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Damian Kedziora

SERVICE OFFSHORING INDUSTRY: SYSTEMS ENGINEERING APPROACH TO ITS TRANSITIONAL CHALLENGES

LUT
Lappeenranta
University of Technology

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Thesis for the degree of Doctor of Philosophy to be presented with due permission for public examination and criticism in the Auditorium 3310 at Lappeenranta University of Technology, Lappeenranta, Finland on the 21st of March 2018, at noon.

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Abstract

Damian Kedziora
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The thesis addresses the concepts of business process offshoring and international service transfers. For the last few decades, this industry has been advancing worldwide, and in the past few years, its rapid development has been observed in Central and Eastern Europe (CEE). The multiple opportunities organizations see in such corporate transformations come not only from the possibility of reducing operational costs and taking advantage of foreign talent pools, but also from the focus on continuous improvement and process optimization that can enhance operational efficiency.

The work follows the general scientific design with interpretive and positivist approaches. It applies mixed research methods, among which we can mention literature and legal topics review, qualitative analysis, statistical analysis and case study (with the use of simulation, 'six thinking hats', 'scamper' and brainstorming).

The dissertation aims at applying systems engineering approach to the analysis of challenges identified at different stages of service offshoring transitions, by understanding problem design structure and responding to the most problematic issues with sustainable solutions. It shall constitute conceptual basis for approaching and building operational systems for various offshore business applications. The thesis discusses the solution reaching process and suggests the newly developed problem solving method. It presents the phases, design tracks and key stakeholders of transition projects that are supposed to migrate operational tasks from one organization to another located in a different country.

What is more, the study aims at identification and analysis of factors motivating offshoring investments in CEE region, from the perspective of service vendor and client. It conducts comparative analysis of five CEE countries that are direct competitors to Poland. Finally, it touches the specific kind of offshored operations which is the offshoring of higher education, and sheds the light on the differences between standard business offshoring and offshore university ventures.

Keywords: transition, offshoring, outsourcing, captive, re-engineering, business, model, systems, engineering, life-cycle.

Acknowledgements

This work has been accomplished between 2016 and 2017 at the School of Business and Management of the Lappeenranta University of Technology, Finland. In this section I would like to express my gratitude towards all the persons who supported me in completing the doctoral degree.

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I wish to thank the reviewers of the dissertation for the constructive and valuable comments which had substantially helped me to improve this work, as well as the opponents for the time they spent on its consideration and evaluation. I would like to appreciate the support of my supervisors and co-workers at the company I worked for throughout the most of my degree, Fujitsu Poland, as the sound share of my ideas resulted from the solutions we developed at the daily Service Desk operations. Moreover, I would like to appreciate the ProProgressio organization that facilitates the dynamic growth of modern services sector in Poland, for the continuous support towards my research, together with all the people in case firms who spent their time and shared valuable thoughts during interview sessions.

Most importantly though, I would like to express my greatest gratitude towards the people I love for understanding and patience during the whole three years of my doctoral studies. It has been a priceless support I will always appreciate.

September 2017
Lappeenranta, Finland

Damian Kedziora

Do not be afraid, put out into the deep!

This thesis is dedicated to my beloved grandmother Bronisława, R.I.P.

Contents

List of publications

This section presents the five publications on which the thesis is based, together with the author's contribution to them. Four papers are already published and one of them is accepted and awaiting publication. The rights to include the articles in the dissertation have been granted by the publishers.

PUBLICATION I

Kedziora, D., Kraslawski, A., and Karri, T. (2016). Offshored Service Cost Model as a Key Post-Transition Challenge. *Journal of International Studies*, 9(3), pp. 229-240.

The author acted as a paper writing coordinator, wrote most of the text. Made the research plan, wrote the literature review, and organized data collection. Engaged in the case study, developed conclusions together with the other co-authors. Corresponding author.

PUBLICATION II

Kedziora, D., Karri, T., Kraslawski, A., and Halasa, M. (2017). Nearshore Service Transfers in the EU: Legal and Economic Issues. *Economics and Sociology*, 10(1), pp. 290-309.

The author acted as a paper writing coordinator, wrote most of the text. Made the research plan, wrote the literature review, and organized data collection process. Engaged in the case study, developed legal aspects review and conclusions together with the co-authors. Corresponding author.

PUBLICATION III

Kedziora, D., Kraslawski, A., and Karri, T. (2017). Reengineering of Offshored IT Helpdesk Operational Model for Transitional Optimization. *International Journal of Management and Decision Making,* 16(4), pp. 375-406.

The author acted as a paper writing coordinator, wrote most of the text. Made the research plan, wrote the literature review, and organized data collection process. Engaged in the case study, developed the conclusions together with the co-authors. Corresponding author.

PUBLICATION IV

Kedziora, D., Hak, A., Kraslawski, A., and Karri, T. (2017). Offshoring industry of Central and Eastern Europe: the perspective of service vendor and investor. *International Journal of Management and Enterprise Development.* Accepted for publication.

The author acted as a paper writing coordinator, wrote most of the text. Made the research plan, wrote the literature review, and organized data collection process. Supported in-depth interview analysis and performed statistical analysis together with other researchers. Corresponding author.

PUBLICATION V

Kedziora, D., Klamut, E., Karri, T., and Kraslawski, A. (2017). Higher Education Offshoring as an Innovative Response to Global Learning Challenges. *International Journal of Management, Knowledge and Learning,* 6(2), pp. 239–260.

The author acted as a paper writing coordinator, wrote most of the text. Made the research plan, wrote the literature review, and organized data collection process. Performed qualitative interpretation and coding of data together with the co-authors. Corresponding author.

Table 1. List of publications

#	TITLE	JOURNAL	JUFO LEVEL	STATUS
1	Offshored Service Cost Model as a Key Post-Transition Challenge.	Journal of International Studies	1	Published
2	Nearshore Service Transfers in the EU: Legal and Economic Issues.	Economics and Sociology	1	Published
3	Reengineering of Offshored IT Helpdesk Operational Model for Transitional Optimization.	International Journal of Management and Decision Making	1	Published
4	Offshoring industry of Central and Eastern Europe: the perspective of service vendor and investor.	International Journal of Management and Enterprise Development	1	Accepted for publication
5	Higher Education Offshoring as an Innovative Response to Global Learning Challenges.	International Journal of Management, Knowledge and Learning	1	Published

The Finnish Publication Forum *JUFO* (*Julkaisufoorumi*) is a system of publishing channels categorization for assessing the quality of scientific research. The score level varies from 0 to 3, where “0” is the lowest and “3” is the highest value.

Nomenclature

Abbreviations

BCP	Business Continuity Procedure
BPO	Business Process Outsourcing
CAQDAS	Computer-Assisted Qualitative Data Analysis Software
CAT	Consensual Assessment Technique
CEE	Central and Eastern Europe
CEST	Capacity for Engineering System Thinking
EU	European Union
HEI	Higher education institution
HKM	Hitchins-Kasser-Massie framework
IBC	Internaational Branch Campus
ICT	Information and Communication Technology
KPI	Key Performance Indicator
KT	Knowledge Transfer
SECF	Systems Engineering Competency Framework
SME	Subject Matter Expert
SSC	Shared Service Centres

1 Introduction

The first section of the thesis introduces the concept of business process offshoring. The background and motivation of the studies have been summarized to start the discussion on the research topic. Moreover, the objectives and structure of the dissertation have been described.

1.1 Background and motivation

Business process outsourcing (BPO) has been present in the world's economy for no longer than several dozen years and has spawned significant amount of scholarly work in the past two decades (Lahiri, 2015). We happen to live in so called 'age of outsourcing', as an increasing number of organizations decide to delegate some operational processes to an external, independent supplier (Grossman and Helpman, 2005; Jabbour, 2013). The strategic importance of corporate changes from a 'make or buy' decision's perspective, has kept the focus of traditional literature on the level of coordination, asset specificity, investments, and contract fallibility (Grossman and Hart, 1986; Williamson, 1985), whereas the core of the existing empirical research is based on the developments of the property rights and transaction costs theories (Hubbard, 2008; Lafontaine and Slade, 2007). In the past few decades, the liberalized supply chain approaches have substantially contributed to the dynamic changes in the economical geography, by encouraging numerous companies to introduce global sourcing strategies (Jensen and Pedersen, 2011).

There are multiple factors that facilitate rapid growth of service offshoring industry, among which we can mention the reduction of operational and transportation costs, overcoming trade barriers, and technological changes (Bottini et al., 2007). Offshoring is generally claimed to enhance productivity (Michel and Rycx, 2014), as it is often stipulated by the expense cut and wide workforce-pools accessibility in some remote location (Fielding, 2006). The implications of service offshoring on the labour market have become a vital concern for modern economies (Amiti and Wei, 2009; Mankiw and Swagel, 2006). Offshoring may bring a 'productivity effect' resulting from cost reduction and structural optimization allowing companies to strengthen competitive advantage, or a 'downsizing effect' resulting from relocating operational tasks abroad (Kohler and Wrona, 2011). Moreover, business offshoring may be associated with the 'supplier-substitution effect', resulting from substituting domestic for foreign suppliers, or 'business-stealing effect', linked to winning larger markets shares by convincing less attractive, domestic competitors (Sethupathy, 2013). The offshoring decision-making framework is often complex and involves deciding on a business function to offshore, partner, location and ownership model, so as the control and coordination mechanisms (Mihalache and Mihalache 2016).

During the past decade, service offshoring industry has been rapidly growing in Central and European Europe (CEE), where Poland holds a position of regional leader, with over nine hundred service centres, which is the second largest hub in Europe. The greatest

share is being held by the United Kingdom, but in the light of the Brexit decision, Poland has significant potential for becoming a European leader of service offshoring industry in the forthcoming years (ABSL et al., 2016). Here, the operational costs are considerably lower than in Scandinavia or Western Europe, and there is broad availability of high-educated, multilingual workforce already experienced in various tasks that can be performed with similar or even higher quality and processing efficiency. The study motivation comes from the author's interest in process offshoring, international service transfers, business transitions, operational modelling and re-engineering. It has been deep-rooted in his over 4-year professional career at Polish and Finnish corporations that run offshore operations in the forms of Business Process Outsourcing (BPO) and Shared Service Centres (SSC). The doctoral degree has been based on the corporate experiences from both Poland and abroad, as part of the transnational organizations conducting operations in the BPO/SSC sector within the European Union (EU).

At various stages of corporate changes, there are numerous challenges the offshoring industry's managerial community needs to struggle with on a regular basis. The author shall analyse the issues affecting offshore service transfers in a possibly universal context, applicable to any industry, geographical location and business environment. The superior aim of the thesis is to carry out the comprehensive study of challenges affecting service offshoring operations at different stages of transitional projects, with the use of systems engineering approach. The presented research interlinks the author's interest in the concepts of service offshoring and systems engineering by covering the first stages of systems engineering use in the design of business models, as it determines the framework of transitional problems and aims of processes, as well as stakeholders and their needs. Analysing transitional changes from this perspective shall serve as a means of the service offshoring transition projects interpretation. Then, the author shall present possible solutions (designs) to the identified key challenges of transitional changes, developed with the use of various creativity enhancement methods that can help responding to such problems through a shared solution design process. The systematic SOLVE method suggested by the author shall facilitate the process of solving difficult issues that are likely to cause problems, in the same time increasing organizational efficiency and competitive advantage. The dissertation is focused on the intensive growth of service offshoring activities observed in the EU. It examines key factors facilitating offshore investments both from the perspective of customer and service provider. Moreover, the unique type of service offshoring ventures is studied, which is lately becoming more and more popular in Poland, Scandinavia and entire globalised higher education world (Healey, 2015). It is the university programmes' offshoring, realized through the creation of international branch campuses (IBC). Such formulation of research motivation is aimed at yielding holistic view on the service offshoring industry in CEE region.

1.2 Research objectives and scope

The dissertation elaborates on the concept of business process offshoring. The doctoral research had two core objectives: 1) to identify and analyse key challenges of the

offshored delivery centres located in CEE region and respond to the most important issues; and 2) to identify factors facilitating service offshoring ventures in CEE region. Such statement of work was assumed to approach the studied industry from multiple perspectives and ensure the research is constructive from the practical and epistemologically relevant from the structural point of view. The applied research approaches, from system's to actor's based ones, situated across the timeframe and systematic framework of offshoring transition projects, were supposed to enhance the available theory (literature) and business practise (network based and knowledge intensive service transformations, leadership over dynamic operations, and competitiveness in decision making). The research objectives, research questions and referred papers are presented in Figure 1.

