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# Endogenic Value Creation Through Knowledge Acquisition in Internet-based Business Relationships

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## INTRODUCTION

In recent years the Internet and information and communication technologies (ICT) in general have grown to become an important way by which a firm interact with its counterparts. The usage frequency and usage intensity of such technology is highly dependable on the particular firm's anatomy and its links to the exoteric environment. To some firms the Internet is yet another way of interacting with counterparts yet for others the Internet is the primary and most important channel of interaction on which their entire operations rest upon. One example of the latter is service firms. In particular service firms where the service is solely and purely comprised of immaterial content which is transmittable to the client in a digital form. Firms within the financial service sector, such as banks and security brokers, fit in to this description and not surprisingly this type of firms are among the pioneer adopters of Internet technology. This is especially evident in the United States and in the Nordic countries where the technology has been embraced early on in its development. Despite the fact that there are today a growing number of service firms that engage in the establishment and development of business relationships with their clients and other counterparts using the Internet as the main interaction channel the understanding of such relationships are still limited. As the number of such firms keeps on growing this will become a vital issue. In this paper we focus our discussion on the role of the

Internet (the term Internet will be used from now on to denote information and communication technologies if not stated otherwise) in the development of Internet-based business relationships with clients, in particular customers in consumer markets. Our aim is to create a conceptual foundation for analysing Internet-based business relationships (IBR) between service providers and service clients. Our means for accomplishing this task are analytical in nature. We understand such Internet-based service firms as value accumulators and value distributors using the Internet as a value distribution system. These service providers become engaged in business relationships with their clients of whom they acquire and develop knowledge of their knowledge, i.e. knowledge of the customer's knowledge. Acquiring such knowledge is time consuming which entails relational exchanges (Dwyer, Schurr and Oh, 1987). This knowledge is later used to create a common paradigm that can be shared with the customer which in order affects and facilitates a better understanding between the actors by raising their absorptive capacity. Knowledge, i.e. what the actual service is all about, can now be transmitted between the firm and the customer in the sense of information which in the moment of interaction enables endogenic value creation. For the customer this value, the output of the interaction, can later be used as input and generate meta values in subsequent interactions with the firm or other actors. Thus in this paper we use a somewhat different definition of value by distinguishing between the value which is born at the moment of interaction in a relational context (endogenic value) and that which is born in later interaction (exogenic value) which we label meta value. For the Internet-based service firm this may in the long run lead to sustainable competitive advantage if it succeeds in capturing and capitalising on the accumulation and distribution of the endogenic relational value. This due to the fact that the value created within the relationship is idiosyncratic since it is contingent upon the unique collaboration between the firm, the client and the particular context, a combination affecting the interaction and its outcome, the endogenic relational value. Hypothetically this can only be imitated imperfectly since it would require re-creation by the imitator of the homeostasis that prevailed throughout the relationship between the actors and the context. Since firms, their customers' and the environment change symbiotically (Starbuck, 1992) the chances for recreating this state of equilibrium are needless to say microscopic. Even if one state at a particular time is known to the imitator, for instance a joint decision and the preferences of the actors' leading to such a decision, it would require the imitator to ex post anticipate the consequences of that

decision and the future preferences for those consequences. Thus we argue that Internet-based business relationships is about constant knowledge acquisition and development through interaction which enables the creation of common and shared paradigms between the actors involved granting them higher absorptive capacity and subsequently endogenic relational value. Using this perspective we argue that the Internet is better understood if identified as a value distribution system. As such its power lies not in the creation of anything, rather its power lies in its ability to distribute that which is created in the moment of interaction between business actors.

The structure of this paper is as follows. Firstly, the empirical background is discussed. Following is a discussion concerning the commercial utilisation of the Internet. Here, we elaborate on utilisation that takes advantage of the unique capabilities the Internet possesses. Thirdly, continuous knowledge-intensive services that are solely and purely comprised of immaterial content and transmittable in a digital form are identified as one type of commercial utilisation that fully employs the strengths of the Internet. Fourthly, we discuss the concept of value whereby we argue that value, although a somewhat ambiguous concept, is an intrinsic part of relational exchange processes. As such, value is a factor of greatest importance that may help explain the dynamics of relational exchanges in settings such as continuous knowledge-intensive services on the Internet. In the next section we present a model of Internet-based business relationships in knowledge-intensive service settings. The model emphasises the importance of knowledge of the customer's knowledge in the quest for endogenic value creation. It is argued that endogenic value can only be created if knowledge of the customer's knowledge is acquired which in order helps facilitate the creation and sharing of a common paradigm which positively affects the absorptive capacity of the parties involved in the business relationship. The four core concepts of the model, i.e. customer's knowledge, common/shared paradigm, absorptive capacity and endogenic value creation, and their relation to each other are described and analysed in detail. Finally, a concluding discussion is to be found concerning our understanding of the Internet in business relationships, i.e. Internet as a value distribution system.

