Business Models of Social Software Platforms in Business-to-Business Context

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Business Models of Social Software Platforms in Business-to-Business Context

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ABSTRACT OF THE MASTER´S THESIS

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This thesis studies the business models of companies engaged in social software business and involved in offering collaborative work and learning, networking, or content sharing services to be used in business processes involving partners, employees or customers. Furthermore, we study the role of each party in value-creation and the feasible earning models and pricing strategies through four case studies. By integrating practical experiences with the conceptual discussion on collaborative and participative value creation, we suggest a strategy that allows Finnish companies engaged in social business to achieve a sustainable competitive advantage.

The results suggest that the small vendors might succeed particularly through providing specialized and customized collaborative applications for groups with a focused professional or business interest. Fast delivery, full service, and local language on domestic market bring additional advantages. The results also indicate that both the vendor and customer benefit from cost-effective scalability of SaaS technology. The customers of small vendors being often SMEs with limited resources for development, we recommend their industrial associations to consider reciprocal participation in developing and marketing the services. The study contributes to current social business discussion, by first, providing empirical insights into business models between enterprises, which have currently been discussed predominantly in the context of general-purpose social media, and second, by extending the perspective to encompass competitive assets of Finnish companies on the domestic market.

Keywords: Social Software, Platform, Business Model, SaaS, B2B

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Tämä diplomityö käsittelee liiketoimintamalleja yrityksissä, jotka toimittavat ja hyödyntävät yrityskäyttöön tarkoitettuja ohjelmistoalustoja yhteisöllisiä työtapoja ja oppimista sekä verkostoitumista ja sisältöjen jakamista tukeville palveluille. Yhdistämällä yhteisöllisyyttä ja osallistumista hyödyntävää toimintamallia sekä mahdollisia ansaintamalleja ja hinnoittelustrategioita koskeva tutkimustieto neljän tapauksen käytännölliseen kokemukseen, todetaan kuinka suomalaiset yritykset voisivat saavuttaa kestäviä kilpailuetuja.

Tulokseksi saatiin, että pienetkin yritykset voivat kumppaneiden ja kustannustehokkaan SaaS-teknologian avulla luoda innovatiivisia palveluita, jotka erikoistumisen ja asiakas- tai tarvekohtaisen erilaistamisen avulla voivat menestyä myös kansainvälisillä markkinoilla tarjottuna ryhmille, joilla on erityinen ammatillinen tai liiketaloudellinen intressi. Toimitusnopeus, kokonaispalvelu ja kotimarkkinoilla suomenkielinen palvelu tuovat lisäetuja. Pienikin toimittaja voi hyödyntää globaaleja kumppaneita vastatakseen asiakkaiden tarpeisiin. Koska pienten toimittajien asiakkaat ovat yleensä PKS-yrityksiä, joiden kehittämisresurssit ovat rajalliset, tutkimus suosittaa toimialajärjestöille vastavuoroista osallistumista palveluiden kehittämiseen ja markkinointiin. Tutkielma tuo uutta näkökulmaa keskusteluun, joka nyt on keskittynyt yleisen sosiaalisen median hyödyntämiseen ja toiseksi, valaisee suomalaisten pienyritysten kilpailutekijöitä kotimarkkinoilla.

Avainsanat: Yhteisöllinen, Palvelualusta, Liiketoimintamalli, SaaS, B2B

Preface

This thesis concludes my studies toward the degree of Master of Science in Technology. The thesis has been carried out during DiplomPro program organized by Aalto University Professional Development - Aalto PRO.

Firstly, I wish to express my gratitude to Matti Kotisaari, Markab Oy, for his indispensable contribution in formulating the research objectives and for sharing his excellent viewpoints during the writing process. It has been an interesting and remarkable learning experience to write my thesis of such a current topic.

Secondly, I want to take this opportunity to thank Docent Kalevi Kilkki for his guidance and valuable comments throughout the writing process in his double role of as the instructor and supervisor of my thesis.

I would like to thank the case company executives I had the chance to interview for sharing their time and knowledge. This thesis would not have been possible without their valuable contribution.

I also wish to thank my colleagues who shared the same challenges during the program with me. Special thanks go to Leena Kojonen for the valuable feedback regarding the text, and to Päivi Lebedeff for the encouraging discussions.

Finally, my sincere thanks go to my dear children Raimo and Katri for their patience during the long evenings spent writing this thesis, to my sisters Vappu and Maija-Liisa, and all the friends for their empathy during my studies.

Otaniemi, 30.5.2011

Raili Koivisto

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Abbreviations

API	Application Programming Interface
B2B	Business-to-Business
B2C	Business-to-Customer
P2P	Person-to-Person or People-to-People
CRM	Customer Relationship Management
ICT	Information and Communication Technology
PISA	Programme for International Student Assessment
SME	Small and Medium Size Enterprises
RIA	Rich Internet Application
RDF	Resource Description Framework
RSS	Really Simple Syndication or Rich Site Summary
SCORM	Sharable Content Object Reference Model
SOAP	Simple Object Access Protocol
SSO	Single Sign-on
TCO	Total Cost of Ownership
XML	Extensible Markup Language

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1 Introduction

1.1 Background

The needs related to working, competence, and development are connected with the historical status of the society. After the eras of craft work and industrialization to the information society, collaborative and social competencies are back again in the main role. The emerging services representing that phenomenon are often called social media, participatory media, community media or collaboration media. Main characteristics of social media are support for profiling and expressing oneself among interesting people, social feedback, social networks, and achieving diversified community gains due to other users.

Definitions for these services are not yet established. In early phase Schuler defined social computing as “any type of computing application in which software serves as an intermediary or a focus for a social relation” [71]. Lugano settled on division according to the mode of interaction: applications for formal interaction are called groupware and for informal one they are social software [46]. Instead of using social software as a synonym for social media, Lietsala and Sirkkunen suggest it to be confined to ”code, software and technologies utilized for social media implementations” [45]. In this research the term social software from Shirky is used as a general concept of ”software that supports group interaction” [75] and the infrastructure needed for applications is called a social platform. In business-to-business (B2B) context social services are often called social business because it is more about social networking than social media which implies a broadcast feature. Thus social media could be dedicated to P2P use.

New markets are where the people gather, even virtually. When technology evolved to the degree that multimedia and communication could be combined to support new market opportunities, a paradigm shift or rather a complement from virtual community as a social phenomenon to commercial one was inevitable. High expectations on the business value of social software at least in knowledge intensive industries rose on 1990s, but they were hardly realized before the end of 2000s. The social software enterprise market is expected to zoom these years, according to IDC the social software market was $370 in 2009 and will approach $2 billion in 2014 [87].

Visions of the use cases are multifaceted. Sales and marketing optimize customer acquisition through social monitoring and engagement, and through

aggregating customer insights and sentiment. Lead generation and brand protection during crisis is more cost effective in social media. Social collaboration tools are coming to enterprises for improving work processes; they enable finding competencies, knowledge, and other resources more effectively within the company or its partnerships. Social software provides companies the tools to implement the theory of learning organization which enables them to make most of its knowledge and competency resources for renewal of the enterprise.

The framework of social business is shown in Figure 1. The market factors insist on using social software for managing social output in order to achieve the strategic social objectives crucial for business. The social applications and features are built on a social platform. The implementation options for social software are social portals, social suites, social applications, and social tools.

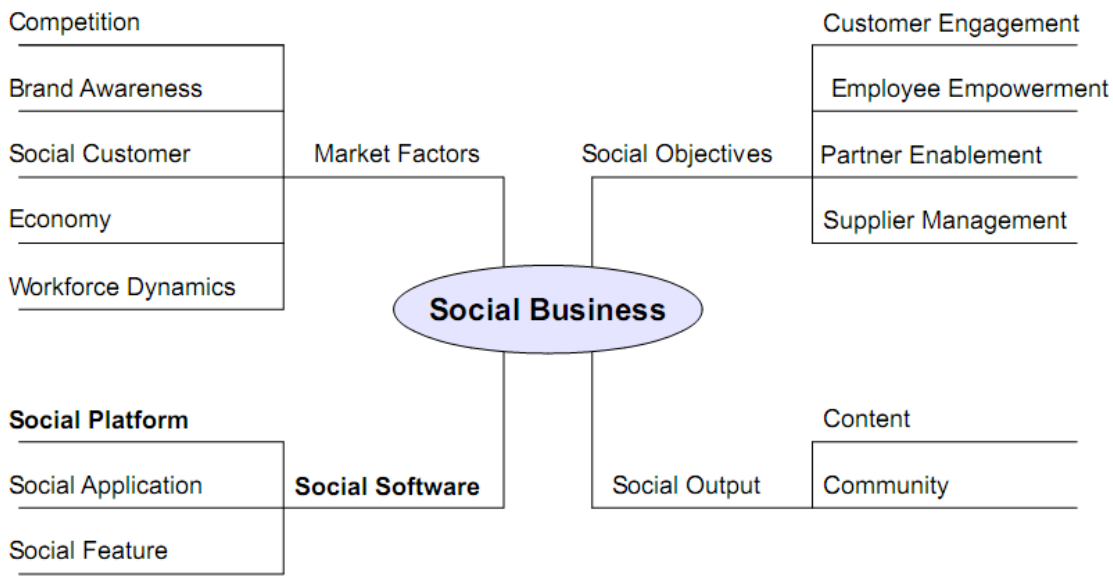

Figure 1: The Social Business Framework [76].

A plethora of tools and features can be associated with social software: messaging, blogging, microblogging, wikis, profiles, communities, forums, dashboards, podcasts, RSS, recommendation engines, mashups, search, social bookmarks, file sharing, tagging, webcasts, virtual realities, lifestreaming, presence, idea management, analytics, etc. For example in enterprises they are used for creating and maintaining documents and databases, for project and meeting management, and for aggregating and finding knowledge.

There are two main drivers for vendors to push social software into enterprises. Firstly, public, general-purpose platforms and services cannot fulfill the needs of business organizations in harnessing collaborative value networks, ubiquitous learning environments or participative customer relationships. Secondly, sustainable business models for consumer social media market are not found which leads the providers to search them for example on technology and professional social markets [38].

The most well-known, globally utilized public platforms and business models originate outside Europe that is presumed to be a consequence of the regulation driven innovation environment in Europe. This is seen as a risk to both the development of European economics and the culture.

1.2 Research problem

There is a lot of discussion and research going on around social media and also its use for business purposes, but mostly the conversation and research concentrate on public, general-purpose platforms and services along with social media strategies within business and public organizations.

People using Internet and general-purpose social platforms are typically not charged for the services, but the most common revenue model is advertisement-based. Apparently the same business models are not necessarily feasible in B2B environment where emerging social business software is expected to increase benefits for example through improved customer relationship management and employee engagement. Business ecosystems are often complex in developed countries likewise innovative business models are crucial prerequisites for satisfactory return on investment. The emerging market of social software platforms in B2B context necessitates analyzing what kinds of business models are feasible.

From European and Finnish point of view there is a concern of maintaining competitiveness of the continent and nation in the pressure of global platforms and their innovative business models. Social software in B2B context is lacking research and understanding about the success factors because according to the preliminary Finnish study the use of social software in business is still rare and occasional [78].

1.3 Aims of the study

This study analyses the social platform industry in business-to-business (B2B) context in order to draw a holistic, informative picture of this business in Finland. The study analyses how these platforms are used, what are the feasible business models, challenges and success factors to understand the revenue drivers and what would give sustainable competitive advantage for the local providers in the future. The research problems arisen are:

- What kind of business models are used for social platforms in B2B context?
- What kind of challenges, competitive assets, or success factors the Finnish providers have and could have?
- Is there any difference in business between platforms aimed for networking, learning, collaboration and content sharing?

The basis for this research is an in-depth analysis of relevant literature. Some Finnish business cases giving empirical insights are described and compared with the literature and global counterparts in order to find the possible competitive assets and future opportunities in Finnish business environment.

The objective in this study is to formulate a description of the phenomenon in its context. The selected cases are analyzed as samples of social software platform industry in Finland. Analytic generalization, i.e. comparing empirical results against appropriate theory, is the main result of this study.

1.4 Scope

The study describes business models of social platforms dedicated to providing services for collaboration, content sharing, learning, community or networking purposes in enterprises. The platform term is used albeit platform, applications and features might often be inseparable. When applicable, paradigms relevant only in business use of general-purpose platforms are described in order to give material for comparison. The research environment is shown in Figure 2. The genre of solution describes the main purpose of use, in practice the features overlap due to natural reasons. Customers here are enterprises as distinct from consumers as customers.

General-purpose platforms for person-to-person use are discussed as examples albeit they are outside the scope of this study.

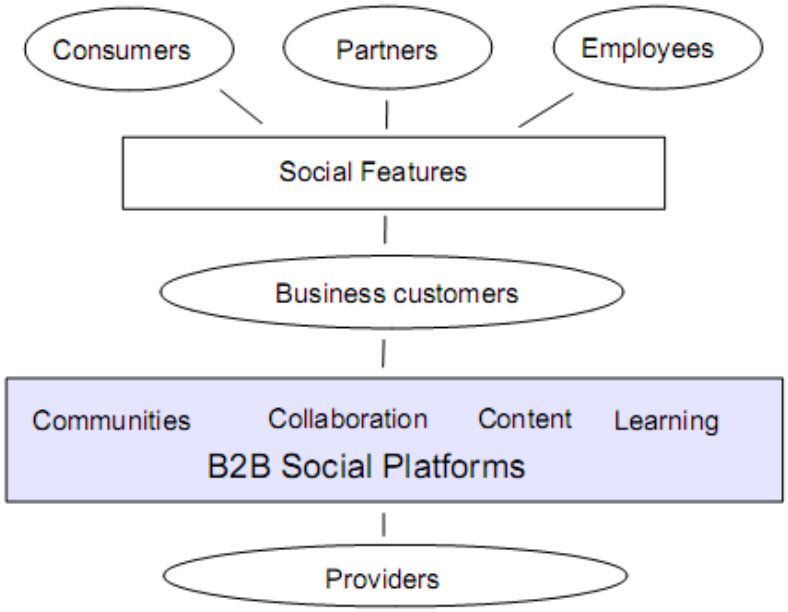

Figure 2: The Research Context.

2 Research Methods and Data

2.1 Research Approach

The previous chapter introduced the business environment setting the research problem to understand how Finnish originated social software platforms could survive and succeed. This chapter describes the research methodology used in the study beginning with general discussion of research views of business economics. Secondly, this chapter describes case study and theme interview methods and how they are used in this study.

In business economics the empirical research strategy might be constructive and normative or conceptual-analytical and descriptive [56], the compromise between them being functional-analytical research view which is used in this study. Figure 3 positions these paradigms relative to each other.

This research is made using qualitative, empirical approach in order to multiply understanding of the emerging social business from pragmatic view. For qualitative research in business economics science it is characteristic that only one or few individual cases are analyzed at a time as samples or exceptions of the area. The research process in inductive, i.e. the hypotheses are created when collecting and analyzing the research data.

