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WHY DOES THE SYSTEM USAGE DIFFER BETWEEN ORGANIZATIONAL UNITS? - A CASE STUDY IN A KNOWLEDGE- INTENSIVE PROJECT ORGANIZATION

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Abstract

This paper seeks to examine how a case company exploits new staffing procedures and enterprise system (ES) functionalities in order to improve allocation and control of project resources. The paper relies on qualitative data collected through an in-depth case study in a large European high-tech company over a period of one and a half years. In order to understand the system usage in the case company the paper employs institutional theory and Orton and Weick's concept of coupling. By combining the concept of coupling with the elements of system usage - work assignment, user, and system -, the paper explains why system usage differs between organizational units. Findings show how the use of new ES functionalities is influenced by features of organizational unit, features of work assignment, individual characteristics as well as target customer. The paper also recommends selective system use in a knowledge-intensive project organization.

Keywords: Competence catalogues, Enterprise Systems, Knowledge-intensive organizations, Coupling, Project management, Staffing

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- A CASE STUDY IN A KNOWLEDGE-INTENSIVE PROJECT ORGANIZATION

Abstract

This paper seeks to examine how a case company exploits new staffing procedures and enterprise system (ES) functionalities in order to improve allocation and control of project resources. The paper relies on qualitative data collected through an in-depth case study in a large European high-tech company over a period of one and a half years. In order to understand the system usage in the case company the paper employs institutional theory and Orton and Weick's concept of coupling. By combining the concept of coupling with the elements of system usage - work assignment, user, and system -, the paper explains why system usage differs between organizational units. Findings show how the use of new ES functionalities is influenced by features of organizational unit, features of work assignment, individual characteristics as well as target customer. The paper also recommends selective system use in a knowledge-intensive project organization.

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1.0 Introduction

Companies are seeking new ways to create and capture value. One important way to increase value in the organization is to innovate new business models and concepts. The challenge is to efficiently combine structures and procedures that enhance innovation with tools that support allocation and control of resources. In order to find a balance between these often competing objectives companies may implement integrated matrix organizations, common procedures and new enterprise system (ES) functionalities. By standardizing internal procedures and by mandating enterprise system use in organizational units, a company's management aims to allocate and control resources more efficiently.

In this paper an enterprise system is defined as a software package that "enables the integration of transaction oriented data and business processes throughout an organization" (Markus et al. 2000). It includes both the enterprise resource planning

(ERP) system functions and all the other applications providing an integrated information system for most functions of a company.

In order to shed light on the issues that have an impact on the use of newly implemented ES functionalities, this research adopts the lens of institutional theory and the concept of coupling (Orton and Weick 1990) in the context of a knowledge-intensive project organization. The paper follows the lead of Comstock and Scott (1977) and emphasizes that a company consists of subsystems that are combined with each other in different ways. Enterprise system use in these subsystems i.e. organizational units is examined by adopting a commonly used framework for system usage i.e. user, system and task (e.g. Burton-Jones and Straub 2006). Recognizing the complexity of system usage and that the business value of ES is rarely linked with the features of the ES itself (e.g. Davenport 1998; Peppard and Ward 2005; Zammuto et al. 2007) this paper leaves the system in the background, and focuses on the user, herein enhanced to cover organizational unit, and the task, herein work assignment. As previous literature recognizes the importance of loose coupling associated with enterprise systems (Berente et al. 2008) this paper goes deeper into analyzing the coupling of the organizational unit and the work assignment with system use in a knowledge-intensive organization. Based on in-depth case data from different managers, specialists and ES users within a publicly quoted case company, the paper figures out why the use of new ES functionalities differ between organizational units.

The findings show that features of organizational unit, features of work assignment, individual characteristics and target customer cause the variation in system usage between organizational units. By introducing two concepts - the organizational unit coupling and work assignment coupling, the paper presents how some organizational units and work assignments are tightly coupled with staffing procedures and the use of ES functionalities while other organizational units are loosely or even decoupled with them. Further, as the system usage and new ES functionalities themselves represent the institutionalized procedures of some organizational units and the stabilized procedures of certain customers or industry area, the findings emphasize the impact of target customer into the system usage.

Given that this research is only a snapshot of the use of new ES functionalities during an organizational transformation, it is important to understand the dynamics of system usage. Theoretical contribution of this study is achieved by combining the concept of coupling with elements of system usage in a knowledge-intensive project organization. It broadens the discussion into the fit of enterprise system functionalities with all elements of system usage. Practical contribution of this paper is to demonstrate why organizational units have different fit with new ES functionalities. It also recommends selective system use regarding those work assignments and organizational units which have poor fit with system use.