## **EMPIRICAL BACKGROUND**

The existence of the Internet has given birth to Internet-specific service firms. We label these firms Internet-based and we distinguish them from conventional firms that have commenced operations on the Internet as a way to stay competitive by infusion of technology in their services (Bitner, Brown and Meuter, 2000; Porter, 2001). The latter type of firms we label Internet-operating. The difference between Internet-based service firms and Internet-operating service firms (henceforth *firms*) is evident in numerous ways. Firstly, Internet-based firms most often lack a customer base when commencing operations whereas Internet-operating firms already have an established customer base (cf. the American international Internet-based financial service firm E-trade versus conventional banks going online). For the Internet-based firms this implies that the services they develop and provide have to appeal to new customers whereas for the Internet-operating firms the knowledge which they hold of existing customers makes it more likely to develop online services that appeal to this group rather than to new customers (Christensen, 1997). Secondly, Internet-based firms such as E-trade do not only have to manage and master their core trade but also the transformation of the trade's content, i.e. the services provided, into the new digital environment of the Internet. This transformation or change entails two intertwined aspects; the aspect of new service development closely related to innovation, and the aspect of adaptation of already existing service structures into the new environment. These processes are difficult to accomplish since no comparison standards exist. Furthermore, they are costly since they involve trial and error and might yield little in return since the services may be relatively easy to observe and thus imitate at least what regards the service structures (Mellahi and Johnson, 2000; Porter, 2001). On the other hand Internet-based firms possess an advantage in being newly established firms and as such they have a rather limited history which enables unconstrained learning. The prior history of the firm often constrains its future learning behaviour (Hedberg, 1981; Levitt and March, 1988; March and Simon, 1958; Teece, 1988).

The growth of Internet-based security broker firms, particularly in Sweden, has been spurred by the dramatically increased level of share ownership and the high Internet penetration rate. Heavy investments on information and communication technology (ICT) have enabled a highly automated securities brokerage service provided to the customers at low costs. This in question has made it possible for the Swedish and Finnish Internet-based broker firms in short time to capture an essential portion of the domestic securities brokerage market.

Traditionally, brokers, banks and saving institutions, have provided securities brokerage services to private investors. Typically, the customers' orders were manually received, processed, executed and reported by the firm. For the customer such financial services included receiving personal investment advices by the service provider. Thus, this type of financial services require the assessment of the customer's heterogeneity in order to be effectively and efficiently performed. The manual handling of orders combined with the personal advisory services demanded high manpower resources by the firm, something that made the service both costly and slow. Furthermore, for the firm the manpower resources also constituted a limit of how many customers that could be handled. In the long term an increase of customers normally required an increase of manpower resources. However, the technological development within the area of telecommunications and computer technology has brought about new media such as the Internet leading to new and more cost effective solutions within the brokerage industry. By using computer technology to convert previously manpower-demanding tasks into semi- or fully-automated ones and subsequently eliminating parts of the advisory services, discount retail brokers were able to offer their customers trading possibilities at reduced costs. The low cost of trading made the brokerage service available to a wider audience than previously. However, being partly or fully automated required a communication interface that relied heavily on technical platforms. The level of Internet penetration and rate of new technology adaptation by the customers was of vital importance to these firms. Not only had the access (penetration) to the Internet to rise but the Internet-brokers had to learn the customers to get accustomed with using online brokerage services. This requires the customer not only to possess knowledge of how to use the Internet-based interface but also to possess knowledge of how the security markets function. Furthermore, the customer has to possess knowledge of different securities and the development of those, knowledge which enables the customer to understand alternative investments and later choose among these. Needless to say, if the customer lacks such knowledge the possible relevant investment alternatives will not be known of and the perceived uncertainty will be too high for the customer to place an order. Since the revenue models of the Internet-brokers are to a large extent based on commissions and to a lesser extent on fees, reduced trading entails drastically decreasing revenues. Furthermore, since these firms are operating in consumer markets, the revenues derived from each customer are small. Thus, for the firm to

become economically sustainable a certain trading volume is necessary which requires customers to be active.

As the Internet-brokers commenced operations the typical customers were the early adopters of the service which possessed knowledge of investing in securities and thus were more self-directed. The firms interviewed have all stated that these customers are characterised of being more active traders, wealthier and more accustomed with the Internet and Internet-based services. However, these customers are limited in number. As more and more firms entered the market attracting new customers among the late adopters became necessary. These customers constitute the largest part of the customer base. They are characterised of being mainstream customers, with less or no knowledge of investing in securities whereby they are far more reluctant to conduct transactions. These customers are to a much higher extent in need of customer support and financial advice than the early adopters. Although reluctantly, the Internet-based brokerage firms have had no choice but to comply to the demands of the new customers if they are to survive. In order to enhance the customers' knowledge different strategies of action has been embraced by the firms and manifested in the form of new services. These strategies have certain commonalities but also differences that distinguish them from each other. In our investigation of Swedish and Finnish firms we found that these firms tend to imitate, although with certain modifications, strategies aiming at enhancing the customers' knowledge which were used by American counterparts early on in their development. In this sense, the task of enhancing the customer's knowledge is not a local phenomenon.

The development of Internet-based brokerage services, as well as that of other Internet-based financial services that necessitate a certain knowledge possession by the customer, has changed both the role of these firms and the role of the Internet in a business context. From being merely a mediator between the stock exchange and the customer and to some extent a market maker these firms slowly transform into providers of continuous knowledge-intensive services. As such they acquire knowledge of the customer's knowledge in order to create and derive endogenic relational value with and from the customers. The Internet in such Internet-based business relationships is thus used as a value distribution system.