The research data is analyzed and categorized to draw systematic conclusions. Interpretation of results is comparative. Triangulation using multiple sources of information is used to achieve more holistic and reliable interpretation of the findings. The other information sources in this study are previous scientific literature and web pages of the case and example companies.

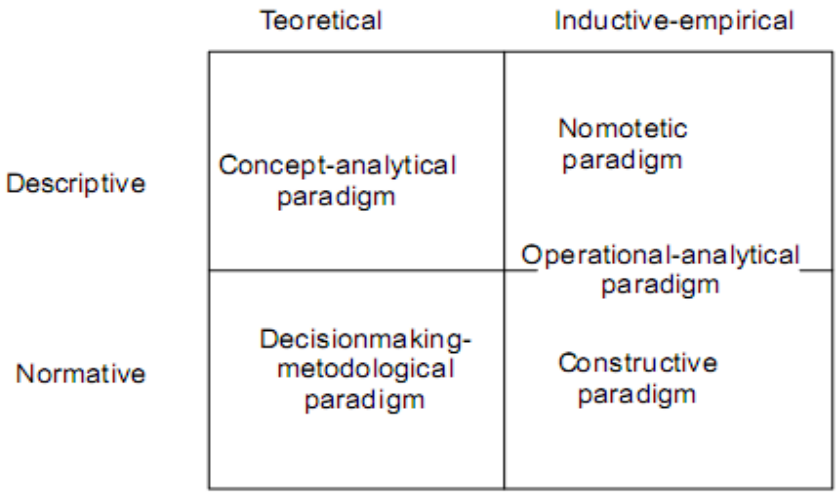

Figure 3: Research Paradigms in Business Economics. Applied from Kasanen et al. 1991 in [56].

2.2 Case Study

According to Yin, a case study is ”a method of choice when the phenomenon under study is not readily distinguishable from its context” [94]. It is applicable when the nature of research problems is how or why. Case study research can be categorized in single and multiple case ones, each of them being exploratory, descriptive, or explanatory. A descriptive theory is not an expression of cause-effect relationship but rather an understanding of crucial attributes of the phenomenon under study [94]. Case study method is not linked with the data collection method (quantitative/qualitative), but it rather implies using multiple sources of evidence.

Case studies are used both in education and research. In research a case is more focused and delimited like a process, a function, a series of events in industry, organization, group or even individual level. The most important phases in designing a case study are defining the case, selecting single or multiple case, selection criteria for the cases and selection of the data collection method. Exceptional or diverging cases are especially valuable [43]. In this study it is hard to say if the cases are samples or exceptional ones because the total amount of Finnish providers in this business is small. The cases were chosen as representatives of the earlier mentioned genres of applications.

2.3 Semistructured Interview

An interview is defined as a discussion with predetermined purpose to gather information. Semistructured or semistandardized method (in Finland often called a theme interview) is used instead of forms when it is impossible to put enough answering options due to the complexity or nature of the research subject [32]. The interviewee can formulate his/her answers in own words and even suggest new questions; thus interviewees may find it motivating and comfortable to participate and the interviewer is able to concentrate in understanding and supporting. The interview provides an opinion of the subject, not necessarily the real issue [43].

A research interview should be predesigned in order to enable systematic acquisition of information and control by the interviewer. In design phase only the interesting themes are listed, during the interview they are operationalized as 5 - 12 open questions by the interviewer or interviewee[32]. The structure of the interview aims to balance between the necessary questions and naturalness of the dialogue. In economic science the interviewees are usually people making decisions or their closest colleagues, who may be difficult to reach due to organizational bulwarks, participation principles or decision mechanisms. Their cognitive, emotional, and interactional peculiarities may challenge an inexperienced researcher [43].

The research data is gathered through semistructured interviews of key persons in the supplier companies, from company web pages and relevant literature. In this study the chosen themes for the interviews were the main target customer groups, the ecosystem, the success factors perceived by the company, the technology, and the earning model.

3 Earlier Research

This chapter firstly introduces the history of online communities, some business paradigms, and trends which help to understand the environment and challenges of social platform business. Secondly, most common business types, earning models, and business models are introduced. Thirdly, short introduction to enabling technology and standards is given before more thorough description of selection criteria and success factors found in the literature study.

3.1 History of Online Communities and Social Software

There has been software and services for building communities almost 50 years as counted from PLATO BBS (Programmed Logic for Automatic Teaching Operations Bulletin Board System). PLATO was initially created as Computer Based Training Network, but was later developed to support online communities before 1975 [92].

Among the first widespread virtual communities The WELL (the Whole Earth 'Lectronic Link) was established in 1985 for independent writers and readers of the Whole Earth Review publication. Thus this social site celebrated its 25th birthday online last year. During its first months The WELL started to take in customers for $8 per month plus $2 per hour; the resources were a leased VAX 11/750 computer and hard disks, UNIX system software, a conferencing program called Picospan, 12 phone lines, and 800 MB storage. [91]

The size of communities in 1980s was reasonably low, but in the long run bulletin boards and news groups grew both in number and size. During the first two decades an anti-commercial culture was dominant, the networks were comprised of passionate members sharing the same interest. Before long also commercial online services were launched to provide bulletin boards, chat, and published content. Social software as a term was introduced already in 1987, but spread out more widely after the Social Software Summit in 2002.

Among the first applications for educational and collaborative work were DelphiForums and Basic Support for Cooperative Work (BSCW). Unlike community building tools, the early collaborative and educational tools typically provided work space and means to share documents, references, and

objects in addition to threaded discussions. The space had an owner who defined its structure and assigned the access rights.

Today social software is most often running on service platforms albeit social networking features are included in ordinary web browsers as well. The software and services for building communities use asynchronous and synchronous tools available via standard web browsers. The only administrative function is invitation of new members, personal profiles can be stored on servers. A service platform enables building, integrating, and facilitating communities, interaction, and sharing user-generated content. Dedicated platforms are used for collaboration, project management, content or document management, customer support, learning or gaming. They may act also as a portal to other social platforms and tools and/or provide a specialized platform for a closed group of customers or employees. As a heritage from the infancy of social software there still might appear contradiction between commercial and communal approaches especially in consumer communities which impacts on opportunities of the enterprises to monetize them.

3.2 Some Basic Paradigms and Definitions

3.2.1 Web 2.0/Enterprise 2.0

As internet technologies are under continuous development, the present generation as a high level marketing concept is often called Web 2.0 in order to emphasize the modern business and operational models including collectivity, participation, openness, and web-based applications used in social media.

Business needs differ in many dimensions from consumer needs. Thus, instead of Web 2.0 concept, McAfee launched Enterprise 2.0 and defined it as ”the use of emergent social software platforms within companies, or between companies and their partners or customers” [50], emphasizing that people can choose to use, or not to use it, and that the software is egalitarian and accepts different forms of data. Further, ”platforms are digital environments in which contributions and interactions are widely visible and persistent over time” [50]. Thus open, general-purpose platforms, enterprise intranets, and email systems are ruled out.

McAfee enumerates Enterprise 2.0 components as search, links, authoring, tags, signaling, and extensions for categorization and pattern matching [51]. Links

between pages disclose the best or the most useful pages only if they are made by a large amount of people which is not common in intranets. Authoring in blogs is done individually, but the content is cumulative, authoring in wikis enables producing iterative content which improves convergence and quality at its best. Tags (social bookmarks) reflect the relationships and information structures people use in practice, and that decentralized categorization helps all users to find what they want. Extensions use algorithms to suggest other content recommended by other users. Signaling uses technology like syndication to inform about new content on interesting pages. In any case, the tools must be easy to use and let the categorization, structuring or work processes emerge without preconceived notions [50].

Mash-ups, shared bookmarks, and social tagging help to recommend content, to remix information, to follow updates, and to locate expertise inside the company according to individual needs. Blogging and wikis aggregate information decreasing email traffic and personal repositories of them hidden from colleagues. Many companies already use blogging also to communicate unofficial information to interested internal and external readers at no-cost.

A scenario of future technologies and interfaces between different user domains is described in Figure 4. Activity streams are expected to become tools for communication, learning, and situational awareness; especially if their interoperability will be guaranteed via standardization [27]. Automated compliance monitoring is useful in global companies who need to ensure compliance with local and foreign laws and regulations. More advanced unified communication products are needed for integrating the new social channels with the existing ones.

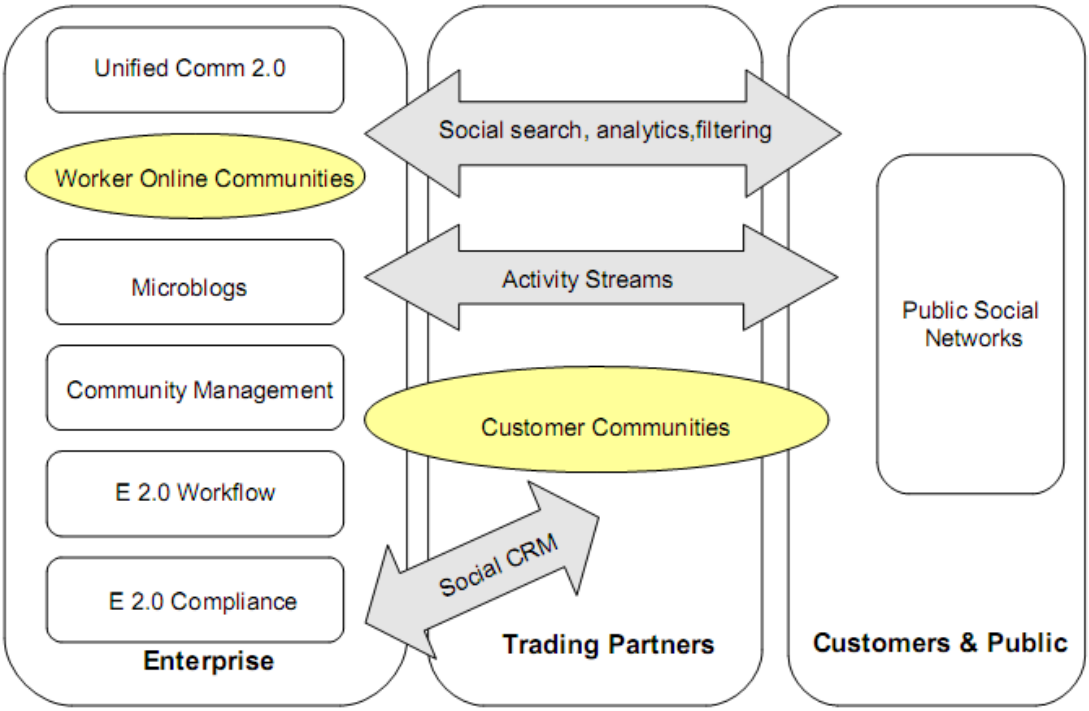

Figure 4: Enterprise 2.0 [27].

3.2.2 Content

Content is a high level term for a diversity of media products; radio and TV programs, music, films, games, interactive services, web pages, and mobile services which are delivered through an electronic media. Content might be also video documents, document files, learning solutions, and presentations as characteristic in business context.

People derive psychic or social benefit from creating (even free) content to be shared; the companies losing their privilege in content creation and delivery have to consider if they can exploit this content in attracting customers through offering cooperation. Large media publishing companies, like legacy broadcasting companies, are also facing the challenges of user-generated content. According to media executives the biggest impediments complicating the new content and distribution strategies are limited resources, poor technology integration and conservative management vision [7].

Free content basically has unlimited audience, but in practice only a small amount of it has a large audience and the others very small one. In regard to this study, it is also important to remember that most of the content is language-

based; content locked within a culture of a group has a narrow market. Due to low costs of digital content production and distribution even local markets can be profitable as the concept of long tail describes.

3.2.3 Online communities

Virtual community as a form of computer-supported social network (CCSN) is the basic unit on any social platform. Äkkinen gathers the earlier definitions for virtual community, ”it exists in cyberspace, having its activities supported by computer-based IT, focuses on communication and interactions driven by participants, and emphasizes on the relationships among members” [95]. Virtual communities are now often called online communities due to the network platform they utilize.

Before any action the enterprise has to consider the strategic goals they are targeting at through social software. A virtual community with weak ties between members is rather called a social network, in a community the ties are stronger and the members have a common motive like a passion, profession or lobbying. If a community acts as a virtual public, the interaction and ties are variable [65].

The following classifications may help to understand the multifaceted world of communities. The businesses need to decide the objectives before establishing a community. On the other hand, communities are quite self-directing; the owner cannot necessarily dictate the use, form, or future of a community, even if it were a business-to-employee (B2E) community.

The participants of the community may be a group of enthusiasts or persons supporting for example certain profession, technology, or ideology. In Figure 5 a classification related to the agenda of the virtual community gives four types [95]: discussion, task or goal oriented, virtual world, and hybrid. All of these types are relevant in business context, for instance discussion communities include topic-oriented ones like product communities and communities of practice, virtual worlds enable building learning environments.

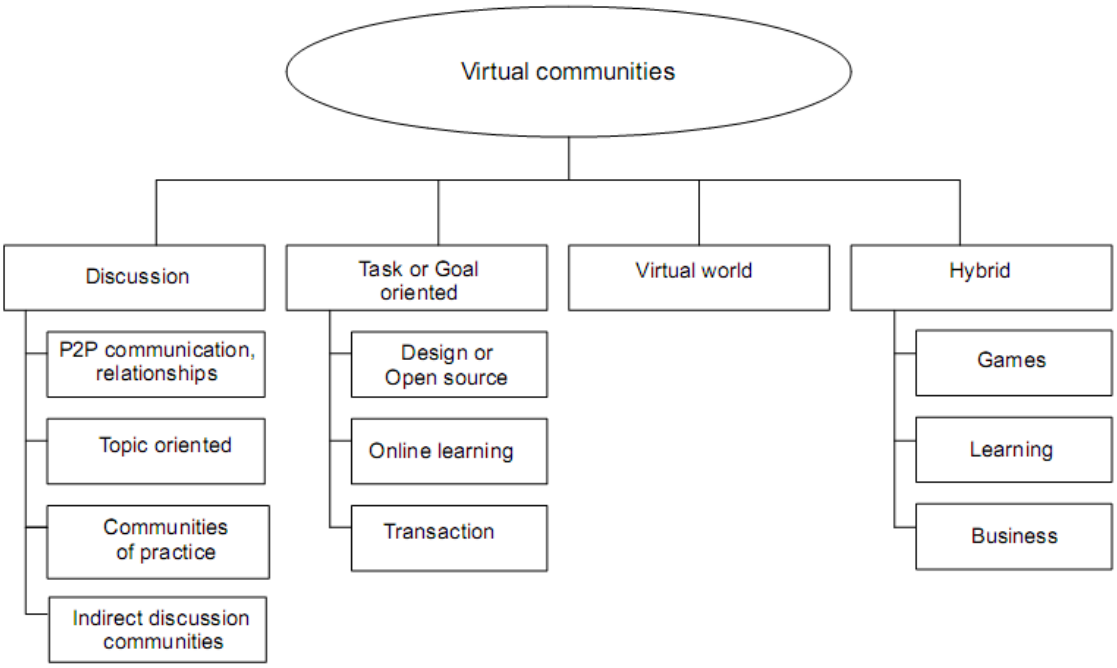

Figure 5: Types of Online Communities. Applied from [76] and [94].

