European Economy

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SOURCING OF INFORMATION SYSTEM RESORCES FROM AN EMERGENT MARKET – AN EXAMPLE OF UKRAINE

Abstract

Geographically distributed development of information systems calls for a set of specific skills among all actors involved, especially when sourcing from an emergent economy in an unstable national situation. With a theoretical point of departure in a resource-based view on strategy, this paper discusses sourcing of IT services from western Ukraine with the purpose of identifying its qualities and challenges as well as identifying a path for research to understand the dynamics of the actual situation. The paper concludes with suggestions on how to proceed with the research based on indications that the actual situation is not as challenging as suggested by some observers.

Key words:

Co-Sourcing, software development, emergent market.

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1. Introduction

Global competition, reduction of costs and the need for flexibility and resources that rise with new types of expertise drive companies in need of software development to engage in geographically distributed software projects (Lacity et al. 2009; Persson et al. 2009).

For the sake of catering to the needs for managing this type of projects, a business model with an intermediary company has emerged in order to facilitate the co-operation between a client's local (in-house) and external ((out-)sourced) resources, named *facilitated co-sourcing* (Schlichter, 2017).

When discussing these opportunities in relation to Ukraine with potential customers they have many concerns, such as 'Isn't this country in war with Russia? What about the massive problems with corruption and the very complicated tax-laws? The national currency is quite weak and unstable, and then the culture – are they strange and very different minded from us? We have heard rumours that the labour market is very unstable and that staff qualifications are dubious'.

Many of these concerns are somehow routed in the fact that Ukraine is a country in transition and this paper would like to contribute to a deeper insight in these aspects related to sourcing of it-related resources (Roztocki & Weistroffer, 2011).

As a result, this paper aims to address the following research questions*:*

What are the contextual challenges of sourcing it-resources from an emergent market?

The paper answers the RQ by taking a theoretical point of departure from the resource-based view on strategy and the next sections present a brief review of the literature regarding the resource-based view on strategy and qualifications in outsourcing of IT development services.

The following sections describe the research approach and the activities undertaken to gain insight into the setting of the case. We then present and discuss the findings and suggest a future research agenda.

2. Theoretical Background

The section on the Theoretical Background provides a theoretical and contextualized introduction to out-sourcing, co-sourcing, the resource-based view on strategy and related issues.

2.1. Offshoring and co-sourcing

Offshore outsourcing involves cross-organizational transactions by the use of external agents to perform one or more organizational activities (Dibbern, Goles, Hirschheim, & Jayatilaka, 2004). In software development, this transaction can apply to everything from the use of contract programmers to third-party facilities management.

Offshoring setups may pursue high levels of cohesion, interdependency, and integration, while other setups pursue high levels of independence and low coupling among sites. In the pursuit of high cohesion, companies may co-locate the software developers (J. S. Persson, 2013; Šmite, Wohlin, Gorschek, & Feldt, 2010), adopt agile methodologies (Jalali & Wohlin, 2012; John Stouby Persson, Mathiassen, & Aaen, 2012) and strive for virtual team setups with high levels of trust (Siebdrat, Hoegl, & Ernst, 2009; Søderberg, Krishna, & Bjørn, 2013). In addition to the widespread virtual team conceptualization (Curseu, Schalk, & Wessel, 2008; Ebrahim, Ahmed, & Taha, 2009; Martins, Gilson, & Maynard, 2004; Powell, Piccoli, & Ives, 2004; Schiller & Mandviwalla, 2007), the high cohesion approach in software development offshoring has been conceptualized as co-sourcing (Kaiser & Hawk, 2004). Kaiser and Hawk (2004) define co-sourcing as 'an outsourcer and a client melding their IT-competencies to accomplish the client's work'. However, available research provides limited explanation of the dynamics of high cohesion strategies such as co-sourcing in an emergent market.

2.2. Resource-Based View

The resource-based theory (RBT) has been widely used within IS research (Seddon, 2014) and Melville et al. (2004) presents an integrative model for IT business value based on RBT. The model is divided into several layers, where the present paper focuses on: (1) IT business value generation process consisting of IT resources and complementary organizational resources making up a business process, which leads to business process performance, and (2) Focal

firm consisting of many business processes leading to overall organizational performance. Basically, these two exist in (3) Competitive environment with the organizational field entailing key suppliers, resource and product consumers, regulatory agencies and other organizations that produce similar services or products (DiMaggio & Powell, 1983, pp.: 148-149), and finally (4) the Macro environment with country characteristics generally shaping any business (Melville et al., 2004) – which is in focus in the present paper.