## **UNDERSTANDING THE INTERNET IN A BUSINESS CONTEXT**

True<sup>1</sup> commercialisation of the Internet began in the last decade of the last century. Firms, spurred by the uproarious coverage in the media, went online holding different images of how to commercially use the Internet. The state of economically unsustainable rampant experimentation of the Internet became evident. As Porter (2001:64) notes “[the Internet] tends to alter industry structures in ways that dampen overall profitability, and it has a levelling effect on business practices, reducing the ability of any company to establish an operational advantage that can be sustained.”. There were those who used the Internet as a global billboard to publish static information wishing visitors would notice and read the material. From static billboards the use went on to dynamic ones yet still these firms did not understand what the Internet’s true nature was. Today, the commercial use of the Internet is dominated by retailers using the Internet as a way of letting customers get access to goods by enabling presentation of and information about the goods as well as order fulfilment (Rust and Lemon, 2001). Still researchers argue that this is a way which does not fully utilise the advantages of the Internet. However, this argument implies that there is an optimal way of using the Internet for commercial purposes. Utilisation entails that there is an object, an entity and a user. The object, in this case the Internet, and the user, in this case a firm, interact to produce a certain outcome. The outcome is highly dependable on two things. Firstly, the intentions of the user, i.e. the user’s purpose with using the object, and secondly the object’s anatomy and the capabilities it holds. However, it becomes more complicated to understand the true nature of the Internet and thus how to utilise it if we take into account the fact that the Internet and ICT in general are converging technologies. The object thus keeps on changing something that makes it difficult for the user to evaluate the optimal way of using the object to accomplish a certain task. Then there are three things that are of interest to the user in order to understand and come up with an optimal way of using the Internet in the sense of being able to fully use the capabilities it holds. First, to understand what the object is prior to change, that is the status of the object at a particular moment in time. Secondly, to understand the object after a change and compare to that of the state of the object prior to the change. Finally, to understand to what extent the object has changed and what the effects are of this change on the anatomy and

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<sup>1</sup> Evidence have been put forward that firms funding certain research projects where given the possibility to expose their name on the Internet before unrestricted access was granted to the public.

capability of the object. If the user does not possess any knowledge of how to utilise the object in the first place then associative learning will be one way to help bring about a solution to this problem (Bower and Hilgard, 1981). The user will turn to his prior knowledge of objects that may resemble or in any other way carry similarities with the studied object in question. Understanding the nature of the object and thus how to utilise the object becomes a question of acquiring knowledge through trial and error. Eventually this will help build up a library of impressions and develop the user's knowledge which would facilitate a better understanding of the object and its utilisation. Not surprisingly new innovations have always caused turbulence regarding the possible utilisation and the effects of that utilisation. For instance, when television was introduced it was thought of as radio with pictures. The film industry reacted on the new invention fearing that television would put an end to the whole industry. When videocassette recorders first appeared on the market cinema theatre owners feared that it would no longer be possible to attract people to go see a movie. Thus it is no wonder that it may be complicated to understand how to utilise the unique advantages of the Internet. It is a question of time to develop knowledge of possible utilisation through trial and error. We argue that this process has been ongoing since the true commercialisation of the Internet began.

Using the above discussion as a starting point it is easy to describe the Internet. What might be difficult is to understand its role in a business context in particular in Internet-based business relationships which is the purpose of this paper. Although a simplified description, the Internet comprises of structures that facilitate processes. As structures we mean the interconnected hardware comprised of networks of computer networks and telecommunication infrastructure. The applications that based on the hardware facilitate the processes, that is the software that is embedded in this hardware, utilises the power of the hardware to process, manipulate, distribute, store and re-distribute electronic signals that carry a digital quality. This system of networks uses a common language which in its simplest form is binary in nature. The changes that occur have affected both the structures and the processes by altering and expanding their capabilities. As regard the structure it keeps on increasing its capabilities by faster and larger computer systems and communication infrastructure. The expansion of the structure is also facilitated by the inclusion of new devices that are connected with the Internet such as wireless devices. As the structure keeps on expanding and enhancing its processing, manipulation, storing and distribution power

the processes also change enabled by constantly advancing applications. This complicated system of structures and processes enable the creation, communication and distribution of dynamic outcomes throughout the network. Utilisation that brings about the use of all of the Internet's capabilities must take into account that which can be created, communicated and distributed, i.e. the outcome, and the outcome's nature. Put in other words, exchange processes between business actors where the actual exchange is solely and purely comprised of immaterial content, i.e. transmittable between the actors in a digital form, might be a way to bring about full utilisation of the unique features and capabilities of the Internet. Continuous knowledge-intensive services are one such category that fit into this description.

