: *decision system, information and communication technology, outsourcing, public administration*

JEL code: H8, H830

Introduction

Outsourcing has been widely discussed in the context of advantages and disadvantages, potential risks and problems, but very little discussed about the factors that determine public administration decision to outsource. The decision-making system about outsourcing is a complex set of factors that covering full outsourcing life cycle (the decision making process of usage of outsourcing, defining of criteria in connection with amount and quality, choosing process of outsourcing provider, as well as work control of service provider) and different aspects of entrepreneurship (economical, social, technical, political, juridical and organizational). However the economical factors are the main important in decision making process (Holcomb and Hitt, 2006).

All factors can be divided into two groups – strategical factors (for example, accession of specific abilities/ competence, competitive expenses, risk minimization) and tactical factors (for example, compliance with standard quality, the lack of competence within the company, lack of capital) (Lok et al., 2012).

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The outsourcing influencing factors in the field of information technologies can be divided into the followings groups (under the analysis of scientific literature, listed in alphabetical order):

- General factors – is not under the influence of pattern and sphere of outsourcing (company size, costs reduction, demand fluctuations, innovation, intellectual property rights, language and culture and resources of company);
- Specific factors of public administration – are influencing the outsourcing in public administration field (inherently governmental function and political drivers);
- Specific factors of information technology – are influencing the usage of outsourcing in the field of information technology (data security and technical competence).

This article reviews how general, public administration-specific and information technology-specific factors influence decision to outsource. Examining these factors therefore helps in understanding the decision-making process.

In the scientific literature exists also other influencing factors (listed in alphabetical order) – critical operations risk (Downey, 1995), expenses of labour (Abraham and Taylor, 1996), level of competition (Smith, 2004), necessity of twenty-four hours working schedule (Djavanshir, 2005), organization of working process (Kalleberg, 2001), possibilities of export (Görg et al., 2008), quality of service (Dabholkar, 1995), the location place of service provider (Grover and Teng, 1993), the strategy of company (Currie and Wilcox, 1998), as well as uncertainty of technology (Ang and Cummings, 1997). Part of the listed factors characterizes service provider selection conditions, but others can be distributed as a subset of the other factors; therefore these factors will not be discussed in-depth article.

The aim of this article is to find factor that can be used in decision making process about public administration function outsourcing in the field of information technologies. The research methods used include a scientific literature review and a survey of Latvian public administration employees (high, medium, and low-level managers and experts who have experience in usage of information and communication technology outsourcing). Factors were evaluated using a 6-point scale, where 1 indicated a strong disagreement and 6 indicated a strong agreement.

Research results and discussion

1. Company size

The usage of outsourcing depending on the company size is the most commonly researched issue in scientific literature; because the company size closely influences the company's production or service facilities. The company size in the context of outsourcing is measured by the number of staff employed by the company.

The proponents of negative influence points out that small companies tend to focus their limited resources on the core business processes, but outsource the secondary processes (Abraham and Taylor, 1996). The negative influence in following years is also supported by the side of Ang and Straub (Ang and Straub, 1998). In order to provide IT services the company necessary specific kind of competence that is not available to the small companies. By contrast, the large companies have sufficient financial resources and facilities to provide the specific resources (Delone, 1981).

The promoters of positive influence points out that large companies use outsourcing in order to decrease the expenses (Kimura, 2002). In a result of bargaining the large company can lead to lower prices (Grossman and Helpman, 2002). Also the choice of outsourcing provider for the large company costs less (Grossman and Helpman, 2002).

Merino and Rodriguez believe that there is no linear influence between the company size the usage of outsourcing, but inverted-U relationship (Merino and Rodriguez, 2007). Using the curvilinear it is possible to determine the optimal level of outsourcing in company.



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2. Costs reduction

Cost reduction is the most important and the most frequently researched topic of outsourcing, but its economic importance is dependent on the quality, therefore it is essential to evaluate combination of the cost savings and quality.

There are many reviews about the costs reduction. Some researches have shown that outsourcing can reduce costs (Bowers, 1990; McFarlan), especially labour costs (Abraham and Taylor, 1996). Furthermore the cost reduction in the amount of 20%, not significantly influence the quality of service (Domberger et al., 1987). Also research made in public administration shows that it is possible to get cost savings of about 20%, especially with open procurement (Vining and Goberman, 1999). But researches made in following years indicate less positive results (Hodge, 1999). The end of the 90s shows that only 54% of the outsourcing agreement is reached the expected cost savings (Lacity and Willcocks, 1998). Hodge indicates that in a result of outsourcing the expenses can even increased (Hodge, 1996). But the evidences of efficiency of outsourcing are still infrequently (Leiblein et al., 2002).

