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Open innovation and role of ICT in business-to-business services: Empirical Evidence from Facility Management Services

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Abstract
In this explorative study, we investigate innovation practices and how ICT can support service innovation in a specific service sector, facility management (FM) services. More specifically, we are interested in how facility management services organizations develop their innovations and how can the role and significance of ICT in the FM service innovations be conceptualized. In the empirical setting of Danish FM organizations, we investigate how the organizations develop their innovation activities, what is the significance of information and communication technology in initiating and assisting innovation activities in the delivery of facilities management services, and how the strategic orientation of the organization is related to the innovation activities. Our results indicate a relationship between the strategic approach to innovations and the role of ICT as a tool in innovating FM service processes.

Keywords: Open innovation, Strategic orientation to innovation, Facilities management services.

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INTRODUCTION

Traditionally, innovation has been associated with the development of new products and new technologies. Increasingly, innovation is also associated with the development of new service offerings, business models, pricing plans and routes to market, as well as new management practices (Birkenshaw et al. 2011). In addition, innovation practices have shifted from been understood as an internal organizational activity, to an activity that happens within networks of customers and business partners (Christensen 1997) (Christensen and Bower 1996). It has been argued that the process of innovation has moved from closed systems to a new mode of open systems involving a broad range of players distributed up and down the supply chain (Chesbrough 2003), also in the service industries (Chesbrough 2011). In essence, "*innovation should be understood as an open process in which all of network actors can mobilize resources and thus become co-innovators in co-creating value for themselves and for others*" (Mele et al. 2010). According to Ozdemir et al. (2007), it is the use of cheap and instant information flows, facilitated with information and communication technology (ICT), which places even more emphasis on the linkages and relationships of firms and makes it easier to practice open innovation. Whether a company engages in open or closed innovation is determined by its strategic approaches to innovation. Such strategic approaches have been found to be very much associated with the organizational culture related to innovation (Birkenshaw et al. 2011) and can be described in relation to the strategic orientation of the organization, defined in terms of exploration and exploitation (March 1991).

The purpose of this explorative study is to investigate strategic approaches to innovation and associated role of ICT in a specific service sector, facility management (FM) services. The research question addressed is: How may the strategic orientation to and the role of ICT in open service innovation of facility management organizations be described or conceptualized. In order to answer the research question, we investigate empirically both the strategic approaches to innovation as well as the sources of innovation in a sample of Danish FM organizations. Furthermore, we look into the significance of ICT in initiating and assisting innovation activities in the delivery of facilities management services and its relation to the strategic orientation of the organizations. The motivation of this study lies in the fact that while the service providers' strategies and business models have gained increasing attention in the management, information systems and service literature (see e.g. Zott and Amit 2008; Rajala and Westerlund 2008; Ostrom et al. 2010) the strategic orientation to innovation and related role of ICT in open service innovations in a business-to-business (b-to-b) context has gained less attention.

This paper is structured as follows. After this introduction section, the second section presents a literature review on service innovations and role of ICT in them, while the third section provides the theoretical grounding of the paper on strategic approaches to innovation. The following three sections present the empirical study, the analysis and findings and discussion and conclusions respectively.

LITERATURE REVIEW

A widely accepted definition of service innovation includes a combination of technology innovation, business model innovation, social-organizational innovation and demand innovation, with the objective to improve existing service systems (incremental innovation); to create new value propositions (offerings); or to create new service systems (radical innovation) (Cambridge

2008). The convergence of computation and telecommunications is seen as the central enabling technology, production platform and market opportunity for the evolution and growth of the modern service economy (Potts and Mandeville 2007). A number of classifications of service innovations can be found in the literature. Avlonitis et al. (2001) categorize them as new-to-the-market, new-to-the-company, new delivery process, service modifications, service line extensions, and service repositioning types of service innovations. Marketing literature distinguishes between radical and incremental innovations. Radical innovations initiate new directions in technology, while incremental innovation progress along established paths (Christensen and Rosenbloom 1995). Service innovations can be expected to either improve services productivity or to develop new service models. In addition they could be viewed in terms of the type of benefit offered and the degree of service "separability" (Berry et al. 2006). The type of benefit offered refers to the fact that businesses can innovate by offering an important new core benefit or a new delivery benefit that revolutionizes customers' access to the core benefit. The degree of service "separability", instead, addresses the question of whether the services must be produced and consumed simultaneously (Berry et al. 2006). Regardless of the categories innovations have been classified by (e.g. type, degree, impact, competence and ownership), a common element in most classifications is the element of novelty that adds commercial value (Narvekar and Jain 2006).