### **INTERNET-BASED CONTINUOUS KNOWLEDGE-INTENSIVE SERVICES**

We define (Internet-based) continuous knowledge-intensive (CKI) services as services where knowledge has more importance than other inputs, such as labour or capital, in the production process. Subsequently, the outcome of such services entails some form of transmission of knowledge between the service provider and the service client which facilitates a change of their knowledge structure, i.e. learning has occurred. In fact, both actors become changed since their knowledge structures have been influenced either by the generation of new knowledge, the correction of old knowledge or by both. Put in other words, the actors have been subjects to learning and unlearning (Hedberg, 1981). Furthermore, CKI services are long-lasting and thus continuous since they do not have a pre-stated end, e.g. securities brokerage. Moreover, CKI services require a high degree of active participation by the actors. Most often this type of services are comprised of both general and applicable knowledge regarding a specific situation. This in order requires the producer and the client to work closely together where deeper knowledge of the customer has to be acquired and processed and later utilised in the production phase. The notion of CKI services resembles that of building a house. In order for the house to be erected properly careful examination of the ground is necessary. How thorough this investigation should be depends on how significant each detail is for the construction of the house. There is a difference between building a cottage and building a skyscraper. The erection of a building is thus contingent upon the anatomy of the ground. The more dramatic the changes will be on the ground on which the house or building will rest upon the more details become significant and have to be taken into

consideration. This analogy shows that in order for changes to prevail, i.e. knowledge in our case and erecting a house on top of the ground as in the example mentioned, knowledge of that that is to be changed is necessary, since change cannot otherwise occur effectively. Change in it self entails the shift between two states, the state prior to change and the changed state. Thus in our discussion, deeper knowledge involves the understanding of the customer's behaviour through her knowledge structure. This implies that the customer's heterogeneity has to be taken into account. In this respect, the general purpose of the providers of such Internet-based services is enabling the customer by empowering her. The customer chooses to purchase such a service when she perceives uncertainty in how to solve a certain problem due to her lack of knowledge. Furthermore, the customer may also feel uncertainty due to the lack of knowledge of what knowledge may be required in order to come to a solution with the problem. Gaining and developing knowledge reduces uncertainty (e.g. Machlup, 1980). In this perspective knowledge is seen as an asset which is possessed by the service provider or the service client or by both and used as an input in the service production. It has been noted that unlike physical assets knowledge can be shared without reducing the utility for its original possessor (Boisot, 1998; Buckley and Carter, 2000). As such it has been considered a public good (Arrow, 1962) as opposed to private goods such as land, labour or capital, and thus mobile since it resides in the head of the individual (Grant, 1996a). On the other hand, sharing causes a reduction of the knowledge asset's value since scarcity will be lost.

Since Internet-based (continuous) knowledge-intensive services encompass, learning and unlearning, a time consuming process, these services require continuous exchanges that are relational in character. Knowing and subsequently knowledge, the endogenic value of such Internet-based business relationships, a result of knowledge structure changes that are brought about through learning and unlearning, is created in the moment of interaction.

## **RELATIONSHIPS AS VALUE GENERATORS**

One way of looking at business relationships is by looking at such relationships as generators of value. The essence of this perspective stems from the notion of the exchange theory in sociology that relationships are exchange processes (Blau, 1964; Emerson, 1962; Homans, 1958; 1961; Thibaut and Kelley, 1959). Aiming at

explaining interpersonal behaviour Thibaut and Kelly (1959) argued that an individual becomes more dependent on the social relationship when the outcome is positive (more rewards at less costs) and subsequently when this outcome exceeds the comparison level alternative ( $CL_{alt}$ ). In their discussion the authors imply that there is a certain value created within the relationship that yields something which might be attractive to the actors involved depending on their subjective evaluation. In marketing literature, the notion of business relationships as (ongoing) exchange processes is prevalent (see e.g. Bagozzi, 1979; Dwyer, Schurr and Oh, 1987; Hallén, Johansson and Seyed-Mohamed, 1991; Håkansson, 1982; Håkansson and Snehota, 1995; Kotler, 1972; Lambe, Speckman and Hunt, 2000; Weitz, 1981). Exchange processes of relational quality implicitly entail that parties engage in some form of interaction that at least in the long run leaves each party better off than prior to such an engagement. The parties do not have to have common goals or need to overcome obstacles that are equal or similar in nature. Furthermore, the elements that constitute that which is exchanged do not have to be of the same nature. However, what can be regarded as similar or equal is the fact that both parties receive a certain value out of the relationship.

In the case of Internet-based firms providing CKI-services to a client a long-term relationship is necessary in order for unique value to be created. We label this unique value endogenic value, since it is created within the relationship at the moment of interaction with the customer. The purpose of CKI-services is to change the customer's knowledge structure by learning and unlearning in order to enable knowing. Enabling knowing is a continuous and incremental process. When knowing is facilitated endogenic value is created. Thus in this paper endogenic value is defined as the state where the firm continuously through the interactions enable knowing to the client regarding a specific activity, e.g. investing.

In order for this value to emerge there are some time consuming prerequisites to be met. Since the purpose of CKI-service is to change the customer's knowledge structure in order to enable knowing, it requires the firm to understand what is to be changed and in what way. Thus, the firm has to acquire knowledge of the customer's knowledge, knowledge which reveals a more dynamic picture of the customer and better understanding of the same. The acquisition of such knowledge is a continuous process with no pre-stated end. As the firm continuously acquires such knowledge the understanding between the two parties becomes better since an overlapping of their

paradigms occur. Put in other words, that which is communicated by the firm to the customer becomes more adapted to the customer and subsequently the absorptive capacity of the customer raises. The more the absorptive capacity of the customer increases the more the customer learns, unlearns and knows. When this occurs, endogenic value is created at the moment of interaction. When the level of sufficient knowledge of the customer's knowledge is reached in order to enable a common paradigm shared by the parties and subsequently enhance absorptive capacity is dependent the characteristics of the actors and on the frequency, intensity and quality of the interaction between them. However, this is a question which will not be dealt with in this paper. Thus, in this perspective the relationship between the firm and the client is seen as a value generator.