Hagel and Amstrong [24] classified communities to consumer-focused and business-to-business communities. Among B2B communities shown in Figure 6, the vertical industry communities have long been common in high technology industries, for example SW user groups. Functional communities are gathered among business functions, for them online interaction supplements magazines, industry associations, and conferences. Geographic communities serve business people targeting the same area. Business category communities serve groups of similar businesses such as exporting, franchising, or SME.

Creating virtual communities for customers (B2C) is the way to deeper relationship with them. Customers use virtual communities as a group of agents which helps to collect more product and service information, information of suppliers and product options. Comparing and aggregating experiences gives them wider and more independent perspective on the important resources. For vendors a virtual community means increasing markets by reducing search costs and perceived risk of purchasing. Vendors gain from aggregated information of the related product range, and are able to tailor and add value to the products accordingly.

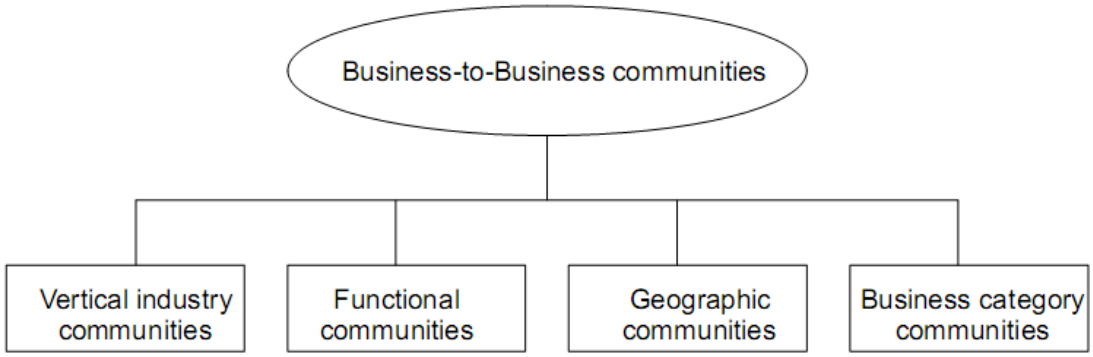

Figure 6: Community types. Applied from [24].

Porter [65] summarizes the literature of virtual communities in her 5P model according to purpose, place, platform, pattern of interaction, and profit model. Further, platforms can be synchronous or asynchronous, and the profit models revenue generating or non-revenue generating. Profit model leads to three types of communities generating revenue: community enablers, trading/sharing communities, and communities as a website feature. Accordingly they host, facilitate, or own communities for their economic purposes while others are non-revenue generating. Considering the strategic objectives of community owners on wider level, the classification on value generating model leads to standalone and add-on types of communities [18]. That model recognizes also the indirect effects through customer integration, market research or product development.

Organization-sponsored virtual communities are classified by Porter [65] as commercial, non-profit, and government types. Commercial communities could be customer relationship communities, gaming/fantasy communities, search communities, lifestyle communities, and knowledge-based, collaborative learning communities.

Customer-producer relationships and their increasing role in product development is the driver for establishing communities called as Firm-Hosted Online Communities (FOC); communities hosted for commercial purposes. Hunter and Stockdale [34] have found three types according to the ownership

of the community: a business sponsored community is owned by a business in order to promote business targets; volunteer oriented ones are owned by organizations and may transform later to business sponsored communities.

Online community tools are included in any of social platforms, but usability and industry specific features presumably are the vehicles of differentiation and competitiveness. The most challenging tasks in regard to communities are:

- How to reach and engage enough community members,
- How to capitalize the community directly or indirectly,
- Who owns and controls the community.

Owning a community actually means having access to the member profiles, user behavior and output in addition to the motivation to enhance its growth. An online community is based on interest, relationship, and transaction, i.e. aggregating people, not resources like information.

3.2.4 Collaboration

Shirky [76] introduced a four-step path to describe the degree of group work:

1. Sharing produces shared awareness among participants,
2. Cooperation creates group identity,
3. Collaboration relies on shared creation,
4. Collective action creates shared responsibility.

Collaborative way of working is actively driven by management evangelists these days. Social software is bringing new efficiency into work inside companies and between partners through better tools for finding required competence, expertize or information through using tagging, networking, blogging, and feedback to aggregate institutional data. Project work when members belong to different organizations, is convenient to isolate on an external platform providing work space.

Collective intelligence is acknowledged to surpass intelligence of individuals or limited groups. It is harnessed through peer production, crowdsourcing or produsage which are forms of mass collaboration. The key benefits of peer

production are harnessing external talent, keeping up with users, boosting demand for complementary offerings, reducing costs, shifting locus of competition, taking the friction out of collaboration, and developing social capital [85]. Tapscott introduces seven models of mass collaboration [85]:

- Peering i.e. mass of volunteers create projects like Linux operating system and Wikipedia online encyclopedia,
- Ideagoras i.e. pools of external talents which provide ideas or inventions,
- Prosumers i.e. producer-consumers providing customer innovations,
- New Alexandrians who aim to advance human health and culture or to develop technologies,
- Platforms of participation i.e. companies open their products and technology for partner communities for creating value and new businesses,
- Global plant floor i.e. planetary ecosystems for designing and building physical goods,
- Wiki workplace i.e. mass collaboration in the work place instead of hierarchical silos.

Many companies like eBay, Google, and Amazon, have established open platforms for creating on-the-fly partnerships with external developers who build new business or add new value to the platform. For individuals and SMEs tapping open platforms might be the only way to successful delivery of their offerings. For developers, access to Amazons software services, commissions on traffic and sales give the reciprocal result, for Amazon this strategy has brought the status of largest online retailer in the world.

Mesh collaboration describes technology-supported innovative collaboration between adhoc partners over all industries. Some companies have provided software development or modeling kits, like BMW for SMEs, to receive ideas. Contrary to that, some companies like Apple prefer not to encourage product hacking, some even condemn and try to prevent it like Sony. The companies have a challenge to balance between customer engagement and innovativeness, and the fear of cannibalizing their own business model and losing control over the product platform [82].

A special case of collaboration is co-creation of services, products or knowledge together with the customers, suppliers, and independent contractors. It is not transfer or outsourcing activities but rather exchanging knowledge and resources. Co-creation is a vehicle of reducing innovation-related market risk, bringing in external ideas and technologies, reducing cost and shortening time-to-market [14]. Co-creation is also expected to give competitive advantage and better customer retention through complex and difficult to copy business solutions required in that environment [70].

With regard to co-creation, the customer would pay only if the value added is over and above what one could achieve alone. In addition to the importance of mutual trust, protecting intellectual property may be challenging because ideas or knowledge themselves cannot be protected. Open collaborative innovation challenges enterprise innovations and blurs the conception of competitors and partners.

3.2.5 Collaborative Learning

Collaborative learning is also called as community learning or communicative learning. The simplest definition includes both views saying that collaborative learning is a method ”to learn through collaboration with one another rather than from material delivered by the teacher” [42]. Learning communities according to Steufert et al. are ”ensembles of agents, who share a common language, world, values in terms of pedagogical approach and knowledge to be acquired, and pursue a common learning goal by communicating and cooperating through electronic media in the learning process” [74]. In this study the focus is on informal learning, but collaborative methods are under discussion also in formal education.

Integration of communication, collaboration, and coordination tools as technology-enhanced education enabling to build learning groups over countries, cultures, and time zones has long been a promise of the future. Public institutions and work place learning functions are the main target users . Even the traditional corporate learning systems include tools for content development, management, and delivery, but the social applications could bring more collaborative features and online tools as shown in Figure 7.

Infusion of technology into education is natural for the media-savvy generation, the diginatives. Social software enables individual learner empowerment and becoming an active producer of knowledge through process-oriented learning

method instead of traditional subject-oriented or product-oriented methods [74]. The platform should provide tools for planning one´s own learning process, for carrying it out, evaluating it, and continually improving it.

Cooperative learning environments result in higher achievement, supportive and committed relationships, greater psychological health, social competence, and self-esteem than individualistic methods [40]. Collaborative, online method equalizes the opportunities of contribution and encourages to social interaction and support. It is ideal for problem solving, analysis, and discussion which are basic activities for example in research and development function.

The content for learning, earlier often created through collaboration by the teachers, is now created together with learners. The teachers are preferably coaches or facilitators of the learning process. When using collaborative learning model it is crucial to enhance feeling of positive interdependence between learners and teachers. As one can see, social software brings a very suitable environment to implement these kinds of learning projects.

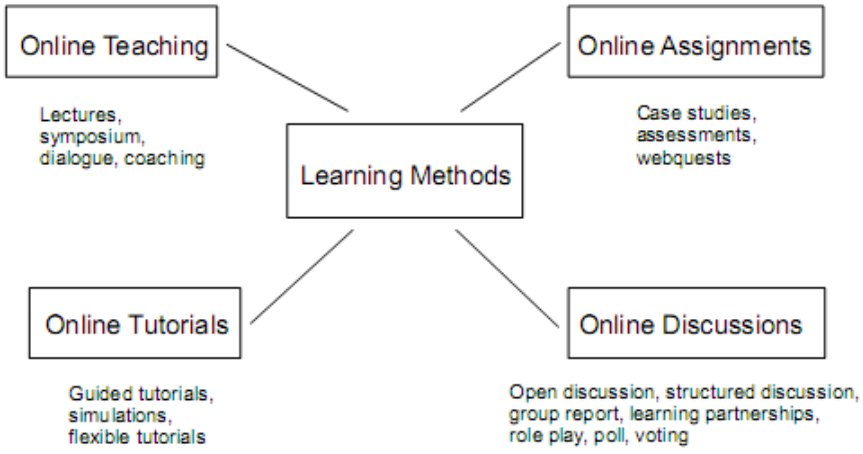

Figure 7: Framework for Learning Methods. Applied from [73].

Technologies now enable utilizing the same content in different situations by different actors, in the future intelligent technologies are expected to integrate pieces of content into ubiquitous learning spaces. The value of the learning

space is the higher the more it has connections with other content, applications, services, and learning spaces. Learning content gets several formats from concrete objects and virtual worlds to processes. Thus distinguishing learning platform and content is becoming impossible [31].

In business context some challenges are found:

- Cultural differences and traditions in education challenge the design,
- Collaborative learning presumes collaborative company culture,
- Public educational institutions are lacking money and ICT competence, and
- Global enterprises need global learning systems.

3.2.6 The Long Tail

Instead of mass market driven business, the Internet supports the well-known ”Long tail” concept by Chris Anderson i.e. overcoming geographic and scale limitation of any kind. Aggregating long tails is seen to be the most profitable business model among digital entertainment industry.

The long tail is applicable also to social business as shown in Figure 8. Sociologists have found that in addition to strong ties with close circle of acquaintances people are willing to use weak ties when searching advice or new job. In the past, maintaining relationships and especially contacting new people was troublesome and time-consuming. New tools for social networking grant an easy access to significantly larger number of contacts; the long tail consists of infrequently used contacts. The same principle applies inside companies, the decentralized experts are more easily found through networking tools.

Communities of interest, even minority interest, can now aggregate to attractive target groups addressed through broadband internet. The challenge is how this participation by users and personalized response to their needs could be monetized. For new entrants a virtual community might appear attractive because community members tend to be loyal, but the entrants often lack the resources needed to build the environment and to reach the critical mass of members.

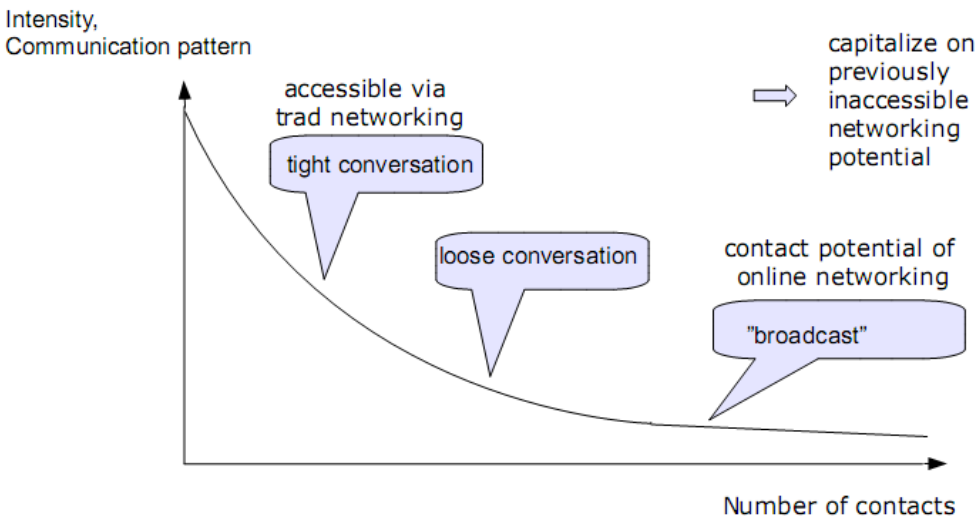

Figure 8: The Long Tail in Social Business. Applied from [17].

The other side of this phenomenon is that the communication pattern is necessarily different than in the short head of this function shown in Figure 8. True interaction becomes impossible with large number of contacts and starts to resemble broadcasting if the resources for interaction are not aligned with the need.

3.2.7 Ecosystems

These days competition is said to be hardest between ecosystems, not enterprises. According to Moore, "a business ecosystem describes the structure and behavior of a network of high-tech organizations that share a key technological platform, and the ways individual firms can flourish in such an environment" [55]. The member organizations exploit the platform for their own success. The ecosystem concept describes the interdependency and interconnections between companies, customers, and other stakeholders in modern business environment. However, drawing the borders of an ecosystem is quite impossible. In Moore´s model the core business consists of core contributors, distribution channels, and direct suppliers. The extended enterprise includes direct customers, customers of customers, suppliers of complementary products, suppliers of my suppliers, and standard bodies. Into an ecosystem he includes also investors, trade associations, labor unions, government agencies, regulatory bodies, other stakeholders, and competitive

organizations which have some shared items [55]. Figure 9 gives an example of potential actors of an extended enterprise in social business.

