

Global Management in Service Firms – The Role of Linkages

Abstract

In this paper we address two propositions from literature. First, we question the idea that service firms have fewer benefits of globalization than manufacturing firms. Secondly, we argue that whereas many previous studies have focused on the subsidiary or service as the unit of analysis, looking at the integrated activity set opens up for the opportunity to study the nature of activities and their interlinkages, which allows us to take a much richer view at “production” within the service firm. We look at a case firm that delivers certification services, and by identifying their activity set and the linkages between activities, we look at parts of the delivery that can be globalized to enjoy benefits of scale, arbitrage and learning, and examples of reciprocal linkages between activities which we argue are best taken care of when the interlinked activities are located together. Our framework adds an extra dimension to the integration –responsiveness framework as we argue that localization is not only relevant when there are local and unique market demands, but also when linkages to customers are strong. Our framework does not suggest, however, that all activities in this case should be localized, we argue that only the densely linked activities should be either localized together, or carefully coordinated if located apart.

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1. Introduction

One of the central questions in any multinational company is where to locate activities and how to coordinate them. Central coordination offers great benefits of scale, scope, best practice learning and arbitrage when activities are standardized, co-located and performed where the cost is low (Bartlett and Ghoshal 1989; 1992; Ghemawat 2007). Sometimes central coordination is not efficient because of local, specific demands (Prahalad and Doz 1987; Bartlett and Ghoshal 1992), service requirements of production close to consumption (Boddewyn, Halbrich et al. 1986; Habib and Victor 1991; Li 1994; Aharoni 1996; Aung and Heeler 2001) or the nature of professional service firms requiring an integration of activities from sales to delivery by the same professional (Løwendahl 2000). In the extreme, the benefits of globalization (scale, scope, learning and arbitrage) may be grossly unavailable to service firms because of their need for closeness to the context and nature of delivery requirements (Enderwick 1989; Goerzen and Makino 2007).

Based on the insight from a multinational service firm we will in this paper try to moderate this prediction. From Porter's seminal value chain thinking (Porter 1985), Stabell and Fjeldstad's value configurations (Stabell and Fjeldstad 1998) that are inspired by Thompson's linkages (Thompson 1967), we argue that the nature of linkages between the activities define whether the activities must be localized or centralized to gain cost and learning advantages. Linkage concerns may also apply to manufacturing companies, and prevent firms from offshoring certain activities (Pyndt and Pedersen 2006) due to benefits of co-locating certain activities together (Grant 2005), and to different types of services, suggesting different coordination patterns based on customer interaction (Larsson and Bowen 1989). We will build

on these perspectives and present a framework where we discuss the role of linkages in multinational service firms for localization/centralization. Whereas linkages are important for localization (Porter 1985; Pyndt and Pedersen 2006) and service coordination (Larsson and Bowen 1989; Løwendahl 2000), no study has specifically looked into how various types of linkages between activities in an international service configuration may guide managers when they design their international organization.

Most of the centralization/localization debate has taken place at the subsidiary level. However, we agree with the following postulation: “globalization occurs at the level of the function, not at the firm” (Malnight 1995: 119). Hence, to understand the benefits of integration between localizations we should therefore focus on the function, not the entire subsidiary (Mascarenhas 1984; De Meyer 1991; De Toni, Filippini et al. 1992; Carpano and Chrisman 1995; Nobel and Birkinshaw 1998; Kim, Park et al. 2003). Our focus in this paper is on similar functions taking place within an activity, defined by Porter as “discrete, but related production functions” (1985: 39), and our main concern is how these activities are related to each other in terms of interdependence (Viktor and Blackburn 1987) or connectedness (Cook and Emerson 1978). Linkages exist when the cost or value of an activity is affected by how other activities are performed, and in an organization these linkages are often subtle and go unrecognized (Porter: 1985: 50). Our ambition in this paper is to demonstrate how linkages between activities in a service MNE may affect value creation due to their localization/centralization and type of coordination. It is well known that many international consultancy firms outsource parts of their activities to for example India (Pyndt and Pedersen 2006) which indicates that certain parts of the value activities can be located elsewhere for cost or learning reasons even in professional service firms or value shops

(Stabell and Fjeldstad 1998). Our aim is to understand better when conditions of this centralization apply.

In the next section we will discuss our theoretical framework before we present our case, a service firm from the certification industry. This firm has attempted to standardize much of its activities, but has so far not succeeded in this pursuit. In our discussion we suggest that this attempt may not necessarily be totally flawed, but needs to be modified regarding the nature of each linkage between each activity. If linkages are mostly sequential, and a clear interface can be developed between the activities, coordination can easily be facilitated across distance by virtual means. In situations where high complexity drives reciprocity in the linkage, these interfaces must be co-localized, whereas localization depends on the customer interaction.