Earlier innovation literature has largely focused on the organizational factors influencing innovation development. For example, Rogers (2003) pointed out the important role of top management and employees in the innovation process. Also Jeppesen and Molin (2003), Magnusson et al. (2003) and Nambisan (2002) emphasize the importance of the organization and their employees in playing an active role for motivating users and converting user input to usable innovations.

However, while in the past companies were developing their innovation competences internally, today the organizations need to be enriched with new external knowledge (Bröring and Herzog 2008). Accordingly, companies are more and more collaborating with external parties, including suppliers, customers, consultants and sometimes even with competitors (Chesbrough 2007). The role of the customer is changing from a pure consumer of services to a customer that might help to generate innovation through specific service demands or even becoming a partner in a process of adding value. Customers in this last role are becoming co-producers and co-creators of new services (Vargo and Lusch 2004; Vargo and Lusch 2008; Nambisan 2002; Nambisan 2008). However, according to a recent study, only a few corporations have institutionalized open innovation practices in ways that have enabled substantial growth or industry leadership (Rufat-Later et al. 2010).

Drawing on previous literature (Broadbent and Weill, 1997; Mele et al. 2010), we distinguish three main roles for ICTs in relation to service innovations. The first role relates to ICT as an enabler of a service innovation. Service innovations are often technology-based, comprising either of introduction of new technology or different use of existing technology (Barras 1986). Examples of this role are, for instance, e-banking and different e-government services. The second role refers to ICT as a support infrastructure for a service innovation. Examples of this can be the online help desk or the use of the web to collect ideas about new service offerings (see e.g. Prandelli et al. 2008)). The third role relates to ICT as a utility for a service innovation. This implies the use of ICT mainly to reduce costs as in the adoption of many FM system used at operational level to increase coordination of activities internally and externally to the organization. Service innovation is thus not directly based on R&D, but often on

investments in and the adoption of new (ICT) platforms and the subsequent adaptation of these in order to produce new products and services or improved business processes (Potts and Mandeville 2007). However, although the role of ICT in facilitating service innovation is paramount, ICT is neither a sufficient nor a necessary condition (den Hertog et al. 2003).

THEORETICAL GROUNDING

Strategic approaches, in addition to environmental circumstances, the values and actions of top management, organizational structure and technological cycles have been found to be associated with organizational culture that support creativity and innovation (Birkenshaw et al. 2011). Strategic approaches to innovation can be described in relation to the strategic orientation of the organization, defined in terms of exploration and exploitation(March 1991). Menguc and Auh (2005) define strategic orientation as "*strategic directions implemented by a firm to create the proper behaviors for the continuous superior performance of the business*". The key ingredients of the strategic orientation are the behaviors associated with the organization-wide generation, dissemination, and use of market intelligence (Grave et al. 2009).

The essence of exploitation is the refinement and extension of existing competences, technologies, and paradigms and its returns are positive, proximate and predictable; the essence of exploration, in turn, is experimentation with new alternatives, and its returns are uncertain, distant, and often negative (March 1991). According to March (1991) exploration strategy focuses on cost reduction and standardization, and is captured by terms such as search, variation, risk taking, experimentation, flexibility and discovery of new opportunities. Exploitation, in turn, focuses on revenue expansion and customization, and includes the concepts of refinement, choice, efficiency, selection, implementation, and execution. In terms of innovations, the exploitation strategy focuses in closed innovation, and the exploration strategy on open innovation.

Open innovations have been found to create benefits, in terms of providing a company with access to a vastly greater pool of ideas. However there are also considerable costs and practical challenges in, for instance, resolving intellectual property ownership issues, lack of trust on both sides of the fences, and the operational costs involved in building an open innovation capability (Birkenshaw et al. 2011).

Hence, it has been suggested that innovation should not always be open, but that internal and external sources should be used for different problems with a balanced approach (Birkenshaw et al. 2011) and that organizations need to be ambidextrous and to maintain a good balance between exploration and exploitation in order to succeed (Tushman and O'Reilly 1996; Bröring and Herzog 2008). Ambidextrous organizations excel both at exploiting existing products or services to enable incremental innovation and at exploring new opportunities to foster more radical innovation (Andriopoulus and Lewis 2009).