In an ecosystem there are usually at least one dominant player, but most of the others are niche players who bring the necessary fluctuating, valuable diversity likewise in biological ecosystems as Iansiti and Levien describe [35]. Most of the value creation and innovation is also to niche players´ credit. Niche players need complementary assets from the other players to be able to focus their own resources on differentiating expertise. Offering innovating technologies for them is a vehicle to keep them in while the new interface technology enables looser dependence from the platform owner. Ecosystems can survive in this environment only if the members create efficiently value together and that value is shared with the members of the ecosystem, otherwise the niche players will rally against it or disappear [35].

Platform leadership strategy easily leads to either the role of physical dominator with too much control over the network, or the role of value dominator with passion to collect too much of the value created in the network [35]. In both cases the ecosystem cannot survive in the long run.

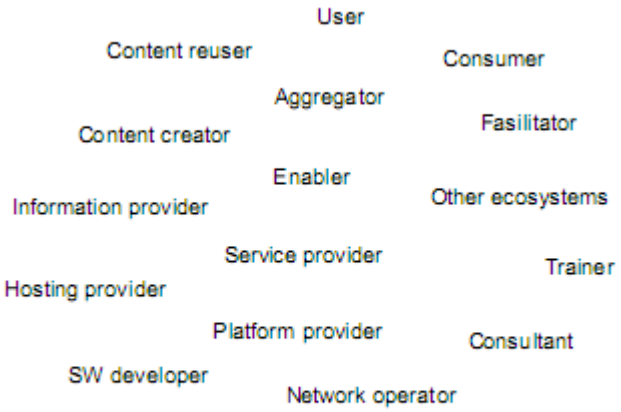

Figure 9: Actors of an Ecosystem

3.2.8 Definition of Business Model

The most successful firms do things in different ways compared with their competitors. Continuous value creation requires new division of responsibilities, risks, and reorganization of tasks between providers and customers. Business models help to understand other sources of revenue than traditional selling, the aim is to find sources of continuous income. The concept of business model was introduced in 1990s along the ”dot-com” companies, but it still has a plethora of definitions. Shafer et al. [75] suggested a combination of previous components: ”a business model is a representation of a firm´s underlying core logic and strategic choices for creating and capturing value within a value network”. According to Osterwalder et al. [61] a business model describes:

- The value offered to segments of customers,
- The architecture of the firm and its network of partners for creating, marketing, and delivering this value, and
- The relationship capital to generate profitable and sustainable revenue streams.

Tinnilä [86] expounds that the value networks sell mediation between customers or places, a core element is the chosen role in the value network and the uniqueness of relationships with suppliers, partners, distribution channels, and customers. Defining target market segment is the most crucial element because it dictates many other choices. The elements of his business model are shown in Figure 10.

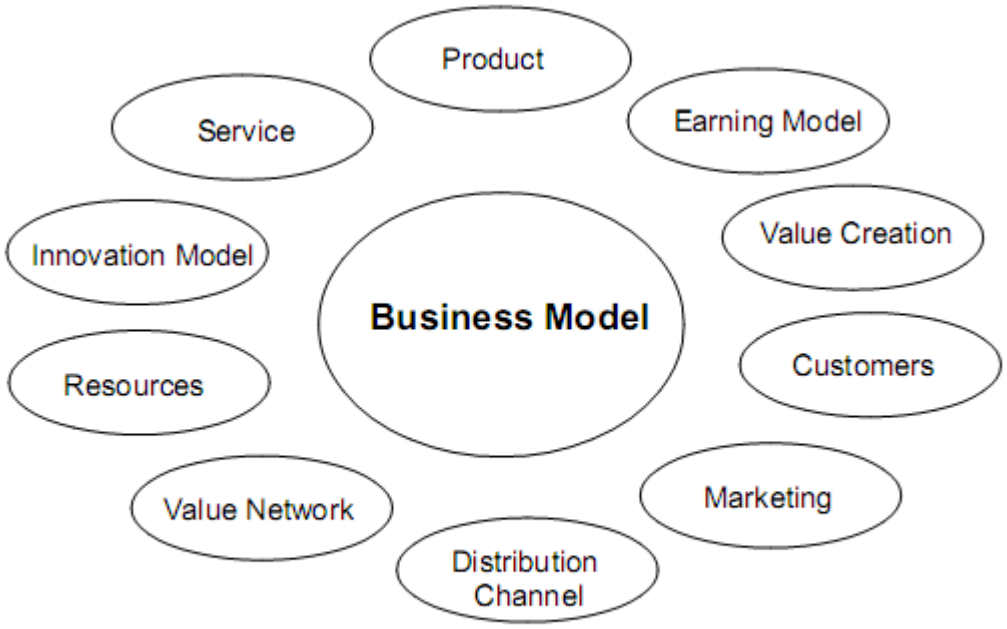

Figure 10: Elements of a Business Model [85].

The business model reflects the strategic choices of the company. The choices should be internally consistent and support each other; model must also cover the all of the firm´s core logic. A common problem, when crafting the business model, is to focus on value creation but ignore the value capture, or to confuse potential value with actual value [75]. When designing the business model one should not assume that the existing value network or the current state of business environment will continue unchanged. Business models are not necessarily mutually exclusive but can be combined as multisided or several models can be used at the same time. Aligning the business model choice with the chosen marketing strategy is crucial.

3.3 General Trends in Business Environment

3.3.1 Bundling - Unbundling

The way of organizing business, its functions, and processes has changed dramatically in recent decades. Unbundling is popular especially in asset-

intensive businesses because it enables to access new assets and scale up faster, but also enables to utilize own assets more efficiently through disaggregating them into by-products which are sold to external partners. Distributed co-creation of value with communities and networked organizations are online applications of this trend.

In spite of the unbundling trend the businesses divide into three types with different competencies, economics, and cultures [23]. Customer relationship business rests on building relationships with customers, getting to know them, and offering products and services tailored to their needs. Product innovation and commercialization rests on deep understanding of market trends and organizing innovative talent to create and accelerate adoption of new products or services. Infrastructure management rests on operations and cost consciousness.

The overall business logic has been transformed from product centric through service centric to value co-creation. In customer relationship business a paradigm shift from vendor-centric view to customer-centric view is a prerequisite of building a focused and trust-based relationship. As described earlier, managing the relationships and networks of diversified actors has become a crucial prerequisite of building competitive advantage. Social software is expected to give effective tools for that.

3.3.2 Walled Gardens Are Falling

The Internet has changed the tenets of business: the delivery channels are shorter; buyers or users discuss together, not only with the seller; they may produce competing or accompanying content free of charge, and even take care of supporting each other. New technologies enable accelerated service launch without major investments in computer hardware or software licenses. Thus the barrier of entry is lower for new services; innovative services like Flickr, FaceBook, and YouTube have rapidly permeated globally with limited promotion effort.

New competitive paradigm based on openness, peering, sharing, and global action is driving businesses to change the structure and operational model of both corporations and economies. Participation may be seen as a threat to established businesses; many well-known, highly valued products like Linux have already been developed by collaborative, horizontal, peering organizations instead of traditional hierarchies. For example in learning content

production, social software enables collaborative production with other teachers and students so that commercial actors are not necessarily used [31]. Walled gardens of content, databases, and software are seen as an impediment when creating new business models based on customer-driven creativity, instead some amount of innovations are now shared for collaboration. Sharing of resources like computing power, bandwidth, content, and knowledge is ruining some businesses like Skype did to telecommunication [85].

In media industry a growing business through open platforms counts on user-created content and mashups. Consumers are willing to remix or quote content from media conglomerates into their own content at fair price paid to creators, but the content is controlled by distributors. This trend is creating demand for new forms of certification to guarantee interoperability and dependability of channels or platforms as well as demand for platforms to share user-generated content or to access company content. The traditional content owners (studios, game publishers, and music labels) prefer open channels but media distributors closed communities to gain higher margins.

Online communities of customers and the related power shift create reverse markets where a company must give high-quality content to members, and all the technology they need to access each other and aggregate the information to compare products and vendors, make transactions, and utilize information about themselves. Reversing markets tend to make price discrimination more difficult for companies. The companies are not anymore able to control their customers, instead they are building trust through openness or steering self-organizing, interoperating agents. Loyalty is expected to develop from one-way phenomenon to a one-to-one relationship with the customer through customized advertising, products, and two-way sharing of information [24]. Then loyalty is based on performance in service and responsiveness which are also the cornerstones in building the brand. The winner on a market is presumably the company that achieves to build and maintain high loyalty among the customers before others.

Faster and more personalized interaction between customer and vendor contributes to company credibility and deepens the relationship between them thus enhancing business opportunities. Real-time user feedback and quick response on customer forum, or prioritizing features in product development according to customer input may save the brand, time, and money [41]. However, an open user or developer forum constitutes a risk of benefiting competitors as well.

The Internet enables crafting new innovative business processes, but at the same time it enables copying them as well as the user interface elements because large part of them has to be published in the Internet, and the same technologies and tools are basically available for all. Therefore other assets are crucial to preserve the competitiveness, for example dominance in the market, a strong brand image, proprietary access to customer information or relentless innovation [85].

3.3.3 How Businesses Plan to Use Social Media

The analysis in 2009 [20] figured out how businesses were using and plan to use the most well-known social media platforms. The organizations were considering using public social software, mainly LinkedIn, Facebook, Twitter, and blogging, mainly in lead generation (marketing), branding, public relations, and understanding customers. Smaller companies were using social software mainly for external communications, the larger ones for internal communication. Small companies used free public social applications also for sharing internal documents and other information inside the company regardless of the security risks due to third party networks.

Responses show that the trend in marketing and sales functions was toward enhancing customer communication and prospecting and intensifying interaction with customers, for understanding customer´s personal values and passions is crucial for selling. Converting prospects to sales rides often on the word of mouth. Internal workflow functions using social software were expected to maintain communication with teams, to create communication for work collaboration and internal communication, to share documents, to coordinate schedules, and to create working groups [20].

This year, in spite of all interest and attention, the value of social software is still not unanimously recognized among senior executives, partly due to the difficulties to measure its impact on business performance, partly due to the concern of software driving a wedge between authority structures [54]. The early adopters of social software have not been able to show concrete benefits due to vague goal setting before implementation and the resistance from users. Implementation of social software should be driven by clear business objectives using opportunity-driven approach (instead of organization-driven) and judged by measuring the frequency and nature of sustained usage [54].

Demanding, knowledge intensive work in collaborative networks together with social software is apparently transforming somehow the processes in most of the business functions. The core value-added by social software might be in supporting exception handling through easy access to cross-border resources and expertise in which the earlier tools are ineffective.

3.4 **Business Models**

3.4.1 Platform Business Models

A traditional platform is a product opened up for external innovation. A typical platform innovation provides a simplifying layer to mask the underlying complexity. In broader meaning a platform is ”an evolving system of interdependent pieces that can each be innovated upon” [19]. A platform can be a physical product like PC or terminal or a service like operating system or other software package. In addition to the platform architecture it includes a set of rules because its value as a whole depends on the behavior of the members [16]. In the long run the most competitive platforms, or even just one of them, typically achieve dominant position on the market.

In platform business three different business models are feasible [9]. In integrator platform model the platform owner sells to customers retaining himself high degree of control and ownership of transactions as Apple does between iPhone software developers and customers. In product platform model the external innovators build on the platform but sell their products themselves to customers. In that case innovators have more freedom to set prices and control the development. In two-sided (or multisided) platform model the platform is needed for transactions and interaction between parties, but external innovators and customers are able to interact with each other without the platform owner as far as they comply with the rules and regulations set by the owner. For example the external innovators of widgets for Facebook platform use their own pricing models but limit the access to user information as set by Facebook Inc.

Some big players have chosen to use mixed or nested approach in order to address different segments effectively. For a late entrant who is coming to market where the most interesting individuals are locked into an incumbent platform, establishing a collaborative community of external innovators might be the right strategy [9].

Platform leadership

Towards the end of 20th century several companies (e.g. Intel, Cisco, Microsoft, NTT DoCoMo) succeeded in applying platform leadership strategy, especially in ICT industry where interdependency of products and services and the number of actors capable to innovate increased. Platform leadership is built on ”a certain vision of technological and business innovation which is achieved by harnessing a wide network of innovation within and around the industry and by manipulating the processes of competition and collaboration” [19].

The platform leadership strategy is driven by the benefit of complementary innovations developed in other companies. The more those complementary products are used, the more of them are innovated which stimulates the demand and innovation of the core product. Platform leadership is a strategy of interdependence, the strategic questions when considering aspiring after it are [19]:

- Scope of the firm: make the complement in-house or externally?
- Product technology: the degree of modularity, openness of interfaces and information?
- Relationships with external complementing actors: collaborative or competitive, trust, consensus?
- Internal organization: structure, culture, processes?

In 2001 NTT DoCoMo became the market leader in Japan in Internet based wireless services by focusing on the technology platform, a new business model, and unique content. They established a strict control over the platform but designed an attractive business model for the partners that resulted in fast and wide rise in customer base. In the long run the business model, however, turned out to be non-attracting to content developers [19]. The case illuminates how challenging a platform strategy is: how to attract customers and partners and encourage developers with competitive advantages, but reject the competitors with entry barriers; how to provide compelling content which differs from the one of competitors or the free content in Internet. Platform leadership is conceivable only if the product has limited value alone but is more valuable with its complementary products or services.

According to Gawer a large market share, not technical leadership, is the prerequisite of achieving platform leadership [19]. In the long run, even vibrant ecosystems are likely to be ruined when technology and user patterns emerge or the environment changes. The Internet is transformed to a platform itself and along that trend customer lock-in through software APIs or protocols is becoming impossible if the vendor cannot control both ends of interactions and that kind of control is not feasible without losing the strength of platform concept [60].

Collaborative communities of innovators prefer low-control platforms enabling self-organization, informal relationships, and transactions based on reciprocity and fairness which leads them to avoid powerful profit-seeking platform vendors [9]. Through some commitment mechanisms or contractual commitments the vendors still can try to convince external innovators that their efforts are not exploited or vendor´s power is not abused.

Considering the above mentioned facts it is obvious that platform leadership is seldom a feasible strategy and never for an enterprise with limited resources. Platform model as such seems to enable even smaller providers of disruptive services with competitiveness through shared risk and development costs if the ecosystem includes competent partners and other elements.

Generally speaking, pervasiveness and continuous innovation are the key success factors of most platform-related businesses. In order to achieve large enough ecosystem of loyal innovators, suppliers, customers, partners, etc. where network effects enable self-reinforcing growth, you have to be a magnet for innovation in terms of customer base and opportunities to partners [82]. In regard to social software some global providers seem to be those magnets, but even they are lacking means of locking in either developers or customers.

3.4.2 Network Effect Business Models

In Internet business the network effect is among pivotal concepts; it assumes that the value of the network increases exponentially as a function of the amount of participants. However, the operating costs often rise accordingly and the investment needed to reach the critical mass might be significant. The same features which make the platform valuable if enough participants adopt it, can drop its value if only few adopt it, thus it is crucial to find useful features for the platform even before large amount of adopters [23]. A huge amount of

participants might be undesirable too if they are not bringing enough revenue to cover the costs incurred.