This paper is organized as follows. Theoretical underpinnings are presented in section 2. Section 3 introduces the research approach and process. In section 4, the case description is outlined. Section 5 contains the case analysis and the discussion. And finally, sections 6 and 7 include the conclusion and implications as well as future directions.

2.0 Theoretical Underpinnings

In this paper enterprise systems are defined as software packages that “enable the integration of transaction oriented data and business processes throughout an organization” (Markus et al. 2000). An enterprise system includes the enterprise resource planning (ERP) system functions and all the other applications providing an integrated information system for most functions of a company. Enterprise systems allow allocation and coordination of resources across time zones and geographical locations, while keeping the data available and centralized.

Scott (1995:33, 2001:48) defines institutions as “social structures that have attained a high degree of resilience”. He suggests that institutional elements (regulative, normative, cultural-cognitive) produce meaning, stability and order to social behaviour. These institutional elements move from place to place and time to time with the help of four types of carriers, which are symbolic systems, relational systems, routines, and artifacts (Scott, 2003). As presented previously (Barley 1986; Orlikowski 1992; Gosain 2004; Berente 2009) this paper considers technology, i.e.

the enterprise system, as a fourth institutional carrier. While socially constructed by the actions of e.g. designers or users, once developed technology tends “to become reified and institutionalized, losing its connection with the human agents that constructed it or gave it meaning to be part of the objective, structural properties of the organization (Orlikowski, 1992)”. The paper emphasizes the duality of enterprise systems by noticing that while enterprise systems are subject to institutional forces and institutional processes that set the rules of rationality, they also represent institutional commitments by constraining the action of users (e.g. Gosain 2004). Further, as the development and the use of ES functionalities often emphasize logics of certain organizational units (e.g. Orlikowski 1992), rationalities of other organizational units may be in conflict with ES usage.

In similar way as an enterprise system is a combination of different modules a company consists of subsystems (Lawrence and Lorsch 1967; Weick 1976), which vary in their degree of coupling with each other. In this research subsystems consist of organizational units, which may be loosely coupled with the other parts of the company in order to achieve innovation, agility or flexibility. Further, the use of enterprise system may combine differently coupled organizational units together. In order to study how organizational units are coupled with the system usage, this paper adopts the concept of coupling (March and Olsen 1976; Weick 1976; Orton and Weick 1990). The concept of coupling defines tightly coupled systems as highly integrated and responsive to each other, while decoupled systems are seen as separate and indifferent to whatever occurs in other parts of the system. Loose coupling includes the presence of both tight coupling and decoupling (e.g. Berente, 2009). Because disturbances in one part of a system need not cause disturbances in other parts, loosely coupled organizations are currently seen to survive longer (Czarniawska, 2008). This paper also recognizes recent literature on coupling in organizations (Fitz-Gerald and Carroll 2006; Volkoff et al. 2007; Berente 2009; Marabelli and Newell 2010).

The business value of enterprise systems is rarely linked to the ES technology itself, but rather to how organizational features support the system usage (e.g. Davenport

1998; Peppard and Ward 2005; Zammuto et al. 2007). By adopting a commonly used framework for the system usage i.e. user, task and system (e.g. Burton-Jones and Straub 2006) and recognizing the complexity of ES use this paper focuses on the influence of organizational unit and work assignment on system usage. By analyzing organizational unit coupling and work assignment coupling this paper also participates in the discussion of appropriateness of ES in the organizations (Berente et al. 2008; Berente 2009).

3.0 Method

By adopting a view that reality is socially constructed by humans this paper attempted to understand the enterprise system usage through the meanings that users assigned to it. As ES users translated these meanings according to their own frames of reference, this research employed the interpretive case study approach (Walsham 1993). The interpretive approach was selected in order to help to make sense of present events and in order to recognize the formation of new patterns in everyday staffing practises. The aim was to be close to the everyday practises and the system use, while keeping enough distance to be able to problematize them (Czarniawska, 2008).

In order to reveal the underlying assumptions, expectations, and knowledge that people had about global staffing process and the use of new enterprise system functionalities in it, we conducted focused interviews in the case company, here named Neon. During the first phase between December 2008 and September 2009 we conducted 12 focused interviews about the company's transformation process, newly implemented matrix organization and the new enterprise system functionalities. In order to achieve a comprehensive understanding about the use of the new ES functionalities in different parts of the organization, 19 additional interviews were conducted between March and August in 2010. The total of 31 interviews covered different interest groups, positions, competence areas or industry fields. One or two researchers conducted face-to-face interviews on interviewees' own experiences and perceptions. The interviews lasted for 40-90 minutes, they were recorded on MP3 and later transcribed for subsequent analysis. Furthermore, an extensive review of the company's documents, Intranet and training materials was carried out.

