Designing Virtual Value Network for Risk Management Business Services

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Abstract

The field of electronic business is changing rapidly. The monstrous speed of development at the sector of information and communication technology provides the means to build even better products and services all the time. Then again, it also builds tremendous pressure to the research and development. All the same, the electronic business has finally reached the point, where the creating of economically reasonable products is on the whole possible. The old thoughts of bubbles and unrealistic expectations are finally passing by, when electronic networks starting to be a part of life to almost all of us. Risk management portal developed in eRisk-project is a knowledge content product that is expected to contribute to the creation of a network of excellence in the field of risk management and facilitate the delivery of risk management-centric knowledge-intensive business services within this field. It's an electric portal, a virtual organisation, where socialises many different kinds of users, service providers and other interest groups. The basic tool, the database itself is provided by a company to be founded in the near future. The knowledge and content of the product is going to be tailored by service providers, which are firms from different sectors working within the risk management portal. Finally the knowledge ends up to hands of the final user. The purpose of this paper is hereby to introduce issues and considerations raised while carrying out the development work related the design of a virtual value network for risk management business services.

Keywords

service, risk management, value added, competitive strategy, electronic business, network, stakeholder

Introduction

Knowledge is the principal asset in managing risks and maintaining competitive advantage. As organisations' competitive landscapes become ever more complex, a graving for innovative approaches for producing and exploiting information emerges. Today, a graduated number of forward-looking organisations actively search for new opportunities within this field, and aim for piecing together business concepts and competitive strategies that hold potentiality towards commercial viability.

In answer to this call, more and more knowledge-intensive business services (KIBS) are being developed within multi-stakeholder networks, each of the network members having their own area of special know-how. The reasoning behind the network-oriented approach is to integrate these detached competencies and constitute a network that contains capabilities for providing its customers with a value-added set of knowledge-intensive business services. We claim that the performance of such knowledge-intensive service network is predicated on the effective articulation of different modes of particular competencies existing among the network members. Our aim is to demonstrate that the integration and utilisation of such distinctive competencies boil down into the core competency of the network as a whole. Again, we argue that treating knowledge as a key agent for the successful construction of a network, understanding the significant benefits provided by ever developing information technology, noticing the conditions of varying operational environments, and finally, realising the importance of business models and revenue logics provide the cornerstones that constitute favourable conditions for the delivery of such service concepts.

Herewith, our aim is to examine diverse approaches to the design of knowledge-intensive business services in a multi-stakeholder network. We end-up exploiting an action-oriented research approach since the examination is focused on better describing and structuring this complex real-life phenomenon. Our overriding aim is to constitute a general framework for an effective design and implementation of knowledge-intensive business services through a multi-stakeholder network. We finally end up suggesting possible solutions to discussed challenges and obstacles, simultaneously keeping in mind the tendency towards sustainable competitive advantage and commercial viability for the network as a whole.

This paper results from eRisk research project, a scheme, which is designated to determine theoretical and practical approaches to the design and development of knowledge-intensive business services in the field of risk management. As a result of this project is to be expected a design for a web-based risk management service portal and a conceptual mechanism for determining the roles and responsibilities within the service providers' network.

Theoretical framework

The areas of exploration

Within the pages of this article we concentrate on discussing and illustrating considerations related to the development service concept for a virtual enterprise in a selected operation space. The future-founded company can be characterised as an interactive collaboration resource for risk management-centric knowledge-intensive business services, some these services being electronic, others non-electronic. It hopes to be established as an ever evolving knowledge creation platform in the field of risk management and provide a source of competitive advantage for each stakeholder within the reach of its network.

Conceptual framework for electronic business

A proper illustration of the eRisk-collaboration platform requires drilling down into the subsets of electronic business. The following triple-bottom-line illustratively describes the sub-dimension of electronic business, hence, the cornerstones and enablers of eRisk's

operation space. The classification of the three elements of electronic business can be done referring to Bartelt and Lamersdorf (2001) as illustrated in the following (Figure 1.).