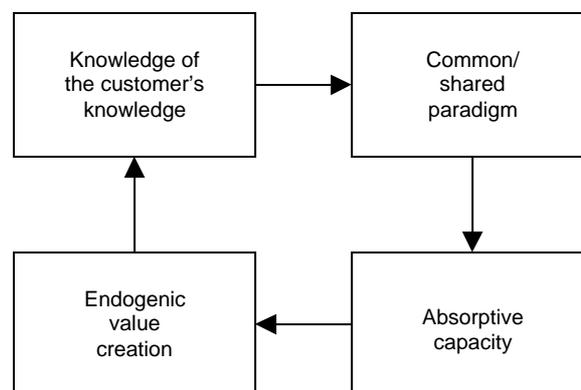
### **MODEL DESCRIPTION**

The Internet business relationship model (IBR-model) is based on four core concepts: knowledge of the customer's knowledge, the establishment of a common and shared paradigm, the actors' absorptive capacity and finally the endogenic value creation. The model, which portrays the firm's perspective, can be described as cyclical since its elements are affected by each interaction that occurs between the actors. It can be ascribed as having a deterministic approach in the sense that one element affects the other. The elements are positively correlated where an increase in one element has a positive affect on the subsequent element. Furthermore, its basic foundation lies in the firm's assessment of the customer's heterogeneity. The model emphasises the evolutionary development of knowledge which is facilitated by the cooperation between the two interacting parties within a dyadic relationship.

It is assumed that the firm strives to empower the customer in his pursue to solve current and upcoming problems by turning them into possible business opportunities. As such the empowerment is aimed at enhancing the customer's problem solving capability and subsequently to reduce the uncertainty that is inherited in the problems that she faces. What they learn by interacting with each other is not how to solve a particular problem rather how to enhance, in general, their own problem solving capabilities. It resembles that of learning a second language. Language is an abstract system of rules. As you read about the phonological, syntactic, semantic and pragmatic rules you eventually come to understand this system through training and

be able to perform it by applying these rules. However, you do not learn explicitly how to cope with specific situations in the country where this language is spoken.

The model is based on the logic that the transference of knowledge and subsequently knowledge acquisition between two actors is contingent upon their ability to understand each other. It is based on the disclosure of their knowledge, which permits the identification of their capabilities. The model is thus subjective and relative both to the actors in question and to the scope of time of the relationship. It is subjective since as far as to the actors' own evaluation and judgment of what the counterparts capabilities are. This evaluation is much a function of the evaluating and judging actor as it is on the evaluated and judged upon actor. It is relative since it does not identify a fixed point in time where the knowledge acquired for instance by the firm has reached a high enough level in order to facilitate endogenic value to be created in the moment of interaction.



*Figure 1: Internet-based business relationships model*

## **KNOWLEDGE OF THE CUSTOMER'S KNOWLEDGE**

We introduce the first concept of the model which we label knowledge of the customer's knowledge (see figure 1). We argue that there is a need for deeper knowledge of the customer if the firm is, in cooperation with the customer, to create endogenic value. CKI services are services with the purpose of changing the knowledge structure of the customer as well as that of the firm through learning and unlearning in order to enable knowing. The knowledge of the customer's knowledge, is a prerequisite, a necessary input of the production and delivery of such services. As

such, it is viewed as a strategic resource (Baumard, 1999; Buckley and Carter, 2000; Nonaka, 1991; Nonaka and Takeuchi, 1995; Porter Liebeskind, 1996). It is heterogeneous in nature since it creates different outputs when utilised (Alchian and Demsetz, 1972).

It is widely recognised that knowledge of the customer is an important and essential input factor for success. Possessing such knowledge helps the firm understand the customer's wants and needs, be it expressed or non-expressed by the customer. This in order facilitates a better resource allocation by the firm. However, in many cases holding such knowledge of the customer might not be enough. Deeper knowledge may be necessary. This type of deeper knowledge grants the firm not only the understanding of who the customer is and how she functions but also essential knowledge on why she functions and is the way she is. This knowledge is necessary to firms providing CKI-services since it constitutes the foundation on which the services are built upon. The difference between knowledge of the customer and knowledge of the customer's knowledge can better be understood if we apply the factor of distance/closeness. We argue that there is a difference in the understanding of the counterpart, in this case the customer, depending on the distance/closeness that exists between the two actors. This understanding is contingent on the knowledge the parties acquire from each other. We understand knowledge of the customer to be knowledge acquired about the customer when the parties are at a greater distance. Consequently, knowledge about the customer's knowledge is knowledge that is acquired when the parties are closer. While the former knowledge is of a more superficial, temporal and static quality, the latter one is more detailed, deeper, dynamic and temporally unbounded. We define knowledge of the customer's knowledge as comprised of three categories of knowledge: general knowledge, operational knowledge and logical knowledge. General knowledge refers to knowledge of the customer's 'anatomy', the current knowledge structure, and answers the question of who the customer is. The operational knowledge in turn has the purpose of enhancing the understanding of how the customer functions, i.e. behavioural aspects of the current knowledge structure. Finally, logical knowledge is knowledge which provides an understanding of the knowledge structure changes of the customer which have affected both who she is and how she is at a point in time. A combination of these three types of knowledge enables the firm a more

comprehensive picture and thus a better understanding of the customer. An in-depth discussion of these categories is to be found later on.

