SOFT SKILLS IN CO-SOURCING OF INFORMATION SYSTEM DEVELOPMENT SERVICES

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THE CHANGING SKILLS OF THE DELIVERY MANAGER

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Abstract

Sourcing of services related to development of information systems calls for a set of specific skills among all parties involved. To cater the needs for managing geographically distributed, sourced projects, a business model with an intermediary company has emerged to facilitate the co-operation between a client's local (in-house) and external (outsourced) resources.

This paper explores the skills of a group of so-called 'Delivery Managers', where practice shows a growing need for other skills than the traditional system development related programming competences such as project planning, diagramming and testing.

By applying the concepts of soft and hard skills, inspired by contemporary discourse on the 4.0 Industrial Revolution, the paper contributes to theory by a model classifying the soft skills that are in need and to emphasize the importance of communicative skills, team building, and time management skills as well as emotional intelligence in the context of distributed environment across time, space, and cultures.

Keywords: soft skills, hard skills, co-sourcing, delivery management, communicative skills.

1   Introduction

Global competition calls for flexibility and resources with new types of expertise as well as reduction of costs, driving software developing companies to engage in geographically distributed software projects (Lacity et al. 2009; Persson et al. 2009).

To cater the needs for managing geographically distributed projects, the 'co-sourcing' business model with an intermediary company has emerged to facilitate the co-operation between a client's local (in-house) and external (outsourced) resources.

The purpose of the present paper is to understand the changing skills needed by "Delivery Managers", a specific category of middle managers in co-sourced software system development. The primary task of a Delivery Manager is to facilitate the work by the staff in the outsourced processes and to assure proper delivery of services to the clients. Secondarily, the Delivery Manager is to contribute to the business goals of the service provider as well as to the client buying services.

As this sourcing model has matured, service providers have realised that possession of hard skills (technical skills related to software development and project management) are not enough and are to be supplemented.

Recently the concept of soft skills has emerged in relation to disciplines. This naturally leads to the research question:

What soft skills should the Delivery Managers possess to improve the co-sourcing process?

The next section introduces the case. This is followed by the basic theoretical concepts on sourcing and skills, to establish a theoretical background for the following analysis. Hereafter a section describing the research approach and the activities undertaken to get insight into the setting of the case. Then we present and discuss the findings of the actual need for soft skills identified with the offset in the empirically derived structure of skills dimension from the literature review. The paper concludes with implications for research and practice.

2   The case

Sourcing Service Inc. is a Danish company established in 2006 providing facilitation of software development offshoring 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 pay 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, such as *Solid-Client.* 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.*

In order to provide an example of an actual supplier-client relationship facilitated by the Delivery Managers in *Sourcing Service Inc.* (and to form the basis for observations) the case of *Solid-Client* is presented below (*Sourcing Service Inc.* and *Solid-Client* are not the real names for reasons of anonymity).

The headquarters of *Solid-Client* are based in a European country outside of Ukraine. It has more than 500 employees and provides advanced software solutions to a variety of customers spread around the globe. The group of software development teams (seven to fifteen persons per team) is divided between the HQ and *Sourcing Service Inc.'s* premises in Lviv. The *Solid-Client* teams, supported by Delivery Manager A, develop mission-critical software, primarily based on Net and Java. Both teams apply Scrum in their development process and they sit in their own open offices at each location. The teams have daily scrum meetings for fifteen minutes in the morning, in dedicated rooms, using large screens and laptops showing each other their respective environments. The teams are organized with a product manager and headed by a project manager, and there are one or more scrum-masters for each sub-team.

We have analysed interview transcripts and documents to uncover the involved participants' attention to middle managers' skills related to co-sourcing. We searched for deviations from the established theory by approaching the analysis as a critical dialogue between the theoretical frameworks presented in the background section and our empirical work (Alvesson and Kärreman, 2007).