3.4.3 Business Models in Media Industry

Trends

Evolving technology enabled clear changes in user behavior, the trend in content business has turned towards participation in content creation, interactivity, social networking, personalized content, unbundling, and repacking of others´ content into own products, and the convergence of delivery channels.

In media or content industry knowing and engaging the audience is crucial. Engaging through services, fan clubs, and products are traditional vehicles to build customer communities. Advertisements´ role in media business is traditionally interdependent; the content brings the audience to advertisers who finance the production. This relationship is weakening due to the fragmentation of channels, but on the other hand, the new technologies are enabling personalization of advertising as well as content at individual level. Print media is not able to harness those new features but is in big trouble because large portion of advertising has moved to low-cost online channels.

Print media is facing decreasing numbers of subscribers because the news is available online more rapidly. Local newspapers are also challenged by local media sites, albeit they are often linked together as citizen media or bridged media [45] and owned by the same stakeholders. New business models, products, and strategy are needed. Some publishers for example encourage their readers to create content by offering free blogging opportunity for them. Newspaper online community members are potential print subscribers and give valuable market information for developing the business model [18].

A fairly new trend has evolved along the development of search engine optimization technology which enables browsers to show advertisements related to the search results. Because higher page ranking brings more potential audience to advertisements, more content for everyday life is created intentionally to attract visitors and advertisers [22]. New entrants and content aggregators are challenging established content providers also with online videos.

One of the biggest challenges of European content is the cost disadvantage due to its cultural diversity most content being language-based. Due to that the global suppliers for audiences speaking dominant languages have a clear competitive advantage. SMEs are said to be more innovative and developing disruptive new offering, but their challenge is lack of resources to capitalize their innovations.

In B2B context the challenges in regard to content are:

- How to aggregate content internally in order to benefit the business?
- How to capitalize own content/user-created content?
- How to protect content from competitors?

Business Models for Content

In media industry four business models will probably coexist for some time [7]:

1. Traditional media establishes on branded content created by professionals and distributed in walled environment and dedicated devices.

2. Walled communities distribute user and community created content but through the same channels as traditional media.

3. Content hyper-syndication delivers professionally created content through open channels without dedicated devices or providers, for example multiplayer online gamers and broadcast networks on their own sites.

4. New platform aggregation model establishes on user-generated content and open distribution platforms, for example YouTube, SecondLife, and XING.

The researchers have recommended for the incumbents to deliver experiences instead of pure content, to leverage virtual worlds, to invest in interactive advertising services and platforms, to redefine partnerships, innovate and invest in new business models, and create a flexible business design [7]. Virtual worlds such as SecondLife enable self-styled experiences and the users decide themselves which brand or service extensions (content, loyalty, character, and storyline) they use.

The companies have two main options for a new strategy as response to new situation, directly or through licensing to a partner or consortium of

competitors. Licensing shares the risks and investment with the partner or competitors but the revenue as well.

Bernoff has classified consumers to six groups forming ladder-shaped ecosystem: creators (who publish, upload, write), critics (who rate, review, comment, contribute), collectors (who add tags, use feeds, vote), joiners (who maintain profiles, visit sites), spectators (who read, listen, watch), and inactives (neither) [8]. It is quite obvious that the same groups are found among business users as well. Only minority of those is willing to pay for the platform owner but the provider has to find other revenue sources, maybe based on the number of potential audience.

Media industry is based on two-sided or multisided platform concepts. The key to success in the content based industries is to understand the linkage between content, advertising, and payment. Associating local news, local content, and community services, or associating content profiling and e-commerce or advertising are examples of innovative content-based value networks.

3.4.4 Business Models for Collaboration

Collaboration platforms provide an environment for collaboration inside a company or between companies; for example collaborative design or project support for a virtual team or team of consultants. The main features are managing presence, profiles and communities, and providing work space for projects. For the buyer of a collaboration platform it is one of the investments in infrastructure for daily tasks or revenues from other sources, in both cases the costs usually cannot be passed to end users. Basic business models from provider view are managing the platform or selling specialized tools needed in utilizing the platform [85]. Also maintenance, support, and interoperability with other platforms are potential revenue sources.

3.4.5 Business Models for Communities

B2B communities are established for receiving direct or indirect revenue. If the community provides valuable content, a membership fee for the access to it is a simple earning model. Secondly, if the interaction within the community is valuable for an external company, it could be capitalized as strategic partnership. Harnessing thought leadership partners or charging for focus group research are more advanced revenue models [15]. Professional networks might sell member profile information for recruiting companies. Most of the

B2B communities are, however, valuable indirectly through better customer engagement, interaction, and loyalty which means that any universal earning model cannot be described.

3.4.6 Business Models for Learning

There is a long-term trend in education to adopt tools initially designed for business use. Thus participatory technologies are slowly emerging also on educational field where they are expected to improve learning and attract students, albeit participatory learning not necessarily requires new technology but participatory forms of educational design. As learning basically is a social process, participatory computing could be harnessed to enhance collaborative learning and learner-centric approach. Virtual worlds like SecondLife and Active Worlds Educational Universe are used for educational purposes, but as walled gardens their future is uncertain. According to some academics, the virtual learning environments, if not left irrelevant due to newer technologies, will be updated in the future to personal learning environments or to social personal learning environments [6].

Learning industry now breaks up to platform, training, and learning solution industries. Legacy systems include learning management and learning content management, the social software brings applications for collaborative learning. Training often includes also consultation and facilitation. A wide variety of platforms for establishing learning networks and networks for educators as well as for learning solution management are available and they are widely in use. Legacy learning spaces like Moodle can be expanded with social software.

The main target groups of learning platforms are schools and universities on public sector, learning solution providers on private sector, and enterprise learning functions. The platform model is emerging in customized executive education where two-sided network concept is applicable [2]. One side of the network is the owners of skills and expertise, the other side consists of customers looking for education. The intermediary between them, the platform providers, are the organizations that build client relationships as trusted advisors. This phenomenon is driven for example by [2]:

- The increasing number of free agents working independently outside institutions,

- Recognition of open collaboration as a driver of innovation, customization, and career development,
- ICT technology enabling decentralized production and delivering of learning solutions with competitive price/quality ratio, and
- Sophistication of customer demand requiring integration of disciplines, methodologies, and approaches.

The next generation, Web 3.0, includes the concepts of semantic web, the mobile web, and the immersive Internet. The increasing trend to provide web experience through more versatile mobile devices is expected to extend to learning as well. Semantic web that understands the meaning of data and uses natural language searches, enables finding and interacting with the right content and subject matter experts more easily. In addition to that, using virtual worlds, simulations, augmented reality, and multiplayer gaming technologies for learning are among the visions associated with Web 3.0 [21]. Albeit the technology for learning comes a step behind the technology for business processes, there are several initiatives to harness the emerging technology for learning in order to save costs and to improve business performance. The product will not be content loaded to a device but a space for learning with connections to other resources [31].

The education sector in spite of its size and potential, is still fragmented and intertrading ecosystems are not broadly developed, but some governmental initiatives are taken in Europe to build non-commercial ecosystems to exchange and manage knowledge in nationwide networks [6].

In Finland as well the learning industry is small, most of the companies producing or selling e-learning products employ only few people and a couple of larger publishing companies took most of the revenue in 2008. About one third of the target customers are enterprises or other organizations and a huge majority of revenue comes from learning content creation [81]. Teachers use widely open source software [31]. Global enterprises typically count on large non-Finnish platforms and content providers in order to ensure global availability, scalability, and conformance with other enterprise systems.

Competence on learning and pedagogy is on high level in Finland according to OECD´s PISA assessments and based on that education is expected to become a significant export product for Finland. Developing virtual learning

environments that enable also future expectations of dialogue and interaction is a clear opportunity in that business, while business window is now mainly used by providers outside learning industry and some new entrants [68].

3.4.7 Earning Models

In this chapter at first some common earning models used in online business and social business are described. Secondly, the challenges in platform pricing are discussed.

Generally, an earning model describes both aspects of revenue and costs, but in this study the emphasis is on the revenue side. Enders et al. [17] find three categories of revenue models for social networking software:

- advertising,
- subscription,
- transaction.

Chai, Potdar and Chang [11] reviewed 66 public social software websites from categories of bookmarking, collaboration, community, e-commerce, project management, text, video, and wiki. They found three revenue models in addition to the earlier mentioned ones, namely:

- affiliate programs,
- donations,
- selling merchandise.

Advertising is the second most popular revenue model and maybe the most popular amongst general purpose, public social software sites, but because it deteriorates the user experience many sites offer an advertisement-free version for a fee. Affiliate programs bring revenue as commissions from referring users to other services; this model is found profitable especially if the users are to review products or services. Donations in order to cover costs and future development of the service, for example Wikipedia, presume that the number of users is high, the software is free for them, and it is found useful. Selling software-branded merchandise like clothing accessories or mugs is one of the most rare revenue models.

Conventional subscription pricing means charging fixed price over the period which gives subsidy to high usage customers if the costs scale up correspondingly, but it may be also usage-based [4]. Another impression is that time-based revenue models (usage fees) are probably ”relics of the past” [17]. The length of software licenses has decreased even to monthly ones, so that the invoice period reminds a newspaper subscription.

For every revenue model there is a main revenue driver that implicates the long tail as shown in Figure 11. The advertising model can be viable even if the participants are not willing to pay, but the number of users is the key revenue driver. Attracting more members means lengthening the long tail of networking.

Subscription or membership model is viable if the customers are willing to pay which depends on the expected value of the service [17]. Different pricing schemes for different feature sets adjust the perceived value for more users. The increasing value corresponds fattening the tail in Figure 8.

Transaction cut or commission is paid to an actor who organizes, facilitates, or performs a deal between exchanging parties. Transaction model has endogenous and exogenous types, the first meaning that the platform provider sells goods or services to users, and the latter that the provider sells third party content or enables transactions between users. This model [17] is heavily based on trust in the platform and peers, the trust together with connecting supply and demand drives the demand down the tail.

Revenue model	Revenue drivers and impact on model			Implication
	Number of users	Willingness to pay	Trust	
Advertising	very high	small	small	Lengthen
Subscription	medium	very high	medium	Fatten
Transaction	substantial	medium	very high	Drive demand down the tail

Figure 11: Revenue Drivers for Basic Earning Models [17].

Quite often a mix of models is used. If marginal cost is low, and there is at least a small portion of customers who are willing to pay for premium services, providing service for free to the others may be more cost efficient than billing all [31].

It is obvious that many of these revenue models are not applicable in B2B context even when the end users are customers of the customer. Hagel [23] introduced six models from which the presumably most relevant in this context are:

- Loss leader model: items are given for free or at low cost in order to enhance other sales like enhanced or bundled products or to generate demand for other content.
- Sell services like authoring tools, hosting or warranty to open content producers.
- Free the content, sell the platform. For example software can be free but hardware and services are liable for charge.
- Sell the basic product but let the users enhance it.

Selling user-generated content is non-feasible due to ethics and privacy issues [17]. Hagel argued that also selling or renting user profiles for third parties is only a theoretical model because it brings the trustworthiness of the company into discredit [24]. Today, however, several companies are selling profiles openly and many doubt that it happens also without permission from the community members.

Pricing of two-sided or multisided platforms is challenging because pricing of the other side impacts willingness to pay (and growth) on the other side. The aim is to achieve maximum cross-side network effect with optimum same-side network effect. Giving subsidy to one side is healthy presuming that the provider has the ability to capture cross-side network effects. Basic principle is to subsidize the more price-sensitive side and charge the one whose demand is increased along with the network growth. Sensitivity to quality is another criterion: the provider should charge the side that must supply quality. Same-side network effect is not always positive, downward pricing pressure due to rivals may restrain willingness to participate. In that case the platform owner should consider charging for exclusive rights to participate. Brand value of big users, if they are committed not to use rival platforms, attracts participants to the other side, but sharing the value with them may be intractable. [16].

The concept of global engineering network was launched in 1990s by Deutche Telecom. At that time pricing was a combination of package, service, and transaction fees. The customers preferred service on subscription basis in order to ensure guaranteed response for better time-to-market; price was not considered a competitive factor [85]. According to research [13] simple monthly subscription fee is still the most common (50%) model for web-based enterprise solutions. In the long run the marginal cost of web applications seems to approach zero due to wide availability of open source software; so services like customization, installation, integration, deployment, maintenance, and support as well as various indirect pricing models will apparently become the main revenue sources in the future [13].

Prices of Enterprise 2.0 applications are under pressure also due to commoditization, bundling, and subsumption [52]. Commoditization divests the foundation of differentiation, bundling application to suites has the same outcome. Subsumption happens when large companies add the new features to existing platforms at no or minimal cost or enforce smaller competitors to partner with the largest ones.

In traditional software business the revenue model is not connected with the product or service as opposite to software-as-a service business where the revenue streams are based on metrics built into the applications in development phase. The most relevant metrics representing the cumulative value to a customer is not necessarily the number of users or the amount of storage needed. Well-designed metrics enable bundling features decoupled from pricing which is then applied and customized according to customer segments or, to the utmost, the perceived value by each customer [55].

3.4.8 Pricing Strategies

From a total customer value perspective IT services consist of ”software, hardware, telecommunication networks, data, maintenance, technical support, and consulting necessary to design, deploy, operate, and maintain computer application for the purpose of delivering superior customer value” [25]. Industrial (single product) pricing approaches are categorized to cost-based, competition-based, and customer value-based ones. Value-based pricing is grounded on customer´s value requirements and willingness to buy products and services that maximize the perceived value; the acceptable development costs are derived form that value [25]. According to that view ”customer value includes the full set of customer benefits and sacrifices – except the purchase price” [28]. Thus, in this concept customer value is independent of pricing strategy.

The competition-based pricing is found dominant in spite of numerous research recommendations to use value-based pricing [30]. In competition-based category the models are penetration pricing, price skimming, pricing according to average market prices and price follower behavior. Traditional cost-based models are flat pricing, tiered-pricing, performance-based pricing, user-based, and usage-based pricing models.

Customer value-based pricing includes two challenging tasks: making the value assessments and effective communication of the value to the customers, preferably communicating benefits in accordance with customer needs [30]. Customer value creation in B2B market is described with six dimensions as in Figure 12. As abridged for social platform business they are [28]:

- Product quality including conformance to specifications and reliability,
- Delivery capabilities including delivery speed and flexibility,

- Services including installation, support, customization, performance guarantees, financial services,
- Ease of doing business including ease of ordering, responsiveness, and reachability,
- Vendor quality including competencies, product and additional solution development capability,
- Self-enhancement including social status and prestige in company network.

