



Faculty of Technology
Industrial Management

GRADUATE STUDY

USER-DRIVEN COMMUNITY-BASED SERVICE DEVELOPMENT



Author: Vilppu Simpanen

Supervisor: D.Sc. (Tech) Ansa Harju, Principal
Lecturer of Industrial Management,
Helsinki University of Applied
Sciences Stadia

Instructor: Pekka Koponen, Development and
Project Manager, Forum Virium
Helsinki

Approved: 15.02.2008 by D.Sc. (Tech) Ansa Harju

FOREWORD

This final study was made in the Industrial Management department in the Helsinki University of Applied Sciences Stadia for Forum Virium Helsinki.

I would like to thank the whole Forum Virium Helsinki crew for a flexible and understanding attitude towards this study. I would also like to thank Dr. Ansa Harju, the supervisor and Mr. Pekka Koponen, the instructor for offering professional guidance and help through the writing process as well as Mrs. Jonita Martelius, the supervisor of English language.

I wish to thank my family and friends for all the support I have received during my studies. I am grateful.

In Helsinki, the 15th of February, 2008

Vilppu Simpanen

ABSTRACT

Name: Vilppu Simpanen	
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Instructor: Pekka Koponen, Development and Project Manager, Forum Virium Helsinki	
Supervisor: D.Sc. (Tech) Ansa Harju, Principal Lecturer of Industrial Management, Stadia	
<p>This final thesis project was carried out in the Industrial Management department of University of Applied Sciences Stadia for Forum Virium Helsinki.</p> <p>The purpose of this study was to answer to the question of how companies can use online customer community of co-creation in service development and what is the value gained from it. The paper combines a range of recently published theoretical works and ongoing customer community case development.</p> <p>The study aims to provide new information and action approaches to new service developers that may increase the success of the community building process. The paper also outlines the benefits of the use of online customer community and offers practical suggestions for maximizing the value gained from the community in service development projects.</p> <p>The concepts and suggestions introduced in the study appear to have notable new possibilities to the service development process but they have to be further tested empirically.</p> <p>This paper describes the online consumer community of co-creation to an important organizational process of innovation management suggesting that it possesses a great value to business. Online customer communities offer a potential of improving the success of new services or products enabling early, penetrable market entry and creating sustainable competitive advantage.</p>	
Key words: online communities, customer innovations, co-creation, social software, service development	

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Työn ohjaaja: TKT Ansa Harju, Tuotantotalouden yliopettaja, Stadia	
<p>Tämä insinöörityö on tehty Helsingin ammattikorkeakoulu Stadian tuotantotalouden koulutusohjelmassa Forum Virium Helsingille.</p> <p>Työn tarkoituksena on vastata kysymykseen, kuinka yritykset voivat hyödyntää verkossa toimivia, yhteiskehitykseen perustuvia asiakasyhteisöjä palvelukehitykseen ja mikä on niistä saatava lisäarvo. Tutkimus yhdistelee viimeaikaisista julkaisuista ja reaaliaikaisista käyttäjäyhteisöprojekteista saatuja käsitteitä ja malleja.</p> <p>Työn tuloksena saadaan uusien palvelujen kehittäjille uutta tietoa ja toimintatapoja, kun tavoitellaan yhteisöjen rakentamisessa parempaa onnistumista. Työ pyrkii myös nostamaan esiin asiakasyhteisöjen hyödyntämisen edut ja tarjoaa käytännön ehdotuksia yhteisöllisten palvelukehitysprojektien lisäarvon parantamiseksi.</p> <p>Työssä esiintyvä käsitteistö ja ehdotukset tuntuvat tarjoavan merkittäviä uudistumismahdollisuuksia, mutta niiden käytännön testaamista tulee jatkaa edelleen.</p> <p>Tutkimuksessa todetaan, että verkossa toimiva, yhteiskehitykseen perustuva asiakasyhteisön kehitys on tärkeä prosessi innovaatioiden hallinnassa ja sillä on merkittävä liiketoiminta-arvo. Asiakasyhteisöt tarjoavat suuria mahdollisuuksia uusien tuotteiden ja palvelujen menestyksen parantamiseen sekä mahdollistavat aikaisen ja voimakkaan markkinoille pääsyn ja luovat pysyvän etulyöntiaseman.</p>	
Avainsanat: virtuaaliyhteisöt, asiakasinnovaatiot, yhteiskehitys, sosiaalinen ohjelmisto, palvelukehitys	

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ABBREVIATIONS / ACRONYMS

B2B	Business to Business
B2C	Business to Customer
C2B	Customer to Business
C2C	Customer to Customer
CMC	Content Mediated Communication
CME	Content Mediated Environment
CMS	Content Management System
Drupal	Open-source Content Management System
DVB-H	Digital Video Broadcasting Handheld Standard
FiMTV	Finnish Mobile TV Project
FVH	Forum Virium Helsinki
GPL	General Public License
R&D	Research and Development
SMS	Short Message Service
URL	Uniform Resource Locator
VPC	Value Proposition Cycle
VPP	Value Proposition Process
Wiki	Collaborative Work Book

1. Introduction

In order to survive in the modern turbulent business environment where competition is hard, margins are narrowed and efficiency must be on an extent level, companies need to be innovative. Nowadays it is not enough to compete on price, quality, delivery or service alone. Innovation is the key to constant progress and renewal as it is the essence of survival in the markets. Innovation can be defined as the successful exploitation of new creative ideas to meet or generate a need, including activities directed to changing the things that the organization does or the way it does it (Bernadette – Grier 2000).