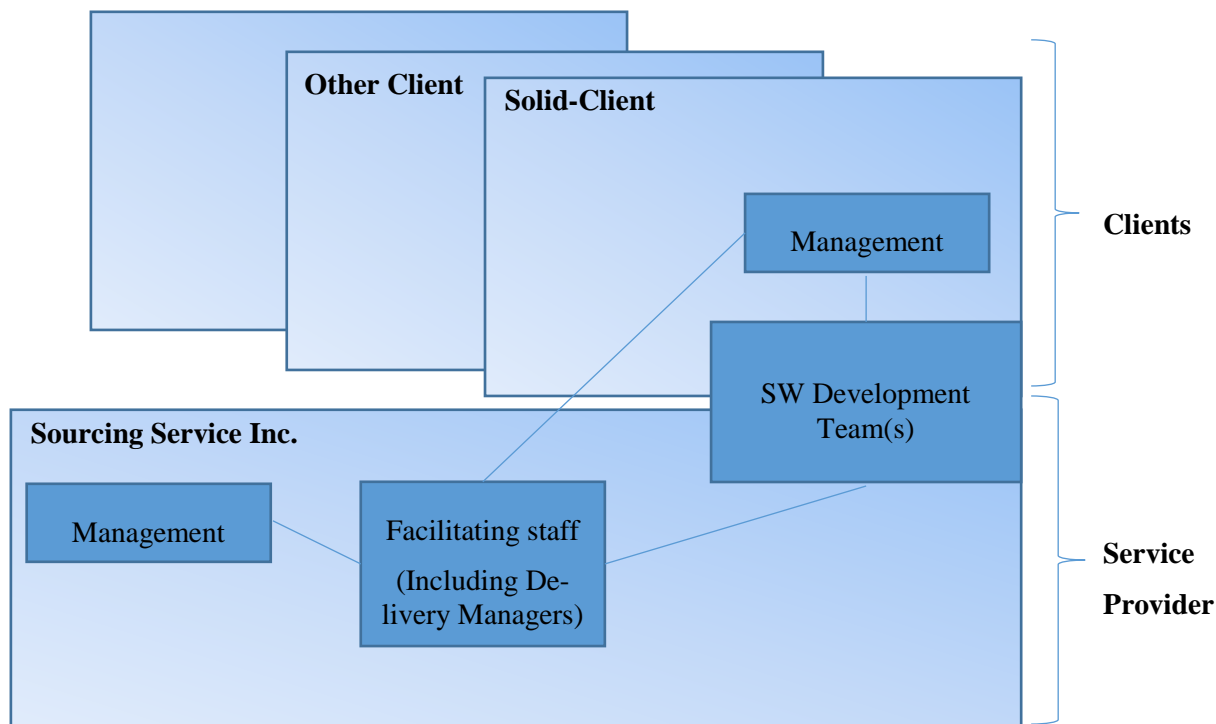The explorative step of the analysis provided the model in figure 1 below.

Figure 1: The context of Facilitated Co-sourcing

The main objective of the model is to set up a taxonomy that highlights peculiarities of the case setup and puts the different roles into context. The model shows the two main institutional bodies (the Service Provider and the Clients) in which the Management teams, the SW developers, and the Facilitation Staff act. The model indicates that the Delivery Manager is to possess certain skills to span these two bodies.

According to the model, the Delivery Manager should:

- Contribute to the goals and learning of the Service Provider.

- Contribute to the goals and learning of the Client.

- Mediate the interaction between the Clients home-office staff and the clients pool of Developers placed at the Service Provider's premises.

- Coach the clients' pool of Developers.

Actor	Role	Comment
Delivery Manager	Each Delivery Manager is in charge of his or her own client portfolio. Being a trustworthy mediator managing the relationship through the full client life cycle [1].	Refers to the VP of Global Delivery
Staff	At clients' home-offices. Define tasks for developers and coordinate with their own organization/needs.	
Developers	Located at the premises of the Service Provider. The persons actually do development of software.	
Client	The company buys services from the service-provider. Employs the Developers.	*Solid-Client* in the present case
Service Provider	The company sells its facility services to the clients. Employs the Delivery Manager and hosts the Developers.	*Sourcing Service Inc.* in the present case.

Table 1: Actors and roles

3 Theory

To establish a foundation for the analysis, this section presents the concepts of offshoring and co-sourcing followed by a review of earlier findings on related qualifications. The section ends with an introduction to the concept of soft skills.