As the research progressed, the research data was analyzed “in order to draw valid meaning to realize when an interview should be conducted to fill in gaps” (Miles and Huberman 1994). The analysis and interpretation of the research data continued throughout the research in order to assure that the findings were grounded in the case data. In order to categorize the data the research data was coded. During the initial coding codes such as Requested competence, Work assignment, Nature of project work, Time frame, Target customer, System, Organizational unit or Individual characteristics of employees emerged from the data (Figure 1, I Initial coding). These emerged codes were joined together into categories (Figure 1, II Coding) such as features of Work assignment (WA), Organizational unit (OU), Individual characteristics (IC), Target customer (TC), and System (SYS). As this research adopted a view that the system usage was more linked with work assignment and user than the features of the enterprise system itself, the system was cut out from the data analysis. Next, these categories were placed in the framework of system usage (e.g. Burton-Jones and Straub, 2006) by linking target customer and individual characteristics with both work assignment and organizational unit (Figure 1, III System usage). Thereafter, organizational unit and work assignment were combined with the concept of coupling (Figure 1, IV Coupling). Analyzing of research findings was done at the organizational unit level.

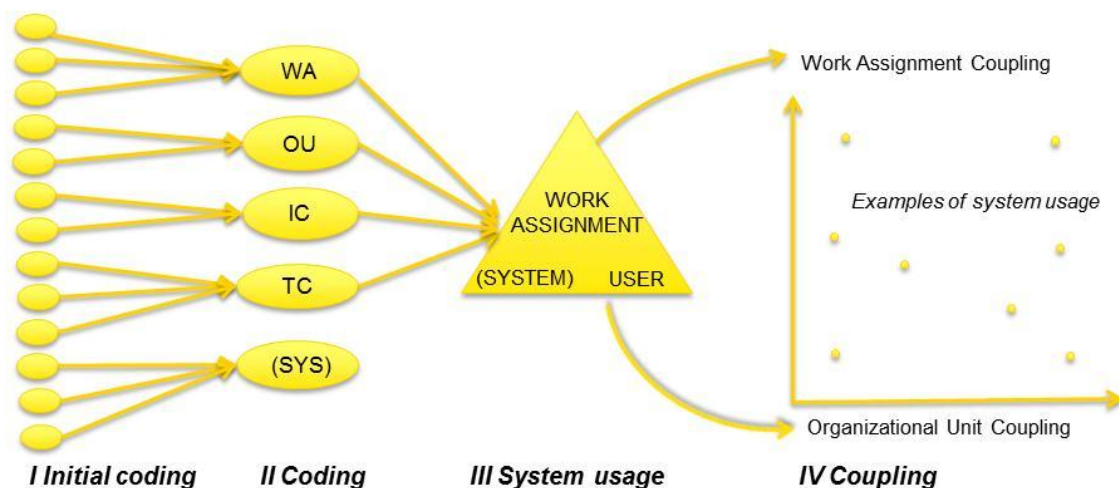


Figure 1. Research phases

4.0 Case Description

4.1 Case Company

The case company Neon (a pseudonym) is a large European high-tech company operating in project business. With over 16.000 employees in close to 30 countries it delivered IT, R&D, and consulting services to several customer sectors either locally or globally. At the beginning of 2009 Neon implemented a new matrix organization structure in order to support its new corporate strategy and a global project delivery model. The transformation process was materialized through a transformation program spreading over a three-year period from 2009 to 2011.

Previously the company structure had been based on customer-specific industries, which varied greatly in their size, procedures, operations, or ability and need to benefit from the global network. During the transformation process employees were continuously transferred from industries into competence pools located in service lines. These competence pools were structured according to the employees' competencies on certain technology or work assignments. In the new matrix structure the industries were responsible for sales and customer relationships, and the service lines took care of project or service delivery. While service lines became responsible for delivery, the business responsibility remained at the customer-specific industries.

4.2 Staffing and Enterprise System

As an important part of its new strategy and global project delivery model Neon implemented a new global staffing process in February 2009. This new global staffing process replaced small, industry- or customer-specific teams, which had taken care of every phase of the customer projects. The new staffing function aimed to ensure that the external customer needs were combined with the internal employee competencies by allocating right people to the customer projects and services. It also aimed at maximizing the utilization of the company's human capital globally. The staffing management group consisted of about 50 global and country staffing managers organized first globally by competence areas. Due to e.g. challenges of geographical

distances, time zones and language requirements, staffing function was reorganized by delivery countries in January 2010.