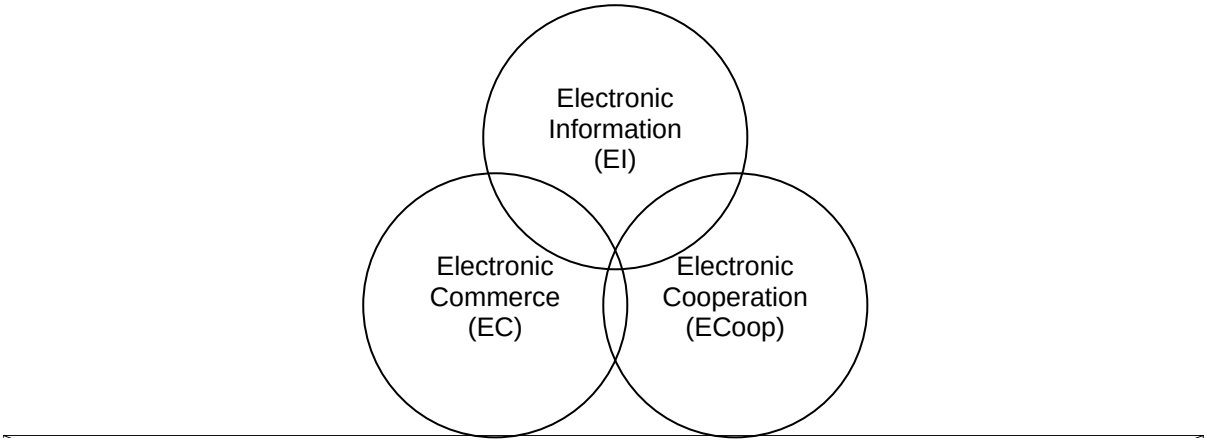

Figure 1. Dimensions of electronic business (Bartelt & Lamersdorf 2001).

For a moment, let us discuss the relevance of the above graphical illustration for the eRisk-portal and the network of excellence. In this specific case, *electronic information* thus consists of risk management-centric information that is i) supplied and built up into eRisk information system, ii) possibly further processed and packaged within the system – that is, by the system itself, or by its users, and iii) intermediated to the network members through the eRisk-portal user interface, or physically, by the service providers involved in the network of excellence. Respectively, *electronic co-operation* takes place in virtual operation environment wherein multiple eRisk community members interact around specific risk management-related topics. By encouraging the active involvement of the users, the future-founded eRisk wishes to promote the increased availability of risk management-centric information and the network members' knowledge creation, instead of being just an information distribution resource. Finally, the subset of *electronic commerce* is, herein, understood as electronic trade. This means that suppliers, mediators and consumers are involved and exchange goods and services for an equivalent value.

Defining knowledge-intensive business services

At present, various definitions and approaches describing the characteristics knowledge-intensive business services is available in the public domain. While the overriding definition is yet missing we quote few authors in order to provide some insight into the meaning of this combination of trendy words. According to Müller (2001) *'knowledge-intensive business services can be described as firms performing, mainly for other firms, services encompassing a high intellectual value added'*. Further, Miles et al. (1995) characterise knowledge-intensive business services as '*services which rely heavily upon professional knowledge, and either supply products which are themselves primary sources of information and knowledge to their users, or use their knowledge to produce services which are intermediate inputs to their clients' own knowledge generating and information processing activities having other businesses as their main clients'*. The previous characterisations well describe the aspects and attributes involved in eRisk-project. This is because the project aims for establishing an intermediating company surrounded by service providers who rely heavily on knowledge and

expertise related to a risk managerial discipline and its functional domain is to supply intermediate products and services which are knowledge-centric.

Multi-stakeholder approach: virtual networks and communities

With the multi-stakeholder approach we wish emphasise the significance of networking and communality for our yet imagined virtual enterprise. Freeman (1984) defines stakeholders as 'those groups who can affect or are affected by a firm's objective'. Hence, all people, groups and institutions, who influence the attainment of business objectives and whose achievement of objectives is influenced by a firm are named as stakeholders. Interestingly, Prahalad and Ramaswamy (2004) consider that behind each group or institution an individual can be found. That is to say, centrality of an individual is crucial within the dialogue between these groups and institutions. How does this all relate to virtual networks and communities? Hagel and Armstrong (1997) view virtual communities as places of interaction on the Internet and that offer channels of communication for multiple user groups. The authors see virtual communities as mediating spaces wherein interactions of communication and content take place while the focus is especially on content created by the community members.