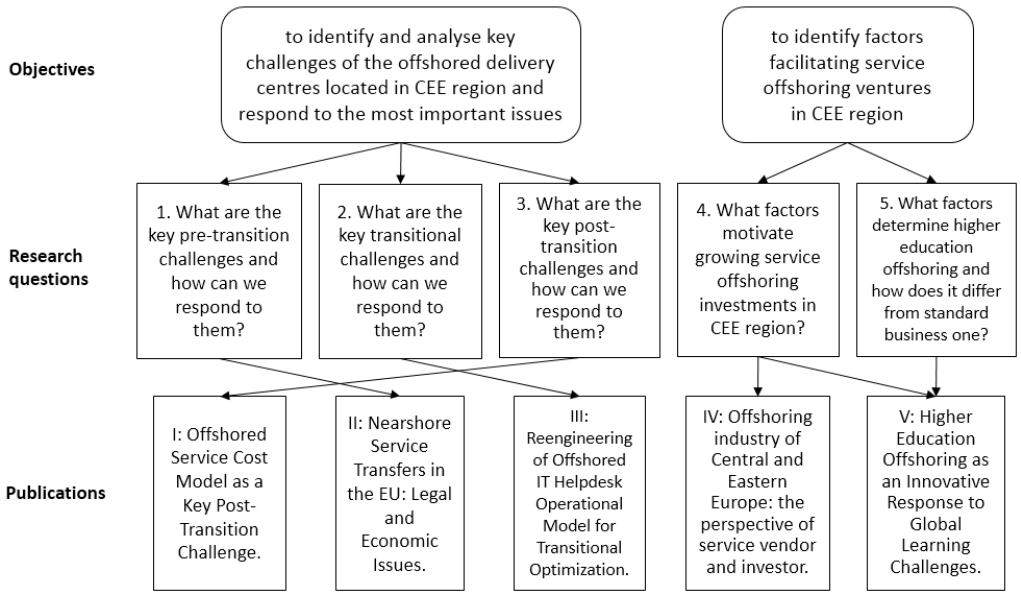

Figure 1: Research objectives, research questions and publications.

The two research objectives are realised thorough five research questions and five publications. There are three research questions that refer to the first research objective, which addresses the identification and analysis of key challenges of the offshored service delivery centres located in CEE region, and latter reaction to the most important issues. Research questions 1, 2 and 3 focus on identification and classification of key problems at the pre-transition, transition (project execution), and post-transition stage. These aspects are addressed in Publications I, II and III. From the perspective of developing sustainable solutions to problems encountered at different stages of transition projects, Publication I provides a case study on the cost model of an offshore service which can be applied and adjusted for service valuation, budgeting and control; Publication II offers

the review of selected legal issues regulating international process transfers within the European Union (EU), in the light of economic and social conditions that are important for the offshoring industry's managerial community; and Publication III covers the reengineering work on the offshored IT Helpdesk's operational model, aiming for optimization of key performance indicator (KPI) and facilitation of team work.

The second objective is concentrated around identification of factors facilitating rapid growth of service offshoring ventures in CEE region. Question 4 focuses on factors that are important for service offshoring investors and providers. It is realized through Publications IV and V. Question 5, addressed in Publication V, aims at exploring key features of higher education offshoring, in comparison to standard business process offshoring. Publication IV aims at identifying factors facilitating different offshoring ventures and provides a comparative analysis of key competitors to Poland for service offshoring investments in CEE region. Publication V describes the case of an American university that runs degree programmes in Poland, in the light of similarities and differences between higher education offshoring and standard business process offshoring.

The focus of the thesis lies in the multidimensional view on the service offshoring industry mainly in Poland, aiming for direct implementation of the research. It is presented in Figure 2.

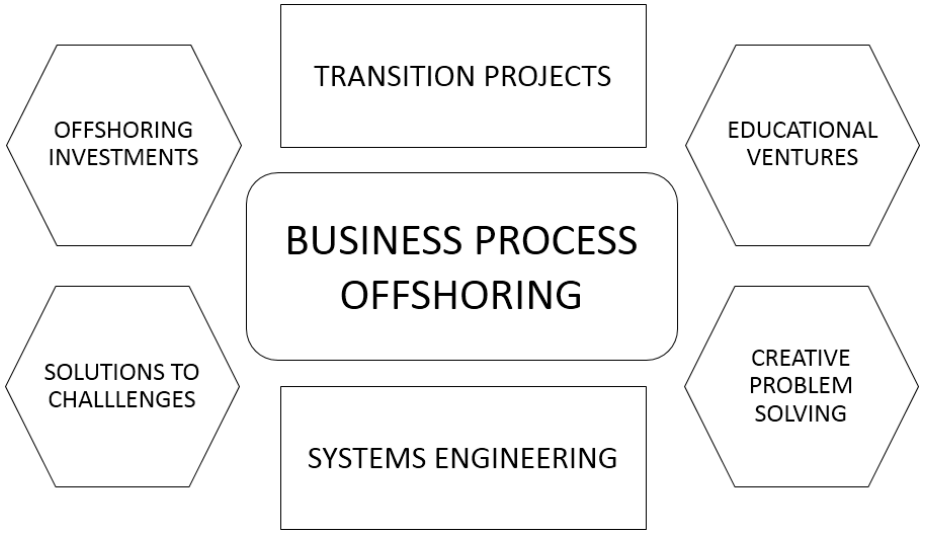

Figure 2: Research focus and scope.

At the core of transnational service transfers, there stands a transition project that is supposed to coordinate process migration through its stakeholders, key aspects and stages (van den Ende and van Marrewijk, 2014). It is often encumbered with multidimensional and demanding challenges (Mani, 2005) and aims at ensuring the successful

implementation of such business functions as process and knowledge transfer, or new governance model rectification (Parikh and Gokhale, 2006). The author wanted to research the most common challenges that pose risk of hindering transition project capacity, and apply systems engineering approach to their analysis. The complex system, service offshoring industry, required the holistic identification and representation of its key elements, which was covered by the initial steps of systems engineering framework, it means the inputs and requirements analysis at the conceptual stage. Moreover, the author wanted to explore the process of creative problem solving that can be applied for seeking resolutions to offshoring challenges and develop the method enabling thorough understanding of common effort leading towards the reaching of sustainable solutions.

Another aspect of service offshoring industry that caught the author's interest was the evidence of its intensive development in CEE region across the last few years. Thus, the conditions facilitating offshoring investments at both sides engaged in the transitional effort: client and vendor company have been researched. Throughout the work conducted during the degree, the author came across an interesting form of service offshoring that has not been studied as widely as standard business offshoring, which is the higher education ventures abroad, and aimed at comparing key motivators of these two types of offshore investments.

1.3 Outline of the research

The dissertation is constructed of two main parts: introductory and contributory. The introductory part constitutes the lead-in to the dissertation by presenting the overall overview of the doctoral work. The contributory part discusses the publications that bring research results and applies systems engineering approach to transitional challenges' analysis, together with concluding remarks. The introductory part is composed of three chapters and the contributory part is divided into two chapters. The first chapter describes the study's motivation, background, objectives and scope. The research questions are formulated and focus axis of the research is introduced. The second one presents the context of current academic literature on the topic, by reviewing the previous studies on business process offshoring, international service transfers, transition projects, innovation and problem solving in business, international education, as well as systems engineering. The third chapter summarizes methodological aspects of this work, by introducing design of the study, methodological approach, the process of collecting and handling data, as well as research methods applied in the research. The fourth chapter summarizes key findings of publications that respond to the research questions stated in the introductory part, and covers the analysis of challenges identified with the use of systems engineering approach. The last chapter concludes by presenting key study contributions, practical implications for the managerial community, limitations and prospects for future research. The outline of the dissertation is presented in Figure 3.

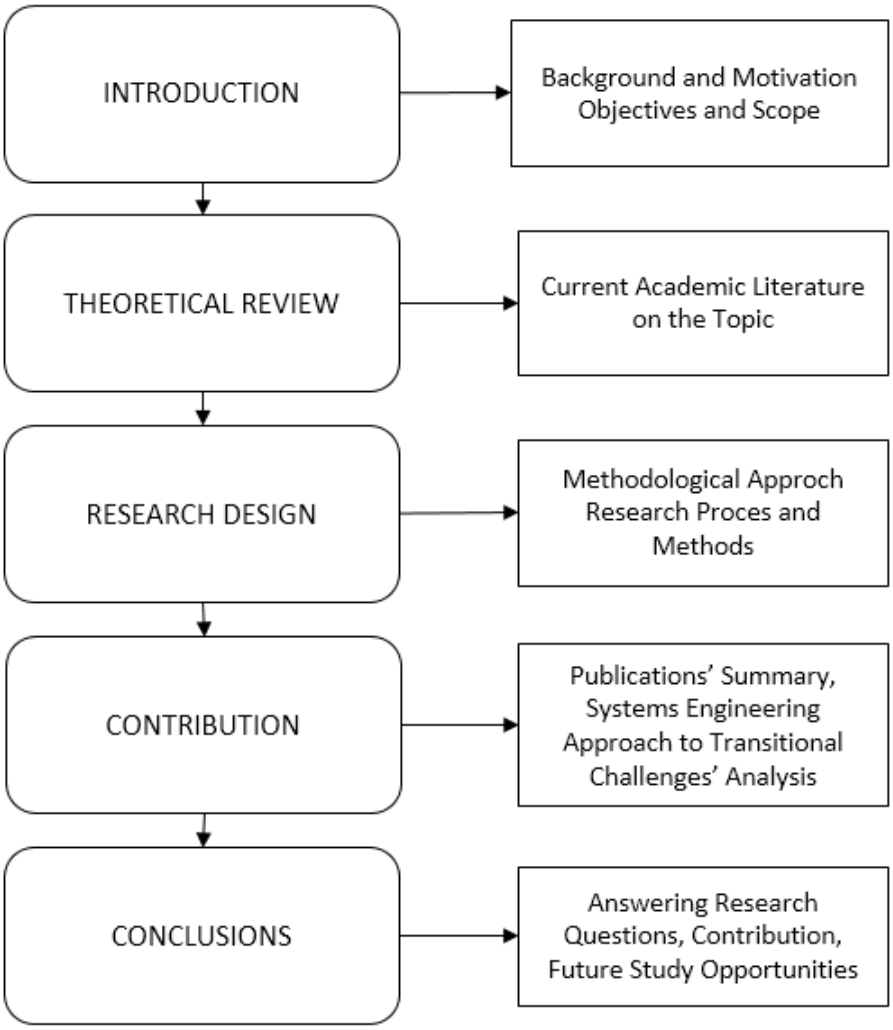

Figure 3: Outline of the thesis

2 Theoretical background

This chapter covers the theoretical review of the research concepts linking the study. The first part addresses the topic of service offshoring and its models. The second section describes service transition projects. The third section defines the concepts of innovation and creativity in problem solving process, and the fourth presents the topic of higher education offshoring and international branch campuses. Finally, the key concept of systems engineering is introduced.

2.1 Business process offshoring

Business process offshoring has to be understood as a relocation or dispersion of business activities to a foreign country (Doh et al., 2009). It is used in regards the locations that are geographically remote, but economically and culturally close (Ellram et al., 2013). When we speak of processes transferred to a remote unit based at a medium distance (e.g. Mexico for American companies, or Central/Mediterranean Europe for Western European companies), we deal with service nearshoring (Kamann and Van Nieulande, 2010), but when service providers are located in some geographically distant country, we talk of service farshoring (Carmel and Abbott, 2007). Captive/in-house offshoring concerns activities that are performed inside the boundaries of the same firm, but in an offshore country (Elia et al., 2014). Offshore outsourcing corresponds to the situation where the client company subcontracts service delivery to some external vendor (Betz et al., 2014), as implied by the word 'outsourcing', composed from words "outside", "use" and "resource" (Allweyer et al., 2004). Business process outsourcing (BPO) usually concerns the outsourcing of IT processes to a provider who takes responsibility for delivering them according to the contracted metrics (Chou et al., 2015). Information technology outsourcing (ITO) can be defined as a process of selling or contracting-out the IT assets, activities or people of one company to a third party vendor that assumes responsibility and manages these services and assets for an agreed period of time and fee (Kern and Wilcocks, 2002).

Taking advantage of technological progress, many firms decided to migrate great number of services to another country in the past few years, aiming for significant cost cutting (Freund and Weinhold, 2002). Although labour cost differences between countries decrease across time (Rost, 2006, p. 35), there are other factors impacting such transformations in short and mid-term, such as the enhancement of productivity and quality, building core business capabilities and learning new competencies (King and Malhotra, 2000). It often increases demand for medium and high-skilled workers that brings not only the qualitatively identical, but also quantitatively similar effects (Crinò, 2012). Until lately, global manufacturing corporations have mostly been engaged in the offshoring of production, but now many processes that have previously been seen as non-transferable to some different location, have now become offshorable (Amiti and Wei, 2009). Nowadays, service offshoring may concern broad range of processes (Pisani and

Ricart, 2016), and it yields significant impact on worker migrations that enhances effective labour force available at the domestic market (Olney, 2012).