Based on the literature review on open service innovations and role of ICT in it, and the theories of strategic orientation and organizational learning in the innovation management literature, we propose that in explorative organizations the role of ICT in service innovations is that of an enabler, in exploitative organizations the role of ICT is mainly of support and utility., whereas ambidextrous organizations are characterized by presenting all three roles of ICT for service innovations. This is in line with the literature on organizational adaptation and organizational learning research, that suggest that explorative strategy focuses on revenue expansion and customer satisfaction (instead of cost reduction), exploitative strategies focus

more on cost savings, while ambidextrous organizations in turn would be expected to focus both on cost and benefit. Revenue emphasis focuses externally on customer perceptions and attitudes that will lead to more sales, addressing issues that have the greatest impact on overall customers satisfaction, whereas cost emphasis focuses on the efficiency of the firm's processes (Rust et al. 2002).

EMPIRICAL STUDY

In our empirical study, we investigated the strategic orientation of Danish Facilities Management (FM) organizations towards service innovations mainly in terms of the sources of innovation (internal, external or both) and the outcome of the innovation. We also looked into the role of ICT in the FM service innovations in the organizations in our sample and tried to relate the strategic orientation to the ICT role in service innovations.

In the last three decades, FM has established itself as a key service sector, with a diverse and highly competitive market of FM contractors, in-house FM teams, FM suppliers, FM consultants, and professional FM institutions (Cardellino and Finch 2006) that form very complex FM supply chains (Nutt 2000). Facilities management (FM) can be defined as the integration and alignment of the organizational non-core services required to operate and maintain a business to fully support the core objectives of the organization (Pitt and Tucker 2008). Jensen (2009) defines the facilities management supply chain as a network of connected and interdependent organizations mutually and cooperatively working together to control, manage, and improve the flow of facilities management materials and information from suppliers to end users. Nowadays, the dedication of FM organizations to new service developments and continuous innovation processes seems to be the way to stay in business (Mudrak et al. 2004), constantly trying to exceed customers' expectations and to add value to the core business of the client organization (Pitt and Tucker 2008).

Data collection

The empirical data for this exploratory study were gathered from interviews in 12 Danish organizations (FM service providers, FM customers and FM consultants), as well as from conferences and workshops on FM related topics (partnerships in FM, innovation in FM, and IT systems in facilities management) and archival sources. The organizations were selected based on their market share, influence in the FM business, number of business segments within facility management services, and availability and willingness to participate in this explorative study (see Appendix 1. for details).

The main body of data was collected by using a semi-structured interview guide (Yin 2008), which was first piloted to establish the functionality of the instrument, and then amended where necessary. All interviews lasted about 1.5 to 2 hours each. All interviews were tape-recorded and transcribed. Notes were also taken during the interviews. To increase reliability, an interview protocol was used and a database was developed (Yin 2008). The interviews aimed at eliciting data about the specific themes of strategic orientation of the organization to innovation, sources of innovations, outcome or type of value created by the innovation as well as the role of ICT in FM innovation processes. In addition were gathered background information about the organization and the respondents. The respondents, all high level managers and directors, were selected and pinpointed by the companies according to the criteria that they should be involved with, or at least should have good knowledge of, FM innovation and ICT in the company.

The research design is based on Miles and Huberman's (1994, p. 58) suggestion to create a provisional "start list" of codes prior to the fieldwork to guide the analysis. The coding was manual. This "start list" was based on the literature review on sources of innovations and role of ICT in it. However, new codes such as the strategic approaches to innovation of the organization or the outcome of the innovation emerged from the interviews. By following Miles and Huberman (1984, p. 23), the data analysis process can be described as comprising of the following processes: data reduction, data display and conclusion drawing/verification. Finally, partial results relating, for example, to the sources of innovation or the role of ICT were presented to and discussed with facility management practitioners from the companies interviewed and other companies, as well as facility management experts in several meetings and workshops, thus ensuring external validity.

ANALYSIS AND FINDINGS

In this study, we look at organizations' strategic orientation to FM innovations in terms of the stated role of FM innovation in the organization and the sources of innovation in each identified innovation instance. In this analysis we distinguish closed and open innovation approaches, depending on whether the source of the innovation is internal or external to the organization. In addition, while we briefly touch upon the closed innovations and related issues here, our main focus is in the strategic orientation of the studied organizations in relation to open innovation strategies and related role of ICT. In our analysis, we found examples of both internal and external sources of innovation. Most of the identified 31 FM service innovations were initiated internally by the management or the employees, and could accordingly be categorized as closed innovations. This is exemplified by an FM manager of a big public organization (A8) who states that:

> *In this* [FM] *department,* [....] *innovation happens as an interaction between employees and the upper management* (FM Manager, Big Public Organization, A8).