In order to support its global project delivery model and staffing process Neon modified its ES with new functionalities, the project resource management (RM) module and competence catalogue (CC). In practice these new ES functionalities were used for both staffing of projects and staffing of continuous services. Neon's enterprise system had mostly been implemented during the years 2004-2009, while in the spring 2010 some organizational units were in the middle of their first ES implementation (Figure 2). Based on a commercial, US-based product Neon's enterprise system was integrated with local banks, local payroll systems, common invoice system and common reporting and budgeting system (Mattila et al. 2010b). It also had the basic operational functionalities for an expert organization. However, the ongoing organizational transformation process with simultaneous implementation of new procedures and tools set a wide variety of challenges for the organization (Mattila et al. 2010a).

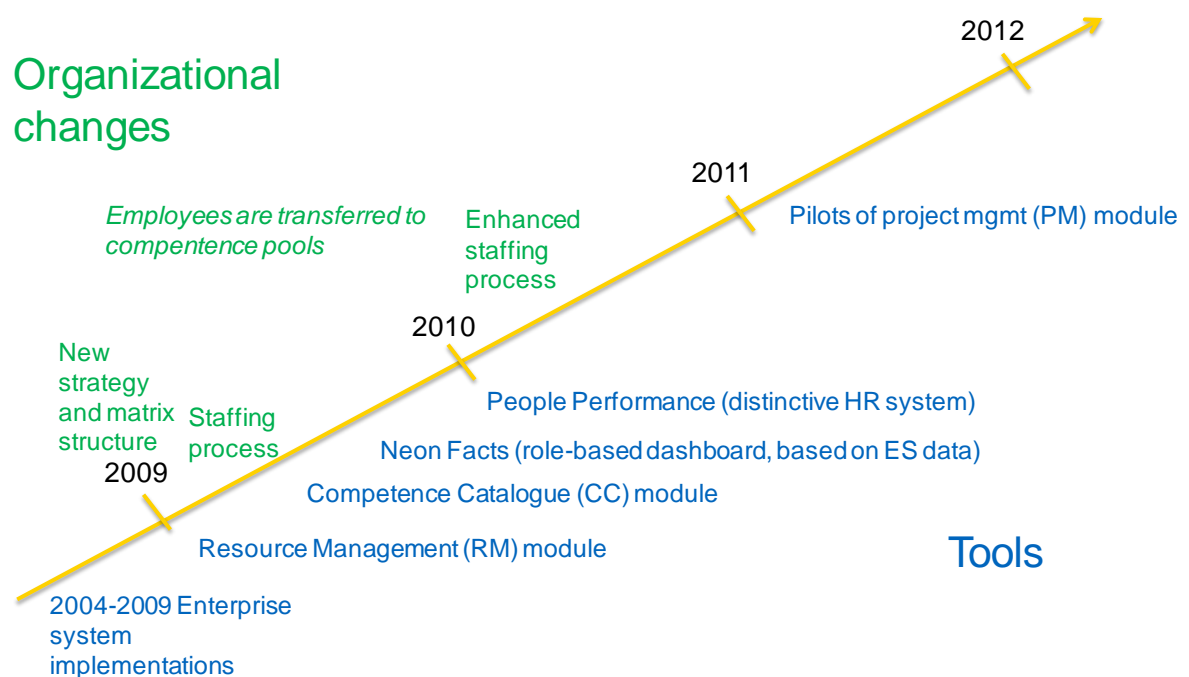


Figure 2. Timeline of organizational transformation process and new tools

The employees were expected to input and update their competence profiles and administrative assignments into the system on a regular basis. The line managers were

responsible for the utilization rate and that the employees work assignments were updated in the RM module. On a high level the resource searching and matching went as follows. First, a resource requester such as a project manager planned the project resource requirements and assignments. Then a project manager sent a resource request to the global staffing monitor by using the RM module. Next, the global staffing monitor allocated a resource request to a staffing manager in a certain delivery country. In order to find suitable candidates the staffing manager reviewed competence requirements as well as the utilization and assignments of employees by using the CC and the RM modules and his/her personal networks. After matching the requirements and resources the staffing manager offered candidates to the project manager, who made the final decision in cooperation with business units.

If internal candidates were not found, staffing was allowed to use subcontracting, internal competence development or recruiting in collaboration with business units. However, responsibilities between industries and service lines regarding these procedures were unclear. As all the interest groups were eager to acquire the best available resources for their work assignments, for example internal competence development through project work required a lot of negotiations and caused conflicts between different interest groups. Also the role of staffing between industries and service lines was confusing as staffing managers had neither business nor project delivery responsibility.

In conclusion, the business units argued being losing business opportunities all the time due to the unclear staffing process. Further, in spite of the formal staffing process, a lot of staffing seemed to be carried out separately through personal networks. Particularly experienced employees took advantage of their own networks, while inexperienced employees were more dependent on the formal staffing process and new ES functionalities.