2.2 Transition projects

A business project can be understood as an interim activity, conducted for the purpose of delivering some predefined results (OGC, 2009, p. 3). Organisational project management can be referred to as a novel aspect of management where dynamically changing company structures are connected as means to realize corporate goals through business projects and programmes aiming for the value maximization (Aubry et al., 2012). At the corporate level, strategic project management (including programmes and projects) can be considered as an instrument of implementing corporate strategy, which is about translating the strategy into operational programmes (Jamieson and Morris, 2004). What is important, one needs to bear in mind the internal cultural and general business context while addressing the complementary framework of organisational project management (Aubry et al., 2012). Transition project is a type of business activity which migrates service (responsibility, execution, and management) from one organization to a different one (Moeller, 2013). It can be understood as a planned method of executing permanent system level transformation (Rotmans et al., 2005). The Client (service buyer) is usually some external company from all sorts of industries, and its incumbent environment and resources that now need to be adopted and adjusted to the new delivery channels, are commonly referred to as the Organization's Legacy (Weigelt and Sarkar, 2012). Transition management, perceived as a systemic process of launching a novel administration model, relates to coordinating and steering system innovations and leading towards greater system sustainability, by realizing the promising pursuit towards a more sustainable reality (Sondeijker et al., 2006).

Transition projects are complex in the communication sense, and their implementation often involves multi-functional units at all the parties involved (development, technical, functional, etc.), which is crucial for assuming a holistic perspective (Feeny and Willcocks, 1998). Skilful communication and change management in outsourcing activities impacts the level of motivation at the service buyer company (Cullen and Willcocks, 2003). Leadership needs to guide the organization through changes, define and drive the activities needed to support the employees throughout the change and act as role models (von Krogh et al., 2012). Managing strategic changes may be divided onto two stages: initiation and effective implementation (Herrmann and Nadkarni, 2014), where the first stage assumes only discrete scope and content alterations to existing strategies, but the second applies the changes in processes, systems and structures (Zajac et al., 2000; Greiner and Bhambri, 1989). Setting up and realizing strategic plans for the company lies under the responsibility of leadership, headed by the CEO (Calori et al., 1994).

Strategic ventures are often expensive investments that are supposed to change the firm's scope, involving significant risk, and usually changing the corporate strategy of the firm

(Wang et al., 2016). Business transition is commonly referred to as Service Transfer, Migration, Take-On or Transition-In, while the reverse phenomenon can be named as Service Exit, Backsourcing, Transition-Out, Reshoring (Ellram, 2013; Kotlarsky and Bognar, 2012). After the cut-off of the service, the focus is normally put on collaborative and continuous improvement (CI) (Middel et al., 2006).

2.3 Innovation and problem solving

Innovation is a competence of using information from different sources to develop unique solutions to problems (Proctor, 2005, p.18). Open innovation explores the emergence and discharge of knowledge, in order to strengthen internal innovation by expanding for external usage (Chesbrough, 2003), and it always involves external participants in the process (Cheng and Huizingh, 2014). In the past decades we can observe the major shift onto the open innovations from the traditional 'closed' approach (Lichtenthaler, 2011). It often results in the improvement of a firm's productivity and profitability (Chiang and Hung, 2010) and many companies engage in innovation enhancement initiatives not only to strengthen their own development, but to facilitate society's prosperity and economic growth (Ahlstrom, 2010). The long term prosperity and ability to compete can be facilitated by sustainable corporate approach towards continuous innovation (Roberts and Amit, 2003). In the era of strong market competition, the survival and performance of companies depend on sustained innovation (Mumford and Licuanan, 2004). Strategic entrepreneurship is important for policy innovation, and charismatic leadership can be crucial for the periods of transition (Johnsen, 2015).

Problem solving theory stems from the single division onto identification (understanding) of an issue and looking (searching) for solution (Newell and Simon, 1972). SARA model, composed from Scanning, Analysis, Response, and Assessment was focused on the subsequent linear approach (Spelman and Eck, 1987). Knippen and Green (1997) presented the 7-phase problem solving method: goal establishment, problem identification, considering alternatives and constraints, and finally evaluating and choosing one solution to be implemented. An issue may be particularly difficult to solve by the uncertainty in its configuration and parameters (Simons et al., 2004). Relationships between an organization and third-party partners may enhance or block solution reaching process (Windahl and Lakemond, 2006). There are many techniques for enhancing and measuring employees' creativity (Herrmann and Felfe, 2012), such as Amabile's Consensual Assessment Technique (CAT) (Baer and McKool, 2009). CAT, named as a *'gold standard'*, has been extensively used as a creative product assessment method (Cheng, 2015), reporting high degrees of validity and reliability (Hennessey et al., 2008). What is also important, rushing for solutions to highly complex problems is often associated with the short-term relief, but can make the overall situation worse and increasingly hard to deal with (Lowy, 2011).

2.4 International education

Transnational education can be defined as a circumstance where a student is located in a different country than the institution that awards a diploma, and it is usually executed through an international branch campus (IBC) (Wilkins and Huisman, 2012). IBC can be understood as an offshore unit of higher education institution (HEI), managed solely by mother university or via a joint venture, where that institution functions as a partner, and awards degrees after successful programme completion in an offshore location (Becker, 2009, p. 2). It often provides its offshore students full access to academic virtual resources (Cross-Border Education Research Team, 2014). The number of IBCs in the world is constantly growing, currently exceeding 200 (Lawton and Katsomitros, 2012), and the major host region globally is South-Eastern Asia (Huang, 2007). As the competitive research funding allocation has forced many universities to seek for external sources of revenue gaining (Slaughter and Rhoades, 2004), it is facilitated by so called 'academic capitalism' (Cantwell and Kauppinen, 2014), and sometimes criticized as 'academic colonialism' (Nguyen and LeBlanc, 2009).

The progressing internationalization of HEIs can be perceived as a response to overwhelming globalisation (Maringe and Gibbs, 2009), embracing different domains of higher education (Haigh, 2002). It forces many institutions to tackle challenges and respond to global knowledge community demands, by taking advantage of information and communication technology (ICT) developments (de Jong and Teekens, 2003). As the publication productivity is still a major concern for many researchers (Bentley, 2015), HEIs use multiple expansion strategies, in order to satisfy all the parties involved in the university institutional logics (Upton and Warshaw, 2017). HEIs have been systematically transforming themselves into industry-like, market-focused organisations (Bozeman and Boardman, 2013), but they evolve gradually and slowly (Meyer et al., 2007). IBC ventures are often associated with high risk, particularly in case of entering unexplored educational markets (Girdzijauskaite and Radzeviciene, 2014).

2.5 Systems engineering

Systems Engineering is linked to the engineering of all types of systems and examination of all of the applicable aspects that impact the service, process, or product (Sage and Lynch, 1998). Engineering Systems (ES) is an area of study which looks for multidimensional, sociotechnical problem solutions (ESD, 2008). It was developed in response to the increasing ramification of human endeavours in technology and the lack of theoretical foundations and comprehension to support engineers and decision makers that are supposed to manage and design large, complex systems (Bartolomei et al., 2012). Systems engineering is one of a few fields of knowledge that has emerged from applying systems approach to interpreting and organizing the world (Brill, 1998). The activities performed by systems engineers may be different in every organization and sometimes even in various units of the same company (Kasser et al., 2013). The Systems Engineering Competency Framework (SECF) got introduced as a respond to the problems identified

by the INCOSE UK Advisory Board and focused on the skills of systems engineering, more than systems engineers (INCOSE, 2010). The competencies are divided onto three domains (Hudson, 2006):

- Systems Thinking, forming the base for systems approaches and competencies, counting the technology and enterprise conditions.
- Lifecycle View assuming the holistic approach towards the competencies linked to the systems lifecycle, identification and requirements, operations and system disposition.
- Systems Engineering Management that addresses the competencies of assuming the correct lifecycle, effective control, planning, and monitoring of systems engineering processes.

The system life cycle is normally based on four typical stages: concept, development, production, utilization and retirement (INCOSE, 2010). A life cycle model should be used as an ES framework that acts as a development tool ensuring the system to meet all requirements throughout the life (Gräßler and Yang, 2016).

The Capacity for Engineering System Thinking (CEST) embraces a series of high-profile comprehension competencies, enabling people to execute systems engineering duties (Frank, 2006). The MITRE model of systems engineering capability is composed of five core sections (Metzger and Bender, 2007):

- Enterprise Perspectives
- Systems Engineering Life Cycle
- Systems Engineering Planning and Management
- Systems Engineering Technical Specialties
- Collaboration and Individual Characteristics

The Hitchins-Kasser-Massie (HKM) framework for the comprehension of systems engineering is a method for arranging workflow activities and developing skills required to execute such actions in an objective manner, identified in the structure of cases scenarios, descriptions and operation concepts (Kasser, 2007). While working on system architecture, the role of design is not restricted to advanced considerations, but also digging into the details of domain and specific subsystem with synthesis and high-level structuring (Maier and Rechtin, 2009, p. 254).

3 Research design

This part of the thesis presents the research approach assumed in the dissertation. The research design combines different methods, based on the own perspective of the author. The construction of process addresses the principles for the assessment of research quality, validity, and reliability of the results (Eriksson and Kovalainen, 2008, p. 294).

3.1 Research approach

The philosophy of science is primarily focused on the use of abstract believes and ideas that fall under the research scope (Creswell, 2013, p.16). Ontology should be understood as theory of reality, and epistemology as theory of knowledge (Kriegel, 2011). The 'common-sense' ontology is an ontological theory, and its assumptions about reality do not differ much from the common-sense verdicts (Hirsch, 2007). The epistemology of science helps to understand how scientific knowledge is constructed (Lederman, 2007) and aims at researching the source, nature and methods of scientific knowledge (Lederman et al., 2002). The lively debate on the ways of understanding, defining and approaching knowledge has been present in academia for many decades. The philosophy of science comprises different epistemological approaches that differ from one another, such as subjectivism and objectivism, relativism and realism, constructivism and positivism (Järvensivu and Törnroos, 2010). Fundamentally, philosophical assumptions of science are anchored in two key domains. The first, interpretive assumption focuses on understanding and interpreting studied phenomena, whereas the second, explanatory view is concentrated on explaining phenomena and searching for contexts of their existence (Wicks and Freeman, 1998). Such dichotomy often comes to the methodological choice between the qualitative and quantitative research approaches, but they do not need to be mutually exclusive (Denzin and Lincoln, 2000). Our choice of research approach shapes the understanding, observation, and explanation for our constitution of reality (Arbnor and Bjerke, 1997). Using different research methods to study various data sets from wider perspective can bring more comprehensive results and enrich the knowledge in the field (Mangan et al., 2004). There are different methodological approaches towards scientific paradigms among researchers, while a paradigm is to be understood as the entire systems of values, believes and techniques shared by given community (Kuhn, 1996, p. 44). Orlikowski and Baroudi (1991) broke the scientific classification criteria onto three roots: the first of social and physical reality, the second of knowledge nature, and the third of the relationship between the theory and practice. van Aken (2004) defined three basic approaches: explanatory, formal, and design. Hesford et al. (2007) divided research methodologies onto nine different elements: archival, analytical, experiment, field, case, survey, review, framework, and simulation.

The dissertation follows general scientific approach, moving from the general overview to the specifics. The research process is constructed around the ontological assumptions on philosophy of science that helps the author to address research objectives and related questions, so as to align them with proper research methods (Burrell and Morgan, 1979).

The positivistic and interpretative approaches have been followed, as the positivist approach assumes existence of fixed relationships that explain objective reality, but the interpretive approach treats the knowledge and reality as social products, impossible to be studied independently of the actors engaged (Orlikowski and Baroudi, 1991). The mixed-method view on epistemology with some modifications, in the context of empirical social research, enables quantitative methods to be followed by the qualitative ones (Punch, 2013). Moreover, the author of the thesis follows the multi-layered triangulation strategy of research (Olsen, 2004; Yin, 2003), by using multiple data sources, sets and methods to refrain from a mere one-dimensional research approach (Mayring, 2002; Patton, 2002). Hence, the weakness of separate research methods can be rectified by other ones, resulting in better validity and reliability of the results (Jick, 1979). The multi-method design makes a valuable choice for approaching phenomena hard to explain and measure (Hirsjärvi et al., 2002). The dissertation's design of research in embedded in the classical theory of science (Cooper and Schindler, 2013), and it involves building a detailed literature review, formulating hypotheses aligned with conducted business cases, conducting interviews with subject experts (Hyde, 2000), and reviewing results by analysing quantitative data and seeking generalizations (Sandelowski, 2000). Qualitative (and quantitative) survey and case studies might be conducted in a reliable manner only by *'careful documentation'* (Sykes, 1990). Practical examples can contribute to the knowledge, and case study approach may follow initial quantitative work, helping to clarify research scope and core theoretical concepts (Dubois and Araujo, 2007). Practically oriented managerial studies can benefit from hermeneutic, action-oriented approach, particularly when the research aims at understanding of managerial decisions (Pihlanto, 1994). Rather than presenting the density or syndromes of a phenomenon, it is worth to address its consequences and deeper causes (Flyvbjerg, 2006).