For the purposes of this paper, we were able to identify altogether eight innovations in seven different organizations categorized as open (i.e. driven by external sources) or open/closed (i.e. driven both by external and internal sources) (see Appendix 2.). All of these eight innovations were incremental, even though there were a number of radical innovations among the closed, internally developed innovations.

Also, whereas the role of top management as a source of innovation was apparent in the instances of closed innovations, in the open ones it was mostly the employees who were acting as co-creators with the external sources. In fact, some if not many, innovations are generated through co-creation among a number of different actors as for example the following example shows:

> *This* [new technology] *was developed when we got the idea from some clients wanting to document that we had done the inspection right. This was developed by Company X* [undisclosed] *because they got the knowledge of PDA and Bluetooth technology, so they were our partners in finding out what we needed in order to develop this* (Development Director, Big FM provider, A4).

Furthermore, in terms of the outcome of these innovations, that is, how they create new value-in-use (Mele, Spena et al. 2010), they could all be categorized as functional service process innovations. Customer-pulled service innovation strategies seem to be facing strong barriers created by additional costs, a lot of extra time, increased risks of failure, uncertainty of profit, and the risk that other competitors will take over the business solutions if their offering is more attractive to the business partner.

Two distinct ways for value creation from innovations emerged: one is to create additional benefits, and the other is to reduce the costs of the benefits the service already provides. Both ways are based on being innovative by changing the technologies used or by changing the underlying business models.

Strategic orientation to innovation

For four of the seven organizations in our sub-sample of companies engaging in open innovation strategies, innovation is a strategic activity and is conducted as a planned and systematic process. These organizations each have a clear innovation strategy and innovation is a strategic priority. The remaining three also see innovation as a strategic priority, but they also engage in ad hoc innovations driven by customers or other external partners.

Customers can contribute to the generation of FM service innovations mostly in an indirect way, through expressing their needs and wishes. For example, a department manager in a software provider states that FM service innovations are mostly small improvements of the existing products and services, but sometimes some more radical changes take place. These changes are mostly associated with the development of ICT systems or with their use:

> *You need to develop new products and new projects and also improve the existing ones for customers by adding some minor improvements* (Department Manager, IT System Provide, A2).

The need for close collaboration between the FM service provider's employees and their customers was clearly recognized in our case companies. Indeed, partnerships between the customers and the providers are becoming a frame for co-creation of services in several of the companies interviewed. For example, when asked about the most important external sources of innovation, a Senior Manager in a big FM provider states:

> *It is mostly our partners, that is 70%. The rest can come from our network* (Senior Manager, Big FM provider, A1).

This is further reinforced by a Director of the Facilities Management Department in another IT consulting company:

> *Here we are also sharing risks and gains, so we have a common goal: we are partners with the maintenance companies and if we do well, then we share* (FM Director, Big Consulting company, A3).

We categorize these four organizations utilizing both internal and external sources in their innovation processes as ambidextrous in the identified instances of innovations.

Another critical source of innovations for the public organizations in our sample was the government and its requirements. In two out of three instances, government initiated open innovations had also a network of external contracts or partners involved in the innovation process. This is for example illustrated by a Senior Manager of a public FM company as follows:

> *The government is suddenly very interested in measuring energy. We have a network* […] *that we ask and see how you have been doing it. It's up to our service providers for the system, we discussed different approaches to measuring their number of different ways for doing it* (Senior Manager, Public FM company, A7).

These three organizations are categorized as taking an explorative approach in the instances studied. The five companies in the sample conducting closed innovation are categorized as exploitative in this paper in relation to the found innovation instances.

The role of ICT

Our case organizations utilize different kinds of ICT for the FM services and in relation to service innovations. The role of ICT in facilitating service innovation is seen in all of the case organizations as paramount, both in innovation driven by internal sources and when interfacing with users and clients. Overall, the use of FM ICT systems is seen as a central managerial issue by all of our respondents. ICT in the case organizations is mainly used to collect, store, analyze and process data to gain access to information used to assist facility services provision and innovation as for instance the following statement demonstrates:

> *One of the advantages that* [the FM ICT system] *has is that our employees out at the customer site can login into the system and quickly get an overview of their business and be able to serve the customer better.* (Senior Manager, Big FM provider, A1)

All three roles of ICT (support, utility and enabler) were found in our study in relation to FM service innovations. ICT can be used to create new services or to improve existing ones, thus functioning as an enabler of service innovation. This is, for example, the case of switching from 2D to 3D in modeling maintenance and more general FM tasks; or the use of GSM systems to monitor from long distance the use of energy in buildings.