Using outsourcing the companies cost savings can be obtained only under the condition that outsourcing provider work efficiently and are able to provide a lower cost (Bers, 1992).

Expenses of outsourcing are not constant throughout the duration of the contract, because initially have difficulty in clearly defining the quality of service criteria, the technologies are changing during the time, as well as the outsourcing provider and receiver are cooperating and improve cooperation (Chopra and Sohdi, 2004).

3. Data security

One of core principles in sensitive and confidential data processing is an accepted level of data security. Particularly important is medical personal data (Huston, 2001) and financial information security, because misuse of these kind of data can cause significant damage to a person's life, reputation, professional activities as well as financial prosperity.

Data security problem are described as the lack of outsourcing and non-use reason, while the most important security and data privacy risks are mentioned company's corporate policy, audit and control procedures, as well as state laws and regulations (Tafti, 2005). Data security is dependent on technical and subjective safety (Shin, 2009).

The safety factor significantly influences outsourcing. The higher is the accepted level of safety, the higher are the expenses (and vice verse). Even a little change in the level of safety can make great influence to the expenses of outsourcing, even more the companies are ready to pay more for the provided additional safety (Piazza, 2006), because safety risk is considered as one of the greatest company's priorities (Buzzard, 1999).

In the scientific literature there are considered different viewpoints, if data security risk depends on the type of outsourcing (onshore or offshore). Colwill and Gray believe that legislations of national law in some countries are not complete in the question of data security; therefore the data security risk is higher in offshore (Colwill and Gray, 2007).

Security risks can be divided into two categories – the company's internal and external risk (Loch et al., 1992) and four subcategories – the human, non-human, intentional and unintentional (Bojanc and Jerman – Blazic, 2008). In order to reduce security risks are used complex measures, which covers the technical, legislative and administrative issues.

4. Demand fluctuations

In the decision making process it is important to take into account demand value, uncertainty and fluctuation (Hsiao, 2009, p. 49-50). The uncertainty creates difficulties for planning and control process



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(Fisher, 1997); therefore demand uncertainty significantly increases the company's reliance on outsourcing benefits (Kouvelis and Milner, 2002).

The uncertainty of demand is defined by two dimensions (Grover and Malhotra, 2003) – environmental uncertainty and behavioural uncertainty. However, some another uncertainties exists – performance ambiguity, technical uncertainty, complexity and unpredictability (Krickx, 2000). It is useful to use internal resources, if they are used on a regular basis and work with a full load, while outsource resources with low or irregular demand (Carlton, 1979).

If demand is very volatile then providing services with the company's internal resources, the company must invest significant financial resources, because resources must be provided in full amount even in period when particular service is not necessary or it is necessary under limited conditions. Under these circumstances it is more advisable for company to use outsourcing (Abraham and Taylor, 1996).

Company's request for flexibility can influence the internal (low component commonality) and external factors (seasonality), therefore outsourcing is advisable for companies with seasonal work (Fill and Visser, 2000).

5. Inherently governmental function

The usage of outsourcing can be excellent tool in achieving the goals of public administration, but it is important to keep the monitoring functions in order to control the service providers and outcomes, as well as determinations of political and regulatory rights (OECD, 2011).

Although the usage of outsourcing in public administration have increased in recent years, specially in the fields in national security, intelligence, warfare, development of state infrastructure and military (Freeman and Minow, 2009, p. 2), there is still a belief that some functions is not appropriate to outsourcing – functions that are critical for existence of the state or that are in basis of the creation of public administration (for example, military operations, working of police and fire safety department, as well as tax collection) called as inherently governmental function. Each company has its own central functions that are in great importance for existence of the company and not be outsourced. However if company's goals are changing, then core functions or priorities can change (Cohen and Cohen, 2008, p. 99).