2. Literature Review

Internationalization of services has been at an increasing focus in the marketing and management literature the last decade. Not surprisingly, when we know that the service industry counted for close to 70 percent of the total output in the world economy in 2003 (World Bank 2006). However, prior research seems to have almost ignored (with a few good exceptions, which we come to later on) issues regarding global integration, standardization, and reallocation of service firms and activities, although Brown, as early as in 1970, claimed that multinational firms (services included) were going to relocate production and sources of supply to different global locations in the future to survive in an increasing global competition (Brown 1970; Chen 2006). And according to Chen (2006), prior research in globalization of services has primarily focused on (1) developing global strategies by identifying industry driver factors, (2) analyzing the effect of regulation (for example in the telecom industry), and (3) designing organizational structures and support systems.

Likewise, a more specific focus on the organization of value creating activities within international service firms is so far missing in the literature. Most of the former research has been struggling with issues on the macro environment of the firm, or at the organization level. The focus on the specific value creating activities and the linkages between these activities, such as with the value chain approach for manufacturing firms, is hardly present in the typical service literature. Anyway, before we turn to the more specific literature review, we will just briefly present the classical view of services.

There are four well-accepted characteristics of services that differentiate them from manufacturing firms, and most certainly also makes internationalization more challenging (Javalgi and White 2002). First, services are intangible – what is delivered cannot be touched, seen, or physically transferred. Second, services are inseparable from their customers. As services often necessitates cooperation and communication between the service producer and the customer, or recipient, they are understood as interactive (Normann 1984; 2001). Third, services are perishable and cannot be stored. Finally, services are heterogeneous in the sense that each service deliverance is different from the others (Parasuraman, Zeithaml et al. 1985).

As a consequence, many authors have claimed that service firms have to locate their activities close to customers and there would be little or no possibilities for standardization and scale effects (Enderwick 1989; Goerzen and Makino 2007). However, there are researchers that are questioning the above characteristics and claim that, at the best, these are only myths, and at worst totally misleading conceptions (Vargo and Lusch 2004). For example, by the intangibility criteria there should be complete untainted services or goods – whereas in reality all services have essences of tangibility, and all goods have some service components.

Further, the idea that humans are so involved in the production of services, that it is impossible to standardize services is at least only half way true. Airlines and medical procedures, to mention only a few, deliver standardized services as much “as the production of the airplanes, medical instruments, and computers on which they rely” (p. 328). There are also many examples from the financial, entertainment, and information services that the idea of inseparability is questionable (Lovelock and Gummesson 2004).

In an early work about service organization, Larson & Bowen (1989) propose a typology of service firms based on diversity of demand and customer disposition to participate in the value creating processes. When the diversity of demand are high and the participating disposition is low, they talk about so-called sequential customized service design (i.e. firms such as car repair, cleaning, and gardening), with a high-high configuration of the same attributes, we get reciprocal service design which are services like psychotherapy, medical care, law firms, etc. A pooled service design (firms such as banks, airlines, and fast food restaurants) is characterized with a low-low configuration, and with a low-high pattern, we get a sequential standardized service design (self-service retail stores, car rentals, etc.).

This way of thinking is much in line with Thomson’s seminal work from 1967, which also strongly inspired Stabell & Fjeldstad in their value shop and value network typologies (1998). The value shop is a typical professional service provider such as medical doctors, consultancies, law firms, etc. The activity flow is non-linear, iterative between activities and cyclical across the set of activities. The value network represents other types of services such as banks, telecom, and insurance companies and facilitates and coordinates interactions between actors. The level of analysis for both approaches is the whole organization, although

Stabell and Fjeldstad (1998) are very much focused on the activities that constitute the value configuration.

From an operational and global viewpoint, Lovelock and Yip (1996) classified service firms into to three distinct categories according to the nature of the value creating processes and whether customer must be present during the service production. *First*, people processing service firms involve tangible actions to customer (i.e. the customer takes part in the production), which most often implies that consumption and production tend to be simultaneous. Examples can be transportation (of people), health care, foods and hotel services. The customer has to enter the production unit, which we often recognize as a hospital, a bus, an airliner, etc. Hence, the service provider has to be geographically present with buildings, equipments, people, and supply. *Second*, possession-processing services entail tangible actions to material objects. Transportation of goods, car repair, laundry are example of such services. The service production is separated from the customer, but the object needs to be involved in the production processes. Therefore, in many cases a local geographical presence is necessary. However, this is not always so. Smaller items, which can be transported, may be repaired from a distance. Especially with modern information technology, this has been a large opportunity for cost reduction. *Third*, information based services depend on data collection, data manipulation, and data transmission to survive and create value. Accounting, banking, education, consulting, news, etc. are all example of these types of services. Involvement from customers in the production process is quite seldom (perhaps with an exception of higher education where the students are important in the final production). Modern telecommunication, powerful databases makes it possible to deliver services from a central hub, which makes it unnecessary with local presence with exceptions maybe of pcs, telephones, and other types of terminals.