The IT Business Value Generation Process (Melville et al., 2004; fig 1) is based on:

- IT Resources: Technological and Human

- Complementary Organizational Resources

Both of these contribute to the execution of Business Processes, which further on contributes to better Business Process Performance. Overall, it is the claim that this influences the Organizational Performance.

2.3. Developed and Developing markets

There are no consolidated agreements on how to define an emergent market in a it-sourcing context, but it is commonly accepted that Ukraine in many aspects can be seen as a country in transition. Please refer to table 1 below where this is unfolded following the taxonomy established by Roztocki and Weistroffer (2011).

The business environment will have an impact on management of IT resources. E.g. on how to source and do local management as such (Roztocki & Weistroffer, 2011).

3. Research Approach

This paper extends on the stream of research done in out/co-sourced software development and is based on the Ukrainian Sourcing Service Inc. set-up. Other lenses earlier applied are risks (John Stouby Persson & Schlichter, 2015), trust (Schlichter & Persson, 2014), skills (Schlichter, 2015) and facilitated co-sourcing (Schlichter, 2017).

This section[1] presents the case and its related context. This is followed by an explanation on how we collected and analysed data. The approach of the case study follows the terms of Cavaye's (1996) single case with interpretive use of qualitative data for discovery. An interpretive approach is particularly useful when addressing problems with a dominant social or cultural dimension, such as those frequently encountered when studying work practices in a globally distributed team setting (Clear & MacDonell, 2011). This interpretive research approach allowed us to investigate the management of offshoring in its organizational and cross-cultural context as being socially constructed and thus open to several interpretations by organizational actors, but also to us as researchers (Klein & Myers, 1999; Walsham, 1995, 2006). This research approach is in line prudent with the study's social constructionist view of context (Boholm & Corvellec, 2010). Because in order to understand the dynamics of the sourcing model in practice, researchers should delve into the logic of practice, analyse how people (managers) organize their experience, and follow how they navigate in their everyday lives.

3.1. The Case

Sourcing Service Inc. is a Danish company established in 2006 providing facilitation of software development co-sourcing to Ukraine.

At the location in Lviv, *Sourcing Service Inc.* is organized with three delivery managers (A, B and C). A delivery manager is in charge of a set of clients with the related software teams and with reference to the Vice President of Global Delivery. The Ukraine-based Chief Operating Officer (COO) refers to the CEO. The CEO and the Vice President (VP) of Delivery are situated in Denmark, but pays frequent visits to the office in Lviv. A local IT department manager, a Recruitment Manager, a HR Manager and a Career Advisor support the COO in her daily tasks. Overall, there a more than one hundred and thirty developers on the Lviv premises.

Sourcing Service Inc. hosts development teams from more than ten different clients. The number of local staff (developers and project managers) related to each client differs from four to thirty. All system developers are on individual contracts with *Sourcing Service Inc.*

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[1] This section is highly based on (Schlichter, 2017) but adapted to the present setting.

3.2. Data Collection

The data collection included document studies and individual semi-structured interviews with team members, middle managers (delivery and local office managers) and top management from both *Solid-Client* and *some clients.* We initiated the case study with informal meetings with managers in *Solid-Client* in the spring of 2012. To get an overview of the full organization, we did exploratory interviews with managers and developers in the early summer of 2012 in Lviv. We developed an interview guide based on this explorative phase and focused on their offshoring challenges and mitigation strategies. This guide supported our semi-structured interviews in Lviv and Aarhus in the autumn of 2012 and several times yearly from the spring of 2013 to 2017. The pilot interviews conducted with managers of *Sourcing Service Inc.* and software engineers brought about several changes to the interview guide such as framing and focusing questions for management software professionals. These interviews furthermore provided an understanding of the environment and challenges faced by the organizations. In addition, these interviews helped identify additional candidates for interviewing. In general, we are following Meyer and Newman's (2007) recommendations for qualitative interviewing by situating us as actors, minimizing social dissonance, representing various voices, inclusive interpretation, mirroring questions and answers, flexibility, and confidentiality of disclosures.

Altogether, we have conducted +35 interviews with different roles and nationalities as well as managers at different levels from *Sourcing Service Inc.* and their clients. Each interview lasted from forty to sixty minutes, was recorded, and fully transcribed verbatim. To ensure correct information regarding e.g. use of technology and for maintaining good relations with the interviewees, the transcriptions were sent for verification. In addition to the interviews, we took pictures of the premises (offices and facilities for scrum-meetings) and collected supporting documents such as organograms, sketches of workplaces, presentations, and product descriptions.