The means of exploration

The concepts of electronic business model, interactive value chain and value maps were developed as systematic vehicles of examination for boiling down the operational spaces and concepts having relevance for eRisk. The areas of electronic business, computer-mediated knowledge-intensive business services and collaborative networking are contemplated and demonstrated utilising creation logics of the future company. In other words, the principal aim of this study was to utilise business models and value creation and delivery mechanisms as vehicles to demonstrate all the key activities for the future firm's performance and how they interact, as a basis for analysing the sources of competitive advantages.

Electronic business models

A common conception is that a 'business model' draws on a multitude of business subjects. In spite of the frequent usage of the word in spoken language it is still a rather scattered term merging together a number of subjects and functions relevant for a firm's business activity. However, few recognised authors have discussed this 'fuzzy concept' in a scientific context and we wish to discuss their view points in the following.

According to Slywotzky (1996) a business model as the totality of how a company selects its customers, defines and differentiates its offerings or responses, defines the tasks the company will perform and those it will outsource. Slywotzky has also pointed out that a business model configures a company's resources, channels to the market, creates utility for customers and captures profits. Timmers (1999) complements Slywotzky's definition by suggesting that a business model can be defined as architecture for product, service, and information flows. Timmers accentuates that a business model encompasses descriptions of the various business actors and their roles, potential benefits for the various actors as well as sources and revenues. Respectively, Rappa (2000) discusses a business model in value creation context. He views a business model as the method of doing business by which a company can sustain itself – that is, generate revenue. According to Rappa business model talks through the process of how a firm makes money by specifying its position in the value chain.

One of the most recent and frequently cited approaches is an approach proposed by Chesbrough and Rosenbloom (2002). These two authors offer maybe the most straightforward and practical description of a business model. They introduce a six-fold logic for designing and analysing business models. The discussion of Chesbrough and Rosenbloom is started from the premise that a value proposition of a firm offers a baseline for the business model development.

To summarise the key subjects within the framework of business model we ask readers to consider the following aspects of relevance:

- Demonstrate the value proposition – that is, how the value is created for the users by the offering,
- Define a specific market segment and the potential users for the offering within the specified segment,
- Determine the value chain within the firm and complementary assets required for value creation,
- Project the cost structure and profit potential,
- Describe the firm's position within the value network; and
- Devise a solid competitive strategy in order for the firm to sustain its competitiveness threaded current competitors and future arrivals.

To this end, we end up introducing a generalised conceptual framework of a business model and primary external influential environments from the surrounding business eco-system relevant for the business model development. The generalised conceptual framework fabricated by Rajala et al. 2001 quite comprehensively covers the previous topics of discussion within this chapter and condenses these points of consideration into common framework.

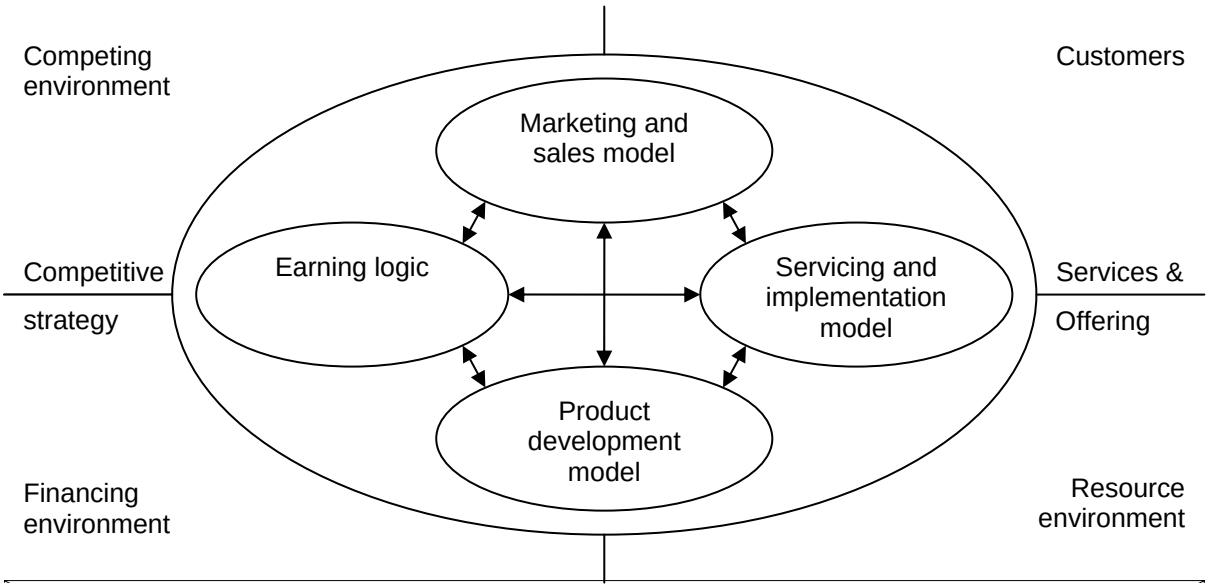

Figure 2. Elements of a business model (Rajala et al. 2001).