In nowadays the outsourcing are being used also for realization of very important (sensitive) functions of the public administration that some time ago were considered as exclusive functions for public administration, for example, military target selection, interrogation of prisoners, border control, security training, monitoring system design, intelligence service management, classified or confidential information gathering and use, military support in warfare zone (Freeman and Minow, 2009, p. 2). Another researches shows following the fields in public administration where usage of outsourcing is possible – public building maintenance and management; personnel management; services of public transport; parks and gardens management; prison supervision; road maintenance; public health services; tax assessment; maternity salary administration; welfare program implementation; state auto-parks maintenance and information technologies services (Washington Roundtable and Washington Research Council, 2010, p. 6).

6. Innovation

If the company does not have the required competence to create innovation, or the creation of an internal innovation process is too slow and expensive, the company can use the outsourcing (Barney and Lee, 2002).

Different classifications for innovations can be met that are divided into pairs – innovations of products/ processes, competence lowering/ innovation-enhancing, radical/ incremental innovations, administrative/ technical innovations (Schilling, 2006, p. 43-45). According to Glass and Saggi innovations gives positive impact on outsourcing – innovation provides additional income, that later can



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be used for the purpose of development of the company (Glass and Saggi, 2001). Bardhan points out that outsourcing is appropriate when innovation becomes as a mainstream subject, when competence of the company is freely available and it can be repeated by the competitors (Bardhan, 2006).

Decision making process about outsourcing innovation can be influenced by some characteristics, arising from the nature of innovation or in comparison with other goods or services (Howell, 2006). Company access to the external service provider competence and technological capabilities, including innovation is one of the advantages of outsourcing (Lacity et al., 2009), but the main setback for usage of innovation outsourcing is investors' uncertainty about the return on investment (Hall, 2002). The data from research shows that only a third of companies are satisfied with their innovation results obtained from the use of outsourcing (Robinson et al., 2008).

Innovation can be described as an unclear, uncertain and at the same time a complex process (Pich et al., 2002), which in the high-tech age can cause significant damage to the company or to provide a competitive advantage.

7. Intellectual property rights

Intellectual property rights are related to data security, but it is discussed as a separate factor. One of the most importance assets of company are the intellectual property rights that cover copyrights, patents, trademarks, business processes and business plans (Hinkelman, 2007, 15). Leakage of the intellectual property risk has historically been mentioned as one of the most important risks and outsourcing non-use reasons (Teece, 1986).

The protection of intellectual property rights is under the basis of legitimacy of each country, in this manner influencing the relationship within parties of contract if they are located in different countries (Pai and Basu, 2007). The main attention must be paid to outsourcing provider that is operating in country without strong protection.

Using the advantages of outsourcing companies are important to maintain its intellectual property rights, as well as getting the appropriate ownership of outsourcing results (Pai and Basu, 2007). In contracts of outsourcing typically the protection of intellectual property rights are being enclosed in three degrees – in the moment of signing the contract, during the contract period and after the termination of the agreement (Corley et al., 2005).

Merges and Nelson believes that the protection of intellectual property is difficult to implement in some fields, for example, in information technology (Merges and Nelson, 1990), however, over time the legislation is improved and in nowadays the company knowledge base is dependent on efficiency of the protection system of intellectual property rights in the company itself (Martinez-Noya and Garcia-Canal, 2001).

8. Language and culture

In decision making process about outsourcing, the culture and linguistic factors play an important role, especially in customer relationship management, however in the scientific literature can be found conflicting assessments about necessity to know official state language in outsourcing, because there is belief that knowledge of English language can fully replace the knowledge of official state language (Herbsleb and Moitra, 2001).

Other researchers indicate that the number of people who speak in several languages is more then people who speaks only in one language (Graddol, 1998). However the majority part of English speaking people, English uses it only as the second, third or forth language. There are differences in level of knowledge and used dialects (Fishman, 1998); therefore the knowledge of national state language is one of the core factors in outsourcing.



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Cultural differences can create significant and systematic misunderstandings in process of cooperation (Herbsleb and Moitra, 2001), for example, the differences in perception of life, values, beliefs and behaviour, working habits, as well as incompatible working hours; therefore the cultural differences between parties must be taken into account (St. Amant, 2002). Due to the time zone differences, communication can be distorted and service response time can increase (Qureshi et al., 2006). The cultural differences influence the decision-making process. In order to reduce outsourcing risks, outsourcing is mainly used in nearshore – in the regions with the same or similar culture.