Acquiring knowledge of the customer's knowledge is a continuous process since that which is to be changed by the firm, i.e. the customer's knowledge structure, is constantly changing. As such acquiring knowledge about the customer's knowledge is an infinite ongoing process of knowledge development only limited by the termination of the firm-client relationship. Constantly acquiring knowledge of the customer's knowledge is necessary to facilitate a better understanding through the creation of a common paradigm shared by the actors. This in order enables a higher absorptive capacity and thus endogenic value to be created. Understanding the three categories of knowledge required to gain knowledge of the customer's knowledge necessitates the clarification of their foundation, the knowledge structure. The focus of the discussion that follows is thus on an individual level.

### **Knowledge structure**

The structure of knowledge is closely connected with the processes of learning, unlearning and knowing. In this paper, although based on previous research on these matters, we use a somewhat different definition on the above-mentioned terms. Knowledge structure is here defined as the way by which knowledge is created and stored in the mind of the individual.

The knowledge structure of an individual is the foundation on which knowing is based upon. It comprises of information centres that hold information of two types: unprocessed information and processed information. Unprocessed information is information perceived through the sensors. Processed information on the other hand is information which has been perceived through the sensors and later processed in the sense that it has been logically but subjectively linked to other information centres. When these information centres are activated their content is made available for retrieval and/or manipulation. In this sense the knowledge structure can be described as a dynamic tissue which is under constant change due to the learning, unlearning and knowing. Separating the activities of learning, unlearning and knowing from each other might be difficult since they often occur simultaneously and are contingent upon each other. This is also evident in the literature. Consider for instance Spender's (1996:48) definition of learning: "Learning is the process of experiencing and analysing, or the process of communicating the knowledge [which would require

knowing] previously generated by others [emphasis added]”. Learning and unlearning have been described as ongoing processes triggered by problems the individual faces (Hedberg, 1981). They have the ability of altering and thus manipulating the knowledge structure by expanding it through the inclusion of new information centres and/or by exploiting its current information centres by altering the linkages between them in order to enable knowing. Knowing on the other hand refers to the retrieval of information that is stored in constellations of interconnected information centres. This is accomplished by the activation of relevant information centres and their subsequent linkages. Furthermore, knowing can be described as an effect of repetitive activation of the interconnected information centres enabling certain intensification of these constellations that makes subsequent retrieval, i.e. knowing, more simple. The more a certain information centre is activated the more the user becomes aware of its content and the relevant configurations of linkages to other information centres and their contents at the particular moment of activation. Knowledge in this perspective is accumulative in nature and encompasses all the activations of information centre constellations that have occurred. The emergence of knowledge is contingent on learning, unlearning and knowing. It is much like a muscle where repetitive activity under certain conditions may yield a stronger muscle with smoother movement while more continuous inactivity will eventually make it dysfunctional. In this respect, certain knowledge may fade away yet other knowledge may be more intensified at a particular point in time. Thus current knowledge can be described as temporal, tacit, incomplete and dynamic (Shariq, 1999).

Based on this discussion, acquiring knowledge about of the customer’s knowledge is a question of understanding the customer’ current knowledge structure, the function of the same and the prior changes that have occurred and have affected the structure to its present state.

### **General Knowledge**

General knowledge refers to the ’anatomy’ of the customer. By anatomy we mean the present state of the customer’s knowledge structure as she perceives it. As such it is a cognitive and thus subjective description of the understanding of oneself at a particular moment in time. General knowledge answers to the question of who the customer is. This knowledge can be labelled ’technical’ since it deals with a static content which is not confirmed by the receiving partner, in this case the firm. If we

assume that the customer is providing the firm with truthful information, this knowledge is only describing the current state and does neither reveal anything about the past nor about the possible future state of the customer. It is thus only a picture of the current knowledge structure the customer possesses. In this sense this knowledge is incomplete because it does not provide us any information of how this current knowledge structure functions and furthermore, how this knowledge structure has evolved to its present state. General knowledge of the customer expands the firm's understanding of the customer but subsequently it fails to provide deeper knowledge that would bring about an exploitation of current knowledge.

### **Operational Knowledge**

Operational knowledge on the other hand refers to the 'function' of the customer. By function we mean the functionality of the present state of the customer, again, as she perceives it. Its behavioural character provides an answer to how the customer is as opposed to *the who* the customer is of the general knowledge. While general knowledge is a mere picture of the current knowledge structure, operational knowledge represents the current knowledge structure in action. In this respect, the customer's current knowledge structure in action is equal to its usage by its user, i.e. the present knowing of the customer. Like general knowledge, operational knowledge is subjective since it is an interpretation the customer conducts of her own current knowledge through her knowledge structure. Combined with general knowledge of the customer, operational knowledge provides the firm a more comprehensive understanding of the customer at a particular point in time. Furthermore, operational knowledge is complementary to the general knowledge in the way that it provides an operationalisation of the general knowledge. As such it does not expand the firm's understanding of the customer instead it brings about an exploitation of the current knowledge of the customer the firm holds.