With focus related to emergent market aspects, this paper draws primarily on interviews with a sourcing manager from a client, a delivery manager and the general manager all from *Sourcing Service Inc.*

3.3. Data Analysis

The main purpose of the actual analysis was to identify promising avenues for research by developing already addressed either areas or finding new angles or lenses to understand the dynamics of the case. The analysis was done by

reading interviews and earlier papers steaming from this case, do informal coding and consolidate this. The analysis was framed by formulating questions around Areas of Concern and Practice (Mathiassen, Chiasson, & Germonprez, 2012) and structured inspired by Roztocki and Weistroffer (2011).

Table 1

**Characteristics of Emerging Countries,
adapted from Roztocki and Weistroffer (2011)
and populated with observations from the analysis**

Business environment	Emerging economies	Ukraine	This case
Laws and regulations	Changing fast and unpredictably	Inertia of the bureaucracy: resistance to reforms; Inability to create transparent and stable business rules; Unsatisfactory pace of reforms (including the fight against corruption and judicial reforms)	Anxiety due to permanent changes in legislation; Bad influence of the bureaucracy on the development of IT sphere; Low level of protection of intellectual property rights
Governmental control	Mostly strong and determined authorities	Increasing the number of regulatory and supervisory authorities and duplication their functions; Slow deregulation process	Excessive attention to the IT sphere; Unreasonable pressure from the controlling authorities Structure of the system does not organized Internal regulatory barriers
Workforce characteristics	Low, but rising salaries, accompanied by high demand for highly qualified workers and high employee turnover	Brain drain; Labour migration; Salaries in envelope; Weak labour union	Regular rising of salaries in IT sphere; Increasing of appropriate government education program in IT sphere

Business environment	Emerging economies	Ukraine	This case
Management style	Accommodating to fast growth and to developing new products and services	Accommodating to economic decline; Fast reallocation of resources	Providing with integrated, ready-made solutions for the digital transformation of business and the introduction of new technologies
Customer characteristics	Low per capita income, but a rising middle class with rapidly increasing consumer demands	Problems and uncertainty of populations' incomes; Small number of middle-class population	Growth number of middle-class among IT specialists;
Economic conditions	Continuous and fast economic growth	Low level of economic development of the country; Shadow economy; Low guarantee of business security; Slow implementation of changes in tax legislation; «Grey» schemes of taxation; Monopolization of key industries	Desire to increase the transparency of business and investment attractiveness Uncertainty of the exchange rate; Risk of reduced competitiveness due to tax increases
International Environment		Conflict with Russia (military conflict in eastern part of Ukraine) International Support (cooperation with International Monetary Fund and others Financial organization) Association Agreement between Ukraine and the EU	Increase exports of IT-services; Threat of transfer of business and start-ups to other countries

4. Findings and suggestions
for further research

The analysis followed the structure in table 1 and identified issues related to four of the five entries in table 1 and a few others as well.

Related to Laws and regulations the respondents state that «… the legislation is not stable…they change laws in some unexpected ways…the transition period we have to adapt to this law is very low» and «….but the problem is that very often they can vote in December and then we have to start from the 1st of January. Like there is very limited time for changing, for adapting». These observations in full correspondence with Roztocki and Weistroffer (2011) Stating that laws and regulations are changing fast and unpredictably in a transitional economy. It seems that the service provider mitigates this by «That's why I have to keep my eye on the situation around and to proactively react, or reactively, very fast, provide changes in reporting of somewhere else» but this is related to general management, not IT-sourcing related.

A more relevant issue for IT sourcing is the handling of intellectual property: «I have seen some issues regarding intellectual property laws working with <local> companies. We have some laws, but unfortunately, it is not very…there is not a lot of practice in the court. Therefore, we do not have this - we call it 'precedence`».

The informants state the importance of employee and client free travel to and from Ukraine: «Visa we have this visa-free regime right now which is very helpful».