The validity and reliability of all research remain its key aspects (Brink, 1993). At the core of good writing there is the focus on structure simplicity, objectivity and accountability, so as the classical language (Cooper and Schindler, 2013). The researcher should remain neutral, as the study results should not be impacted by their values, personal interests, or perspectives (Payne and Payne, 2014). The author should seek for consistency and dependability, by distinguishing between personal opinions, interpretations or rumours and clear facts (Merriam, 1995). Quantitative research should focus on internal and external validity, as well as objectivity, whereas qualitative approach should aim at authenticity, trustworthiness, credibility and transferability (Janetzko, 2008). External validly refers to the application of theory or data analysis results to the other setting, whereas internal validity constitutes the strength of qualitative approach, by focusing on authenticity and credibility (Weerawardena and Mort, 2006, p. 27). Research quality appraisal is an important process in qualitative synthesis that should be conducted systematically, but dynamically, in interaction with each case (Sandelowski et al., 2007).

3.2 Research process

The work focused on practical aspects of business process offshoring industry and started in the beginning of 2015, when the original goal was to explore the challenges of business transitions and discover how one can take advantage of creativity, enhanced by scientific tools, in order to reveal the potential of rearranging, reorganizing and optimizing business models. The study was conducted at the School of Business and Management of the Lappeenranta University of Technology (LUT), but the author remained located in Lodz, Poland in order to remain employed at a renowned offshoring corporation from the information and communication technology (ICT) sector. This way, it was possible to reach top business practitioners from the sector and test solutions in real business practice. Most of the first year of study (2015), was spent on collecting the data and reviewing key literature on the topic. The research work was set in motion by noticing multidimensional challenges that hinder successful execution of offshoring transition projects, at their different stages. The author wanted to explore these issues and respond to them by offering sustainable solutions. The timeline of research process is presented in Figure 4.

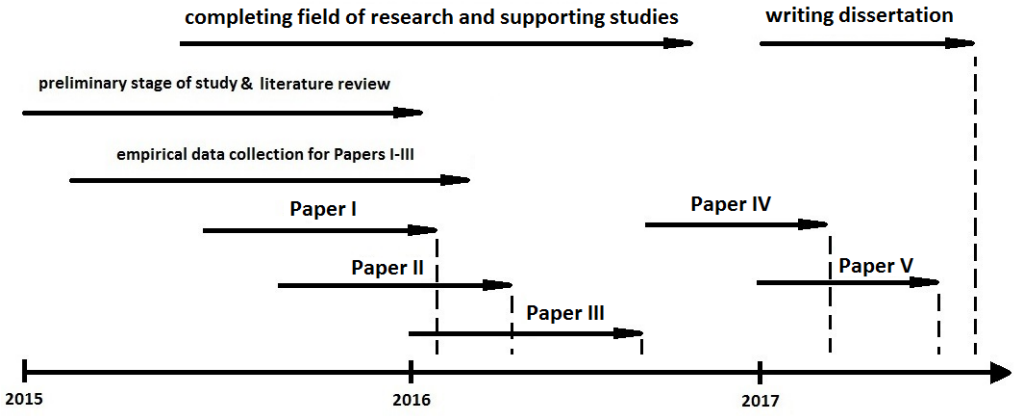

Figure 4: Timeframe of the doctoral research.

The first phase of the research commenced with empirical data gathering for the first three publications that took place between February 2015 and January 2016. The first paper focused on post-transition challenges, the second on the pre-transition issues, and the third on the problems encountered during the execution of a transition project. Couple of dozens managers were interviewed personally at least once, and with many of them the author remained in phone or email contact longer, even to date. The managerial crew represented offshoring corporations based in Poland, Finland, Sweden, Ireland, the United Kingdom, Slovakia, the Netherlands, and originated from the regions of the United States of America, Asia and the European Union. The companies conducted business in the sectors of Accounting (General Ledger, Accounts Receivable and Accounts Payable), Information Technology Outsourcing (IT Helpdesk and Remote Infrastructure Management), and Banking (Account Operations and Payments, Capital

Markets). The leaders were interviewed and asked about the problems they need to struggle with in the general course of business, and real life examples. After the anonymous sessions were completed, every interlocutor received final version of the paper with a gentle call for suggestions on necessary adjustments. Afterwards, the issues have been divided into several categories, so that their classification can reflect key systematic features. In the first and third paper, the author was invited to join the case study, to take active part in the development of sustainable solutions to the key challenges related to the transitional project stage (migrating the service to some different location), and post-transitional phase (after the process is transferred to another country and the responsibility is taken over by the new service provider). The real business cases enabled the author to engage into discussion raising awareness about the concept and elaborate on the practical examples of managing offshoring operations. In the second publication, focused on the pre-transitional stage of offshoring transformation, the key identified challenge that needed to be addressed was conducting the review of legal regulations governing transnational service transfers within the EU, focusing on its readability in a socio-economic context.

In the second stage of doctoral research, the author decided to explore the factors that reinforce country attractiveness for a service offshoring destination, both from the perspective of a client and service vendor. For this purpose, the empirical, quantitative approach was assumed in gathering the data that took place at the turn of 2015 and 2016. Two anonymous surveys, framed in the Likert type of scaling, together with open questions, were distributed in two rounds, where each responder had unlimited time for comfortable consideration of answers. Additionally, some of the interlocutors were interviewed personally to elaborate on the context and quote some direct statements in the discussion section of the fourth paper. In the first round, focused on the investment's side, the responders were responsible for investment assessment and negotiations during the bid process, and had considerable insight into the ultimate decision-making process. In the second round, targeted at the service vendor side, the managerial crew of responders consisted of Senior Management (Operations/Service Delivery Managers) Transition Management (Transition/Migration Managers) and People Management (Team Leaders/Coordinators). Based on the questionnaires' results, the author decided to conduct a comparative analysis of five key competitors for service offshoring investments in CEE region, using the cross-sectional approach and statistical analysis to evaluate data from a number of different sources.

The final phase of the research resulted from the author's discovery of an American university that conducts degree programmes in Poland through an outsourced international branch campus. The author examined the operational model of such investment, and conducted interviews with both the parties involved in the operations at the beginning of 2017. The relationships and constructs of the concepts addressed in Publication V were analysed with quantitative method, using the data mining software, designed to explore and code qualitative material. The results allowed the author to explore the differences between higher education and standard business offshoring.

3.3 Research methods

This section presents the methods of research used across the doctoral thesis. Firstly, the systematic theoretical review covered in all five publications is introduced, including the legal aspects review. Then, the quantitative and statistical analysis is described, together with the empirical case study and qualitative analysis. The methods are discussed in the light of their validity and reliability for the research.

3.3.1 Systematic theoretical review

The systematic theoretical review constituted the base for all five publications and was performed across 2015 and 2016. Every paper starts with a section on the existing topic literature, mostly from the period of 2000-2016. The search was done through the Lappeenranta University of Technology Online Library, and involved the renowned databases, such as Science Direct, Web of Knowledge (ThomsonReuters), Wiley Online Library, EBSCO, Scopus, Research Gate, and Google Scholar. The search terms included mainly the topics in the research focus, such as '*offshoring'*, '*outsourcing'*, '*investment'*, '*transition'*, '*re-engineering'*, '*modelling'*, '*creativity'*, '*solving'*, '*systems'*, '*engineering'*. The author selected the papers to be studied based on their title, abstract and number of quotations, to ensure their validity and positioning at the studied discipline (Tranfield et al., 2003). The forward and backward snowballing was applied for choosing only relevant papers (Wohlin, 2014), which resulted in shortlisting of over hundred publications from journals focused on the studied research area. The review was supposed to explore and structure the current debate in the field, and then to identify its definitions, descriptions, similarities and gaps (Webster and Watson, 2002). The systematic literature review was concentrated around research questions, aiming at thorough understanding of current academic debate that constituted the start for further research actions.

3.3.2 Quantitative and statistical analysis

The core of the fourth publication is concentrated around the empirical data, collected in the form of two surveys, composed both of single-choice questions (Lykert type scaling), and open questions. The 68 responses had been collected, with the rate of 31% (68 answers to 220 invitations). The outcomes of both questionnaires were studied with the basic framework of interpreting multiple data sets, to gain reliable insights, as part of the four-eye principle. The data was discussed and explained to ensure flawless traceability and validity (Pasian, 2015). The statistical data analysis addressed the dependence between the factors identified and presented in the paper. For this purpose, the authors used the Pearson Product Moment Correlation (PPMC) to measure linear correlation between two variables, in order to identify their direction and strength of interdependence (Kornbrot, 2005). It presented the linear relationship between two sets of variables and its values that varied between '+1' and '-1', where '+1' was total positive correlation, '-1' was total negative correlation, and '0' would act as no correlation. I allowed predicting

how two linear-related variables could interfere, as quantitative tool used to conduct research (Magnello, 2009).

3.3.3 **Qualitative analysis**

The qualitative research approach was assumed in the fifth publication. Qualitative data interpretation is a text analysis method used to quantify subject of research in terms of some predefined, replicable and systematic classes (Eriksson and Kovalainen, 2008). The computer-assisted qualitative data analysis software (CAQDAS) enables the quantitative data incorporation needed for further implementation of quantitative approaches to qualitative research (Lewins and Silver, 2009). CAQDAS programs are intended to analyse data in multiple ways, e.g. visual, textual, graphical, audio (Humble, 2012). The use of open ended interviews in qualitative research may allow obtaining detailed information about the studied phenomenon (Polit and Beck, 2008), and for the effective analysis and synthesis of data, we can use such CAQDAS, as NVIVO (Thomas and Harden, 2008).

The dataset used in the fifth publication was composed from words representing summary points rather than continued text. The replies got labelled with codes, and the logical structure, reliability of categories, as well as the in-depth text grounding were rearranged and refined multiple times (Patton, 2002). The content obtained during interviews got coded and analysed thematically with the use of NVIVO v. 11, designed to explore qualitative material. The relationships between main concepts got semantically examined with the use of data-mining software. The relationships between separate nodes were explored with the consecutive semantic analysis, which followed the comprehensive reading and understanding of the substance subdivided into few meaningful units. The analysis revealed that the material was formed from four dominant nodes that covered nearly its 60 per cent. The abductive interpretation of data was constantly taking into account new aspects of the phenomenon under study. As quantitative research has well established principles for addressing reliability and validity (Silverman, 2010), as it needs to be assessed and criticized from different perspectives than the quantitative one (Bryman and Bell, 2007).

3.3.4 **Case study**

The case study was applied in Publications I and III. It can be defined as a technique for analysing an event, a person or a group (Yin, 2003), by providing a context-specific comprehension for systematic decision-making (Järvensivu and Törnroos, 2010). Case study method enables deeper understanding of changing and mundane business practices, by putting them in a social perspective, not governed by directorial context (Eriksson and Kovalainen, 2008, p. 116). For ensuring reliability of the study, the theorising shall not result in production of a validated knowledge, but suggestion of new relationships and connections (van Maanen et al., 2007). We can differentiate single and multiple case studies, that can be divided onto three basic types: descriptive, exploratory, and

explanatory. The case studies performed in the two publications were exploratory multiple-case. Exploratory type can be used on a single case, but connections and dissimilarities between separate aspects can be explored as well, as it evaluates the current state of affairs and assesses potential results (Yin, 2003). We can study phenomena across cases using multiple-case studies, evaluating acquired solutions with the use of design science. This way, the outcomes reliability can be ensured, by ensuring that similar observations and solutions could be developed by various scientists on various occasions (Miles and Huberman, 1994, p. 278-280). Design science aims at developing solutions to newly encountered problems with the use of novel techniques, and is often encountered in engineering science (Hevner et al., 2004). It is built from the six basic steps: problem identification, defining objectives, designing solution, demonstrating, evaluating and communicating (Peffers et al., 2008), and it is often associated with solution's building and evaluation. Model building is a design science method for constructing solutions to problems encountered in real world (van Aken and Romme, 2009), and it differs from analytical modelling, as it does not rely purely on deductive logic (Demski, 2007). The process can be affected by multiple challenges, such as access to confidential information and poor internal data recording (Carson et al., 1995).

The supporting business methods used in the case studies conducted in the referred papers were Simulation, Brainstorming, *'Six Thinking Hats'*, and '*Scamper'*. Simulation is a research approach focused on imitating system behaviour, combining both the deduction and induction (Banks et al. 2001, p. 11). It might be implemented for complex behaviours that can be splinted onto basic variables (Simon, 1996), based on existing literature and observations which form basic model (Gilbert and Troitzsch, 2005) with variety of methods (Dooley, 2002). Across the past decades, brainstorming has been studied and used as a problem solving approach for idea generation and evaluation in response to various organizational problems (Levine et. al., 2015). The concept was developed in 1950s by an American executive and creativity theorist, Alex Faickney Osborn who proposed to produce a checklist of ideas that might act as leads to problem solution, following subsequent evaluation (Osborn, 1953, p. 151-152). It is claimed to be one of the effective techniques, and has positive effect on the morale of employees (Allen and Hecht, 2004). It can be performed individually or in groups that interact internally across a defined period of time (Levine et al., 2015). The *'Six Thinking Hats'* is a research method for enhancing team productiveness and communication (De Bono, 1985), composed of six viewpoints assigned to colours: 1) (managing/blue) for overall subject understanding; 2) (informational/white) for discussion on facts; 3) (optimistic/yellow) for identification of values and benefits; 4) (emotional/red) for reacting intuitively and instinctively; 5) (discerning/black) for critical and cautious analysis; and 6) (creative/green) for prevocational statements and careful investigation. Each hat used by a group member needs to be handed over to another person subsequently, to allow detail organization of the solution reaching process and complex comprehension of an issue from different points of view (Liu et. al., 2014). *'Scamper'* broadens and structures the Osborn's brainstorming, by assuming seven facets of solution design process: (S) Substitute, (C) Combine, (A) Adapt, (M) Modify/Magnify/Minimize, (P) Put to other use, (E) Eliminate, (R) Reverse/Rearrange (Eberle, 1996). These categories has a few

questions assigned that enable successful solution search, which can lead to generating new ideas and system designs (Moreno et. al, 2016).