4.3 4.3 Work Assignments

Work schedules and reservations were typically input into the RM at the beginning of the project, but they were not updated after that. As project work assignments were highly dependent on other work assignments, idle time commonly occurred. However,

costs of idle time were handled differently in different organizational units causing conflicts between them. Also some work assignments such as sales work or internal development were not visible in the system. The inaccurate and incomplete reservation data in the system caused misunderstandings and conflicts between the resource seeking industries and the resource offering service lines. Due to unreliable reservation data the system could suggest candidates, who were not available in practice:

"The problem is that the information is not updated regularly. For example I know that a couple of persons have extremely heavy work load, but according to the RM module their work loads are practically zero. The challenge is that if a person works for sales, there is not necessarily a project in which he/she could be assigned to in order to get his/her work load visible. Another thing is that I have project managers, who are making assignments to a project by themselves. And when they are busy in taking care of many things at the same time, they easily forget to update their own reservations." Head of Service Unit

4.4 4.4 Competencies

As job titles and descriptions varied in different parts of the organization and definition of resource request typically required a lot of technical knowledge of possible competence areas, some users were sceptical about the use of the RM module. Generic competencies (such as project management competencies) serving different businesses were often easier to define into the system than more specific technology competencies. Some businesses had solved this problem by adding their special business competencies into the system. However, defining of competence items into the system was seen frustrating as one interviewee expressed:

"It is visible, that Neon is mostly a software development company. Competencies are to a large degree defined into it (competence catalogue) according to software development assignments. The same shows up in our People Performance tool (dedicated tool for HR) too. And our competencies are always very difficult to find from any of the tools used in Neon." Service Desk Manager

The employees rated their competence levels by using objective evaluations such as course degrees or certificates or by evaluating them subjectively. Basically the employees were seen willing to take any kind of task that had a fit with their competencies. However, some employees were arguably hiding certain competencies in order to avoid work assignments in certain competence areas. Also employees' eagerness to develop their existing competencies seemed to be impossible to define into the system. These subjective evaluations as well as incomplete competence profiles decreased the trust in the quality of the data.

The competence profiles included an employee's skills and knowledge in a certain competence area. Employee's personal features such as cooperation skills, motivation, drive, behavior or on-the-job experience were not included into the competence catalogue. However, these features were emphasized in project work, where personal relationships between project members and customers were very important. Finding the best possible mix between features of work assignment and personal characteristics of a person required a lot of communication between staffing and line managers. As a result staffing should have known a person so well that it was able to identify those of his/her competencies and shortcomings that had an influence on performing a work assignment.

Transferring employees back and forth between industries and service lines set challenges for maintaining customer or industry specific knowledge. In large competence pools line managers were not always aware of the customer or industry specific competencies of their recently arrived subordinates. Defining of these specific competencies into competence profiles was considered difficult or even impossible.

4.5 4.5 Target Customer

The system usage was also influenced by local institutionalized procedures in different parts of the organization. These procedures were related with e.g. their target customers. For example the bidding phase differed between customers. While some customers expected a response to the request for a tender in two months, some expected to get a response in a couple of hours. In addition to differences in time frame, the customers' established procedures regarding interviews of key persons,

elaborateness of agreements or willingness to use global delivery centers varied greatly. Most surprising finding was that the use of the RM module varied even inside the staffing function.

5.0 Case Analysis and Discussion

As demonstrated above the use of staffing process and the new ES functionalities varied greatly between organizational units. In this paper the system use was analyzed by leaving out the ES technology itself and focusing on:

- The features of organizational unit
- The features of work assignment
- Individual characteristics, and
- Target customer

The features of an organizational unit consisted of characteristics which illustrated the unit's dependence on other organizational units. For example some organizational units had very different business model and everyday work practices, they operated in different locations and time zones, and they were forced to use the system. *The features of work assignment* represented the nature of work assignment, i.e. requested skills, competencies and technologies, time frame, or requirements of project work. Respectively *Individual characteristics* consisted of features of requested competence and employee's own attitude towards the system usage. These features included level, evaluation and demand of person's competencies, ego, pride, professionalism, background, or other features such as motivation, cooperation, drive or personal characteristics. *Target customer* included characteristics such as procedures, business environment or specific requirements, i.e. language, confidentiality, customer or industry specific knowledge, which had an influence on the system usage. Individual characteristics and target customer had an impact on system usage throughout both work assignment and organizational unit.

In order to uncover the relationships between these elements a 2-dimensional framework of system usage was created (Figure 3). In this framework the x-axis represented the nature of unit coupling and y-axis the nature of work assignment coupling. Basically the work assignment coupling was high when the features of work assignment supported the system usage. For example requested skills, competencies

and technologies could be defined easily and unequivocally and personal knowing of resource was not necessary. Respectively unit coupling was high when an organizational unit was highly dependent on other organizational units, staffing process and the use of new ES functionalities. These organizational units often represented large competence pools in service lines. Also some industry units, whose former employees were transferred into these competence pools, had high unit coupling. Also established procedures with target customers and individual characteristics impacted both unit and work assignment coupling and the system usage.