The two main dimensions of services in the literature are degree of customer involvement, co-production and customer needs (Larsson and Bowen 1989; Bitner, Faranda et al. 1997; Løwendahl 1997; Ramírez 1999; Lovelock and Gummesson 2004) and degree of customization and standardisation (Schmenner 1986; Reich 1991; Maister 1993; Løwendahl 1997; Hansen, Nohria et al. 1999). We will build on this body of literature using the degree of customer involvement and degree of service complexity, to explore linkages within service activities and the coordination needs between experts performing the services. By using these two dimensions of services, we wish to highlight which parts of the service performance that need co-location and which do not in multinational service firms.

Global presence gives service firms competitive advantages through a credible promise of broader ‘experience records’ and shared knowledge (Løwendahl 2000). Løwendahl distinguishes between global customers with centralized decisions and/or activities and global customers demanding consistent services at multiple sites. Consistent services can be delivered and distributed either from a central pool of professional resources, from a single hub and a network of delivering units, or from a global network of multiple hubs. Depending on the type of service and delivery process, the amount of coordination, control mechanisms needed and mutual exchange processes are different, but extensive. Of local customers, there are those with global problems who need global expertise and those with local problems who still want expertise with a global reputation. For local clients, having a broad access to knowledge and expertise is hence important. Thus, serving local customers entail knowledge sharing, while global customers entail knowledge exchanges between experts. How such linkages between experts are managed is not specified.

Once a firm has become multinational, there are established routines, communication paths and exchanges between people at different localities within the organization (Grosse 2000; Segal-Horn and Dean 2009). Grosse notes how global service firms often have proprietary methodologies for producing their services. These methodologies are transferred internally through manuals, training programs, team interaction and ICT use (Grosse 2000). In such a way, global professional services ‘travel’ within an organization as long as the same organization has offices at a number of localities.

Both the marketing and professional service literatures argue that services are different from manufacturing because they in nature are tacit and therefore should take place close to the customer. Our review show, however, that many services are outsourced and offshored, and offered at many locations through specific coordination mechanisms like personal relations, training and common IT platforms. There is therefore a need to study when services can be standardized, and we suggest that a promising approach may be to look at parts of the service, more specifically the activities comprising a service and how these parts are interlinked and coordinated.

Service and activity linkages

Linkages or types of fit (Porter 1996) are relationships between the way one value activity is performed and the cost or performance of another (Porter 1985: 48). Linkages are also defined as value and cost drivers, indicating that if these are discovered and managed, they may lead to competitive advantage, mainly through two mechanisms: optimization and coordination. Optimization occurs when for example more stringent material inspection reduce service costs due to fewer breakdowns, while coordination benefits take place when for instance the coordination of input and production reduces need for inventory. Linkages may be vertical

reflecting interdependencies between a firm's activities and the value chains of suppliers and channels, or horizontal, coordinating activities with other related firm's activities.

Thompson (1967: 54-55) describes three manners in which parts of the organization are linked together. The first of these is what he calls pooled interdependence. This is a situation where units A and B within an organization can perform their activities independently without the influence of one another. They are therefore not dependent on each other to perform their activities, but the total service/product depends on the jobs done in both A and B. The second type of dependency is termed sequential dependency, and it occurs when part B of the organization cannot perform its activity if A has not done its jobs first. In this situation B can do its activities without the influence of A, but has to wait until A's jobs are finished before starting its own jobs. In this sense A becomes a supplier to B. The third form of dependency is termed reciprocal dependency, describing a situation where unit A's activities become input to B's and opposite. The example used by Thompson is an airline that both operates and repairs airlines.

Two different theoretical perspectives may be applied to look at linkages within the MNC, one based on resource linkages and the other based on workflow (Astley and Zajac 1990; 1991; Boehe 2007). Both perspectives see the MNC as a network where the MNC *"possesses internal linkages and coordination mechanisms that represent and responds to many different kinds and extents of dependency and interdependency in inter-unit exchange relationships"* (Ghoshal and Bartlett 1990: 604). The "loose" network model builds on a resource dependency logic (Pfeffer and Salancik 1978) and pooled interdependence, but as our focus is on activities more than units, we focus on the other perspective of "tight coupling" that assumes behavior rationality and sees value creation in a MNC as "one system" to be

optimized, and “*precisely defined subunit activities interlock so that they complement each other as harmoniously as possible*” (Astley and Zajac 1991: 403). This “macro-logic” produces a hierarchy of dependence where “organization tasks are successively divided into “areas”, “groups”, “bundles”, “modules”, and “activities” (page 403). Astley and Zajac view this system as sequentially interdependent. We question whether all activities in a service delivery are necessarily sequential, and explore implications of different types of interdependencies.