4 Research contribution

This section presents the results of five publications addressed in this dissertation. The key findings and research objectives of each article are described in detail, with primary focus on research questions and objectives presented in the introductory section of the thesis. Moreover, it covers the analysis of transitional problems determined, with the use of systems engineering approach. It shall present the relations between papers and draw an overall view on the research work conducted as part of the doctoral degree.

4.1 Summary of publications

For the start of this section, Table 2 shall present the titles, objectives, methods, research questions and key results of all five articles covered in the thesis.

Table 2. Summary of publications

	Publication I	**Publication II**	**Publication III**	**Publication IV**	**Publication V**
Title	Offshored Service Cost Model as a Key Post-Transition Challenge.	Nearshore Service Transfers in the EU: Legal and Economic Issues.	Reengineering of Offshored IT Helpdesk Operational Model for Transitional Optimization.	Offshoring industry of Central and Eastern Europe: the perspective of service vendor and investor.	Higher Education Offshoring as an Innovative Response to Global Learning Challenges.
Key objective	Identification and classification of potential post-transition issues, responding to the most important challenge.	Identification and classification of potential pre-transition issues, responding to the most important challenge.	Identification and classification of potential transitional issues, responding to the most important challenge.	Identification of factors important for offshore destination assessment and performing comparative analysis of CEE region attractiveness.	Comparison of standard business offshoring and the higher education offshoring, in the light of an American university's operations in Poland.
Research methods	Systematic theoretical review, Case study.	Systematic theoretical review, Legal aspects review.	Systematic theoretical review, Case study.	Systematic theoretical review, Quantitative and statistical analysis.	Systematic theoretical review, Qualitative analysis.

Research questions	RQ3	RQ1	RQ2	RQ4	RQ5
Key findings	Out of the 34 issues identified, the most important was the development of a well-structured and consistent cost model.	Out of the 28 issues identified, the most important was the development of selected legal topics' review governing offshore service transfers.	Out of the 50 issues identified, the most important was conducting the IT Helpdesk operational model reengineering, aiming for service improvement.	Although cost reduction remains the most important factor, other aspects are also important for investors. Poland hold a role of a regional leader for offshoring investments.	Standard business process offshoring is motivated by slightly different factors than higher education offshoring.

4.1.1 **Publication I**

Overall objective

The first paper elaborates on the concept of service cost modelling in business process offshoring industry. It focuses on the post-transition stage, when the operational tasks are already migrated to a different company located abroad, and the responsibility for service execution is transferred to the new supplier. After transition project is completed, the managers engaged in the corporate transformation need to face and tackle numerous challenges hindering successful business execution.

The paper addressed third research question, which concerned identification and classification of potential issues that may be encountered in service offshoring industry at the post-transition phase. The work is focused on issues that may affect, or even block successful performance of the new delivery Team after the service transfer is cut off from the incumbent provider. The previous studies did not offer such collation, and so the empirical data was collected from the group of experienced business practitioners. The problems found were supposed to be divided onto a few class categories and the researchers wanted to address the second research objective by responding to the challenge identified as the major one, reported by the vast majority of interviewees.

Main findings

Problems identified got divided onto five classes (sector, model, frequency, type and side). Out of the 34 issues identified, the key problem mentioned by vast majority of responders was the preparation of a well-structured and consistent cost model. Thus, the authors decided to join a project group and facilitate the development of optimized costing

solution. The business case study arranged in one of the banking companies was based on materials and service budgeting approaches used internally in the past.

The cost model developed was grounded in the firm's budgeting approach and built of two basic classes (internal and external costs) split onto three cost sections (direct labour, indirect and partnership) and 28 cost items (Salary base, Operational workers, Position uplift, Senior Management, Leaders/Coordinators, Raises, Language uplift, Taxes, Pension related expenses, Overtime, Shift allowance, Holiday benefits, Health care, Employee growth, Core management, Finance team costs, HR team costs, Recruitment team costs, Administration team costs, Legal team costs, Marketing Sales, IT Team costs, Facilities team costs, Seat Rate, Salaries, Salary raises and taxes, Service Management, Partner Management, Escalation Management). The model allows for responsible budgeting of the service coming from broad comprehension of a project, and it may be helpful for decision makers in controlling business results and consolidation of managerial accounting schemes.

4.1.2 **Publication II**

Overall objective

The second paper focused on the concept of service offshoring in the context of economic and social issues. The managerial crew of the business process offshoring industry is regularly affected by various issues at different phases of organizational changes. In the second publication, the authors explored the pre-transition stage (during the preparation and assessment of the strategic decision that determines subsequent service transfer). The authors focused on the first research question which concerned identification and classification of the most challenging problems at the pre-transition period, together with responding to the challenge identified as the major one. The vast majority of the interlocutors expressed the need for presenting a review of selected legal topics in the social and economic context, in an easily approachable and understandable way.

Main findings

The 28 problems identified in the second paper got divided onto the similar classes (type, sector, frequency, model and side). Responding to the key pre-transitional challenge, the authors elaborated on three legal aspects related to international service transfers within the EU: 1) establishing and then conducting business activity in another country, 2) employee relocation to another country, 3) sensitive data handling procedure in the light of transnational process transfers.

Regarding the first topic, during the establishment and then conducting business activity in a destination location by some business entity (capital), the transparency and simplicity of the target country's legal system is of the highest importance. The researchers presented the case of setting up private limited company in the EU, which happens to be a popular form of legal activity in the Continent. Moreover, the procedure of daughter

company incorporation in the target country has been described. As for the second aspect, the legalization of worker's residence in the target country has been discussed, including the brief summary of work permit and visa regulations (which may be handled in the form of the integrated permit in some EU states). Moreover, the detailed review of sensitive data handling procedure within the European Union was presented, which is subject to the Regulation 2016/679 of the European Parliament, and so called '*Madrid Resolution'*. Human rights related to the personal data protection remain among the core EU values, encompassing the accuracy, legitimacy, statement of purpose, openness, proportionality, responsibility and confidentiality, in respect to the personal data processing. The authors emphasized the importance of data subject's right to access the details of the data processed. The EU legislation ensures legal instruments designed to maintain personal data security, aiming at guaranteeing top-level and unified personal data protection policy within the whole EU.

4.1.3 **Publication III**

Overall objective

The third publication focused on business process offshoring transition project management. As this is the most important period of the corporate transformation effort, the authors wanted to explore problems that affect successful execution of process migrations. The managerial community of service offshoring industry regularly faces various issues and aims at foreseeing and tackling them. The researchers wanted to address the second research question focused on classification and identification, as well as responding to potential issues of offshoring transition projects. Moreover, the authors aimed at elaborating on problem solving in business and conducting business process reengineering of the IT Helpdesk operational model that delivered offshored service for the users from multiple EU countries.

Main findings

The authors gathered over 50 common challenges affecting service transitions, and classified them according to the key transitional features: phase, sector, model, type, side, and frequency. Moreover, the researchers conducted the reengineering work on the global IT Helpdesk, focusing on the key issues identified through the active data analysis and talks with the team members. The key focus of business reengineering is process oriented, aiming for the achievement of sustainable competitive advantage, by innovatively improving four areas: costs, quality, customer satisfaction, and time (Schmidt and Treichler, 1998).. The restructuring of the service was done by taking advantage of simulation (with *'Scamper'* and Brainstorming techniques), as well as the *'Six Thinking Hats'* method. Moreover, the researchers developed and proposed their own problem solving approach, emphasizing the importance of team work and creative thinking. The solutions reached with the use of SOLVE method were assessed by engaged managers as successful and useful in enhancing operational efficiency and collective effort. The approach is composed of 5 steps: '*S'* for see the problem context, '*O'* for open your mind

to others, '*L'* for look for ideas together, '*V'* for vote for the solution, and '*E'* for examine and control.

4.1.4 **Publication IV**

Overall objective

In the fourth paper, the authors addressed the second research objective and the fourth research question, by presenting the European service offshoring sector and examining factors that enhance the investment attractiveness of CEE countries. During the process of considering different target locations, various factors might determine country and company attractiveness for offshoring investments at both the sides involved: service vendor and investor. Before processes can be migrated to an offshore location, the investment needs to be thoroughly considered and justified.

The authors focused on identifying the factors important for decision-makers while considering offshore destination. Moreover, the researchers wanted to collate the factors identified in the research process and perform comparative analysis of five countries from CEE region that are direct competitors: Poland, Slovakia, Czech Republic, Bulgaria, Romania, and Hungary.

Main findings

The most crucial factor identified was the operational costs reduction. Among other investment motivators, we can list: economic and political stability, quality of human resources, availability of modern office space, and government incentives. As for the factors equally important for both the parties involved, we can list: cost reduction, service improvement, operational budgeting tights, and process optimization. Still, service providers focused more on intangible values, like high business standards, corporate culture, knowledge/experience in the sector, so as the economic and business environment. In the comparative part, Poland was identified as not the cheapest location, but its other strong sides make it a regional leader, with hundreds delivery centres and over 200 workers in the sector. Among such assets, we can list the wide offer of office space and human resources, political stability, alluring public incentives, and experience in the sector. Nevertheless, the authors emphasized that every decision needs to be adapted and suited to the business strategy and particular corporate conditions.

4.1.5 **Publication V**

Overall objective

The last paper is focused on higher education offshoring, by addressing the concept of international branch campus (IBC) in a foreign country. Although such investments have been implemented and researched in other business domains, the researchers wanted to address the transnational transfers of higher educational functions, which are being

considered by more and more universities worldwide. The rapid changes in global education environment impact many schools by forcing them to seek for expansion opportunities, not infrequently in another country. The authors wanted to examine and describe the presence of an American university in Poland that runs degree programmes by means of a Polish private university.

The researchers aimed at studying globalized educational services environment and finding key facilitators of higher education offshoring, aligned with the fifth research question. The changes in international education are triggered by the decrease in the students' number, differences in annual university fees across countries, and students' strive for prestigious diplomas and top quality education. The authors wanted to explore qualitative research methods with the use of data mining software to study the operational model of an IBC established by an American university in Poland. Moreover, the researchers wanted to address the fifth research question by describing the key features, roles and stakeholders engaged in the studied IBC, to be able compare the standard business offshoring with the higher education one.

Main findings

The qualitative analysis identified the four key concepts related to higher education offshoring: 'quality', 'innovation', 'partnership', and 'expansion'. The approach towards cooperation overlapped in most aspects at both the sides involved. The American university was seeking for expansion opportunities and enhancement of global reputation by offering top quality programmes. The Polish university aimed at development of an innovative product, in the areas of teaching content and style. The operational quality and open communication remained at the key focus of both organizations. It was supposed to facilitate overcoming mutual challenges, mostly of regulatory and financial nature.

Generally, standard business process offshoring was found to be motivated by slightly different factors than higher education offshoring. Among the common motivators we can speak of the operational enhancement and organizational improvement, realized by top quality services that can translate into best customer satisfaction. As for the differences, higher educational offshoring focused on offering innovative programmes strengthening market competitive advantage, with further locations expansion, whereas the standard offshoring of business processes, such as IT, accounting or banking, primarily aimed at expense reduction, access to experienced and well-educated workers, and the partner's operational excellence, focus on core business capabilities, so as the process improvement and optimization.

4.2 Offshoring challenges system analysis

In this section the authors shall analyse business process offshoring challenges, assuming a systems engineering tools. Performing such multi-dimensional study, the researchers shall elaborate on the goal of the system, its stakeholders and their needs, preliminary and

final problem designs (solutions), so as their implementation. The review is based on the material from Publications I, II and III.

4.2.1 Transition challenges

For the start, the author would like to present the problems identified in Publications I, II and III that concerned three core stages of offshoring corporate transformation, i.e. pre-transition, transition, and post-transition. The transition project has been divided onto 5 phases explained in the next subsection: preparation, planning, system design, implementation or closure. The detailed list of transitional challenges shall be presented in Table 3.

Table 3. Transitional challenges

#	PHASE	MODEL	SECTOR	SIDE	TYPE	FREQUENCY	PROBLEM DESCRIPTION
1	Pre-Transition	in-house/ BPO	IT	Buyer	Offshoring/ Outsourcing	Few	Diversity in the current client infrastructure (network topology).
2	Pre-Transition	in-house/ BPO	Every	Buyer	Offshoring/ Outsourcing	Many	Diversity in the current client systems and apps.
3	Pre-Transition	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Majority	Developing a clear scope of duties for the parties involved.
4	Pre-Transition	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Majority	Problems with understanding of roles and responsibilities.
5	Pre-Transition	in-house/ BPO	Every	Buyer/ Vendor	Offshoring	Vast majority	Knowledge on how to migrate a worker to the destination country.
6	Pre-Transition	in-house/ BPO	IT	Buyer	Offshoring/ Outsourcing	Few	Issues with development of service design and test environment.