As important reason for nearshoring can mention lower expenses (especially when talking about labour), cultural similarities, similarities in legislations and language, lower travelling and communication expenses (Gartner, 2002, 4).

9. Political drivers

There are three drivers of outsourcing – costs, strategy and policy. If the first drivers characterized the decisions made in private company, then decisions that are being made within the usage of outsourcing in public administration are closely influenced also by political drivers, however the political drivers can be hidden (Ni and Bretschneider, 2007). In every decision can be used one, several or even all the drivers together (Kakabadse and Kakabadse, 2000).

In public administration decision making process about outsourcing is often determined by political criteria rather than efficiency and effectiveness indicators (Vintar and Stanimirovic, 2011), that is why the decision makers have to find an effective balance between efficiency and political direction (Reddick, 2011, p. 173).

It must be mentioned that in the decision making process about IT outsourcing in the public administration one of the most important aspects that must be taken into account is the “bandwagon effect” and the public administration wish work under the principles of entrepreneurship (Willcocks et al., 1995).

It is accepted to think that outsourcing in the public administration is based only on economical and political decisions (Hirsch, 1995), despite the evidence about politically aspect is met very rare (Brudney et al., 2005).

Rising the frequency of outsourcing the companies are meeting with the advantages of outsourcing and the influence of political and costs drivers are getting lower, because in nowadays decision-making strategy involves a set of aspects – economic, technical, political, strategical and organizational (Baldwin et al., 2001).

10. Resources of company

Company resources include all assets, capabilities, business processes, characteristics, information and knowledge that are available for the company in order to fulfil its strategy (Daft, 1983).

In conditions of limited resources company is forced to regularly review the company’s limited resources (Drtna, 1994), because only with effective administration of resources, being aware of their benefits and losses the company can gain competitive advantages in the market and succeed (Fahy and Smithee, 1999, p. 1). The typical resources are districted to the fields which creates the most value added, usually on the company’s core business processes.

The human capital resources are one of the most important factors that affecting the company’s basic functions and opportunities (Bresnahan et al., 2002), including the decision making process about outsourcing. Companies with high level employees with competitive salary in core process can reduce the cost with outsourcing in secondary process (Cusmano et al., 2009). Usually companies increasingly use outsourcing when companies have their internal lack of the human resource (Green, 2000). But the lack of resources in the public administration is with increased influence, due to the restrictions on the recruitment, the employment termination processes and procedures, as well as the existing limitations in



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the number of officials (Kremic et al., 2006). However, both public administration and private companies may have difficulty finding particular human-specific knowledge.

11. Technical competence

Technical competence is particularly important in the technology-intensive sectors, where technology diversification is becoming more and more required (Granstand, 1998). The competence includes the appropriate qualifications and experience, necessary specialized skills, specializations in the industry and technological knowledge (Carey et al., 2006).

One of the most important advantages of outsourcing is company access to high-quality technological services (Baldwin et al., 2001), which are too expensive for company to provide with internal resources (Gilley and Rasheed, 2000). However, the outsourcing does not in itself mean that the company will have access to the latest technology, because the deals are being regulated by the contract signed between provider and receiver (Lacity et al., 1994).

It must be taken into account that the usage of outsourcing reduces the company's internal technological competence (Coombs, 1996) and critical knowledge, creating the risk of dependence on service provider (Hoecht and Trott, 2006).

There is a believed that companies with high technological competence is more competitive and they do not need to seek additional external resources. On the other hand, companies with high technological competence are better protected against outsourcing failures, due to the fact that company with competence can choose the most appropriate provider for outsourcing, as well as better control the work (Mayer and Salmon, 2006).

12. Results of empirical research

The study was conducted among 68 employees in Latvian public administration – high, medium, and low-level managers and experts who have experience in usage of the information and communication technology outsourcing. The questionnaire was distributed to the respondent by web form during January, 2013. Distribution of responses for factors influencing the decision making process about outsourcing is shown below (see Table 1 and Table 2).