3.1 Offshoring and co-sourcing

Offshore outsourcing involves cross-organizational transactions by the use of external agents to perform one or more organizational activities (Dibbern et al., 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 (Persson, 2013, Šmite et al., 2010), adopt agile methodologies (Jalali and Wohlin, 2012, Persson et al., 2012) and strive for virtual team setups with high levels of trust (Siebdrat et al., 2009, Søderberg et al., 2013). In addition to the widespread virtual team conceptualization (Curseu et al., 2008, Ebrahim et al., 2009, Martins et al., 2004, Powell et al., 2004, Schiller and Mandviwalla, 2007), the high cohesion approach in software development offshoring has been conceptualized as co-sourcing (Kaiser and 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". Based on a case study from the financial industry Kaiser and Hawk (2004) suggest five steps involving engagement, commitment, interchange, co-sourcing, and alignment. The goal of alignment in outsourcing means alignment between the two firms in commitment and values through mutually orientated adaptation of strategy and organization (Kaiser and Hawk, 2004).

3.2 Qualifications in Outsourcing

The success of IT Outsourcing (ITO) is dependent on the ITO Decision, Contractual Governance and Relational Governance. The first of these, the ITO Decision, is historic and hence not relevant in the present context. The last two consist of a set of "client and supplier capabilities" (Lacity et al., 2010; Table 4), IS technical/methodological capability, IT human resource management capability, Supplier management capability, Contract negotiation capability, Domain capability, IS change management capability, Transition management capability, and Client management capability. Some of these (related to technical/methodological and domain capability) are obviously directly related to explicit knowledge learned as an IT professional, whereas the others are more general and soft in nature. Lacity does not explain these in detail, which naturally calls for an analysis to explore and understand the composition of qualifications. We can read in the teaching books what the purposes are, but not the actual skills that a Delivery Manager must possess to be able to execute in these areas.

3.3 Soft Skills

Contemporary management puts new demands on how problems are solved and how quickly people adapt to changing conditions. This requires a whole range of personal, psycho-physiological, moral-aesthetic, emotional, volitional qualities necessary for the successful development in order to understand the direction of orientation of the cognitive activity, effective cooperation and communication and in order to form critical, systematic creative thinking, interdisciplinarity and the ability to predict the consequences of an action.

"Soft" skills describe a set of abilities that an individual may possess to address these issues. Soft skills characterize certain career attributes that individuals may possess like the ability to work in a team, communication skills, leadership skills, customer service, emotional intelligence and problem solving skills (James and James, 2004). 'Soft' skills are personal qualities, attributes, or the level of commitment of a person setting him or her apart from other individuals who may have similar skills and experience (Perreault, 2007).

However, what is then the difference between hard and soft skills? This can be illustrated by the distinction between communicativeness (a predisposition) and the ability to communicate effectively in a work environment because even a person with a low degree of communicativeness can be a very good communicator (due to knowledge of appropriate methods and tools) and can, for example, transmit complex information to others without any bias. Moreover, some soft skills are more closely connected with cognitive than non-cognitive abilities (e.g. problem solving, planning and organization or exploration and orientation of information). Differences between hard and soft skills lie not only in the limited connection between a qualification and some missing credentials in the case of soft skills (as there is no diploma confirming the level of an individual's soft skills) but also in the development of these. As the hard skills are closely related mainly to knowledge (e.g. the process of data-diagramming, English grammar, accounting, etc.), they can be relatively easily trained for and measured. Soft skills, however, are more closely related to attitudes, defined as "a stable, long-lasting, learned predisposition to respond to certain things in a certain way" (Statt, 2002), stemming mainly from psychological traits, preferences, experience, background and so on. This makes their development slower and more difficult, because improving somebody's cooperation, for example, often requires changing his or her attitudes first and then assisting in the mastery of methods to improve that skill (Balcar, 2014).

4 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.* setup. Other lenses applied were risks (Persson and Schlichter, 2015), trust (Schlichter and Persson, 2014) and emergent markets (Schlichter and Bolkvadze, 2019).