7	Pre-Transition	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Many	Not clear which jurisdiction should be applied for the transition implementation.
8	Pre-Transition	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Individual	Problems with understanding the basics of the EU Acquired Rights Directive.
9	Pre-Transition	in-house/ BPO	IT	Buyer	Outsourcing	Few	Final product portfolio wrongly converted onto SLA.
10	Pre-Transition	in-house/ BPO	Every	Buyer/ Vendor	Outsourcing	Individual	How to define the termination conditions in the contract.
11	Pre-Transition	in-house/ BPO	Every	Buyer/ Vendor	Offshoring	Vast majority	How to set up an enterprise in a foreign country to start business activities.
12	Pre-Transition	BPO	Accounting	Vendor	Offshoring/ Outsourcing	Individual	Data access / disclosure risks
13	Pre-Transition	BPO	Every	Vendor	Outsourcing	Many	Wrongly prepared product pipeline for offer.
14	Pre-Transition	in-house/ BPO	Every	Vendor	Offshoring	Many	Risk of the job permits that can postpone the project.
15	Pre-Transition	In-house	Banking	Buyer	Offshoring/ Outsourcing	Many	Not clear how and by whom is the legal risk assessment performed in the project.
16	Pre-Transition	In-house	Banking	Buyer	Offshoring/ Outsourcing	Vast majority	How to protect personal data while processing sensitive information.

17	Pre-Transition	in-house/ BPO	Every	Buyer	Offshoring	Majority	How to find the remote location that is cost effective, but maintains the high delivery quality.
18	Pre-Transition	in-house/ BPO	Accounting	Buyer/ Vendor	Offshoring/ Outsourcing	Many	Problems with defining sound taxing policy.
19	Pre-Transition	BPO	Every	Buyer	Offshoring/ Outsourcing	Many	How to verify the partner's know-how.
20	Pre-Transition	BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Few	Lack of negotiation flexibility at the bid process.
21	Pre-Transition	BPO	Every	Buyer	Offshoring/ Outsourcing	Many	How to verify if the partner possesses a well-developed IT infrastructure available which is crucial for the stability of the service delivery.
22	Pre-Transition	In-house	Every	Buyer	Offshoring/ Outsourcing	Individual	How to maintain the company’s functioning transparency during transformation.
23	Pre-Transition	in-house/ BPO	Every	Buyer	Offshoring	Few	Not clear what are the key government incentive schemes in the considered locations.
24	Pre-Transition	in-house/ BPO	Every	Buyer	Offshoring	Few	How to assess the availability of a high-profile and experienced managerial community in the target investment locations.

25	Pre-Transition	In-house	Banking	Buyer	Offshoring/ Outsourcing	Vast majority	How to understand the legal acts regulating offshoring transitions that are often hard to comprehend.
26	Pre-Transition	In-house	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Many	Issues with planning the new business model enabling supervision costs reduction.
27	Pre-Transition	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Individual	Language barrier when transitioning services along with the suppliers, e.g. Service is being moved from Finland to Poland, but all suppliers stay local and used to communicate in Finnish before (contract, invoices).
28	Pre-Transition	BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Few	Issues with preparing consistent and optimized delivery model.
29	Transition (Implementation)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring	Few	The tasks that remain locally and cannot be offshored are not well defined.
30	Transition (System Design)	BPO	Accounting	Vendor	Offshoring/ Outsourcing	Many	No legal regulations on a given taxation function in a service vendor's country.

31	Transition (Implementation)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Few	Approved candidates not accepting job proposal, not possible to hire.
32	Transition (Implementation)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Individual	'As-is' situation wrongly converted into the 'to-be' situation.
33	Transition (Planning)	in-house/ BPO	IT Service Desk	Vendor	Offshoring/ Outsourcing	Many	Deviations to be handled in the future with the change request process not defined.
34	Transition (Implementation)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Individual	Closure document and decision gate check list not completed.
35	Transition (Planning)	BPO	Every	Vendor	Offshoring	Few	Competition between service centres within the same service vendor organization.
36	Transition (Implementation)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Majority	Constant methodology improvement challenges (e.g. Change management toolbox, fast-track).
37	Transition (System Design)	in-house/ BPO	Accounting	Vendor	Offshoring/ Outsourcing	Few	Wrong taxation return scheme.
38	Transition (Implementation)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Vast majority	Cultural barriers, stereotypes, unfriendly relations with knowledge sharing (inconvenience of the prior team//job acquisition and relocation).

39	Transition (Implementation)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Few	Decision on who should act as a trainer not made.
40	Transition (Implementation)	BPO	Every	Buyer	Offshoring	Few	Business roll-back procedure not prepared (if something goes wrong after go-live).
41	Transition (Planning)	in-house/ BPO	Every	Buyer	Offshoring	Majority	Existing process documentation, initial list of processes not defined.
42	Transition (Implementation)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Majority	Feedback and report on the consolidation sheets not collected.
43	Transition (System Design)	in-house/ BPO	IT Service Desk	Vendor	Offshoring/ Outsourcing	Few	Final application list not prepared or imperfect.
44	Transition (Implementation)	in-house/ BPO	Every	Vendor	Offshoring/ Outsourcing	Individual	Go-live/cut-off process document not ready.
45	Transition (Implementation)	in-house/ BPO	Every	Buyer	Offshoring/ Outsourcing	Many	HR recruitment plan not defined.
46	Transition (Planning)	BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Many	Faulty valuation of separate service components.
47	Transition (System Design)	in-house/ BPO	Every	Vendor	Offshoring/ Outsourcing	Few	Initial FTE ramp-up/hr demand not drafted.
48	Transition (Implementation)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Few	Introductory training for the new employees not executed.
49	Transition (System Design)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Many	Job descriptions for the new employees not created

50	Transition (Implementation)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Majority	Key people for the knowledge transfer not identified: subject matter experts (SMEs).
51	Transition (Implementation)	BPO	Every	Vendor	Offshoring	Individual	Length vs. Prize challenges (insufficient lead time).
52	Transition (System Design)	in-house/ BPO	IT Service Desk	Buyer/ Vendor	Offshoring/ Outsourcing	Few	Application deployment plan not defined.
53	Transition (Planning)	in-house/ BPO	Every	Buyer	Outsourcing	Many	Local labour union strategy meeting not predefined.
54	Transition (System Design)	in-house/ BPO	Every	Buyer	Offshoring/ Outsourcing	Few	Operational model is not efficient and faulty.
55	Transition (Implementation)	in-house/ BPO	Accounting/ Banking	Buyer/ Vendor	Offshoring/ Outsourcing	Few	Necessary booking facilities and other needed resources.
56	Transition (Planning)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Majority	Need for adjusting programme methodology to a particular project's needs and environment.
57	Transition (System Design)	BPO	Every	Vendor	Offshoring	Majority	Need of accepting every service function by the supervisory team
58	Transition (System Design)	BPO	Every	Buyer	Offshoring/ Outsourcing	Many	Official steering committee/ service delivery assurance officer verdict not delivered.

59	Transition (Implementation)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Vast majority	Planned investment case budget exceeding 15% of the tolerance.
60	Transition (Implementation)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Vast majority	Issues with finding multilingual and experienced workers in an acceptable cost for the client.
61	Transition (System Design)	in-house/ BPO	Every	Vendor	Offshoring	Few	Process description, e.g. VSMs (value stream maps) not used at all.
62	Transition (Implementation)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Many	Process designed in a wrong way, not possible to successfully execute.
63	Transition (Implementation)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Majority	Process training/knowledge transfer wrongly executed.
64	Transition (Planning)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Few	Project kick-off meeting wrongly conducted.
65	Transition (Preparation)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Few	Project participants not defined.
66	Transition (Implementation)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Individual	Project quality survey not to be sent to key stakeholders.
67	Transition (Planning)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Majority	Project scope not defined precisely.
68	Transition (Implementation)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Individual	Purchase order for the standard workplace not ready.

69	Transition (Planning)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Few	Service quality & risk not analysed properly.
70	Transition (System Design)	in-house/ BPO	IT Service Desk	Buyer	Offshoring/ Outsourcing	Many	Current infrastructure not ready for remote interaction.
71	Transition (Implementation)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Few	Unclear new team set-up (roles, jobs, responsibilities).
72	Transition (Implementation)	in-house/ BPO	Every	Vendor	Offshoring	Majority	The cost of service in an offshore country exceeds predefined amounts.
73	Transition (Preparation)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Few	Unclear duty scope of all the parties involved, wrong understanding of roles and responsibilities.
74	Transition (Preparation)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Few	Unclear goals set up.
75	Transition (Preparation)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Majority	Unclear stakeholder structure- poor communication and information flow.
76	Transition (Implementation)	in-house/ BPO	Banking	Vendor	Offshoring/ Outsourcing	Individual	Legal issues with the risk of disclosing confidential information to a third party.
77	Transition (System Design)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Few	Incoming volume of calls wrongly calculated, so the demand for workflow capacity cannot be prepared correctly.

78	Transition (Planning)	BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Majority	Wrong SLA contract, no precise information and ratios to be monitored.
79	Transition (System Design)	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Few	Wrongly planned and insufficient training.
80	Post-Transition	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Majority	Problems with communication among stakeholders.
81	Post-Transition	in-house/ BPO	Every	Vendor	Offshoring/ Outsourcing	Few	Major accidents affecting some remote location which blocks service provider from delivering service.
82	Post-Transition	in-house/ BPO	Every	Vendor	Offshoring/ Outsourcing	Few	SLA failures at the service provider's side.
83	Post-Transition	in-house/ BPO	Every	Buyer	Offshoring/ Outsourcing	Only one	Community of users is not satisfied with the new service, cannot accept the organizational changes.
84	Post-Transition	in-house/ BPO	Every	Vendor	Offshoring	Many	Expenses exceed the expected values in the new provider country.
85	Post-Transition	in-house/ BPO	Banking	Buyer	Offshoring/ Outsourcing	Few	Incoming transitions are wrongly calculated and the volume cannot be covered due to wrong capacity schedule.
86	Post-Transition	BPO	Every	Buyer/ Vendor	Offshoring	Many	Third party providers are not cooperating efficiently.

87	Post-Transition	in-house/ BPO	Every	Vendor	Offshoring/ Outsourcing	Many	Wrongly defined operational processes.
88	Post-Transition	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Few	Business continuity procedure (BCP) and recovery capacity objectives (RCO's) fail to function properly.
89	Post-Transition	BPO	Accounting	Buyer/ Vendor	Offshoring/ Outsourcing	Majority	Confidential information disclosed to a third party provider.
90	Post-Transition	BPO	Every	Vendor	Offshoring/ Outsourcing	Many	Venture budget exceeding planned tolerance.
91	Post-Transition	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Few	Different aspects of a service wrongly priced.
92	Post-Transition	in-house/ BPO	IT	Vendor	Offshoring	Few	Low profile IT infrastructure in poor office space not functioning properly.
93	Post-Transition	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Few	Operational risk wrongly categorized.
94	Post-Transition	in-house/ BPO	Every	Vendor	Offshoring/ Outsourcing	Many	Employees kept in the company only for limited period of loyalty-contract.
95	Post-Transition	in-house/ BPO	Every	Vendor	Offshoring/ Outsourcing	Majority	After the initial phase, team motivation starts to fall down.
96	Post-Transition	in-house/ BPO	Every	Vendor	Offshoring/ Outsourcing	Majority	Leadership issues, employees not feeling led by management.

97	Post-Transition	in-house/ BPO	Every	Vendor	Offshoring	Many	Cultural issues (difficulties to accept the reduction or total termination of the incumbent delivery team)
98	Post-Transition	in-house/ BPO	IT	Vendor	Offshoring/ Outsourcing	Few	Too many missed calls, as the users hang up the phone immediately after calling (calls <5s).
99	Post-Transition	in-house/ BPO	Every	Vendor	Offshoring/ Outsourcing	Majority	Workforce rotates dynamically.
100	Post-Transition	in-house/ BPO	Every	Vendor	Offshoring/ Outsourcing	Few	Core experts are not possible to be covered in case of absence (injury, sickness, work termination).
101	Post-Transition	in-house/ BPO	Every	Vendor	Offshoring/ Outsourcing	Many	Goals setup unclear and impossible to achieve.
102	Post-Transition	BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Few	Workers migrated to the vendor company not permitted to work at its premises.
103	Post-Transition	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Few	New workers on-boarded and trained, but fail to perform well in live service.
104	Post-Transition	BPO	Every	Vendor	Offshoring/ Outsourcing	Many	New workers disclose confidential information and make common mistakes.