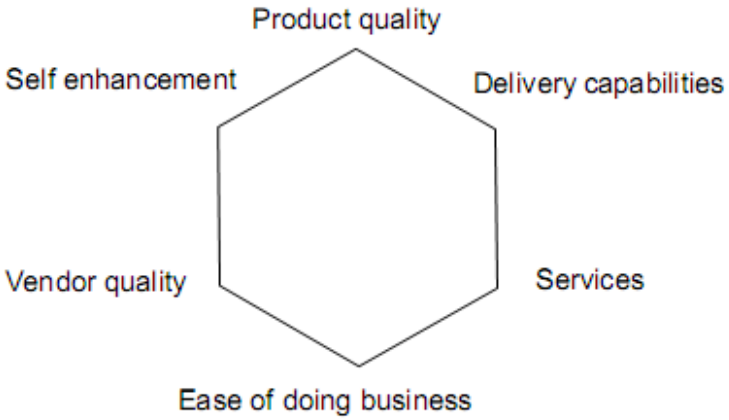

Figure 12: Customer Value in Industrial Markets – Dimensions of Benefits [28].

In order to choose the optimum pricing strategy, the service provider has to identify the value drivers for each target market segment and what kind of product and service configuration will maximize the customer value. Pricing bundles should be based on value-added features and services rather than commodities to be most profitable and giving vehicles to differentiate the pricing [55].

Service developers prefer strong platforms because their network seems to promise more revenue, thus the weak platforms have to adjust their pricing strategy according to the strong ones. The dilemma of pricing is somewhat different if the business customer is the end user or if it is buying the platform

in order to offer services on that platform for its own customers. Estimating the value of the platform to the customer is even more difficult if it is used by customers′ customers.

3.5 Enabling Technology and Standards

The Internet is nowadays understood as a platform of platforms due to the adoption of new technologies. Network capacity and speed have increased rapidly, interoperability across different types of network infrastructure has become a commonplace and the price of storage media plummeted. As a consequence, probably the most important enabler of the modern service economy, cloud computing, emerged enabling thin-client web-based applications at significantly lower cost than legacy solutions. Cloud computing is a model ”for enabling convenient, on-demand network access to a shared pool of configurable computing resources (e.g., networks, servers, storage, applications, and services) that can be rapidly provisioned and released with minimal management effort or service provider interaction” [53]. Cloud computing concept includes service or delivery models for infrastructure (IaaS, for processing, storage, and networking), platform (PaaS, for creating applications), and software as a service (SaaS, for using applications). The user finds SaaS convenient because no downloading of software is required and it can be run from any computer.

At simplest the charges of cloud computing are derived from actual CPU capacity used or actual disk storage used meaning lower total cost of ownership compared with own infrastructure. It is easily taken into use without complex decision making process and corporate IT participation because service costs are treated as expense, not investments. This recurrent expenditure maybe found also as a barrier for growth depending on the industry [6]. Other barriers are the security risk of storing all the work and data in the hands of a single service provider and integration with managed services for ICT. A single service provider raises concern on availability of the service and possible data loss. In some cases the concern is about the internal data in external hands.

Rich Internet Applications (RIA) such as Asynchronous Javascript (AJAX), several Flash-based systems, and its alternatives enable showing rich graphics on browsers. AJAX is a group of browser technologies which enable dynamically reloading pieces of information after the page has once been

loaded. Most of the new applications include RIA and a significant amount of them build primarily on it. The developers divide into supporters of REST (Representational State Transfer) representing simplified programming models or SOAP and WS-family which are more formal [3].

RSS is a family of XML-based data formats for websites through which files containing publishing information and content summaries can be exchanged in syndication process. The users interested in updates on that website can subscribe to the RSS feed and be informed by the aggregating tool in their computers.

Another important enabler of Web 2.0 services is Application Programming Interface (API) technology. API´s are often open enabling license-free use of modules from other sources without access to the source code. API technology enables also portability of social graphs from social network to another. This means opening software services and databases via an API. However, APIs may be open for non-commercial use only [3].

Modern technology enables generating profiles of expertise through analyzing emails and their attachments with data-mining or agent-based technology [12]. These profiles can be used in building social networks for better utilization of expertise.

Large vendors like Microsoft, IBM, and HP provide also server-based solutions and social software features to existing enterprise platforms. There is not yet a common understanding about the best strategy: adding social applications on the board or adding social features to existing applications or both. Social software infrastructure consists of elements which dictate deployment and management options of solutions, those elements are data encryption, policy management, security, storage, single sign-on, and available deployment options (on-premise, hosted or SaaS) [87]. Compatibility of social software with other enterprise systems is crucial for building the most efficient business models. Providing these interfaces or plug-ins often differentiates free ones from charged software products.

Single sign-on (SSO) is a property of access control for using multiple related but independent software systems with one account information. There is also a non-profit foundation providing a decentralized authentication protocol OpenID developed by the volunteer community. This open standard enables authentication to large amount of websites with an existing account in one of

the brand-named log-in sites. It is more convenient for users, but represents a larger risk if the account is compromised.

Technology standards are often used for impediment of interoperability as providers try to lock customers into their own proprietary standard. Producers, distributors, and customers, or consumers willing to use several channels or applications or willing to replace the system find this frustrating. The trend however seems to be towards more open and user-friendly technology which enables producing high quality content to be mixed and shared on any channel.

In learning industry transportability of content between learning platforms is crucial to the development of efficient ecosystems. Two models for this purpose have been launched: The Sharable Content Object Reference Model (SCORM) and AICC Guidelines & Recommendations (AGR's).

SCORM [72] is a set of related technical standards, specifications, and guidelines requirements in order to guarantee:

- Accessibility: The ability to locate and access instructional components from multiple locations and deliver them to other locations.
- Interoperability: The ability to take instructional components developed in one system and to use them in another system.
- Durability: The ability to withstand technology evolution and/or changes without costly redesign, reconfiguration, or recoding, and
- Reusability: The flexibility to incorporate instructional components in multiple applications and contexts.

The main components of this model are Content Aggregation Model (CAM) , Run-Time Environment (RTE), and Sequencing and Navigation (SN).

The AICC AGRs are published by The Aviation Industry CBT Committee. Each AGR makes a technical recommendation in a specific area including conformance requirements for file-based and web-based environments.

3.6 Selection Criteria

In this chapter the B2B market and purchasing process in enterprises are characterized. Secondly, some general criteria and guidelines for platform choice are introduced in order to help realizing the customer perspective.

As found earlier, to some extent public social software is applicable also in business-to-consumer context, but in B2B context the requirements are usually on higher level. Commercial platforms, as commercial software in general, is supposed to provide more support, reliability, and continuity as open source ones although opposite opinions are heard as well. In B2B use of social software fulfilling the business goals, objectives, and requirements comes first, but assessing appropriateness, security, control, management methods, and roll-out strategies of tools is also important.

Albeit many concepts and models are applicable to all businesses and industries, business-to-business markets have also some fundamental differences [28]:

- Products and/or pricing needs to be customized;
- Value of the product or service depends on usage;
- The end user is most often not present in selling stage;
- The products or services are further used in producing or incorporated into other products or services to be sold to other customers;
- Customers are organizations with purchasing norms and regulations;
- Customers are profit and/or budget constrained;
- Customers are more knowledgeable than consumers.

Common criteria for purchasing decision, in addition to product features, price, and TCO, are vendor features; credibility, image, trustworthiness, understanding of customer´s business, and cooperativeness [87]. The willingness to buy has also a mathematical expression as the sum function of the surplus value of the product or service (in terms of economic value and

price) and the perceived fairness of transaction (in terms of price and reference price) [29]. Those findings describe the complex nature of the buying process which buying online cannot match.

Selection criteria

Following the normal selection criteria of the company but to begin with evaluating tools from providers already in use in the company is a good idea, at least when interconnection and conformity of social software with other applications like document management system is important [62]. If the platform is to company-internal use only, it is protected by the company firewall as any other solution. If it is aimed at mixed use, commercial B2B platforms are a better choice than P2P ones due to professional security management. In companies where protecting intellectual capital and business secrets is crucial, data security may be the absolute criteria of selection. Companies also often need approval procedures, role and access rights management which are implemented in commercial platforms.

The set of relevant applications and features is strongly dependent on the business needs and chosen strategy. Among the key criteria are the type and size of the community aimed to use the platform: the community might be open or invitation based, large or limited, members being internal or external, customers or partners, etc. As the number of communities increase, automating and scaling routines is time saving as microblogging for knowledge sharing.

If the social platform will be integrated with existing third-party applications, the ability to communicate with back-office and collaborative applications or even consumer social networks, is an important selection criterion [87].

When selecting a platform for learning, firstly educational and administrative dimensions have to be considered and the resources available for administration, infrastructure, support, and maintenance assessed, and institutional policies clarified. In the design phase it is important to select a reliable provider who shares the same philosophy of education. Development of business models and pedagogical processes should be anticipated as far as possible. [42]

Communication costs are among important design criteria if the functionality of the solution is based on fast and global private virtual networks. If the users are consumers, they pay their network expenses themselves, but low bandwidth or

firewalls should not prevent convenient use. In some cases language or possibility to record and review online sessions are among selection criteria. Usability, functionality of tools and systems are always important. Technology choice should be based on the strategy and business needs as well. Over-investing in technology-driven differentiation increases both financial and operational risk, even when the amount needed is not substantial [24] .

3.7 Success Factors

Profitable and sustainable social business seems to lie on communities, partnerships and culture. The vendor needs to understand these fundamental drivers of value-creation to provide the appropriate platform features for supporting them. Partnerships are the vehicle to build the diversified ecosystems capable of providing complementary services for customers. Firstly, prerequisites, assets, and skills for building and owning a community are described. Secondly, the role of partnerships is discussed. Thirdly, some cultural issues are highlighted.

Assets and skills to own a community

When starting to foster an online community or social network, the customer has to remember the chosen strategic goal. For example, an open network is about resource exchange of information with partners not connected with each other, a closed network is about social exchange, trust, and shared norms among tightly connected partners. This brings a challenge when inter-organizational knowledge transfer is needed [26]. Relationships between customers and companies drive usage, engagement, and success, but instead of customer community, they should rather be communities of interest accepting employees and other stakeholders.

The success of a typical social platform is highly dependent on community growth. Based on interacting and reinforcing dynamic loops, the key assets driving growth can be identified: critical mass of members, usage profiles, advertisers/vendors, transaction profiles, and transactions [24]. B2B communities are likely transaction-intensive which means that value creation is more dependent on achieving critical mass of vendors, transaction profiles, and transaction activities than in advertising-intensive consumer-oriented communities [24].

Popularity of a service is most often a consequence of experienced value to users, not of marketing effort or service quality. The communities create the value to participants and so it is highly dependent on the popularity of the service among its target group. The success factors of virtual communities do not explain the success of social networking services. Social networking sites enable new ways to find contacts and to manage a growing number of them efficiently which is comparable with the long tail concept described in Figure 8. This growing number of contacts or probability to find resources or competence for a project represents value to the user.

As mentioned earlier, the revenue drivers for each of the earning model differ: the number of users on platform in advertising model, users´ willingness to pay for a service in subscription model, and the level of consumer trust in transaction model [17]. Willingness to pay increases when the perceived value by the customer increases. In social networking the value usually depends on the activity level due to unique customer value, content, rich profiles of the members, interaction, and tapping of its expertise. Analyzing corresponding value drivers for other genres of social software might answer how to increase revenue by enhancing customers´ willingness to pay.

Hagel believed that early entrants will achieve the position of well-established, differentiated organizations with unique assets capable of building switching barriers to members and become insurmountable in scale and scope economies [24]. After that increasing returns dynamics leads to concentration which is fuelled by advertisers and vendors benefiting from size of the community. This prediction seems to have come true with some general purpose platforms as Facebook in Europe. However, in B2B context the role of advertisers and developers is less dominant and the community choice driven by other interests.

A community organizer needs some fundamental assets. A renowned established brand facilitates attracting members to the community. Prior customer relationships give a solid base to understand the needs of members and in best case a ready critical mass for prolific interaction. Interesting content which can be supplied in more attractive way online encourages members to start with. The focus of interest is moved towards indirect effects i.e. how building communities supports other revenue sources. Unfortunately in that case the success drivers and factors are much more difficult to distinguish.

A three gate model in Figure 13 describes how a community might achieve a profitable state of life: through generating traffic, concentrating traffic, and locking in traffic [24]. In early stage it is crucial to maximize the traffic, generate awareness, and make the most of existing networks, other media, and partners. In the second phase increasing usage rate, engaging members, expanding, and deepening offerings in order be able to extract value of the community. Locking in happens when the switching barrier is high enough to keep the members in the community. Personal relationships, organized user-generated content, proper functionality, and customized experience raise the switching barrier. Professional collaboration communities, even they are challenging to build, are presumably the most long-lasting.

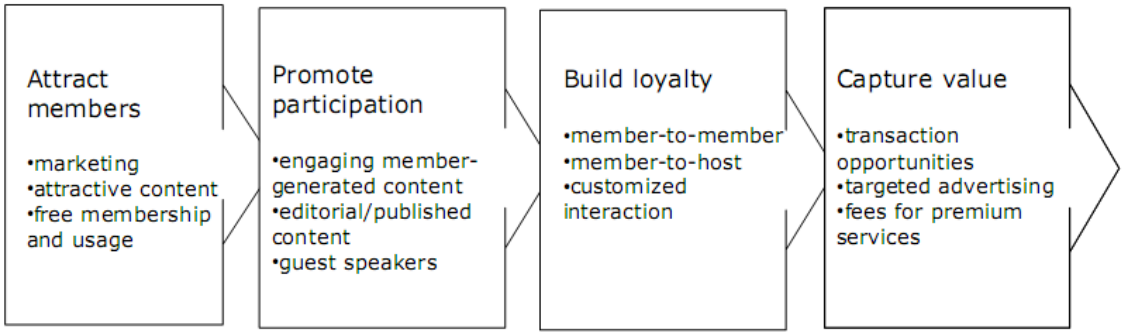

Figure 13: Phases of Member Development [24].

The market of B2B online communities is in early phase, but it seems to be that the companies who benefit are [15]:

- having high-value customers whose senior decision-makers or key influencers are members in the community,
- operating on highly competitive marketplace where community serves as a differentiator and encourages innovation,
- operating in fast-moving industry where rapid exchange of information is crucial.

A community should be designed as a new product with business plan, set goals (improving customer service, exchanging customer experience, marketing, etc.), and measures [15]. Features of the community should be aligned with client needs. By using a dedicated platform the owner maintains

the ability to manage the community. ”Great content and great connections are what differentiate an online community” [15]. Institutional content like thought leadership content and white papers should be offered for the members in order to keep them engaged. Planned, relevant, and fresh information is more important than the volume of it. Moderating, monitoring, managing, and supporting the community have to be organized properly because especially in early phase they are the pivotal elements of success.