### **Logical Knowledge**

Finally, logical knowledge refers to the knowledge of the changes of the customer's knowledge structure. It includes both prior knowledge structures as well as the usage of these. Logical knowledge is knowledge which may reveal the 'evolution' of the customer's knowledge structure. Put in other words, logical knowledge may reveal the learning and unlearning that have occurred. This knowledge is equally subjective

as the two prior categories mentioned. For the firm, this knowledge both expands and exploits the knowledge of the customer. Combined with the general and operational knowledge of the customer, logical knowledge brings about the most comprehensive knowledge which reflects the knowledge of the customer's knowledge. This combination provides the firm a dynamic picture of the customer and creates a foundation for a better understanding of her.

### **COMMON/SHARED PARADIGM**

The second concept of the model we choose to label common/shared paradigm. We argue that if the paradigms of the firm and the customer are sufficiently overlapping the absorptive capacity of the parties will increase enabling an effective and efficient transfer of knowledge, creating endogenic value. As the firm acquires knowledge of the customer's knowledge the creation of a common/shared paradigm is more easily attained. Although the term common/shared paradigm may be new, its content has been at least implicitly touched upon by several researchers. Before defining and discussing the common/shared paradigm a definition of paradigm may be in order.

### **Paradigm**

Through the constant changes of the knowledge structure certain stability emerges which is paradoxically facilitated by the simplicity that the complexity of the expansion and the exploitation of information centres brings about. The more the knowledge structure is expanding and/or the more its content becomes exploited the more evident this stability becomes. Put in other words, stability emerges the further the knowledge structure evolves. Simplicity, the factor which facilitates stability, emerges when the individual knowledge accumulation and development has reached a high enough level. When this level becomes high enough is a relative question, something which can only be judged individually. The following example might help to clarify our argument. Consider for instance the hidden illustrations comprised of dots that are to be found in comics aimed for younger children. The dots, each marked with a unique number, when interconnected by drawing a line between them according to their numerical order, reveals a hidden illustration which slowly emerges as more dots are interconnected. At the beginning the dots may appear as having a random order which does not make sense. As you interconnect more and more dots the pattern which evolves becomes more and more complex. Still you do not

understand what it is suppose to illustrate, the amount of interconnected dots are not sufficient enough. However, as you continue you slowly reach a certain amount of interconnected dots sufficient enough to make the hidden illustration evolve out of the complex pattern of dots. Even though this pattern, this structure of interconnected dots, has yet to be completed stability emerges through the changes made to the structure. Out of the turbulence, created by the constant changes of the structure that brought about uncertainty to the individual due to the inability to understand what the pattern was suppose to illustrate, stability has emerged. This stability is the result of the reduced uncertainty that the ability of understanding causes. Although a complex pattern of interconnected dots, understanding the meaning of the dots transforms complexity into simplicity.

Returning to our discussion we argue that the stability that emerges through the constant changes of the knowledge structure creates a cognitive filter. This filter constitutes the paradigm of the individual. It both affects that which is perceived by the individual and is affected by the constant changes of the knowledge structure. Hunt (1993) for instance describes paradigms as determining the observations of the individual, making the knowledge possessed by the same subjective due to its embeddedness in the paradigm. A similar description of a paradigm is to be found in Andrews and Delahaye's (2000:808) term, the psychological filter, which "[can] be imagined rather like a bubble around each individual, invisible but nevertheless influencing knowledge processes...". Furthermore, as described and illustrated by the above example, the paradigm emerges slowly and more importantly it also changes slowly unless something occurs which would have profound effects on the evolution of the knowledge structure. Major changes as Hunt (1993:79) argues "[m]ust be produced by mass persuasion—much like religious conversions.". Or as Boisot (1998:94) puts it "[p]aradigm shifts often involve the destruction of existing knowledge assets and the building up of new ones on different foundations."

### **Overlapping paradigms**

Each individual possesses a particular paradigm. Paradigms are said to be incommensurable (Hunt, 1993). However, if true then two individuals holding different paradigms will be unable to understand each other since their individual observations of the world would differ to that degree that in the extreme what may be right for one person would be totally wrong for the other. In real-life this can hardly

be true since, as Aristotle (see Aristotle, *Politics*) argue, man is a social animal and as such man learns and understands and subsequently develops the knowledge he possesses by interacting with others (Brown and Duguid, 1991; Cook and Yannow, 1993; Moenaert, Deschoolmeester, DeMeyer and Souder, 1992; Oswick, Anthony, Keenoy and Mangham, 2000). Furthermore, her economic action is said to be embedded in structures of social relations (Granovetter, 1985). It has to, then, be clear, that although each individual holds a particular paradigm and still is able to understand and communicate to others, that this understanding and communication is made possible by similarities in the individual paradigms, i.e. certain overlaps between paradigms occur. This is similar to Hayek's (1945:526) discussion of how knowledge is distributed between members in a market: "The whole acts as one market, not because any of its members survey the whole field, but because *their limited individual fields of vision sufficiently overlap* so that through many intermediaries the relevant information is communicated to all [emphasis added].".