Some applications of ICT are of more general use, such as, intranet applications for communication and dissemination of information having clearly a support role, while others are more FM specific. Examples of the latter include EAM-International asset management system with main focus on maintenance- or COREFM (Danish Computer Aided FM system with main focus on space management), both of which having a utility and support role (Scupola and Jensen 2009). Also systems and services such as help desks, supply chain management (SCM) systems, and increasingly other types of web-based applications including social media services were found to be useful and having a support and utility role (Scupola and Jensen 2009; Prandelli et al. 2008). The following statement illustrates the importance of SCM and help desk systems in interfacing with customers and in collecting information that can lead to open, incremental service innovations:

> *The clients that have the FM ICT system, send 70 %* [of question and inquiries related to FM service operations] *through the system. The rest comes through the help desk that people can access via e-mails.* (Senior Manager, Big FM provider, A1)

In our study, however, most of the respondents pointed out that the possibility to control costs is the main justification for investing in ICT based FM systems, thus implying that ICT has mainly an utility or a support role in FM services. This was seen relevant especially in scheduling maintenance tasks for a large number of individual facilities. Overall, the planning and controlling functions were perceived as the most valuable functions of the ICT based FM systems.

Strategic Orientation to Innovation and Role of ICT

Based on the literature review, we expected that in explorative organizations, the role of ICT in service innovations would be that of an enabler, and in exploitative organizations that of a support and an utility. For ambidextrous organizations, we anticipated all three roles to be relevant with service innovations. This would be in line with the literature on organizational adaptation and organizational learning research (see e.g. March 1991), that suggest that instead of cost reduction, explorative strategy focuses on revenue expansion and customer satisfaction, where ICT acts as an enabler creating improvements.

The assumptions seem to have been reasonable for the relationship between the strategic orientation and role of ICT. We found weak support for ambidextrous organizations presenting all the three types of ICT roles, while we found strong support for explorative organizations utilizing ICT in service innovations is the role of an enabler. In fact, in all the organizations categorized as explorative, the role of ICT is that of enabler, while in the ambidextrous organizations the role was mainly of support and enabler. Three instances of open innovations in the ambidextrous organizations were all related to customization of the service provider's software for recording of the FM data in relation to maintenance and construction of buildings. ICT in these instances has clearly a supportive role. In one instance the role of ICT was that of enabler and utility.. This was about development of a PDA and blu tooth technology to improve documentation in relation to delivered services. This instance was also one of the examples of co-created innovations, as the process involved the customers and another company expert in RFID technology developing this system together with this specific service provider.

As to the relationship between the expected cost or benefit emphasis and role of ICT, the results are more mixed, with no clear, expected links between enabling role of ICT and benefit approach, support role of ICT and cost approach or utility approach of ICT and cost approach.. Actually, despite the central theme of controlling costs, none of the instances could be categorized as a pure cost saving initiative. Rather, there were three instances with simultaneous focus on both benefits and costs.

SUMMARY AND CONCLUSIONS

In this study, we aimed at better understanding the strategic orientation to innovation of FM services organizations and the role of ICT in relation to such strategic orientation. In the study, we looked at both open and closed innovation instances, but we mainly focused on analyzing the open innovation instances. In the empirical setting of twelve Danish facility service organizations, most of the 31 innovation instances mentioned by the respondents were characterized as closed since they were mainly developed by internal sources. Eight instances of open and mixed (open/closed) innovations were found. The four organizations utilizing both

internal and external sources in their innovation processes were categorized as ambidextrous in the instances studied. In this it was found that the role of ICT in ambidextrous organizations was mostly the one of support and just in one innovation instance as enabler. We categorized three organizations as having an explorative orientation in the studied innovation instances. In all these organizations a critical source of innovations was the government and its requirements. In two out of three instances, government initiated open innovations had also a network of external contracts or partners involved in the innovation process. Concerning the role of ICT in the explorative organizations, we found that ICT was mostly an enabler. Concerning the value of ICT in relation to the strategic orientation, we found mixed results with none of the instances that could be categorized as pure cost saving initiative.