O´Reilly summarized the core competencies needed [57]:

- services, not packaged software, with cost-effective scalability
- control over unique, hard-to-recreate data sources that get richer as more people use them
- trusting users as co-developers
- harnessing collective intelligence
- leveraging the long tail through customer self-service
- software above the level of a single device
- lightweight user interfaces, development models, and business models.

Partnerships

Partnerships and acquisitions complement the service offering of platforms or the ecosystems. Evaluating them properly before launching the agreement is important because any problem influencing common customers easily casts aspersions on the brand. The criteria for evaluation might be at least brand alignment, customer reach, management talent, financial stability and proprietary technologies [7]. In some cases regional exclusivity of the partner enables direct access to the desired customer base.

Culture

Culture in this study has several facets, culture is expected to influence on the structure of information systems, applications, usability, content, work processes, etc. According to several studies the perceived success of an information system depends significantly of the culture, “the meaning of information and effectiveness of an information system can vary substantially

in different cultures" [1]. On the other hand, according to critics a national culture has little explanatory power and should be seen as "contested, temporal, and emergent" [57]. Differences due to company history or differences between professions or industries might be more explanatory in regard to acceptance of participative applications.

Collaboration approving company culture is a crucial prerequisite to success in introduction of new collaborative applications, but compromise between commonality and customization depends on company selection. Trade-off between management control and encouragement of use is one of the biggest challenges in social software rollout.

4 Results

4.1 Platform Examples

Hundreds of platforms and applications are available for collaborative work, networking, learning, and content sharing implemented as in-house server based or software as a service (SaaS). In this chapter some examples of widely used social platforms are described as comparison material for the actual cases later in this study.

BSCW (Basic Support for Cooperative Work) [10] is maybe among the oldest tools for collaboration being launched in 1995. The company offers several versions of the product. An in-house server version is available with two options: free version without technical support for homes, schools, and universities; a full version for license paying customers. License fee is based on maximum number of users. A hosted solution (SaaS) has versions using a shared server or an own dedicated server. Pricing model for both is a set-up cost and monthly fee per amount of users. A free trial version for in-house servers for 90 days is downloadable, but online access trial requires registration.

Basecamp [5] is a set of services for online project collaboration; the same vendor 37signals provides tie-in products also for maintaining business relationships and organization, team communication, and group chat. The product is available only as hosted and non-customized on 14 languages. Hundreds of third party applications integrated through API´s are available as complements to the product. Thus this ecosystem provides tools also for billing and invoicing, mock-up reviews, time tracking, mobile apps, and so forth. The pricing model is a monthly fee per limited amount of projects and storage, but the number of users is unlimited. Only online payments, except PayPal, are accepted. The product was initially launched by the consulting company 37signals for an established customer community [80].

XING [93] is a networking tool for business people including internal messaging, profiles, search, address book, discussion groups, tagging contacts in order to categorize them for private use. The service is available in several languages. XING has a two-tier membership system: the basic service is free, but the premium services including many core features are payable. Customer acquisition is user-driven. The revenue comes mostly from the membership fees, the rest from closed branded areas for large companies or organizations

who are able to leave e.g. job ads, company profiles, and videos. Partners provide business-related applications. Advertisement model is not used for site image and traffic expectation reasons.

Ning [58] is among largest platforms for building own online communities with customized sites and privacy settings up to closed communities. The features include blogging, activity feed, commenting, and video uploads. Earlier Ning provided free content and services for users with advertisement based revenue model but decided last year to focus on companies, musicians, political groups, non-profits, and the like who pay in average 25$ monthly. Educational networks get cheaper accounts. The customers are allowed to sell their own advertisements, make money as affiliates, and charge for premium content sharing the revenue with Ning. Phasing out free accounts decreased the amount of users to one fifth which was less than the company expected [90].

Second Life [73] is a massive multiplayer game or synthetic world with own economy where consumers are also developers, community members, and entrepreneurs while many companies are also at present. The solution is aimed for collaborative work and education. Trading virtual goods in real money is encouraged in this non-limited, infinite customer innovation platform. In Second Life features like simulation, interaction, and augmented reality enable to build immersive virtual learning environments. The affiliate program with flat commission and the market place attract new members, the solution provider program for its part attracts new developers.

HotChalk [33] is a platform for students, teachers, parents, and school administrators delivered on ten languages. It includes a learning management system (LMS), a library of lesson plans and digital content, tools for class room tasks, and online communities for teachers, parents, students, and thought leaders. External content providers are used for producing learning material. Basic features are free, but premium content and professional development services are charged on subscription basis. Premium content is packaged by age groups and by partner. Advertising and corporate sponsorships are part of the revenue model.

TeachAde [84] is a free platform for teachers´ online information sharing, collaboration, and professional networking; not for students. Basically it is free for users, but the business members pay an annual membership fee in return for receiving feedback from teachers on their products and services. Commercial

members are allowed to display their brands and trademarks in the community.

Outstart [63] provides sets of solutions for enterprises: social business software, learning content management, learning management or integrated learning & knowledge suite as SaaS delivery. The social component of the TrainingEdge.com product includes communities and wikis, expertise exchange, private messaging, and organic knowledge capture. The Participate product is their tool for establishing social learning environments for informal competence development. The Participate integrates social networking, collaboration, and knowledge sharing technologies. The system provides security and access control; GUI configuration; configurable workflow; crawlers for websites, file systems, and RSS; and integration with systems such as SharePoint, MS Office Communication Server, and CRM.

Outstart Inc. has a partnership program for managing the ecosystem. The partners are categorized into five [63]:

- Value-Added Resellers resell and support OutStart products, often in conjunction with their own or other third party products and/or services as a hosted (ASP) or behind-the-firewall solution.

- Certified Service Providers provide strategy, implementation, integration, and/or content development services with OutStart products, often in conjunction with other enterprise applications and systems.

- Content Providers certify their content products are integrated with OutStart solutions. This allows the delivery of a more complete horizontal or industry specific solution.

- Technology Partners develop and sell products and solutions complementary to OutStart products, often through cooperative marketing and sales initiatives

- Strategic Alliances are companies who have established commitments with OutStart at the highest corporate level. These relationships tend to be global in nature, benefit customers, and often other OutStart partners.

Outstart components are for the most part conformant with SCORM, AICC, and several other standards of the industry.

The pricing model of Outstart consists basically of a set-up cost and subscription fee, but being a product targeted for large conglomerates, the pricing is in practice case-specific [39]. The partners are promised to get access ”to range of benefits, resources, and opportunities” [63] including software license, but concrete levels are case specific.

The previous examples of different products are compared with the products of the following case companies. They represent the genres of networking services, collaborative learning, content production, and online workspace.

4.2 Case: Online Networking

TWID Oy, established in 2009, 7 employees, turnover 46 k€.

TWID [88],[37] launched in 2010 a closed online community service for clients, partners, salespersons or employees of a company. The product originates from Stora Enso new business development in 2007, now owned by a private company. TWID software provides features for discussion, blogging, content sharing, and management; grouping customers and staff on topic basis; measurement and reporting; surveys, member referrals, direct marketing, and rewarding active community members.

The main target customer group is fitness clubs who wish to provide a closed social community for their own customers, on domestic market the product is offered also for SMEs in other industries. Main sales arguments are engaging members and increasing sales through differentiation, loyalty, feedback, and recommendation.

TWID implementation is of SaaS type, hosted in a German company. The service is used with browser as a standalone application or as add-on to existing company web pages. The service is tailored according to the customer´s graphical look and feel before launching. User interface is available also through Facebook and Twitter accounts. The content is returned to the customer when the agreement is terminated.

The setup cost of 2000-3000€ is charged for tailoring, training, and launching the service; later a monthly subscription fee of 300-500€ depending on company size and amount of features is charged covering maintenance and updates.

Their success factors according to the company are

- the platform provider has high expertise in fitness club business,
- the product is a turnkey service,
- Finnish speaking customers get service and support on their own language.

4.3 Case: Learning Community

Prewise Oy, established in 2004, 70 employees, turnover 4.5 M€.

Prewise [66],[64] provides a family of products for competence development: digital training and communication solutions for sales and customer support, process implementation and professional skills aimed to share knowledge and involve people in various major changes. The collaborative learning features are community functions, content functions, challenge functions, and reporting. In addition to studying online together the users also share their own experiences, views, and opinions as the members of the learning community. Sharing experimental knowledge, gaming, and competition are expected to motivate the community members. It provides an opportunity for larger audiences to create a dialogue with content experts as well as to measure activity among individuals and groups.

Prewise Gimlet™ Challenge product will be tailored case by case according to the agreed concept, campaign identity, visual layout, and content. The software is based on general standards, the source code is available to customers. A managed learning and business community Oppidom is provided with partners (now Prewise Group and Vectia Ltd), it is a turn-key service concept for content experts, sales agent/distributors, and localizing partners willing to deliver their knowledge on sales and marketing area. Oppidom is built on Gimlet LMS and Challenge platforms. Oppidom acquires the learning content either through content licensing, content purchase or revenue sharing agreements.

The main target customer groups of Prewise Gimlet Challenge are big and medium-sized organizations who wish to implement learning campaigns when a new strategy, process, product, value set, or way of working should be

communicated efficiently to a diverse target group. It is at its best for project style trainings or business change implementations where the active phase is defined and scheduled [64].

In the core of the ecosystem are Prewise Oy, the customer, and customers content experts (internal or contracted). Prewise aims to be a method partner with full-service strategy, not a content provider. However, some off-the-shelf course products for niche market are created with own partners.

Prewise Gimlet Challenge implementation is most often of SaaS type and based on .NET, SQLServer, XML, Flash, and SCORM standards. Single-sign-on is available. The content is hosted on Prewise´s premises or customer premises. The content is returned as SCORM package when the agreement is finished.

Success factors according to the company are

- full service built together with the customer rather than plain tools,
- the performance measurement feature,
- focusing on managed process to achieve business related objectives.

Finnish skills make selling easier in Finland, but customers are mostly international. Pricing strategy is partly cost based, partly competition based. Set-up cost including tailored user interface is 10-15k€ for a new customer, 5-10k€ if LMS already installed. Monthly subscription fee 500-1500€ depends mainly on features, not amount of users. As a project oriented proposition the pricing is flexible. Off-the-shelf courses are sold on fee per user per course basis or on corporate license with a basic fee + user fee. Oppidom is a license-based Internet service where revenue sharing scheme is used between partners who receive at least 30%.

4.4 Case: Collaboration Workspace

LumoResearch Ltd, established in 2008, five employees, turnover not published.

LumoFlow [47],[80] provides social workspace for collaboration within the enterprise or with its partners. The product family consists of editions, for example Group Workspace for project management with resource planning features and Enterprise Workspace for social networking in global corporations.

The product features include activity streams, discussion, profiles for networking, tools for teamwork, document sharing, and intelligence for measuring and rewarding. Among the key features are dashboards and activity feed for keeping track on project work flow. Also Twitter and RSS feeds available.

Main target customer groups are large enterprises, public administrations, and associations but also private groups in Scandinavia, Benelux, Finland, and other Europe. The service has two special customer groups: collaborative programs between companies who share common interests within the industry and secondly large global companies that build networks of higher level managers or business developers, typically teams of 200-500 persons.

The ecosystem includes Google Apps (web-based messaging and collaboration application) providing SSO account and visibility in their Google Apps Marketplace (as first Finnish company), PayPal as easy and trusted online payment system, and integration with Microsoft SharePoint and Active Directory due to enterprise requirements. Active Directory automates network management of user data, security, and distributed resources, and enables interoperation with other directories. Own affiliate program just launched for sales promotion through word of mouth and personal recommendation on 50/50 revenue sharing basis. R&D is done in-house, but software development is outsourced.

Lumoflow implementation is a SaaS service with SSO feature through Google Apps. The servers are located in Finland, hosted by another company.

Success factors according to the company are focusing on business leaders´ needs of agile project management and social collaboration. They put effort on selling the service face-to-face, but for potential buyers through web pages they offer free trial of full version in order to manage the price image and facilitate easy access. Language is not seen crucial due to global customers speaking English, but the service is localized for Finnish and Dutch speaking customers.

Pricing strategy is aiming towards value-based one. Pricing of the starter version is free including 100Mbyte storage for unlimited amount of users, with limited administration control and support service. Flexible version starts from 5Gbyte storage for max 10 users, with basic control (access control) and online support for 40€/month. Enterprise version starts from 10Gbyte storage for max 10 users, full control and full support for 95€/month. After 290 users, a volume

pricing model is applied for subscribed users with dedicated storage according to agreement, from 500€ upwards. The payments to the product partners are insignificant.

4.5 Case: Content Production

Red Tail Media, established in 2005, 2 persons, 204k€.

Red Tail Media [67], [44] is as a community media production company developing, as they say, formats of social media, format meaning an aggregate of consulting, technology, and services. Their product is a service platform for establishing an own service page for each company subscribed to this channel. Through their pages on this channel the company can deliver their marketing message as shared articles or blogs introducing their products and services to other companies or consumers. These articles are found when using search engines and the newest articles may be taken on the front page of the online newspaper or rewarded with chargeable banner space. The readers can add moderated comments, recommendations, and messages.

In the core of the ecosystem is another company as commercial partner. PRI Lähimedia Oy [67](5 persons) takes care of sales, customer service, invoicing, and development on behalf of the customer company according to agreement. The revenue is shared with media company, PRI Lähimedia, and Red Tail Media. The product is available also without the intermediary. The product R&D is in-house, but SW development is outsourced.

The main customer groups are media and marketing companies in Finland. The success factors are:

- uniqueness of the product on the market,
- measurable results and
- rapid implementation of the service.

Pricing model is a set-up and monthly subscription fee, but every channel owner, typically a newspaper media company, sets their own prices upon a basic fee level required by PRI Lähimedia.

5 Discussion

There seems to be both pull and push for social software in business use. The enterprises facing the crowded consumer market are searching business opportunities from industrial markets and enabling technology. On the other hand the employees who are accustomed to use social applications in their private life want to use similar tools at work as well.

A summary of the research findings from company information and the interviews of the case companies is shown in Tables 1 and 2. In this chapter the characteristic features of the case and example companies are discussed and compared with the literature findings.

Table 1: Summary of the Case Companies 1/2.

	TWID	**Prewise**
Genre	Community	Learning
Ecosystem	No	Content providers, customers´ partners
Target group	Health clubs, closed communities	Large and medium size, projects
Competitive Advantage	Specialization to health clubs, language, tailoring	Full service, methods partner, integration
Pricing	Set-up + monthly subscription	Set-up + monthly subscription or case specific
Technology	SaaS	SaaS
Content Located	Germany	Finland or customer premises

Table 2: Summary of the Case Companies 2/2.