105	Post-Transition	BPO	IT	Buyer	Offshoring	Only one	Server attacks posing a threat on loosing confidential information and personal data in different states (particularly in Linux, but also Windows).
106	Post-Transition	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Vast majority	Issues with defining valuation and budgeting best practices.
107	Post-Transition	in-house/ BPO	Every	Vendor	Offshoring/ Outsourcing	Majority	Generation gap and personal relations between employees cause issues.
108	Post-Transition	in-house/ BPO	IT	Buyer/ Vendor	Offshoring/ Outsourcing	Many	Working together with key competitors posing challenges (e.g. Apple and Microsoft).
109	Post-Transition	in-house/ BPO	Accounting	Vendor	Offshoring	Many	Insecure scheme for archiving and shipment of documents (particularly with short timeframe).
110	Post-Transition	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Vast majority	Cost model that assures sustainability is not prepared.
111	Post-Transition	in-house/ BPO	Every	Buyer/ Vendor	Offshoring/ Outsourcing	Few	Quality of service decreasing due to the faulty process improvement approach.

112	Post-Transition	BPO	Accounting	Vendor	Offshoring/ Outsourcing	Many	Every element of transition project executed by different delivery unit resulting in depersonalized service.
113	Post-Transition	in-house/ BPO	Every	Vendor	Offshoring/ Outsourcing	Majority	Native speakers hard to find on the employee market at reasonable costs.

4.2.2 **Transition problems' analysis**

In this subsection, we shall analyse the problems in a quantitative and qualitative way. Starting from the quantitative perspective, there are 113 issues identified in total, among which there are 28 of pre-transition, 51 of transition and 34 of post-transition stage. Across the transition project, we can further count 4 issues of preparation, 10 of planning, 13 of system design and 24 of implementation (no issues in the close phase were identified). Let us present the location of issues in Figure 5.

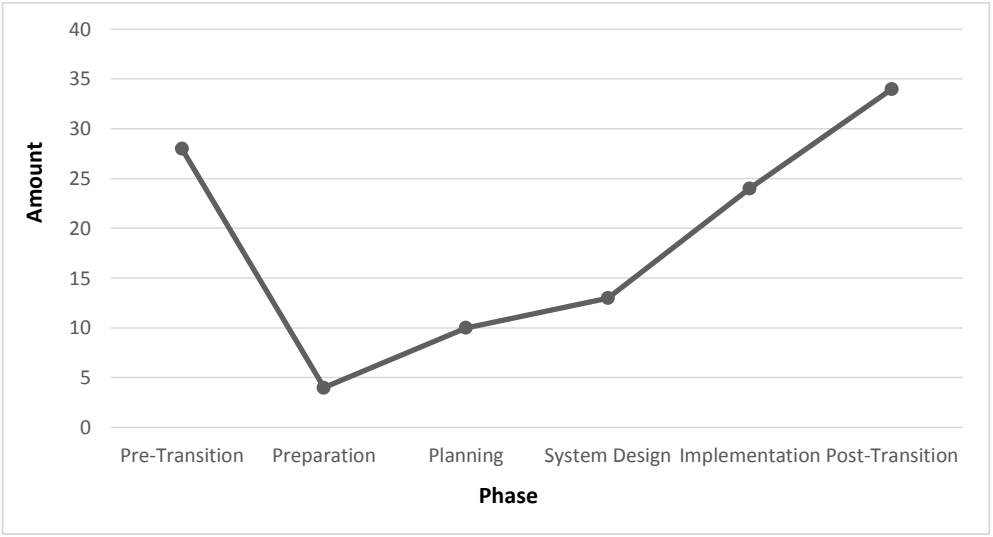

Figure 5: Transitional challenges location for phases.

As for the model, majority of issues are applicable to both: outsourced and captive form (85), whereas 22 apply only to BPO and 6 only to the in-house offshoring, as presented in Figure 6.

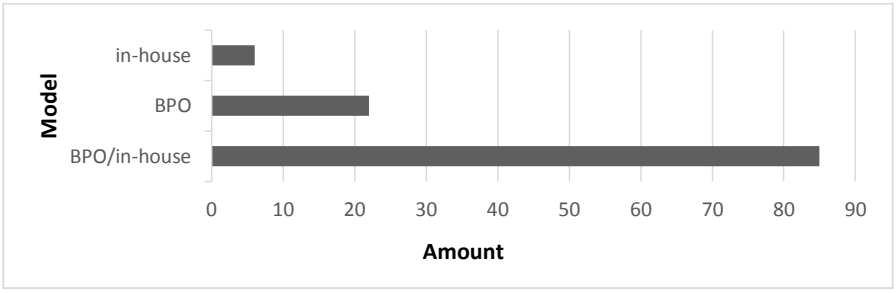

Figure 6: Transitional challenges location for model.

Majority of problems are universal, and can be found in any sector (88), 5 for Accounting, 5 for Banking, 1 for Banking/Accounting, 12 for IT (including Service Desk). It is presented in Figure 7.

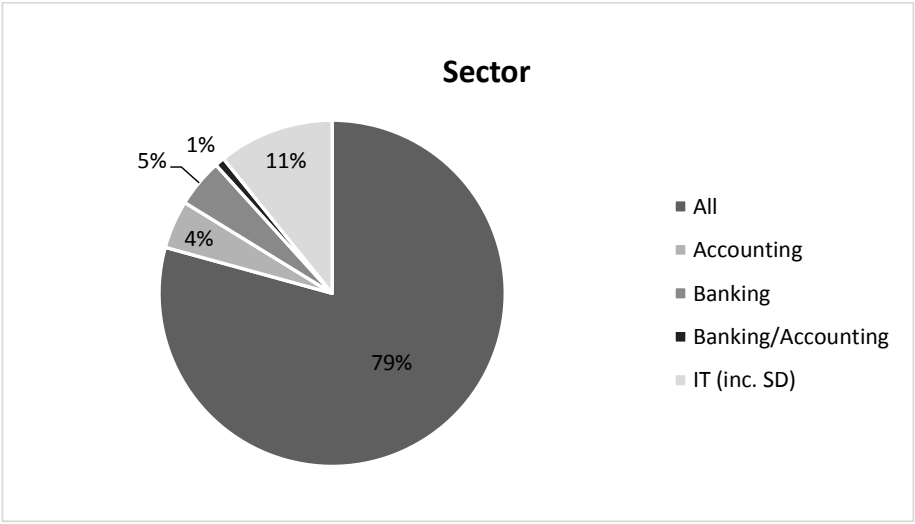

Figure 7: Transitional challenges location for sector.

Most of the issues (88) are applicable both to the outsourcing and offshoring types of operations, while 4 apply to outsourcing and 21 to offshoring, as presented in Figure 8.

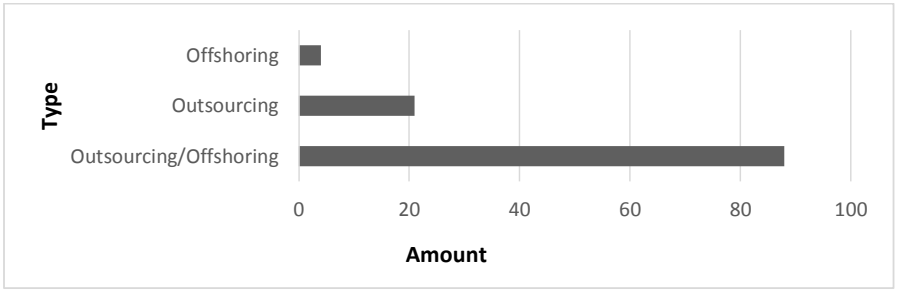

Figure 8: Transitional challenges location for type.

As for the frequency, 14 issues identified were mentioned exclusively by individual person, 40 by only a few responders, 29 by many of them, 21 by majority and 9 by vast majority. Let is present it in in Figure 9.

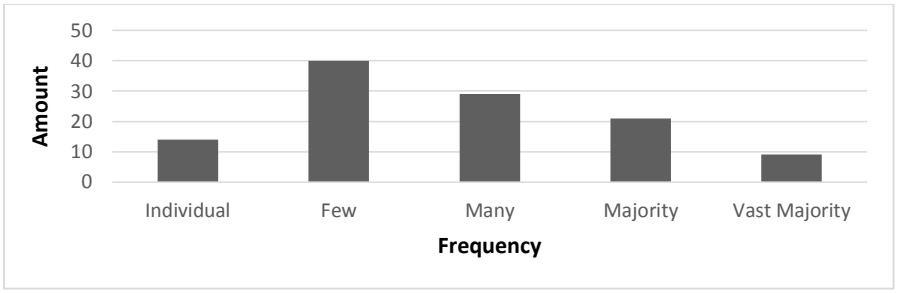

Figure 9: Transitional challenges location for frequency.

Looking at the identified issues from the qualitative perspective, there is a few examples of problems that can be understood as similar and occur in more than one phase, resulting from one another. We shall present such problems in Table 4.

Table 4. Similarities of issues across different stages.

Problem area	Phase	Description
Responsibility scope	Pre-Transition, Transitional preparation and Post-Transition	Defining clear duty scope across the involved stakeholders is an issue that can be found in all three stages of transitional change.
Cultural issues	Transitional implementation and Post-Transition	Cultural barriers and stereotypes may hinder two phases of transitions.

Service design	Transition implementation and Pre-Transition	Issues with developing clear design of processes and service requirements can be found in two phases.
IT infrastructure	Pre-Transition, Transitional preparation and Post-Transition	Issues with availability and stability of an IT infrastructure can be found at all 3 stages.
Human resources	Pre-Transition, Transitional preparation and Post-Transition	Issues with hiring, training and leading unexperienced employees can be found in all 3 stages. What is important, it has mentioned by great number of responders.
Legal issues	Transitional implementation, system design and Pre-Transition	Regulatory and contractual issues can be found in two stages.
Taxing policy	Transitional system design and Pre-Transition	Issues with taxation schemes can be found in two stages.
Documentation issues	Transitional implementation, planning and Post-Transition	Problems with collection, organization and archiving of documents are possible to be found in two stages.

Summarizing this subchapter, we can infer that most of the issues identified are universal, applicable to any phase, model, sector and type. Moreover, most of them are rather frequent (mentioned by many, majority or vast majority of responders), and there is 8 areas of issues that can be found in more than one phase (do not ease across the cycle). It shows that some problems result from each other, or reoccur if not resolved at their first occurrence. It shows the clear call for an efficient problem solving strategy, not only resolving but also predicting issues at their early stage of development.

4.2.3 **Transition phases**

This subsection shall be devoted to the brief explanation of transitional project phases, as presented in Publication III. In the context of the conducted case study, the framework was divided onto 5 phases: Preparation, Planning, System Design, Implementation, and Closure. The first stage, Preparation is to be used for responsible and objective assessment of a new venture potential. The second, Planning has to be focused on ensuring the successful project organization, by aligning the resource chart and controls with predefined venture's objectives. The third stage, System Design is supposed to determine further service details and develop ultimate operational model for the migrated operations. Here, system engineering tools can be utilized in order to enhance the structure, corporate culture and strategy for the forthcoming business effort (Schmidt and

Treichler, 1998). Hence, one of the two basic process migration methods need to be chosen: *'pick-and-drop'*/'*lift-and-shift'* (when the operations are transferred with no functional changes), or *'reengineer-and-migrate'*/'*transform-and-migrate'* (when we transfer operations in a changed, usually optimized form) (Nuwal, 2011). The fourth stage, Implementation is focused on the execution of the assumed solution and deploying resources need to deliver cross-border process transfer. Among the key actions at this stage we need to emphasize *'Knowledge Transfer'* (KT), together with recruitment and on-boarding of candidates for open positions (Chua and Pan, 2008). The final stage, Closure phase needs to ensure successful service migration, so that the responsibility is already assumed by the new vendor and the incumbent supplier may reorganize their operational capacity. Sometimes, the investor's teams remain supporting the new vendor teams in the form of so called *'Parallel Run'* (Infosys, 2015). Let us present the phases described in this section in Figure 10.

Figure 10: Transition Project Phases.

4.2.4 **Transition tracks**

In this subsection we shall present the key aspects of which service transitions are composed, referred to as 'tracks' in Publication III. Such interdependent features, understood as standard scope areas, grouped into work teams can also be named as 'streams' or 'pillars' (Smith, 2010). The previously mentioned *'Knowledge Transfer'* should be understood as successful passing of process knowledge from the incumbent to the new service provider. *'Human resources'* track focuses on complex delivery human resources management (HRM) functions, such as the recruitment, partnering, administration, or personal development. *'Communication'* is supposed to ensure smooth information flow across the entire stakeholder organization. *'Service Equipment and Environment'* addresses the infrastructure and technology that enables successful operations of the toolset (such as network bandwidth and security). *'Service Management'* shall ensure all the activities required to successfully manage the services, by vulnerability assessment and clear task accountability. *'Leadership'* is a very important track that has to ensure that leaders act of role models to make change happen. *'Financial Management'* anchors the reporting, invoicing and financial planning for the overall service (Taylor et al., 2010). *'Organisational track'* needs to ensure the efficient service delivery model with clear roles and responsibilities. *'Business Process Continuity (BCP) and Security'* comprises all the activities related to the risk assessment and foreseeing, by preparing disaster recovery and crisis management plans. *'Legal Issues'* track focuses on the ongoing contractual and negotiating issues, to ensure validity of all transformational actions. *'Process and Procedures'* track focuses on the clear documentation and managing of all regulations defining operations. The last, *'Service*

Go-Live' track ensures the successful hand-over of the service to the new delivery team by meeting readiness assessment and reinforcement criteria. The tracks described in this section are presented in Figure 11.