Porter (1985) demonstrated by the value chain the efficiencies of localizing together similar processes in activities, and showed that the way that these activities are interlinked may have great effect on total cost and value perceived by the customer. As mentioned above, Stabell and Fjeldstad (1998) introduce value shops and networks, where shops create value for customers by solving their problems, and networks create value by pooling customers. Whereas Stabell and Fjeldstad look at the overall configuration logic on a firm level of analysis, we focus on the nature of the linkages between activities and their coordination. As such we are therefore less concerned with one firm following one logic or the other, but open up for the coexistence of different types of interdependencies at the activity level, and the implications of this variation on the structure of the MNE.

Based on these insights we argue that a service delivery may consist of a set of activities that may be reciprocally, sequentially or pooled linked together. We argue that these linkages are important because of their implications concerning localization and coordination.

Global integration concerns control and coordination of business operations across borders. Coordination concerns developing linkages between geographically dispersed units of a

function, whereas control may be seen as regulating business activities to align them with the expectations set in targets. The effectiveness of global integration has implications for business performance (Birkinshaw, Morrison, & Hulland, 1995), which means that a real concern for business managers is to design an organization to achieve effective integration of global operations (Kim et al., 2003). Malnight (1995) argues that coordination and control must be studied at the level of activities rather than the firm, because “*without first enhancing the company’s ability to perform individual functions globally, the potential for cross-functional integration would be limited*” (page 130). Kim et al identify four forms of coordination mechanisms in multinational corporations (Kim et al., 2003) people (or lateral relations) corresponding to personal, socialization and cultural control (Edström & Galbraith, 1977), information systems, formalization and centralization.

We argue that when an activity can be linked to another in a sequential or pooled manner, the processes within the activity can be standardized and self contained since the dependence between the activities depends on one activity being the input of another (sequential) or the activities happening in parallel (pooled). As such, coordination of the activities is pre-planned, known and anticipated, and if something goes wrong, a centralized body may look at interfaces between the activities and resolve conflicts and new formalized rules for interaction may be developed. Therefore, when the activities are sequentially or pooled interlinked, there should be little need for personal interaction, and unless transportation costs or times are high, there is little need for co-location of activities.

When activities are linked reciprocally, however, we expect to see more informal, localized and cooperative strategies (Thompson, 1967). When outcomes of the interdependence are non-correspondent there may, however, be a need for vertical mechanisms like centralization

because the units will to a lesser degree be able to solve problems on their own (Viktor & Blackburn, 1987). Ghoshal and Nohria find that increasing interdependency may increase formalization because it provides a structured context for reciprocity. Centrality, on the other hand, has the opposite effect on interdependency as HQ views are reflected and reciprocity is constrained. Although these studies suggest that there may be some formalization and centralization, we argue that reciprocal linkages create a need for increased coordination, and more personal interaction, which suggests to us that when the linkage is reciprocal we will expect to find that the two activities are co-located together.

3. Empirical Study

This study uses qualitative case-based research. As there is little research relating to linkages between activities in service firms, the research is exploratory. The data was collected applying an explorative micro-level research strategy, with a mixed-methods approach in order to build inductive theory and concept development. The research perspective of a bottom-up qualitative case study was employed (Langley 1999), where reflections overlap in inductive and deductive phases of the study (Miles and Huberman 1994). An appropriate method for such exploratory research is in-depth interviews. 86 in-depth interviews using semi-structural interview guide has been followed. The interview guide focused on daily work, tools used, cooperation needs, knowledge and experience exchange, learning and skills needs, project work and organizational support. The interviews lasted from one to two hours, were recorded and transcribed.

The study is multi-level, performing data collection at different levels within the firm. From top management, middle management, project managers, engineers, secretaries, juniors,

seniors, we have strived to talk with as many levels as possible in order to view the service performance from different angles within the firm.

To view the different activities and service performance over time, a longitudinal study is important. This is due to a number of reasons. First, to gain access to sensitive material, documents, meetings, change processes and informants, it takes time to build up mutual confidence and trust. Second, to develop the understanding of the service performance and the different forms of services take time. Third, to visit different localities needs preparation and time. We have therefore followed the company Comco from 2002 to 2008.

The study aims at being multi-local, performing data collection in different localities that are separated by great distances from each other, with many hours of air travel. However, as the services often travel between offices and experts, it makes sense to visit several places, not only for comparison, but as well for identifying the units being linked to each other in a more or less coherent structure (Hannerz 2003). 12 different localities in 8 different countries, on 3 continents have been visited.

In addition to personal interviews we have also used participant observation of daily work, daily project meetings, unit meetings, top managers meetings, workshops and regional gatherings. Of communication and informal talks, we have had meetings with top management every third to fourth month, regular informal talks with different actors in the organizations and followed different change projects with document reviews, meeting participation, talks with project managers etc. Through various means the validity and reliability of the empirical, descriptive and analytical material has been tested. Not only have

we presented papers to managers, but findings and analysis have been presented to a lot of employees with possibilities for feedback.