In the second phase, the 2-dimensional framework of system use was completed by bringing the concepts of coupling (Orton and Weick 1990) into the context of system usage. The theoretical background of tight and loose coupling as well as decoupling was presented in the theoretical part of this paper. Next, the system usage was analyzed in each of these dimensions by introducing examples of system usage in Neon.

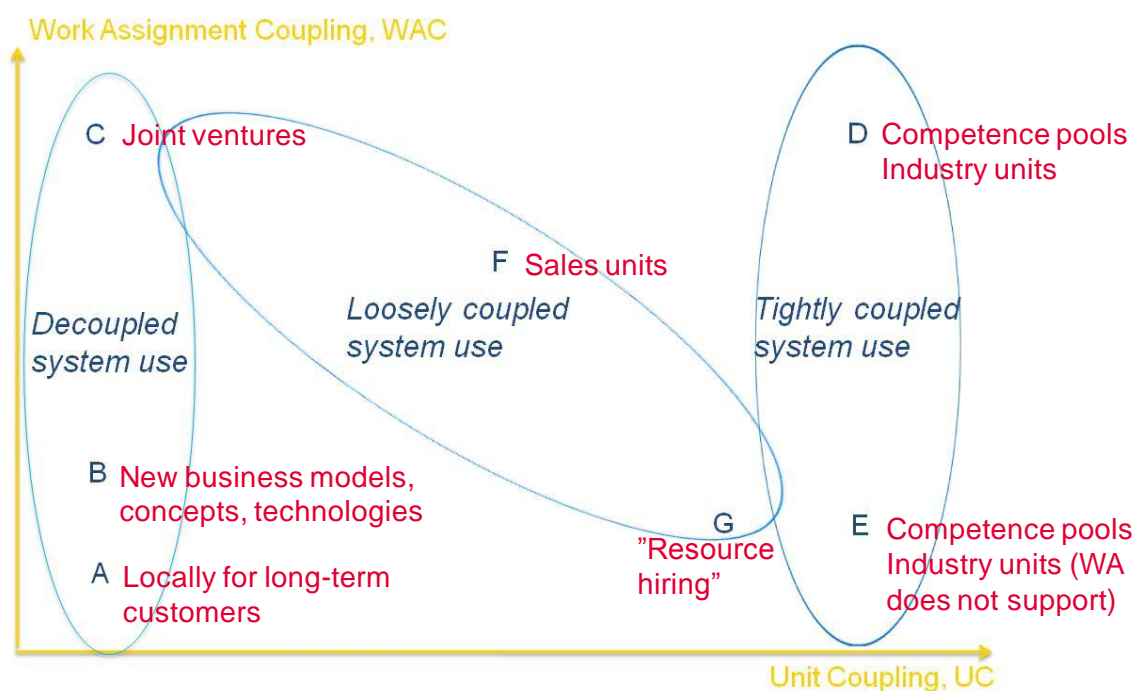


Figure 3. Coupling of system usage in Neon

5.1 5.1 Decoupled System Usage

First, some organizational units were knowingly disconnected from the system use. These organizational units were typically located in an industry, provided projects and services locally for certain long-term customers or sold their own software products. Naturally, requested competencies and technologies were found within their own organizational units. They had often not adopted a matrix form, but were operating in a hierarchical or in a hybrid form. Customers of these locally operating units were not ready to use the global delivery model often having certain specific requirements such as language or very strict confidentiality requirements as one interviewee narrated:

"We have long-term relationships with our customers. Customers are willing to know our people and of course we want to know them too. It has been a clear advantage in our deliveries that we know each other and our respective procedures". Project Manager.

Due to the fact that both unit coupling and work assignment coupling of these organizational units were low the system usage was categorized as **Decoupled** (Figure 3, A).

Second, also some other parts of the company seemed to be disunited from the system use. The aim of these parts of the organization was to find new customers by implementing new business models, concepts, services or technologies. The ways to do business with these new customers were not established and the decision making process in e.g. offering or staffing phase was more flexible. The nature of their work assignments differed greatly from the main business in the company. For example these work assignments typically required a lot of work in advance, lasted less than 3 months, sometimes a couple of hours only and were invoiced by hours, not by days. Due to these reasons the resource planning was made at a remarkably detailed level and the use of common staffing procedures as well as the RM module was seen too complicated. As a result these units had implemented their own resource management tool, My Staffing Beta. Typically these units had low unit coupling and from low to medium work assignment coupling (Figure 3, B).