Value chain, networks and interactiveness

Herein we look at the risk management-centric multi-stakeholder service concept from a value chain perspective. Our discussion is grounded on the well recognised concept of the value chain introduced by Michael Porter in the early 80's. Further, we shortly present a more recent approach to the value chain. The emphasis this presentation is in the networked way of operation and interactiveness.

Porter's value chain concept (1985) can support an organisation in determining which type of competitive advantage to pursue, and how to pursue it. The vehicle for determining competitive advantage is the value chain analysis, which consists of two primary components: i) the industry value chain and ii) the organisation's internal value chain. The industry value chain is composed of all the value-creating activities within the industry, beginning with the first step in the development process, and ending with the completed delivery of offering to customer(s). In order for us to understand how the value chain boundaries are formed within the risk management-centric multi-stakeholder environment we utilised a modified version of the traditional value chain (Figure 3.) and looked at the end products and services from the view point of the networks' customers, and evaluated what features the customer values.

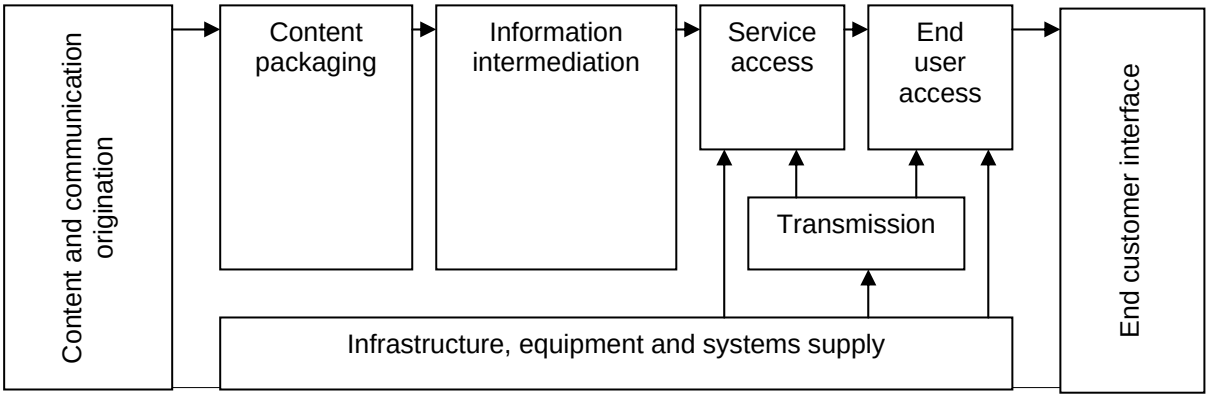

Figure 3. A value chain framework for the interactive information networks (Kajanto 1997).

In his essay 'The Value Chain of Multimedia Networks' Rantanen (1998) discusses Kajanto's (1997) approach to the original value chain concept. Kajanto (1997) views this recognised theory from a fresh looking angle by introducing a value chain for interactive information networks. In this specific context, Kajanto's approach is more useful than the conventional concept of Porter, thus its focus is on interactiveness and networked way of operation. Further, it emphasises the central role information and contents within the value chain.

The classification of the value chain elements for the interactive information networks can be done referring Kajanto (1997) as follows. Within the contents and communication originations sub-element of the value chain the emphasis is on two types of contents; published contents or communication contents. Kajanto (1997) discloses that the published contents are pre-existing whereas the communications contents result from the interactions that take place within the network among its members.