Comco is a service firm with about 500 employees at 18 offices in 11 different countries in Europe, Asia and North America. Comco provides global market access through services of testing, inspecting and certifying products, machinery, installations and systems worldwide. In order to offer these services worldwide the products are sent to the competent experts who test the product according to the market the product is supposed to enter hence which international or national standards agreement the product should comply with. Every electrical tool, equipment, household appliance etc surrounding us at home and at work are tested in order to be (amongst others) safe. Such testing is performed through an official notified body such as Comco. Today Comco is recognized in its industry as a leading supplier of global market access and ranked among the top 3 providers of international CB-certificates.

When we initiated our study, Comco had evolved from 13 to one company. A large part of worldwide production had been moving to low costs countries, especially to China. To gain market share in such a price sensitive industry, they needed to integrate services and increase efficiency of the daily operations. To achieve this, the organization was reorganised to comprise three main units which reflected the processes for service performance: The first is sales and marketing unit at every locality, Front Office, taking care of customer contact, sales, contract initiations and customer support. The second is the facilities for testing and verifying testing, namely the technical labs and the engineers, planned as a more centralized unit. The third is the certification department being centrally located. Through this organization, the customers would be in contact with Front Office, the testing engineers would only test products coming in as a results of the efforts from Front Office and the centralized Certification unit would finally go through the testing and verification results and issue the

certification documents. The expected returns from such organizing was cost effective processes, more effective service performance through division of labor and the use of the appropriate knowledge according to tasks assigned.

In order to achieve such division of labor and ensure that the right expertise was used for different incoming services to perform, the company developed formal processes, an ICT system to support the workflow and used incentive systems and key performance indicators to follow up the new organizational processes. The formal processes developed were both for work within each division and how the tasks and service performance should be transferred to the next unit and competent engineer.

3.3 Case Analysis

We will first look at the “ideal” sequence of activities in Comco, and thereafter look at observed deviations.

An Ideal Service Performance:

At Comco, an “ideal service performance” is as follows: a customer contacts a sales person in order to enter different markets with electrical products, to assure compliance with applicable standards. After an agreement between the salesperson and the customer, being for instance a monitor manufacturer, all documents and details are registered at Comco’s common ICT tool Express (EX). An engineer and tester, receives the prototypes of the monitors and tests them according to for instance the European standards for EMC (Electro Magnetic Compatibility) and safety. After a few days, the tester has performed all the necessary tests using different equipment for measuring different variables, voltages etc. The results of the tests are inserted into the EX. The results are transferred over for verification. Verificators are engineers with

more experience than the testers, and they have passed several exams internally in Comco in order to verify the testing. As a rule, verifications have to be done by a different person than the tester in order to assure that the products will comply with the rules. In Comco, there are not verifiers at every location; hence most verification jobs are passed to other locations. The verifier uses one day to go through all the test results by consulting both the applicable standards and the documentation from the monitor manufacturer. The manufacturer can through their EX customer site follow the monitors, and will now see that the only missing part is the actual certification papers. The certification department of Comco is situated in Oslo, and once the verifications are performed, Oslo receives the job to certify the European testing. Filling out the necessary template while checking once more the results and the documentation of the results, the certification papers are complete and uploaded to the EX customer site for the manufacturer. With such certification papers the products can be launched on the market.

The service initiation is performed close to the customer. The service execution is more complex since it is divided into three stages: testing, verifying and certifying. The delivery of the service is performed through a secure customer site on the web, and the customer perceives the service as one service regardless of how many experts that have been involved and in how many countries the service performance has been executed.

Apart from this ideal service performance sequence, we have found four types of deviations that are linked to inexperienced customers, experienced customers, service uncertainty and service complexity.

Deviation 1: Inexperienced customers

When the customer or manufacturer is new, the entire project course is as described above, except that the sales person uses a lot of time explaining the customer the different tests and standards, making quotes and providing offers to the customer, and/or, the testing fails. About 60% of safety testing fails. Easy products with straight forward testing with known applicable standards may hence become more complicated if the customer is new, needs training or is not providing the necessary documentation for testing. In these cases, the sales person, the planner and finally the test engineer use a lot of time to get the necessary documentation by mailing the customer, phoning them up and sending reminders. Often the customer sends the product without any documentation even though it is clearly stated in the offerings that this is of outmost importance. By consequence, the testing need to be rescheduled, the testers use more time than planned due to customer follow up, the customer often gets annoyed by all the documentation demands and finally, the customer is not satisfied with the testing delay and the invoice reflecting the amount of time and hours spend on the project.