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 and 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 and Myers, 1999, Walsham, 2006, Walsham, 1995). This research approach is in line prudent with the study's social constructionist view of context (Boholm and Corvellec, 2010). In order to understand the dynamics of the sourcing model in practice, researchers should delve into the logic of practice, analyze how people (managers) organize their experience, and follow how they navigate in their everyday lives.

4.1   Data Collection

To identify incidents, mitigation, or perceptions related to co-souring, we searched and coded the transcripts in NVivo (Bazeley, 2007). We coded statements pertaining to skills, grouped them to reveal patterns or other findings. This coding did not emphasize explicit statements of something being a skill, but rather what the different stakeholders considered necessary for the success of managerial practice. We compared these value positions with the generic skills of out-sourcing as derived from (Lacity et al., 2010) and structured as presented in fig. 1.

For further triangulation, managers in *Solid-Client* and *Sourcing Service Inc.* reviewed the analyses, which lead to a few corrections providing alternative interpretations and questioning of findings (Klein and Myers, 1999).

The data collection included document studies and individual semi-structured interviews with team members, middle managers (Delivery and local Office Managers) as well as top management from *Sourcing Service Inc.* and their clients. We initiated the case study with informal meetings with managers in *Solid-Client* (in Denmark) and *Sourcing Service Inc.* (in Ukraine). To get an overview of the overall organization, we later did exploratory interviews with managers and developers. Then we developed an interview guide based on this explorative phase focused on their offshoring. 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 of questions for the management software professionals. These interviews furthermore provided an understanding of the environment and challenges faced by the organizations. In addition, these interviews helped to identify additional candidates for interviewing. In general, we use the following Meyer's and Newman's (2007) recommendations for qualitative interviewing by situating us as actors, minimizing social dissonance, representing various voices, including interpretation, mirroring questions and answers, as well at securing flexibility, and confidentiality of disclosures.

After interviewing the Danish side of the case, we interviewed the Ukrainian side once more to qualify observations and challenge provisional findings. Each interview lasted from 40 to 60 minutes, was recorded, and fully transcribed verbatim. To ensure correct information regarding e.g. use of technology and to maintain good relations with the interviewees, the transcriptions were sent for verification. In all, we have done +25 interviews combined with informal meetings. 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.

To assure that the focus was kept on alternative interpretations and questioning of findings, two researchers made the interviews to take advantage of their different background and experience. One researcher is a Danish professor in Information Systems (specialized in management and implementation), the other is a lecturer at the Ukrainian university, specialised in language and management.

5   Findings

In this section, we present managers' and customer representatives' perception of soft skills for the Delivery Managers in a co-sourcing setting. The interviewees were notably consistent in their accounts of management practices, thus our analysis focuses on the nature of soft skills in the specific IT related setting, rather than discrepancies across managers in different roles. First, we present how managers understand how support of software development differs from general management practices, and then we use the structure from figure and table 1 to identify perceptions on soft skills. All three areas (a+b+c) call for special interest, since somehow they are all in focus with all interviewees and resonates with the presented theories on soft skills and hence shows the dichotomy between management of highly technically skilled employees and soft approaches. Below, we analyse these three areas in more detail.

The respondents direct us unanimously towards three distinct features of the setting where soft skills are relevant: the management of four difference relations (see table 1), the distributed environment across time, space and cultures, and lastly the IT domain where specific hard skills and practices are dominant.

Table 2 shows the results of applying the analytical framework on the interviews.

Relation to	Skills, ability to /have…	Comment
Client	Analyses the client in relation to a sourcing setup, and plans accordingly.	
	Provides the best of breed sourcing experience.	
	Provides experience from commercial software industry.	
	Provides experience with multiple stakeholder management.	
	Provides excellent problem solving, judgment and decision-making skills.	
	Contributes to the learning process.	
Service Provider	Identifies improvements on cooperation with clients.	
	Reports on predefined KPIs.	
	Supports a high level of knowledge sharing.	
	Identifies customers' orientation.	
	Is result oriented (new and up selling).	Evaluated qualitative
	Contributes to the business / profit.	
	Contributes to the learning process.	
Staff	Handle (experience) distributed teams.	
	Gain experience from commercial software industry.	