The creation of a common paradigm shared by the firm and the customer in the sense of sufficiently overlapping paradigms, is of greatest importance to both parties. It grants the parties more efficient and effective transfer of knowledge which in order entails reduced processing and transmission costs which in turn enables a better resource allocation (Buckley and Carter, 2000; Grant, 1996b). For the firm efficient knowledge transfer is enabled by the knowledge the firm possesses of the customer's knowledge. Based on this knowledge that which is to be transferred is adapted to the customer's knowledge. The effectiveness on the other hand lies in the reduced volume of information that is to be transferred which in order will reduce both the processing of this information and the transmission time (Boisot, 1998). The volume of information becomes reduced since it does not have to include meta-information which would otherwise be the case. Meta-information in this case is complementary information that describes the meaning of the primary information. For instance, it would be difficult for a nonphysicist to understand an advanced article in a physicist journal without meta-information (Helfat and Raubitschek, 2000). Buckley and Carter (2000) argue that shared terminology, concepts and frames of references greatly enhances exchange between individuals. Or as Starbuck (1992) puts it "For new knowledge to have meaning, people must fit it in to the their current beliefs [current knowledge structures] and perspectives [paradigms]...[emphasis added]".

The fact that the overlap between the paradigms has to be sufficient and not complete is important to point out. This, since evidence has been put forward that possessing partially different paradigms may yield advantages to the exchanging parties. For instance, Dougherty (1990; 1992) reported that different departments of the firm interpreted product development differently and that they focused on different aspects which they understood differently. Used in proper manner this increase of information generated advantages to the firm.

### **ABSORPTIVE CAPACITY**

The third concept of the model is the absorptive capacity of the actors. This concept is closely connected to the previous concept of common/shared paradigm in the sense that both concepts deal with the aspect of knowledge transfer. Knowledge transfer involves two aspects, the transmission of knowledge by one party and the knowledge receipt by the other (Grant, 1996b). While the previous concept dealt with the transmission in terms of the efficiency and effectiveness of transfer that overlapping paradigms facilitate, absorptive capacity deals with the knowledge receipt.

Absorptive capacity was originally coined by Cohen and Levinthal (1990) and defined as the ability of the recipient to add new knowledge, in the sense of external information, to existing knowledge. When assimilated, this knowledge is to be applied to commercial ends. An individual's ability to learn is greatest when the new knowledge is related to the already existing knowledge (Buckley and Carter, 2000; Cohen and Levinthal, 1990; Grant, 1996b, Lane and Lubatkin, 1998; Tsoukas, 1996). According to Cohen and Levinthal (1990), the related knowledge should be very close to the new knowledge in order to bring about utilisation. Similarly, Lane and Lubatkin (1998) argue that the recipient actor has, to some extent, to possess knowledge which is basic to the new knowledge. They define basic knowledge as “[a] general understanding of the traditions and techniques upon which a discipline is based” (Lane and Lubatkin, 1998:464). Here, we argue that 'traditions and techniques' carries similarities to our discussion of the knowledge of the customer's knowledge and consequently 'discipline' to our discussion of paradigms. Nevertheless, the logic of possessing knowledge, which helps facilitate an understanding of new knowledge, is already inherent in our discussion of the two previous concepts. We believe that, since the firm possesses knowledge of the customer's knowledge and subsequently

through interaction enables the creation of a common/shared paradigm, the prerequisites of absorptive capacity in this case are met.

### **ENDOGENIC VALUE CREATION**

Finally, the fourth and last concept of the model we label endogenic value creation. Although mentioned previously there are some points worth stressing. Firstly, endogenic value creation is a consequence of continuous interaction between the parties in a dyadic relationship. Its input is knowledge that slowly transforms into knowing. Knowing about each other enables understanding which interconnect the parties. The more the parties interconnect the better they understand each other. More importantly, as each party is seen as a knowledge holder, the unique combination of this knowledge at this particular state of the relationship facilitates endogenic value to be created at the moment of interaction. This value enables knowing and subsequently knowledge through learning and unlearning. The utilisation of such knowledge is creating a subsequent value which we label meta value. It is separate from the endogenic value since it is contingent upon different functions and factors external to the particular interaction that created the endogenic value. As such that value is not endogenic but exogenic. For instance, for the client of an Internet-broker the endogenic value when used creates a meta-value that is exogenic in nature. This value is born in the moment of interaction with the market, the moment the customer commences a purchase or sale of securities. The factors controlling the current rate of the particular security is not in any way under direct control of the customer nor of the firm. Hence, we separate between endogenic value and its subsequent use which creates meta values of exogenic nature.

### **THE INTERNET AS A VALUE DISTRIBUTION SYSTEM**

Based on the perspective of this paper a critical factor for an Internet-based firm to achieve a sustainable competitive advantage is the management of the internally and externally dispersed knowledge of the firm. Possessing the capability of knowing through learning and unlearning from other actors as well as the ability to bring about knowing through learning and unlearning in other actors enables not only value creation but also value distribution. In such cases, we argue that, Internet-based firms that provide CKI-services use the Internet as a value distribution system.

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