Third, some joint ventures created challenges for common staffing process and the use of the ES functionalities. These organizational units had not adopted common procedures and tools yet, although their staffing needs were high. At the time of the research these units were still decoupled from system usage with low unit coupling and high work assignment coupling (Figure 3, C).

5.2 5.2 Tightly Coupled System Usage

On one hand, large competence pools were very dependent on the resource requests they received from other parts of the organization. Typically these units operated in an integrated matrix structure, which required a lot of connections between e.g. different superiors, locations, or time zones. Formal staffing procedures and the ES functionalities seemed to be essential for these units. On the other hand, employees of these large competence pools had been transferred from the industry units. As the industry units had lost their competencies, they were very dependent on the staffing process and the RM as one interviewee narrated:

” A person, who has people, also has the power. Of course it is more challenging for me now, because previously I used to be self-sufficient, I had project managers, architects, consultants, and all the prioritizing in my own hands. Now I am totally dependent on the staffing process. And in order to get things work, that we really have employees with right competence profiles, staffing has a challenge how it succeeds in allocating and prioritizing existing employees for different assignments. Of course it (staffing) is allowed to use subcontractors, if it doesn’t find any in the organization. But it will be challenging, because certain competences such as a project manager are in a key role in a project.” Director, Industry Unit

As unit coupling of these organizational units was high, the system usage was categorized as **Tightly coupled**. Typically work assignment coupling was also high, although it varied according to e.g. requested skills, technologies and customer or industry specific competencies (Figure 3, D). As a matter of fact the new ES functionalities were used in these organizational units even if the nature of the work assignment did not exactly support the system usage (Figure 3, E).

5.3 5.3 Loosely Coupled System Usage

As illustrated above low organizational unit coupling was the reason for decoupling, while high organizational unit coupling was the reason for tight coupling. **Loosely coupled system usage** (Figure 3) had features from both of them. The main reasons for loose coupling were the impact of target customer and individual characteristics.

The sales process seemed to be loosely coupled with system use. Although the sales units required information on competencies during the sales process, staffing was rarely requested to map a certain competence area. Obviously unclear boundaries and lack of common procedures inhibited collaboration between the staffing function and the sales units. Also the individual characteristics of the persons involved and the procedures of target customers had an important impact on collaboration. Further, competence areas regarding sales cases seemed sometimes so narrow that the sales person already knew the possible candidates and their availabilities without staffing and the system use. Typically unit coupling of sales units was average, while work assignment coupling varied from low to high (Figure 3, F).

Target customers had often certain established procedures that did not support the use of staffing and the new ES functionalities. For example some organizational units operated in industry fields of high competition, employed new technologies, and provided projects and services to geographically distributed customers. As unit coupling was rather high the work assignment coupling was low (Figure 3, G). In fact staffing activities of these organizational units resembled resource hiring.

Individual characteristics were another reason for loosely coupled system usage. According to some interviewees the definition of competencies into the system was difficult and frustrating. Particularly, top consultants, who were always busy with their work assignments and got them through informal channels in any event, felt inputting and updating of competence profiles useless. In addition, the information regarding competencies was input into two different systems in different formats. In conclusion, the main deficiency seemed to be that information regarding employees' reservations was not created during the project management process, but the

reservation data was expected to be input into the system for staffing purposes. There were also some competing views about who should use the system in the first place.

6.0 Conclusion and Implications

Based on the in-depth case data from different interest groups within the publicly quoted case company, the paper studies why the use of the new staffing procedures and enterprise system functionalities differs between organizational units. By employing the lens of institutional theory and the concept of coupling (Orton and Weick 1990) into the context of system usage (Burton-Jones and Straub 2006) and by adopting the view that the business value of the enterprise system is rarely linked with the features of the ES itself (e.g. Davenport 1998; Peppard and Ward 2005; Zammuto et al. 2007), this paper focuses on the effect of organizational unit and work assignment on system usage.

The findings show how organizational units are differently combined with the system usage in Neon. These differences are mainly caused by the features of organizational unit, the features of work assignment, individual characteristics, and target customer. On one hand both resource offering competence pools and resource seeking industry units operating in a matrix structure are highly dependent on common staffing procedures and the use of new ES functionalities. Basically the system is used for staffing all work assignments in these organizational units even if the features of work assignment do not always exactly support the system usage. Typically the features of work assignment support the system usage when requested skills, competencies and technologies are easily and unequivocally definable and knowing of employees personally is not necessary. On the other hand some organizational units are consciously separated and disconnected from the common staffing process and the use of new ES functionalities in Neon. Generally requested competencies and technologies are found in their own organizational units, and their business model and everyday activities differ greatly from the main business in the company. Also some joint ventures are currently disconnected from the system usage. However, due to the high work assignment coupling of these units, it would be beneficial to combine them more tightly with the system usage. Another issue is that due to e.g. organizational

boundaries and strategy it may be completely out of the question to combine joint ventures more tightly with the system usage.