Table 1

Distribution of responses for factors influencing the outsourcing decision in the public administration (part 1)

	Company size		Costs reduction		Data security		Demand fluctuations		Inherently governmental function		Innovation	
	n	%	n	%	n	%	n	%	n	%	n	%
1	11	16.2	7	10.3	7	10.3	1	1.5	10	14.7	3	4.4
2	7	10.3	1	1.5	1	1.5	17	25.0	1	1.5	3	4.4
3	25	36.8	7	10.3	4	5.9	22	32.4	17	25.0	15	22.1
4	6	8.8	14	20.6	7	10.3	14	20.6	7	10.3	25	36.8
5	18	26.5	28	41.2	7	10.3	7	10.3	22	32.4	19	27.9
6	1	1.5	11	16.2	42	61.8	7	10.3	11	16.2	3	4.4
Total	68	100.0	68	100.0	68	100.0	68	100.0	68	100.0	68	100.0

Source: author's research results, January, 2013 (n=68). Scale: 1 – strongly disagree; 2 – disagree; 3 – slightly disagree; 4 – slightly agree; 5 – agree and 6 – strongly agree



Table 2

Distribution of responses for factors influencing the outsourcing decision in the public administration (part 2)

	Intellectual property rights		Language and culture		Political drivers		Resources of company		Technical competence	
	n	%	n	%	n	%	n	%	n	%
1	3	4.4	11	16.2	7	10.3	3	4.4	3	4.4
2	3	4.4	11	16.2	14	20.6	3	4.4	3	4.4
3	22	32.4	22	32.4	11	16.2	1	1.5	1	1.5
4	18	26.5	18	26.5	18	26.5	22	32.4	22	32.4
5	14	20.6	3	4.4	11	16.2	25	36.8	25	36.8
6	8	11.8	3	4.4	7	10.3	14	20.6	14	20.6
Total	68	100.0	68	100.0	68	100.0	68	100.0	68	100.0

Source: author's research results, January, 2013 (n=68). Scale: 1 – strongly disagree; 2 – disagree; 3 – slightly disagree; 4 – slightly agree; 5 – agree and 6 – strongly agree

The data displayed in table 1 and table 2 indicated that:

- Most of the respondents gave an evaluation of 5 and 6 to the factor of data security (72.1%), but the next important factors were found costs reduction (57.4%), resources of company (57.4%), technical competence (57.4%) and inherently governmental function (48.5%);
- Only 32.4% of respondents gave an evaluation of 5 and 6 to the factor of innovation, while 69.1% of respondents in general are agreed that innovation is important factor in decision making process about outsourcing (gave an evaluation of 4 or more);
- Most of the respondents disagree that language and culture (64.7%), company size (63.2%) and demand fluctuations (58.8%) are important factors in decision making process (gave an evaluation of 3 or less);
- Respondents' views on the importance of political driver factor are not homogeneous – 52.9% respondents in general are agreed that this factor is important in decision making process about outsourcing (gave an evaluation of 4 or more), while 47.1% respondents in general disagreed (gave an evaluation of 3 or less).

Conclusions

Based on the scientific literature analysis and the results of survey can be drawn the following key conclusions, proposals and recommendations:

1. Outsourcing has been widely discussed in the context of advantages and disadvantages, potential risks and problems, but very little discussed about the factors that determine public administration decision to outsource.
2. Public administration decision to outsource is influenced mainly by three groups of factors – general, public administration-specific and information technology-specific factors.
3. Under the analysis of scientific literature was identified the following key factors (listed in alphabetical order) – company size, costs reduction, data security, demand fluctuations, inherently governmental function, innovation, intellectual property rights, language and culture, political drivers, resources of company and technical competence. Examining these factors therefore helps in understanding the outsourcing decision-making process, assumptions and limitations.



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4. In scientific literature exists also other less important factors (listed in alphabetical order) – critical operations risk, expenses of labour, level of competition, necessity of twenty-four hours working schedule, organization of working process, possibilities of export, quality of service, the location place of service provider, the strategy of company, as well as uncertainty of technology. Due the fact that part of the listed factors characterizes service provider selection conditions, but others can be distributed as a subset of the key factors; these factors not discussed in-depth in this article.
5. In Latvian public administration the main factors that influence decision making process about information and communication technology outsourcing are data security, costs reduction, resources of company, technical competence and inherently governmental function, while factors as language and culture, company size and demand fluctuations are undervalued.
6. In Latvian public administration the factor of political driver can not be assessed unambiguously, but in practice is usually overestimated. However in the case of changes in political directions, the previous made decisions, priorities and even targets may become outdated. In context of outsourcing contracts are typically closed to the long period of time, therefore contracts must respond to changing requirements.

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