	LumoFlow	**Red Tail Media**
Genre	Collaborative space	Content production
Ecosystem	Google, MS, PayPal, SW developers, partnership program	Lähimedia, SW developers
Target group	Managerial teams, adhoc, collaboration btw companies	Print media publishers
Competitive Advantage	Specialization to business managers, agile project management	No competitors, rapid delivery, measurable results
Pricing	Monthly subscription or case specific	Set-up + monthly subscription
Technology	SaaS	SaaS
Content Located	Finland	Finland

Product features

The perceived value for the customers depends on how well the platform fulfills their known and emerging needs. The example companies, which belong to the early entrants on the market, aim each product for a certain user group, but they may have a wide variety of components to compose of. For example OutStart, established already in 1999, is offering an integrated family of solutions to be used in all business functions where learning and collaborative processes are feasible. They try to solve all needs related to collaboration, networking, and learning in an enterprise providing also interfaces to information in the existing systems like CRM and document databases. As a

consequence, the users need more training and support in order to learn to find and use the features applicable to them.

Product features in the case companies are in general selected according to the needs of narrow, specialized customer groups. This is aligned with the specialization trend of platforms due to the finding that commitment in dedicated networks and communities is on higher level than in general purpose ones. Committing oneself to a community with business target is stronger than to a community where recognition from peers is the motive [80]. Differentiation through specialization is a common entry strategy as industries evolve and most of the potential customers are locked in legacy platforms [19]. Focusing a product to a niche group presumes knowing the customer needs well.

Integration with other enterprise systems and single sign-on access seem to be important features in B2B context. Large providers have more competence and resources to implement those interfaces, but also small ones like LumoFlow provide at least minimum level of integration.

Ecosystems

When the amount of consumers using the platform is significant, it becomes interesting for potential partners like developers of applications. If the developers are then charged for access to this ecosystem depends on the case. Due to harsh competition between ecosystems, developers might be valuable assets who are worth their share of the revenues. A variety of developers or partners in the ecosystem enable rapid development of new features with minimum risk.

Large global examples of providers, Basecamp and OutStart, have built complex ecosystems in order to complement their product offering and service to a family of solutions. This is implemented through intensive partnership programs. The case companies have significantly fewer partners and mainly for particular, narrow purposes in implementation and content creation like Prewise and LumoFlow.

The role of content production is different depending on the genre of the platform. The platform might carry internally created and utilized content, or content is a product of partners, and the platform is rather a media for access and management. In the latter case outsourcing the content creation is also a way to share risks and avoid recruiting own personnel. External content

providers are a crucial resource especially in learning solution industry, and when on-demand learning is needed. The industrial customers already have long tradition in using external learning solutions, but the tradition in many institutions lies on own content. XING, SecondLife and HotChalk count on users, both consumers and companies, as content creating partners. Red Tail Media is an example of innovativeness in media industry providing a channel for customer created content to be shared with customer´s customers.

In the case companies the research and development, having a strong interdependence with the business model, is typically done by the providers themselves, but software development is outsourced. The underlying technology in most of the cases is cloud computing which enables market entry even for small companies. More thorough information about the agreements with hosting service providers is not public, but it seems clear that the cost of hosting makes a significant portion of the total expenses. A generic pricing model for cloud computing includes three components: a one-time cost for starting-up the service, a subscription fee i.e. availability cost running when the service is not used, and operating cost on pay-per-use basis [36]. In addition to the costs of CPU and storage usage also fees for network connections, IP addresses, email service, load balancing and database operations may be charged.

Even small companies, as the cases show, can benefit from large global service providers when building their own simple ecosystems. Joining or affiliating with other ecosystems is not necessarily expensive as LumoFlow shows, but might give visibility also abroad and features appreciated by customers. Joining online payment systems as Basecamp did, might save costs and decrease risks. Launching an own affiliate program intensifies marketing through encouraging satisfied customers to get rewarded for positive word-of-mouth. An intermediary or a partner in the ecosystem may take care of some functions on behalf of the customer in which case the customer instead of own personnel costs pays for the service.

The social platform owners have significantly less opportunities to dominate their ecosystems than the traditional product platforms including some new mobile device providers. Instead, they are facilitating platforms, tools, and incentives for value creating users [48]. The developers and partners change easily to another ecosystem if they are not treated well, the consumer communities can also easily vote with their keyboards. Even the content created

and stored under a platform is possible to return, but in enterprises other switching costs still retain the threshold to change the platform.

Target customers

Most of the example products are not limited to business, institutional, or consumer use which is reasonable remembering that networking and project work are done in all of those environments. Due to cloud computing technology even computer capacity or licenses do not limit the usage. However, the largest providers focus on large global conglomerates having the best revenue potential.

As small companies under competitive pressure, the case companies have chosen to focus on few very narrow markets. Their expertise on that area provides a competitive advantage through differentiating the product according to customer needs in own R&D. In this aspect they differ significantly from many example companies which are in better competitive positions down to being earlier on the market and with larger resources. However, also a large, loyal customer base enables focusing on a narrow market like Ning did, to achieve more revenue through lower costs and increased prices.

Defining the target market is crucial because it dictates many other choices [86]. If the target group is very specialized consisting for example of small enterprises, it may be hard to reach them. Business category communities or professional organizations might provide a channel for finding the potential customers.

Earning models

Pricing models of the case companies resemble each other and the majority of other enterprises in social software business. The pricing model in both example and case companies is most often based on a set-up fee and monthly subscription fee as already found in earlier research [7]. Set-up cost for launching measures and customizing the user interface seem to be acceptable from customer viewpoint. The example companies have found more diversified revenue sources (in addition to subscription) from partnerships, revenue sharing with business customers, partners, affiliates and content producers, sponsorships and so forth. These more advanced sources are mainly out of range for small platform owners having too small number of users or the users cannot be charged.

Advertising is a common model in consumer portals, but basically presumes large customer communities to be profitable. Employee or partner communities are typically limited and advertising in those environments is not appropriate. Customer communities and learning communities of adults might tolerate advertisements, but at least it has to be justified with mutual benefits. For vendors of any industry the communities enable to save marketing costs by providing, at its best, a predefined homogenous customer group over a single channel. However, new disruptive business models are able to change the tenets of this business as technology enables reaching the target audience on any web page.

Profiting from collaborative or learning communities or networking is more complicated than from conventional products, because new products and services are to be built on top of open ecosystems. When the same technology is available for all at a reasonable price, the competitive assets have to be found in innovative business models, customization, support, and interoperability. The challenges lie in incentive structures inside ecosystems and intellectual property management.

Large implementations are more complex and their pricing in industrial market is case specific. Focusing on project type of selling complicates price comparison on buyer side and gives more freedom of action to small providers if big players save their resources for larger implementations. The pricing level of small competitors is often easily in full view of everyone meaning that the provider has to justify if higher prices are asked. Among the case companies at least LumoFlow applies now mid-level pricing, but is aiming later to apply value-based pricing for on that niche market competition is limited and price sensitivity presumably low.

Albeit researchers recommend value-based pricing strategy, it is challenging especially for small enterprises when large competitors are on the same market. The market leaders are able to set their price which others cannot usually overrun. Finding an exclusive, non-price sensitive target group for a differentiated and customized product gives more space for value-based pricing.

Free trial of a fully-featured service enables easy experiment without face-to-face contact and lets the product sell itself. Prices of this kind of services are often shown on the web pages, prices not shown give the impression of

expensive service which might turn down at least the cost sensitive customers [80].

The cost structures of the analyzed companies distinct from each other. Some tend to limit their costs and risk of not paid through limiting the purchases to be made only using few online payment systems. Customization of the platform, the user interface, or the virtual environment it provides might be left for the owner or the user of the platform.

A clear tendency to switch capital costs to variable expenses facilitates easier decision-making in the enterprises, but in some institutions capital costs are still preferred. Small customers rather outsource also additional services if they do not have free and competent resources already in the house.

The most sustainable revenue model of a platform when its costs depend on number of page views, traffic, amount of storage used or other community size related measure is naturally a function of the community size. Without cost-effective scalability a growing community would soon ruin the company. However, as Bernoff found, all members in a community are not active participants.

The incumbents are facing continuous price pressure due to the new competitors launching their products and services without own investments in ICT capacity, which drives them to cost savings in order to compensate the decreasing revenue. Reducing costs is achievable through consolidation, scale efficiencies, and structural changes to the business. New, more flexible business models which enable to resolve resource constraints and to act rapidly are the best response to a floundering business.

Technology

The implementation for most of the new platforms is SaaS due to its most favorable cost structure. Some in-house server based products are also available, but presumably they are developed before cloud computing become dominant or the products are aimed for customers which for some reason cannot or do not want to use external computing capacity. Among these reasons might be severe security requirements, unbearable communication costs or inadequate network capacity. For SMEs SaaS technology is the key enabler of B2B integration, because it bypasses the diverse enterprise ICT systems of participants.

Privacy and data security seem to be more appreciated in Europe than elsewhere. The Finnish vendors might consider providing premium class services using domestic high competence on that area to achieve competitive advantage over the global platform rivals.

Success factors

The success of the example platforms presumably lies on the advantage of being early in the market. They managed to achieve remarkable number of users and to develop wide range of applications with their ecosystems before later competitors. According to the case companies their critical success factors are targeting the product at a narrow purpose of use or a narrow group of users in which case the features, the user interface, and support can best coincide with the customer needs and objectives. At its best, the strategy discards competitors as in case of Red Tail Media. That strategy is also aligned with suggestions in literature for late entrants. Picking up that narrow target group from the Finnish market may be easier for Finnish companies than others.

Another success factor might be the short time from recognition of the need to setting up the customized, turnkey platform. The high level of the offered service gives probably some advantage, at least when the customer is not in ICT industry. For example TWID seems to use this approach figuring that the customers might have limited ICT competence or resources. Prewise offers full service for campaigns or project type of needs, that is, at the top customer´s resource need.

Three of the four case companies have aspirations to become international even when they all are fairly new in business. Global customers use English as working language, but with these providers the local customers are able to do business, get support, and launch their service in Finnish. In Prewise Oy the approach is more consultative, but language is not more important than in the other cases because the content (learning solutions) is mainly created by partners or the customer´s partners.

Media industry was advised to invest in interactive, measurable advertising services and platforms already in 2007 [7]. The service platform or rather the channel provided by Red Tail Media gives an example of how the media incumbents might respond to the trend of advertising moving online. Red Tail Media has licensed their platform to a partner who provides the marketing

channel with related services (selling, invoicing, customer service) to local newspaper publishers. Local news and local content entice the potential customers to the web site where these advertisements are prioritized. Licensing brings predictable cash flow to the platform provider, but the partner manages the customer relationships, pricing, and branding as well as owns the user data and experience. A locally well-known partner with existing customer relationships significantly accelerates the market entry for the unknown and small platform provider.

While print advertising is decreasing, the cheaper and traceable online advertising is in substantial growth [49]. Online display advertisements are on a new level again after the banner boom due to real-time bidding and retargeting concepts. The intermediates selling most of the online advertisements sell them in automated auctions during user sessions utilizing the traces of the user in the Internet. This concept disengages the advertisers from media publishers and web page owners representing a new threat of decreasing revenues.

From provider view the Finnish market may appear too small after the startup phase, but for SMEs as customers the localized products with support in own language might be very valuable. They do not necessarily have resources to select, implement, and maintain tools on foreign language or their customers are not willing to use them. Even while the social business products are introduced on vendors´ web pages and several categorized lists of the offering are available, many platforms are still sold face-to-face. In face-to-face contact communicating the product value to the prospective customer is more effective. The common language might then be the way to win the deal. If the company aims to an international market, the product has to be translated into English and maybe into local languages as well. Due to the fact that Europe is a very fragmented market with regard to language, it may, being equally difficult also for the American competitors, give some good opportunities to Finnish exporters as well.

As the study results, one of the success factors of small vendors is differentiating the product. The challenge for vendors is how to find the innovative features valued by customers. Because customer of the small vendors are typically SMEs with limited resources, we suggest industrial organizations to consider reciprocal participation in developing and marketing the applications to their members.

6 Conclusion

This thesis studies the business models of companies engaged in social software platforms provided for dedicated business-to-business services. Several social platforms are available for collaborative work and learning, content sharing, networking and community building to be used in business processes involving partners, employees or customers. They enable easy access to the institutional memory of the company through integrating collaboration and communication with sophisticated management of shared objects. The platforms are delivered mainly using Software-as-a-Service (SaaS) technology, the applications built on those platforms are used with a standard web browser. Thus the customer do not need to invest in own ICT or licenses but pays for the service.

This case study provides insights into the value created by four Finnish companies and eight international examples involved in providing social platforms for different genres of social business. The challenges and competitive assets were analyzed using relevant literature and semistructured interviews of the company representatives in order to discern the potential competitive advantages of Finnish entrants in social business.

The results suggest that a social software platform provides possibilities to enhance customer's value-creating processes, particularly through providing specialized and customized collaborative tools for groups with a focused professional interest. The business models of the case companies providing these platforms are found innovative and promising, but straightforward and limited when compared with foreign competitors. The core of ecosystems around the Finnish companies consists of significantly fewer participants. The companies have chosen to focus on niche customer groups which enables the vendors to differentiate the products to confine competitive supply. The pricing model including a set-up cost and subscription fee based on number of users constitutes the main revenue stream in each case, but some revenue sharing schemes and affiliate programs are also in use. The expected competitive advantage of having the same language with prospective customers was found helpful but not vital on domestic market. In spite of limited resources, some case companies are growing also outside Finland or having international customers in Finland meaning that they need to offer the solutions and support on several languages.

Even though the case companies are targeting to different market, they have many similar features. The services are hosted meaning that the provider uses an external partner for delivering the IT functions. The results indicate that the customer benefits from cost-effective scalability of the services implemented using SaaS technology, because the vendors are able to pass the scalability through the established pricing mechanism. The study aimed also to compare the business models between different genres of social business. Any significant difference in business models was not found, but the differences rather reflect the size and history of the companies or the tenets of business in each industry.

The study contributes to current social business discussion, by first, providing empirical insights into business models between enterprises, which have currently been discussed predominantly in the context of general-purpose social media, and second, by extending the perspective to encompass competitive assets of Finnish companies on the domestic market.

Further research

Among the most interesting topics for further research would be what strategic goals the customers buying social platforms wanted to achieve, what criteria they actually used when making purchasing decisions of these platforms and what kind of options they had to reach their goals. This would give more understanding of the customer needs to the suppliers.

Revenue sharing is an issue arisen due to the fact that user created content (UCG) is crucial for many social software providers in media industry. What would be the fair and equitable principles and mechanisms of sharing the revenue if the content comes from users or customers?

Many social platform providers believe that measuring and rewarding activity of the community members increases their loyalty and commitment to the community and consequentially to the platform. Comparative research of consumer and B2B communities with appropriate rewarding schemes would give better understanding benefitting both buyers and developers.

The challenges due to the content sharing social software applications and the impact of real-time bidding and retargeting of advertisements to media industry in Finland would help media publishers in their strategic development.

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