In proportion, content and service management section is itemised into three subsets – i) content packaging, ii) information intermediation, and iii) service access. The first subset

highlights the importance customer preferences packaging the content. It also emhasises proper shape and form for the content in order for it to be presented in, transferred across the network. Respectively, information intermediation refers to information intermediates role in distributing the content within network and shaping the content in accordance with the end customer preferences. Finally, the service access sub-element involves the delivery of the contents to the end customer whereas the transmission covers the means and ways for the delivery. Simultaneously, the end customer access introduces the access point for end customers to enter the network. The end customer interface is basically the object, through which, it is made possible for the network end customers to participate in personalising and consuming the content. Finally, infrastructure, equipment and systems supply covers the part of the value chain wherein the operation and management of the information network has the primary focus.

eRisk-portal and the network of excellence

The design and development of innovative value co-creation environments is becoming the mantra of 21st century. Through the graduated interest toward collaboration, personalisation and new forums of interaction – a shift from conventional B_2B and B_2C patterns is about to be taken toward C_2B_2C characterised activities (Prahalad & Ramaswamy 2004). eRisk-project is a fresh initiative for designing and developing spaces and tools for such experiences. The primary concentration is focused on twofold domain within the field of Enterprise Risk Management, which are i) a risk management knowledge content product and ii) a network of excellence in the field of risk management.

One of the central developments attempted to achieve through the introduction of the holistic www-enabled risk management content product and the establishment of a network of excellence in the field of risk management, is the increased degree of interactions and collaborations between the risk management knowledge resource(s) and its user(s). In this specific case, e-risk management can be defined as co-operation and co-value creation participants in the field risk management. The process of interaction may take place in many shapes and forms e.g. i) between the risk management knowledge resource and a consumer, ii) between a service provider and the risk management knowledge resource, or for example, between a service provider and a consumer. It thus offers a spectrum for interactions between the future-founded company and a consumer (one-to-one), the company and consumer communities (one-to-many), and between the firms involved in risk management-centric network of excellence and other ones from other communities (many-to-many). (See Prahalad & Ramaswamy 2004)

To offer a more practical view into thinkable interactions and value co-creation activities we state *i) paradigmatic stakeholders for the community, ii) exemplary risk management tasks manageable through the www-enabled risk management knowledge resource, and iii) the means of interaction enabling the creation evolving risk management community.* The points of interaction between the eRisk-community members and the knowledge resource involve one or more participants, cooperating on a risk management task and, to that purpose, applying to one or more services provided to user through the risk management portal and the network of excellence.