Deviation 2: Large and experienced customers

Customers that are large in size and/or have a lot of experience, often have excellent in-house testers, own labs and test equipment. Such customers are shopping services at different testing and certification providers according to experience and price. These types of customers use Comco to access in-depth experience exchange with senior test engineers. Apart from receiving test reports and certification papers, the customer engineer uses the opportunity to go through all technical specificities of the product and the standard together with a senior test engineer in order to exchange views, experiences and new insights. The result is at the one side customer satisfaction and improved knowledge of products and standards both for the customer and for the test engineer. At the other side, such experience exchange happen mostly

at the lab which prevents the test engineer to run several projects and test in parallel since s/he has to give full attention to the customer at site, which in turn results in delays and rescheduling of other projects.

Deviation 3: Product uncertainty

There are many products that provide uncertainty regarding the testing service activities. Examples of such products are innovative and new products that are not yet known in the market, and families of products, for instance new products such as types of medical instruments, such as instruments for blood testing with special temperatures for different test tubes, or telecom products such as a new military radio transmitter or special oil and gas products such as motors and equipment being used at oil platforms. The uncertainty lies in which standards to apply and how to proceed with the testing. Furthermore, the applicable standards are in themselves complex and specialized, regarding for instance the material used for capsular. Such a project proceeds either with a pre-project phase where different senior engineers go through the different components of the products together with the customer in order to clarify which standards the product needs to comply with, or the different standards to comply with are identified during the actual testing. Such a project follows the same procedures for sales, testing, verifying and certifying as described above, with the difference that the offering, the contract and specifications are more open, take more time and involve several senior engineers. Hence, the sales person asks for assistance from lab managers or test engineers in order to make the quote to the customer.

Deviation 4: Service Complexity

A service complexity may involve a family of products. Outdoor lightings being in a family of 15 different lights are one example. Here, each component or separate product is not

difficult in itself. The complexity lies in which component needs to be tested first and which components are covered when other components are tested. Such project involves many tests with parts of the same standards. The complexity is at the testing level and the remaining part of the project proceeds as described above. However, lab managers or testers are often involved while making the offer, and during the testing, the tester might contact the customer and verifiers in order to assure that the right components are tested.

These deviations suggest that the ideal model cannot always be followed, and in the next section we discuss implications of these deviations for coordination and localization.

4. Analysis: Linkages and their coordination

Our definition of input uncertainty deviates a bit from Larsson and Bowen (1989) who see input uncertainties as a combination of diversity of demand and need for customer interaction. We agree with the definition of Galbraith (1973) defining uncertainty as the difference between the amount of information required to perform a task, and the amount of information already possessed by the organization (page 5), but see this purely as related to the technical information. Complexity we define as uncertainty on a higher level, as each part may be well understood, but it is not clear which part should be solved first, and how the parts interfere with each other, combining known parts into an unknown whole (Henderson and Clark 1990). The customer interaction into the service production and delivery is identified as problematic when the customer is either inexperienced, creating a need for further clarification and specification, and when the customer is very experienced, creating a need for high level interaction between activities performed in-house at the customer and activities in the service firm. Both these customer deviations create a diversity of demand (Larsson and Bowen 1989), but with different effects for the service delivery. We will use a very simple chain of delivery

of the service in Comco, and use this to analyze the challenges in the service delivery of Comco.

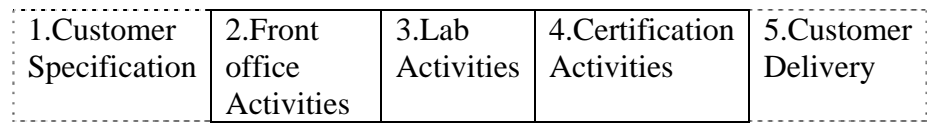
1.Customer Specification	2.Front Office Activities	3.Lab Activities	4.Certification Activities	5.Customer Delivery
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Inexperienced customers create a reciprocal link between stages 1 and 2, as Front Office managers must use time with the customer to understand the service request. If the Front Office managers are experienced, the rest of the production process should go as planned. However, this often is not the case, and requests from stage 3 are sent back to stage 2 and 1 for clarification.

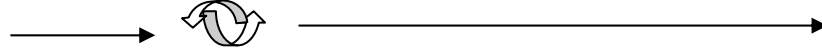
Experienced customers have their own parallel activity 3, and use Comco for comparison and advanced services. In some cases stage 2 is almost side-stepped, and there is a link between stage 1, 3, where selected individuals are approached and customers own labs, creating high reciprocal interaction.

The more uncertain the product is, the more stage 3 is pushed upstream towards the customer specification, as stage 2 has little insight on the number and types of tests and their costs. Consequently level 3 also takes on Front Office functions. In addition, the service may be specified and re-specified as more knowledge is gained on what is needed to certify the product in a circular development between the 3 levels 1,2 and 3. An uncertain product therefore involves the customer to a certain degree, although uncertainty reduction is done by the specialists mainly through activity 3. Complex service deliveries involve an intense coordination between customers, front office and labs, and as more products and standards are involved, usually the process is difficult to coordinate.