Developers	Support the integration of developers into the clients' organization/staff.	Professional, technical skills
	Gain experience with difference SDLC processes.	Do not have any formal power
	Gain good coaching skills.	
General/Personal	Development background (Java or .NET).	Also technical
	Certified PMI or Scrum(Master).	
	Excellent communication skills (oral/written).	Formal education is an underlying competence
	Conflict management.	
	Multitasking.	

Table 2: Qualities of Delivery Managers

5.1 The ITO-IS domain

The first part of the analysis shows that the IS co-sourcing domain has its own characteristics and requires a specific set of soft skills by the middle managers: "*Because IT people are very motivated, self-driving. One concept is not to disturb them when it is not necessary and to provide as much of their initiative as possible*" (Delivery Manager A) and the idea that IS is quite complex: "*… in IT I think 80% of mistakes are coming from miscommunication, misunderstanding*". This is because "*IT technology in itself is rather complicated. So when you say, take the bricks and build the wall, it's not easy, but that is a standard operation*" and "In *IT you can have probably ten different approaches to solve something and you can do an experiment, you can take ten almost similarly experienced developers and they can decide the task differently.*" Because of this, "*the risk in communication in IT is higher [than] in most domains.* " (Delivery Manager B), who also emphasises the need for soft skills related to communication and the ability to embrace unspecified complexity, but also an ability to act in a democratic environment as stated by Delivery Manager B: "*In IT companies, we do have this democratic atmosphere. More tendencies to flat structure. But I do believe that they are moving towards this democratic way avoiding this hierarchy.*"

5.2 Management of relations

The next aspect of delivery management skills is the ability to manage (or facilitate) the three different types of relations as shown in figure 1. This is explicated: "*My main responsibilities are talking with the clients and to build good relationships with them, making sure that we have balanced cooperation, that clients are happy, and the team is also happy how to find the right approach to different people, to different personalities, how to communicate about different working situations, how to use the correct language.*" (Delivery Manager B) who also states: "*Trust is the most important thing. Transparency and trust help to show that they can rely on you*".

We can see that the need of communicative skills is prominent. For example, "*.….we use communication in different channels starting from written communication, written emails and you have to possess quite good skills. Then [there are] also presentations, persuading, negotiations skills, and you need to know how to apply them in practice*" supported by "*If the person has problems with communication we can offer trainings that can help solve his or her problems. Once per [every]two or three months we arrange*

communication training to teach presentation skills. We teach [them] how to express themselves, how to behave, how not to have fear of presenting in front of the audience" (HR manager).

5.3 Distributed environment across time, space and cultures

The last aspect is quite interesting and relates to the distributed environment across time, space and cultures of ITO. As it was said "there are *different clients from different countries, but they work as one team despite the physical location. I do believe that we built a good dialogue with the same calm language, good manners with all the levels of people, basically. We try not to differentiate the people, Danish office or Lviv office*" (HR Manager). Another example relates to the differences on how staff relates to each other. "*Very typical, disconnection is what people do during work and after work. When Ukrainians are visiting customers, and when the day finishes they say bye and they can go anywhere they want, and they[the non-Ukrainians] do not want to communicate outside the work. In the western culture, private time is very important. After work you just go and do what you like*" (Delivery Manager A).

6 Conclusion

The aim of this paper was to answer the research question*: What soft skills should the Delivery Managers possess to improve the co-sourcing process?*. The paper contributed to theory by classifying the soft skills needed *in* four management directions and to emphasize the importance *of* communicative skills in the context *of* distributed environment across time, space and cultures. Of special interest are the many indications that 'communicative' skills are important. We also found out that besides communicative skills, soft skills such as: team building, time management skills as well as emotional intelligence play a very important role.

6.1 Limitations and further research

We acknowledge the need for a more in-depth analysis and hence a description of the presented constructs and their relationships. During the next phase of our research, we will refine the model given in figure 1 by harvesting from the pool of interviews. We will also look into the contrasting of views from the respondents as well as backup claims with quotes from the interviews.

We would appreciate to have feedback on the above-mentioned issues and especially to discuss the basic assumption of the research model and how this can be related to the wider discourse on soft-skills.

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