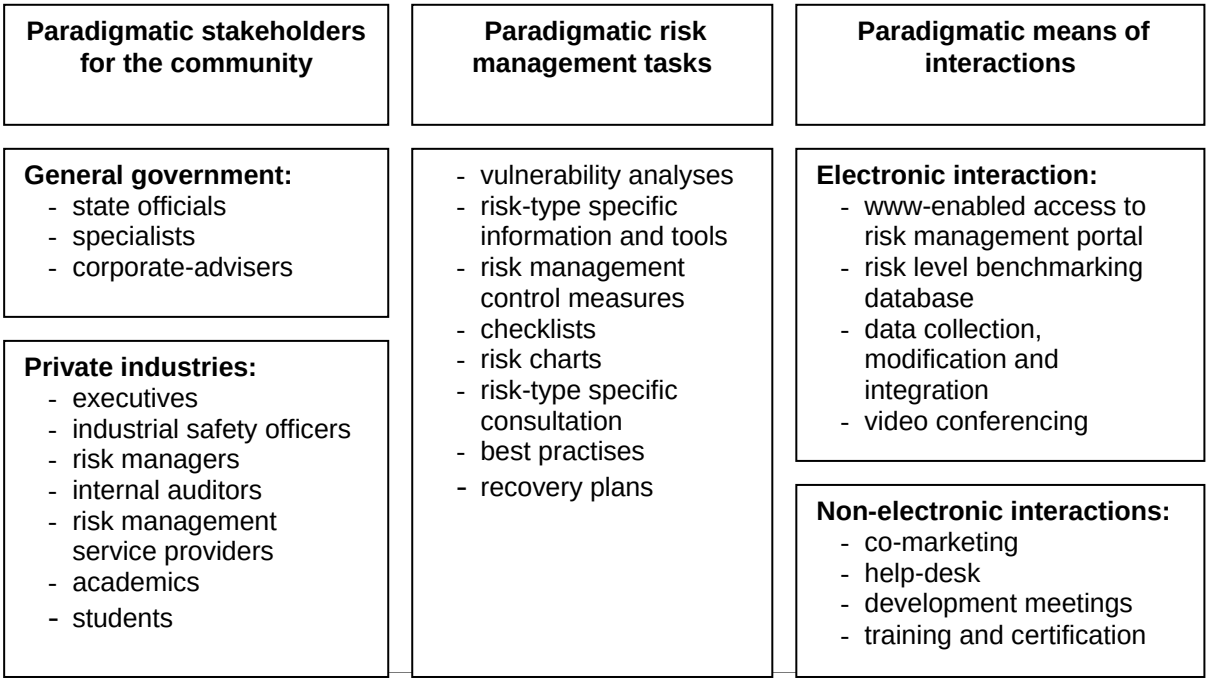

Figure 4. Paradigmatic stakeholders, tasks and the points of interaction within the risk management value network.

The purpose of the previous figure is to demonstrate for whom the risk management business services could be targeted. Secondly, it also introduces a set of services, which could be offered through the network to its member organisations and individuals, and third, what part of the services or other actions taking place in the value network could be provided electronically or through non-electronic measures.

Considering the previous inclinations open up an opportunity to discuss a variety of electronic business models available for the future-founded company. The categorisation of the business models can be done in many ways, but herein we wish to consider the following threefold grouping introduced by Timmers (1998): i) value chain elements, ii) interaction patterns, iii) value chain reconstruction. In other words, we need to identify the specific value chain elements for delivering a specific set of outputs, in this case, risk management business services. We also need to understand the interaction patters enabling an employment of a specific business model, and identify the actors, between whom the interactions take place. Finally, the reconstruction of the value chain needs to be noticed. Oftentimes new business models enable or cause the reconfiguring of the value chain and provide new benefits and opportunities to stakeholders involved in the value system.

The synthesis of these viewpoints three elements leads to various complementary scenarios and potential business models. As in other fields of business and professional services, several basic interactive interaction patterns can be identified. To give examples we state the following business model propositions relevant for the value network providing risk management business services to its stakeholders.

Table 1. Thinkable business models and services for risk management value network.

Business model scenarios	Examples of thinkable services
C2C	Individuals involved in the eRisk network with a specific interest may contact each other through the system: e.g. discussions of a risk-type specific problem between risk management professionals.
C2B	Service requests from a risk management service provider: e.g. requesting risk management consultancy services for a specific risk management problem.
B2C	Risk management service providers providing services to risk managers working with specified risk management-centric tasks: e.g. offering of risk assessment and auditing services.
B2B	Two or more risk management service providers cooperating on a particular risk management task: e.g. a risk management consultancy firm evaluating an organisation's risk levels in order to offer the company a cost-effective insurance policy.
B2B2C	Two or more risk management service providers cooperating on providing services to an executive of a company: e.g. co-operation of a risk-type specific specialist with other specialist to solve customers risk management-related problem.
C2B2C	Corporate executives and risk managers with a specific interest may record their organisations' risk management control measures into the database and benchmarking data in return: e.g. comparing the risk levels of an organisation against industry average.

Referring to the above scenarios, we feel that the risk management-centric service portal as such includes a broad variety of different services. The offered services can be, in our opinion, divided into four principal categories shown in the following Table 2.

Table 2. The categorisation of services within the risk management value network.

Risk type and business line specific services	Collaboration and communication services	Benchmarking and knowledge transfer and creation services	Support services
- business risk management - agreement and liability risk management - product risk management - personnel risk management - environmental risk management	- certification of service providers - development work-shops - risk management seminars	- connections to refe-rence databases - further development of existing best practises - development of new risk management methods and tools	- product support - help-desk - maintenance of software application

Our research has provided preliminary evidence that supports the conception that individuals and organisations involved in the www-enabled risk management network can gain great benefits through the eRisk-portal and the surrounding community due increased networking and interactiveness. The demonstration in Figure 5 by Afuah and Tucci (2001) illustratively outlines the 'sources of competitive advantage' made available for the users of the risk management-centric knowledge resource due its positioning onto the Internet.