These arguments may be shown in a figure:



Inexperienced customers



Here we argue that there is a strong reciprocal linkage between the inexperienced customer and the front office. When the requirements are clear, production of the service is fairly standard.

Experienced customers



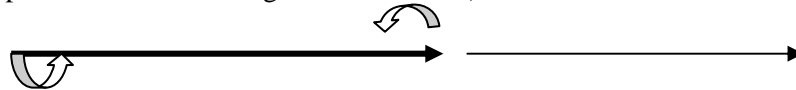
When the customer is experienced, we see the main reciprocal dependence between the customer and the lab activities, often involving lab services at the customer. Front office activities are involved, but only to a limited extent as limited marketing and extra service is needed. The customer gets what he wants from direct interaction with the experienced engineer.

Product Uncertainty



In this situation customers, front office and lab operate as a team, as the technical uncertainty is gradually reduced to testing and experimenting, and the customer and front office engage in discussions as to whether the uncertainty reduction process should continue or be stopped (so the product could be developed further, and testing would be easier)

Product Complexity



This process is very similar to the one above, but as more elements and standards are involved, more units must be coordinated, and hence the interaction between the customer, front office and labs are often more interactive and extensive.

Our analysis show so far that between some activities (3-4, and 4-5), the interfaces are fairly standardized in the sense that work done in one activity can be sent to another activity for further processing without much need for clarifications. Of course, this happens, but when it does, clarifications via mail or telephone takes of the coordination need. This means that lab activities and certification activities can be physically separated, and the certification activity does not need to be located close to the customer. As such the certification activity can be outsourced, offshored or globally centralized to get benefits of scale, scope, learning and arbitrage, given that there is a clear structure between the activities (centrally set performance indicators like time to delivery: usually a set number of days, customer service (if the

customer needs explanations or advice)), and standards on which the certification unit can ask for extra or clarifying information from the labs. In order to deliver the full service to the customer, all these activities are needed, and as such customer satisfaction is low if certification is slow. There is therefore a need to standardize interfaces and make sure that communication lines, such IT and a common mail system works and make sure that people follow established procedures. Based on our analysis of interfaces, we argue, however, that there is little need for co-location between certification and other activities, allowing for decision mechanisms like arbitrage and scale to be gained when designing this activity.

Customer inexperience is typically a feature of emergent markets, and often occurs when the technology is simple and well known. Frequently, inexperienced front-office personnel are unable to guide the customers, and end up sending incomplete orders to the lab, causing problems in terms of planning and costs. Ideally, if products are mostly simple, a well-qualified front-line staff should be able to deal with the customer, decreasing the need for co-location between Front Office and labs. In emergent, simple manufacturing based markets, a strong front office must be present, but the lab should be efficiently located according to criteria like scale and arbitrage. Advanced customers often occur in technology mature markets and demand another configuration. For these groups the front-office is of limited importance, but having close access to a lab usually with personalized relations to one of two engineers within the lab is of utmost importance. As the experienced customers often belong to large global firms, in principle they can travel to consult advanced labs, however there seem to be a competitive advantage of being located close to global HQ or large global R&D centers. Consequently, a decision to locate labs tending to experienced customers should take into account rich clusters of advanced customers. In principle front-office and lab services can be separated.

Our analysis suggests that when product uncertainty and complexity is high, the interaction between customers, front-office and labs are very high, the cooperation may at some points resemble a project that come together and solve a problem (Stabell and Fjeldstad 1998). If the product is small (for example a telephone (Lovelock & Yip, 1996)), it may in principle travel between locations, or a customer may bring the product to a location and visit occasionally to discuss the progress. We consequently think that it is possible that the front-office and lab is located away from the customer, but in reality there is an advantage related to close location as rich information more frequently may be exchanged and meeting face to face is easier. When the product is complex, however, more units, standards and equipment is involved, and in our view the need for a co-location between customer, front office and lab is higher.

Co- location is thus preferred when the linkages are reciprocal, as products or orders must be sent back for clarification or complementary specifications and/or explained or consulted. In situations of reciprocal linkages, we argue that co-location is preferred because communication is facilitated by face to face interaction easing coordination and adaptation. In cases where large scale and learning benefits are high (for instance benefits of a large, advanced lab), communication between front office and the lab can be facilitated by IT based tools, formalized routines and central coordination and control, but as most of our deviations also involve a reciprocal link to the customer, these advantages must be weighed against disadvantages of distance. We therefore argue strongly that reciprocal linkages are best served when the activities are co-located.

5. Discussion

In the previous literature there has been a focus on services as being different from products, being tacit, inseparable from customers, they cannot be stored and heterogeneous (Javalgi & White, 2002). These characteristics imply that services cannot be globalized as they are created uniquely together with a customer at one place in time. Instead of categorizing services as strictly different from products, we argue that both services and products may contain variable levels of tacitness, inseparability and heterogeneity, and that these characteristics may have various effects on choices of coordination and governance.