The results of this study, thus, contribute to both our understanding of the strategic orientation of innovations as well as its relation to the role of ICT in the specific context of FM services. Our results support our expectations that in explorative organizations, the role of ICT in service innovations is that of an enabler, and for ambidextrous organizations it is any or all of the roles of enabler, support and utility, even though most of our instances would fall into the support category. These findings challenge researchers and managers to rethink how and why strategic innovation orientation and the role of ICT affect service innovation in organizations. The innovation strategic orientation of an organization may open windows of opportunities for supporting innovation supply chain activity in the FM industry.

Practical and Research Implications

The managerial implications of this study are twofold. First FM managers in particular and service managers in general should consider and reflect about their actual and future strategic orientation to innovation and create strategy to support it accordingly in order to otimize the service innovations within the organization. Secondly, managers should carefully take into consideration how to use the ICT systems to support their strategic orientation and how to get most out of it. The main research implication is that more research connecting the field of service management and strategic role of ICT in service innovation in a b-to-b context is necessary in order to better understand and relate these two fields of research.

Limitations and Future Research

Even though this explorative study presents some interesting results, there are some limitations. Eight instances of open innovations in seven different, mainly large organizations is a rather limited number and no generalizations can be made from them. Our results do, however, indicate a relationship between the strategic approach to innovations and the role of ICT as a tool in innovating FM service processes. In our future research, we will have to look deeper into the strategic orientations of different organizations and different instances of service innovations to be able to draw stronger conclusions on this relationship.

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APPENDIX 1

Company Type	ID	Person Interviewed	Number of employees
Big FM provider	A1	Senior Manager	250 in Denmark 4000 In Scandinavia
IT System provider	A2	Senior Manager	25
Big Consulting Company in the Building and Facilities Management Market	A3	Director of the Facilities Management Department	45 in the FM Department
Big FM provider	A4	Director of the Development Department	(Company prefers to keep size undisclosed)
Big Parma Company	A5	Director of the Facilities Management Department	90 Employees in the FM Department (size undisclosed)
Consulting Institution	A6	Construction Consultant	. 850
FM Public Organization	A7	Senior Manager	170
Big Public Organization	A8	Manager of the Facilities Management Department	45,000 Employees in Total 15 in the FM Department
Big State / Private Organization in Experience Services	A9	Senior Manager of the Facilities Management Department	Approximately 1100
ICT System Provider for FM	A10	Director of the Danish Subsidiary	6 in Denmark Approximately 12 in the Main Office Abroad
Big Financial Service Firm	A11	Senior Manager of the Facilities Management Department	FM is Organized as an Intern Function with 160 Employees
SME Providing FM Service to Mostly Big Corporations	A12	Senior Manager also in charge of the FM IT systems	Approximately 145 Managers Approximately 430 FM workers

APPENDIX 2

Company	Role of innovation in the organization	Description of the innovation instance	Role of ICT	Source of innovation	Internal/ external	Strategic orientation	Benefit vs. Cost approach
Big Public FM Organizations	strategic activity with planned and systematic processes	3D modeling of buildings and FM services in relation to digital construction	Enabler	Government Requirements +network of external contacts/ partners	external	explorative	benefit
Big Public FM Organizations	strategic activity with planned and systematic processes	GSM unit to measure energy consumption in buildings	Enabler	Government Requirements +network of external contacts/ partners	external	explorative	benefit
Big Financial Service Firm	strategic activity with planned and systematic processes	using 3D instead of 2D in FM modeling	Enabler	consultants	external	explorative	Benefit
Big State /private Organization delivering experience services	strategic activity with planned and systematic processes	adoption of a digital FM system for recording of all the FM data in relation to the construction of a new building	Enabler	Government Requirements	external	explorative	benefit/cost
Big FM provider	strategic activity with planned and systematic processes	development of PDA and Blutooth technology to improve documentation in relation to delivered services	Enabler	customers (+employees)	external (+internal)	ambidexterity	cost and benefit
IT System provider for FM	Innovation both as a strategic priority and ad hoc	customization of the their software to specific customers	Support	customers (+employees)	external (+internal)	ambidexterity	benefit

	innovation driven by the customer						
IT System provider	Innovation both as a strategic priority and ad hoc innovation driven by the customer	ongoing customization of the their software to specific customers	Support / Utility	customers (+employees)	external (+internal)	ambidexterity	benefit
Big Consulting company in the building and FM market	Innovation both as a strategic priority and ad hoc innovation driven by the customer	customization of the their software to specific customers (e.g. in relation to energy consumption)	Support	customers (+employees)	external (+internal)	ambidexterity	benefit/cost

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