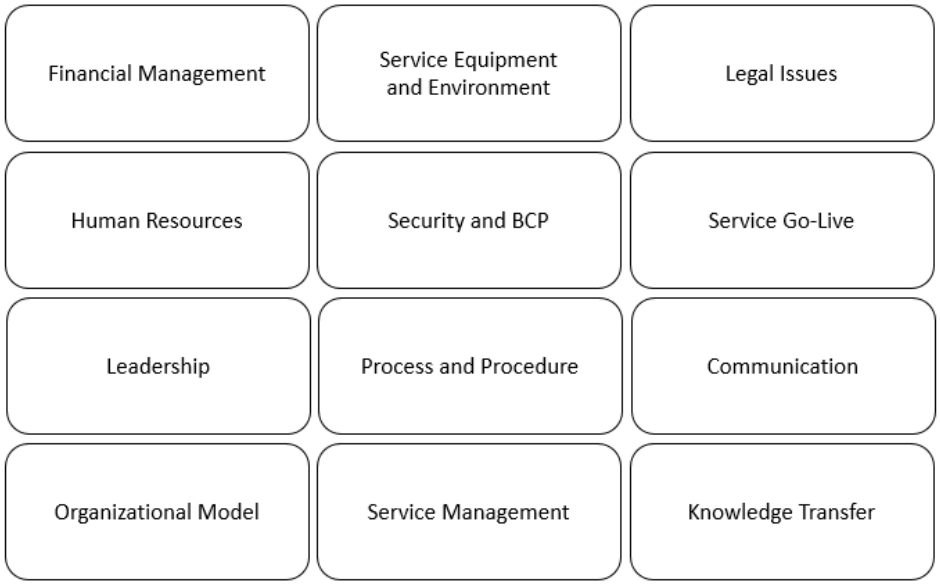

Figure 11: Transition design tracks.

4.2.5 **Transition stakeholders**

In this subsection, we shall elaborate on the key stakeholders of offshoring transitions, described in Publication III. In Publication V the author presented the key players of higher education offshoring operations, but this analysis concerns the standard business process offshoring (mainly from the sectors of IT, banking and accounting). Each stakeholder has different, expectations, needs and perception of business transformation, hence the roles on each involved party need to be defined. The design assumed in Publication III divides the service provider setup onto the two separate units: Headquarters and Service Delivery Unit, realizing overall transition effort. The detailed stakeholder frame shall be presented in Table 5.

Table 5. Transition stakeholders.

Stakeholder	Role	Description
Client: **Investor Company**	Executive Team	Taking final accountability for decisions, approves and sign-offs the changes, negotiating contracts, facilitating relations between client and vendor company and acting as an ultimate escalation point in conflict resolution and complaint process.

	Programme Director	Managing Transition and Transformation actions by coordinating overall effort, preparing documentation, ensuring timely delivery and efficient escalation process.
	Transition Management Team	Executing transition plan as agreed and performs predefined quality audits and required ad-hoc actions. Composed from Financial Manager, Sales Manager, Legal Coordinator and HR Partner.
Service Vendor: **Headquarters**	Executive Management Team	Taking final accountability for decisions, approves and sign-offs the changes, negotiating contracts, facilitating relations between client and vendor company and acting as an ultimate escalation point in conflict resolution and complaint process.
	Service Delivery Manager	Managing Transition and Transformation actions by coordinating overall effort, preparing documentation, ensuring timely delivery and efficient escalation process.
	Transition Stream Leaders	Executing transition activities in a particular stream (legal, financial, equipment etc.) according to the master schedule.
	Transition Management Team	Executing transition plan aligned with Transition Tracks and performs predefined quality audits and required ad-hoc actions. Composed from Financial Manager, Sales Manager, Legal Coordinator and HR Partner.
	Quality Assurance Team	Ensuring successful meeting of predefined criteria, monitoring compliance, performing quality checks to complete each stage checkpoints.
Service Vendor: **Service Delivery Unit**	Executive Team	Taking accountability for decisions, approves and sign-offs the changes, negotiating contracts, facilitating relations between client and vendor company and acting as an ultimate escalation point in conflict resolution and complaint process
	Service Delivery Manager	Managing overall transitional effort on the side of Service Delivery Unit, sometimes performing a role of Transition Manager.
	Transition Manager	Managing Transition and Transformation actions by coordinating overall effort, preparing documentation, ensuring timely delivery and efficient escalation process.
	Team Leader	Ensuring the new service achieves contracted Service Level Agreement (SLA) by effective team leadership.

5 Conclusions

This chapter presents the practical and theoretical results of the study. The contributions advance and extend the current academic debate on business process offshoring and transition projects. The key implications of practical and theoretical nature are demonstrated, together with the positivistic evaluation of the conducted research. Moreover, the last section elaborates on the study limitations and provides future research recommendations in the area of business process offshoring and its transitional challenges.

5.1 Results and implications

The key purpose of the study was to contribute to the existing business practise and academic debate on business process offshoring with the focus on the research objectives presented in the first part of the dissertation. The research came from the practical insights on service offshoring industry in CEE region, which is connected to over 4-year corporate career of the author, who has been working in banking and IT companies engaged in offshore transitions from both operational and leadership perspective, across the entire doctoral degree. Hence, multidimensional aspects of offshoring transitions have been exercised and studied, both from the operational and leadership perspective. The rapid growth of various offshored ventures observed globally in the past few years has been connected with numerous challenges managerial community struggles with and seeks for sustainable solutions. The concepts researched reflected the demand of the author's co-workers and other industry executives, struggling with numerous issues affecting common effort across the technical product development, negotiating portfolio, team building, process migration, so as service optimization and continuous improvement. Business process offshoring is often implemented as a profitable solution for international organizations, as it gives them the opportunity to change former business outline and increase competitive advantage, by optimizing operational efficiency and focusing on core business needs. Nonetheless, such large scale transformations often lead to serious social and economic consequences in both the countries involved in a corporate change. Thus, the well-thought-out strategy on the business model is critical for the efficient progress of an offshoring activity.

The thesis addressed the concept of business process offshoring, which is concentrated around transferring processes to some other company located in a different state. The main theoretical input of this work is the novel outlook on the structure and design of challenges existing in various transitional phases of service offshoring industry. The focus of the research was channelled on the determination of aims and challenges accompanying process delivery, as well as stakeholders involved in corporate transformations. The author determined framework of transitional problems, and proposed some solutions (designs) to the issues identified as the most important. Thus, the presented research is rooted in the conceptual stages of systems engineering design of business models (INCOSE, 2010). It is not supposed to create, nor control any new

architecture, nor operational rules, but to present conceptual basis for approaching and building offshored operational systems for particular businesses. The author identified potential issues that may hinder successful execution of transition projects and presented possible solutions to the challenges identified as most important in each phase of corporate transformation. Nonetheless, the author did not elaborate on the methods of their testing which are specific for particular applications. In total, the 113 issues identified has been analysed in regards their different dimensions. The offshored service cost model, review of legal aspects governing international service transfers and re-engineering work on the offshored IT Helpdesk operational model constituted the designs (solutions) to the most important issues. The stakeholders, phases and tracks of transitional change have also been studied. Such systematic approach may improve the general understanding of centralized service delivery model and strengthen company's competitive advantage on the market. It may bring improved results in the business domains of operational efficiency, cost limitation, profit growth and customer relations. Moreover, the 5-step SOLVE method was suggested to facilitate the conducted case study and help the engaged managers not only in resolving existing problems, but also in predicting potential issues at their initial stage of development. It emphasizes the importance of a shared team-work in problem solving process, and links it to the linear concept of SARA suggested by Spelman and Eck (1987). The suggested problem solving stages are as follows: 'S' for see the problem context, 'O' for open your mind to others, 'L' for look for ideas together, 'V' for vote for the solution, and 'E' for examine and control.

What is more, the author identified the factors facilitating offshoring investments, both from the investors' and service providers' perspectives. The factors stipulating the industry's growth in CEE region have been described, among which we can mention the cost competitiveness, quality of human resources, availability of modern office space, economic and political stability, as well as government incentives. The similarities and differences between standard business offshoring and higher education operations have also been examined in the context of rapidly changing global educational environment. Despite the common focus on organizational improvement and operational enhancement, it has been found that this form of offshoring activity is affected by different factors than standard business process offshoring. It shall support decision makers in the assessment of international branch campuses venturing, which offers multiple opportunities in respect to the exploration of new markets, in the same time posing numerous risks.

Let us summarise the key research implications in Figure 12.

Figure 12: Key research implications.

5.2 Research evaluation

The evaluation of academic research can be based on various frameworks, depending on the area of scientific truth a study is supposed to improve, so as the scope and methodology it assumes. As mentioned in the prior sections, this work followed the interpretive and positivist approaches (Orlikowski and Baroudi, 1991; Mingers, 2001). As the differences between positivist and interpretive approaches are largely rhetorical rather than practical (Weber, 2004), the research methods and implementation shall be aligned with particular cases and applications to ensure the correct balance between the subjective interpretive perspective, and the positivistic perspective, the latter being assessed by its four dominant categories: internal and external validity, objectivity and reliability (Zikmund et al., 2010).

Let us assess the research from the positivistic perspective. Internal validity explores the degree of dependent variable's explanation with independent variables (Zikmund et al., 2010). Within the publications addressed in this work, the variables have been selected based on the previous literature, empirical research and careful inspection of available sources. The method of their selection can be viewed as biased to a certain extent, but the design science research may not always be evaluated with positivistic approach (van Aken, 2004). The external validity, assuring the proper results generalization, was achieved by the decent sample size of empirical data in Publications I-IV that represented

the key-players of the business market concerned (Zikmund et al., 2010). The external validity was reduced by the methodology assumed, for the qualitative analysis, statistical analysis and case study in particular, address the constructs utilized in real business practice from the structural and linkages point of view. Reliability, focused on the quality of data, was assured by the valid formulation of empirical collection process. The author was collecting information directly from the engaged stakeholders, acting at multilevel collaborative roles to reach holistic and sustainable view on the operative and structural dimensions of the industry consensus. The responses and statements received from the people interviewed might have affected the results reliability, hence the author selected the multiple research methods applied in the external and internal practice of the companies. Objectivity assures the reproducibility of results from the methodological perspective. Whereas the case study method can be questioned in terms of its objectivity, the cost model building and operational model re-engineering was conducted to test the constructed models outside their primary context. The statistical analysis applied in Publication IV was performed with the general statistical research guidelines, hence it can be considered as objective.

5.3 Limitations and future recommendations

The research conducted as part of the doctoral degree was affected by some constraints. First and foremost, the data was gathered from a selected number of managers involved in the offshore operations. Many of them emphasized the lack of time and some extent of uncertainty whether to engage in the study, due to the importance and confidentiality of operations. Moreover, the problem solutions (designs) have been suggested only towards the key issues identified across the process and the methods of their testing which are specific for the particular applications have not been explored. Still, there are more issues that have been identified as less important, but require intervention in the entire cycle. Whereas the research presented covers the first stages of systems engineering use in offshore corporate models, the broader perspective on the design of engineering systems may be recommended for future research. The relationship between the technology (knowledge) management and operational competitiveness, striving for sustainable holistic business strategies may be recommended for the future studies in the field.

Aside from all the fascinating dimensions of service offshoring that has lately been developing rapidly in CEE region, the author would like to mention that its application in the large scale poses one vital concern: what shall happen with all the centres and the entire workforce employed there, when the operational expenses in the region become similar as in the more developed countries of Scandinavia and Western Europe? Naturally, the market's invisible hand (Smith, 1790) that tends to equal the salaries and life expenses of the still developing and the well-developed countries, shall limit the profitability and efficiency of offshore service delivery. Thus, we need to take into account possible 're-shoring' of operations towards even more cost-efficient locations. The author would like to research, what measures of centralization, sorting and further

robotics implementations, may enable and facilitate further service shifts towards the environments of grater cost efficiency, but less cultural and mind-set closeness.

The author would like to state that there is still room for the further research on the creativity enhancement and problem solving methods. The suggested approach emphasized the common goal of solution reaching process, but other ideas supporting the concept shall always be welcome. Thus, the author would like to perform the wider testing of SOLVE method, not only in service offshoring investments, but also in other industries and applications. What is more, higher education investments in offshore locations can be further explored, in the light of their effectiveness and implementation in different environments. Particularly interesting would be the assessment of possibility for reverse offshoring in higher education, i.e. investments from less to more developed countries. The differences and similarities between standard business reshoring and higher-education offshoring would be interesting to elaborate on in the future.

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