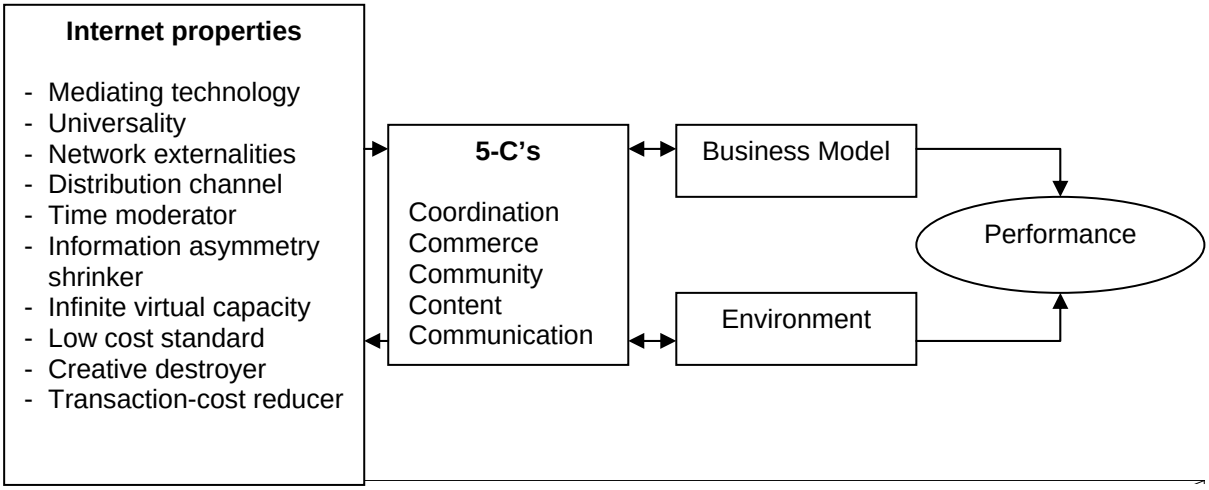

Figure 5. Properties of the Internet and the 5-C's (Afuah & Tucci 2001).

In particular, Internet as a mediating technology would enable bringing together private companies, public bodies and individuals around the same risk management resource. Internet therefore opens up new opportunities for value co-creation among community stakeholders and enables the creation of new forms of co-operation within and across organisations involved. Further, the term universality brings along the opportunity to offer or look for risk management-centric expertise and services elsewhere than from immediate surroundings of an organisation.

Further, www-enabled risk management resource would match risk management service providers with existing and potential customers, as well as, e.g. insurance companies and financial institutions that may found the collaboration and the knowledge available very useful when considering their policies in the context of specific customer cases. Simultaneously, the risk management-centric internet resource is supposed to be a powerful asset in distributing the pre-existing and further developed contents across the network. It is also worth of noticing that the eRisk-portal will play a vital role as information asymmetry shrinker due its specified contents and standardised user interfaces. In proportion, infinite virtual capacity supports the extending of the community and achieving a critical mass for securing its commercially viability and sustainability. Critical mass may also have a reducing impact on the cost structure of the eRisk ltd and the network member organisations alike.

Regardless of the benefits brought along the www-presence of the network we also wish to emphasise the notable significance of the 5-C's for the future success of the risk management value network. We feel that bringing together selected players with specific risk management related interests and competencies is most likely to engender new kinds of strategic partnerships in the different fields of risk management. Another good example is the development of value-added services.

Let us for a moment discuss the currencies and exchanges of value that may occur within the risk management-centric network excellence. In order to do this we state the following currencies of value as outlined by Allee (2000): i) goods, services and revenue, ii) knowledge, and iii) intangible benefits. The principal aim of the following demonstration is to articulate those interactive cause-effect relationships wherein the exchange of goods, services and

revenue might take place. Again, we attempt to illustrate those knowledge exchange occurrences, which flow around and support the operation and further development of eRisk-portal and services within the interactive value chain. Finally, we make an attempt to showcase those intangible benefits that interactiveness, networked way of operation and communality might bring along the train – that is, (Allee 2000) a sense of community, customer loyalty, image enhancement or co-branding opportunities.

The following Figure 6 introduces the conceptual value diagram for the risk management business service network. It demonstrates the principle points of interaction between the different value diagram elements. Within each point of interaction all three currencies of value presented by Allee 2000 are involved. However, more accurate demonstration of a degree of three currencies involved within each interaction point is question of further research.