Others argue that there may be types of services, but they belong to different categories (Lovelock & Yip, 1996), and as such some services, for instance possession-processing services, can be performed globally, whereas people processing services must be performed locally. We argue that more insight is gained when we look at a service not as a unit, but as containing a set of interdependent activities, and we find that these process to varying degrees both people, information and possession processing elements. Hence, it is more useful to study these elements than to treat the service delivery in total.

By using insights from value activities frameworks (Porter 1985, Stabell & Fjeldstad, 1998) and linkages (Thompson 1967) as well as linkages in services (Larsson and Bowen, 1989), we discover that a service may contain a set of different linkages, hence looking at the firm or the service level disguises interesting implications for locations and coordination. By looking at the activity set, we discover that some linkages are more demanding to coordinate as the interface is not standardized, and in those situations separating these activities due to efficiency concerns (for instance locating an activity where input costs are low, where there are benefits of learning by locating together people with different deep experiences, and

where scale affects are gained) may be balanced against the need to disperse this activity to be close to other activities where the links are reciprocal (for instance locating a lab together with front office functions central to customers). Our analysis shows that sometimes the efficiency gain can be selected if resources in the linked activity can be strengthened (improve front office ability to handle inexperienced customers), products can be transferred and activities coordinated (virtual project for an easy to transport product with high uncertainty), but when a firms discover high reciprocity between activities we argue that care should always be taken to ensure that if activities are not co-located for efficiency reasons, coordination mechanisms must be especially and carefully designed to overcome the disadvantages of distance.

We therefore argue that when linkages between activities in a service delivery are sequential or pooled, global HQ may think about a global solution where benefits of scale, arbitrage and best practice are exploited. As sequential and pooled linkages are also important to manage, interfaces should be carefully designed so that customers at one location seamlessly get their deliveries on time, even if one part of the service is performed in another country at another time zone. Our point is, however, that the activity set may be broken up into activities that are placed where economic analysis deem them most efficient.

When linkages are reciprocal, however, they become more demanding to manage, as output from one unit becomes input of another, but may be returned as new input to the same unit in a circular manner. To make sure that the problem is solved, people from more than one activity (including the customer) may have to sit down and discuss what should be done, sometimes try this out, and then decide how to proceed further. Efficiency occurs when the problem is focused and addressed as early in the process, and reviewed adequately (Stabell & Fjeldstad, 1998). Consequently, when experienced people representing a broad range of expertise areas come together, the problem is more efficiently addressed and may be

successfully solved. This requires inter-activity time and focus, and we argue that this is more easily facilitated when the activities are physically co-located. If this is not feasible, the inherent coordination disadvantages should be recognized and overcome through intensive IT facilitation, strong corporate guidelines and frequent travels.

Our analysis implies that managers may use this framework to identify linkages and based on these decide whether activities can be globally centralized or dispersed. If, for example, a majority of the services have low degrees of reciprocal linkages, special attention to coordination may allow a high centralization of activities, whereas when services have high customer interaction, high product complexity and uncertainty, the activities that are mostly involved in the reciprocal linkages should be identified and co-located. Our case shows, however, that even in these cases some activities (like our example of certification) may still be centralized. Corporate strategy deliberations thus imply that a MNE may have a set of services, all with different levels of customer interactions, complexities and uncertainties. Using our framework to first identify activity linkages for each service, then look at the totality of services at a certain location may then identify the balance between globalization benefits and localization advantages due to co-localization of inter-dependent units.

5. Conclusion

This paper has two major contributions. We argue that by looking at the activity set constituting a service delivery rather than using the total service delivery as our unit of analysis gives us a much richer insight to address the localization and coordination of service firm activities. Our analysis shows that arguing that a service firm must be local, or in some cases it can be local or global due to the service typology, is too simple. We argue that even the most customer intensive service may have activities in its activity set that can be globalized. As such we believe that our framework meets the arguments of those that argue

that the inherent nature of service makes globalization less interesting (Enderwick 1989, Goerzen & Makino, 2007). We rather agree that any firm, even service firms, potentially have huge benefits of globalization, and will need to relocate in order to stay competitive (Brown 1970). Secondly, we expand the discussion in international strategy of globalization/responsiveness (Bartlett and Ghoshal 1989). Whereas the argument for the multidomestic firm has been the need to adapt to distinct market conditions, we argue that another reason to localize globally may be to tend to reciprocal linkages between activities in the total activity set. When linkages are reciprocal, there may be huge benefits of localization that outweigh benefits of globalization, even when the markets are similar.

We have one case from one industry, and our findings should therefore be tested in other industry settings, and in firms with a different size and home country location. There is also a need to refine the analysis of coordination mechanisms to more clearly address when the different mechanisms are most appropriate, their combination and their abilities to be used to overcome disadvantages of either globalization or local co-location. Furthermore, there is a need to look at how synergies can be gained in service deliveries that have high geographical dispersion.

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