Related to Workforce characteristics there are several areas highly relevant for the present RQ's. First, there is an issue of retaining staff. As such, salaries in Ukraine are quite low compared to Western Europe but in the IT-sector «... (the) demand it's very high. Many companies still have many open vacancies. Therefore, on this market people are not unemployed» leading to expectations of very high salaries. «Of course, developers will try to get to this» and to strengthen the sector, it is possible for programmers to «work as private entrepreneurs here and it means that we have…that, in fact, every person who works with <us> it's like small private company, sub-contractor….. Private entrepreneur pays 5% from the turnover». Another tactic is to provide frills to the staff: «We have our benefit package and seniority program. We have lunch compensation, medical insurance; we have such a nice benefit as short Friday» and dedicated programs where frills are earned based on longer time of employment: «Seniority program, where people get extra vacation after specific amount of years working for the company, then they get insurance for the couple. In addition, of course we try to keep nice atmosphere here in the company, and try to make people happy,

we try to keep this work-life balance, that people can start in the morning and finish in a proper time, but not work long evening and not meet the family.» A quite interesting observation is that they slightly extend the reach of their employees: «The second is project – how interesting project is for the person, because if the project is boring or something. Then also, the project can be closed and then person has to in addition, one of the good benefits – its direct contact with the customer. People can talk to the customer. Because person can talk to foreigners, first, improve foreign language. The second – have direct contact and understanding what the problem is, what is the project need and so on Appraisal»

Education can increase workforce characteristics and lead to a higher level of salaries «… Lviv National Universities – both Polytechnic and Ivan Franko – they have changed their educational program, they have opened new faculties, for instance, and they have very tight cooperation with Lviv IT cluster. They have these new programs of Internet of Things and more specific into robotics and that kind of environment. Ukrainian Catholic University – they also put a great focus into making proper education for future engineers and IT specialists». As we can saw during interviews

These aspects are in line with Roztocki and Weistroffer (2011) suggestions that in an economy we often see that there are Low, but rising salaries, accompanied by high demand for highly qualified workers and high employee turnover.

Regarding the Economic conditions, where often see continuous and fast economic growth, our respondent did not raise any concerns: «If to talk about <us> there is no problem to get money to Ukraine, to sell them in the interbank, to sell Euros or Dollars, and then to manage all the accounts». However, we noticed some worried concerning changing in tax legislation and possibility of increasing tax pressure for the income of companies' employees. Programmers are acts as private entrepreneurs that is quite complicated and is one of feature of doing business in Ukraine «… such kind of activity let us reduce taxation pressure for the private income. Private entrepreneur pays 5% from the turnover….. If to talk about *Sourcing Service Inc*, we cannot do another way because otherwise we will not be competitive on the market».

During the interviews some other factors, not addressed by Roztocki and Weistroffer (2011), emerged, partly prompted by the question «so, how does the war or these conflicts Donbas and Crimea affect you?» The interviewees did not see this as a relevant issue: «<men> could be mobilized, and it could influence somehow, because mostly at the industry work men. However, right now – no. Our President created a paid army, so right now volunteers who would like to work there, go and earn. Therefore, in case there is not huge escalation with Russia, we do not expect any problems with this. However, of course, we never can trust our neighbour. Because this is a huge country and we do not know what is their plan here». The same more or less pragmatic attitude was seen towards corruption where Ukraine is the country in Europe that has the highest

level of corruption. «We are lucky right now, because, you know, everyone try to develop IT industries, so people protect these IT companies and they don't create problems to them, I would say. But there is a lot… but we….. don't have. In addition, I can say that I worked in other Danish companies, and we did not. Because, I do not know, at that area as well, authorities they preferred to have companies with foreign investments, so they let them to work».

The IT sector has an increasing impact on the domestic economy of Ukraine. In addition to increasing currency revenues in the country, this industry contributes to the formation of the middle class – the basis for building a prosperous economy. However, one of the main problems of the IT market of Ukraine is the lack of a strategy for the development of the industry and the program of education of future specialists. In order to ensure the sustainable IT development of the Ukrainian emergent market, it is necessary to reduce the level of state intervention and promote the improvement of the business climate in the country. While the business climate in Ukraine will be worse than in the neighbouring countries, Ukrainian innovators will implement their start-ups in other countries, where more favourable conditions for their development are created.

To sum up relevant issues related to (managing of) souring of it-related services are:

- Intellectual property issues

- Problem of raising salaries

- Issues retaining staff by offering an extended project reach

The factors identified above are part of the (macro) environment that in a resourced based understanding frames how an organization can and must act at their market. The companies must set up structures and do initiatives to counter these issues. Which in fact contributed to our understanding on *what are the contextual challenges of sourcing it-resources from an emergent market?*

We acknowledge that the present case is a specific instantiation, but dare to claim that a pattern emerges from the analysis. Basically this is all about standard risk mitigation, primarily based on the risk areas structure and actors (Schlichter & Persson, 2014) and are in the present case handled by the intermediate Sourcing Service Inc. who naturally takes care of this.

We will then suggest researching this further by expanding the analysis of workforce issues, including but not limited to management style, educational issues and the challenge of retaining staff. All this based on a more formal coding of a broader base of respondents.

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