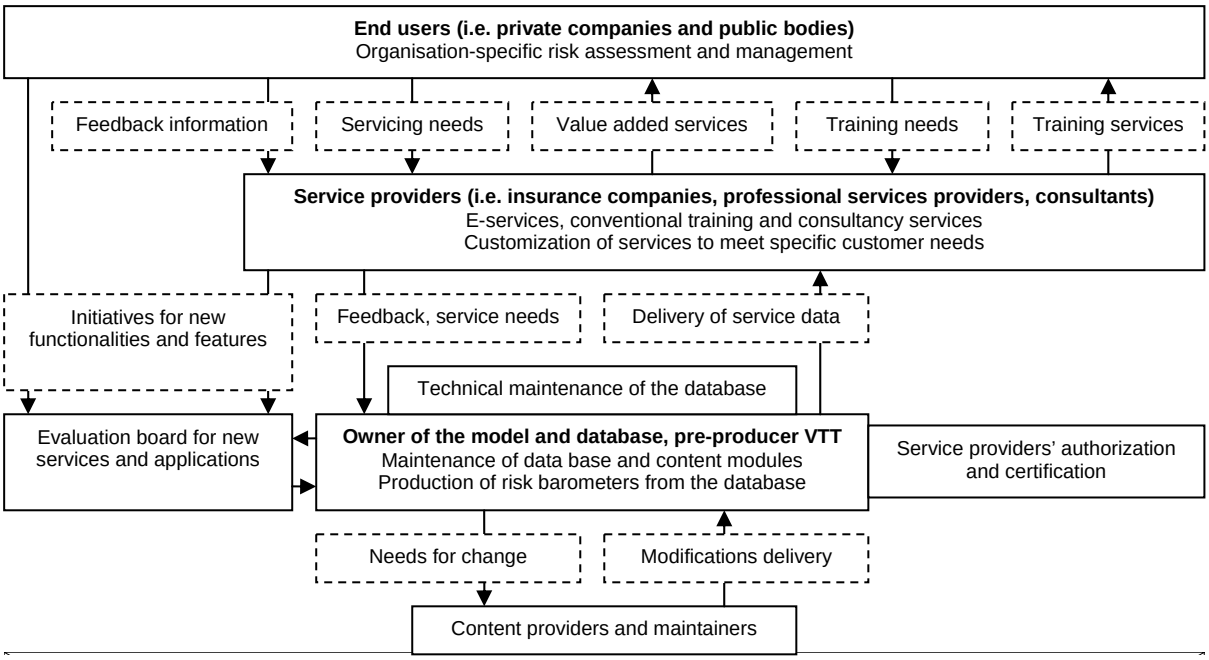

Figure 6. Example of eRisk-portal value network analysis diagram.

Concluding remarks

During this one year project that has been based on the previous risk management-centric development work of VTT Technical Research Centre of Finland we have been privileged to work with multiple organisations and individuals representing general government, private companies and service providers within this field. We found that the present effort is not only unique in Finland, but also in the world.

What we have understood and concluded is that persons in charge of risk management in companies and other institutions are not collaborating and interacting with each other as much as persons in charge of other disciplines in organisations. We argue that the willingness to form strategic and practical co-operations within this field would enhance organisations'

capabilities and competencies in order for them to manage and develop their risk management-centric activities. We foresee that the increased availability of information and knowledge, practical tools and methods, co-operative opportunities and consultancy would elaborate organisations' interest in risk management as one of the primary drivers for the competitive advantage. The eRisk-portal itself, will foster this development due offering a collaborative environment for forming value adding alliances, and by providing the network stakeholders with a toolset that promotes more efficient integration of intra- as well as inter-organisational interactions from the risk management-centric perspective.

The fundamental phrasing of a question to us is which institutions, organisations and individuals take an interest in creating risk management-based value within the described operation environment. That is to say, what kind of value can be co-created, either it is i) goods, services and revenue, ii) knowledge, or iii) intangible benefits. Further, interesting is also to find out how the value co-creation within this operation space may affect the revenue of service providers, the cost of risk management-related tasks in organisations and institutions, the quality and congruence risk management, and availability of risk management-centric services, and how they may facilitate the mainstreaming of restructuring the interactive risk management systems, at first, among Finnish industries and public sector. This perspective forms the conceptual frame for our further research in the field of interactive risk management. Our main interest is in what types of business models can be utilised or created on basis of risk management-based co-operation scenarios. More importantly, we wish to further research the value creation within these kinds of collaborative environments and show the created value, at first, in monetary terms.

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