Individuals and different interest groups respond in different ways to the newly implemented staffing process and the new enterprise system functionalities. Due to limited interest and time or difficulties in seeing the benefits of the new ways of doing things they are not able to use new functionalities properly. Also their individual characteristics have an impact on system usage through level, evaluation and demand of employees' competencies, other features such as motivation, cooperation, drive and personal characteristics, ego, pride, or professionalism.

Previous ways of staffing are not possible in the new matrix organization, while operative implementation of new procedures and tools is still ongoing. Procedures regarding e.g. project management differ between organizational units being influenced by individuals' and organizational units' own background as well as established procedures of target customers. These established procedures of target customers often include certain specific requirements regarding schedule, language, confidentiality, or customer of industry specific knowledge, which do not support the use of new ES functionalities. Further, some organizational units operating in industry fields of high competition by employing new technologies and by providing projects and services to geographically distributed customers are very willing to adjust their internal procedures according to the customer needs. As a matter of fact target customers mainly define how the business is done in these cases. However, due to the great variation in both unit coupling and work assignment coupling, it would be beneficial to reconsider if it is reasonable to combine certain organizational units, e.g. certain sales units, more tightly with the system usage. Recognizing of all skills and competencies as well as availabilities may in turn create opportunities and new business models in the knowledge-intensive project organization.

6.1 6.1 Theoretical Implications

The paper describes how the ES functionalities are locally used in conducting everyday staffing actions by dismantling elements of system usage for organizational unit and work assignment that are studied separately. As expected local staffing

practices are connected to many other actions and reproduced in organizational parts gradually becoming translocal. The paper suggests that new elements – organizational unit and target customer – have an important impact on the use of common staffing procedures and new ES modules in a knowledge-intensive project organization and brings them into the framework of system usage. Although the new elements of system usage cannot be generalized to all organizations, they may be useful in analyzing system usage in knowledge-intensive project organizations.

By emphasizing the use of new enterprise system functionalities should be focused on certain organizational units and work assignments that have the best fit with the system usage, it also participates in the discussion of appropriateness of ES in the organizations (Berente 2009).

6.2 6.2 Practical Implications

The implementation of common staffing procedures and ES functionalities is seen as the management's way to improve efficiency of resource allocation and control in the newly implemented matrix organization. By using these procedures and tools Neon aims to transform into a virtual organization in which the required project teams will be staffed virtually.

However, the system usage for integrating competencies, skills and availabilities with work assignments poses challenges. For example finding the best possible mix between the requested competencies, person, and work assignment requires that all relevant requested competencies are defined into the system. While staffing and the use of new ES functionalities requires system usage skills, wide knowledge of requested competencies or technologies as well as networking skills, dedicated users, who would use the system on behalf of the line managers, could be worth considering. Due to the fact that the use of new ES functionalities serve the staffing function more than other organization units, the staffing function should take more responsibility about for example support and training and linking the entire project delivery process with the system usage. Further, the information regarding reservations is not produced during the project management process and the reservation data is often updated

manually into the ES. The implementation of a new project management module in due course will probably reduce or even take away this manual work.

While the staffing network offers an unusual way to collaborate across boundaries in order to combine skilled employees into a suitable project team, the prioritizing seemed to be very challenging. This is emphasized when certain top consultants are requested at the same time for many simultaneous projects for different customer projects. Even if the competencies and availabilities of top consultants are more visible in the organization, the staffing decisions require a lot of negotiations between several parties. Further, although finding some sporadic top level competencies seems to be important for interviewees, all important competencies should be developed in order to ensure the company's long-term success. However, the procedures for internal competence development by using staffing and common tools are not yet stabilized in Neon.

In conclusion, this paper recommends reconsidering the system usage regarding those organizational units and work assignments, which have poor fit with the system usage. It also suggests that some organizational units, such as certain sales units or joint ventures, could be more tightly coupled with the system usage. Regardless, it seems to be too simplified to use the system only for simple work assignments, while more complex work assignments are handled with informal, personal networks. In fact, some interviewees are irritated about how even some of the simplest and shortest work assignments are carried out using the system.

6.3 6.3 Future Research

As mentioned before the everyday staffing tasks in Neon are carried out by using both *formal and informal networks*. Future research will go deeper in studying the differences of system usage between employees and employee groups.

In a knowledge-intensive company the professional norms are steering actions. These professional norms are a part of the employees' *professional identity*. As the data collection at Neon continues the research is expected to raise discussion about *internal competence development* in a way that enables the company to remain viable.

Future research will combine this fundamental managerial problem about human competencies at work with the system usage.

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