The present study aims to answer the question of how companies can benefit from the use of an online consumer community in order to evolve business and what is the value gained. Online communities can be defined as computer-mediated space where there is an integration of content and communication with an emphasis on member-generated content and distinctive focus to membership. (Hagel – Armstrong 1997, 26 – 33.)

The term “online community of co-creation” used in this study can be defined as the outcome of a co-productive use of any online customer community where the user is strongly present in the service or product development process.

In Figure 1 the core elements of an online community are illustrated. Figure 1 shows that a community works efficiently when all the three aspects are balanced and connected to each other; there are enough dedicated users, there is enough user generated content, and the community infrastructure is operable and accessible through Internet.

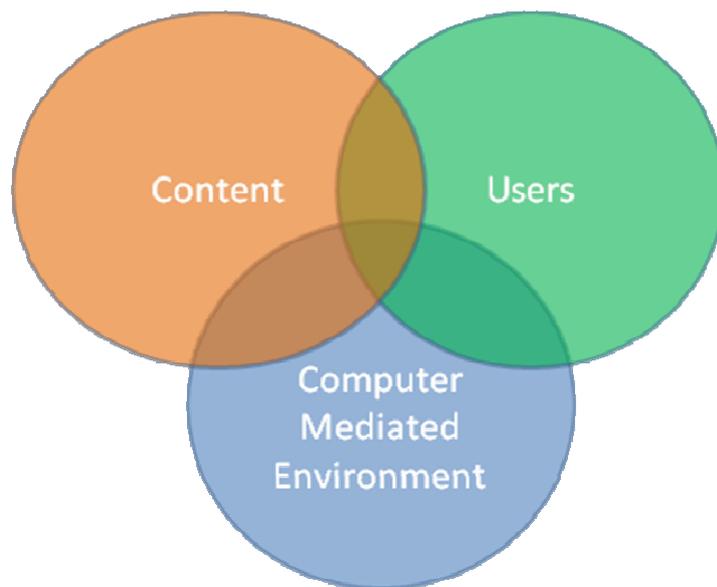


Figure 1. The building blocks of an online community

The value for business can be created by use of accurate, on-time and targeted customer feedback information in order to develop more demand equivalent products or services as well as shorten the development process.

The results of this can be applied in use with earlier market entry, entry to more targeted markets or more aggressively penetrated market entry with a competitive product. On the other hand, cost efficient feedback processing methods are being sparred since it is the only possible way of finding the accurate knowledge from a great amount of data provided by a community's users.

The communities can also be used as an aid for marketing purposes to persuade new Business-to-Business (B2B) customers. Every new member of a virtual community increases the usefulness or value of the community as a whole for both new and existing members. The larger the community

the more attractive it becomes to other members and the more attractive it is to retailers (Farquhar – Rowley 2006).

Corporations, Research and Development (R&D) institutions and the City of Helsinki co-create future digital services in the Forum Virium Helsinki (FVH) cluster, to where this study is addressed. The cluster will act as the driving force for customer-driven service and content development. For that reason it was important to study the best practice for the use of online communities of co-creation for obtaining a sustainable competitive advantage for the clusters' projects.

Based on the study, one should be able to establish and implement a working community or use the value and information offered by a running community. However, the study does not aim to be a manual.

1.1. Research Question

The study aims to answer to the question of what is the value of customer communities of co-creation and how companies can successfully benefit from virtual communities in service development in order to create sustainable competitive advantage.

The study examines the use of online consumer communities and the question why this attribute is an important factor to open innovations.

Open innovations can be defined as collaborative, joint projects among participating clients, whether they are companies, customers or end users depends on the case. The idea behind an open innovation is that in a world of widely distributed knowledge, companies cannot afford to rely entirely on their own research, but should instead buy or license processes or inventions (e.g. patents) from other companies. In addition, internal inventions not being used in a company's business should be taken outside the company (e.g. through licensing, joint ventures, spin-offs etc.).

Digitalization has broken down to many different industrial sector barriers and due to this there is a demand for open innovations and a co-operative service development. Online communities and social software can be used as an aid to fulfill this demand and to increase a cross-industrial communication and co-production.

Social software is normally defined as a range of web-based software programs. These programs allow users to interact and share data with other users. The more specific term; collaborative software applies to cooperative information sharing systems, and is usually narrowly applied to the software that enables collaborative work functions.

1.2. Scope of Study

The study focuses on the importance of innovative use of online communities of co-creation in service development business. The study is narrowed to concern mostly service development only, although it applies for most parts in product development, too. The study is delimited to cover the consumer communities since this will bring the most value for service development and it has been less researched and implemented compared to developer communities.

This paper differs from other research papers made in the same field in the sense that it tries to develop a consensus for the successful use of online communities of co-creation rather than just define them.

The Finnish Mobile TV case, presented later in this study, interprets the collaborative methods used in that particular online community. Further on propositions for an efficient community building process are given to fulfill the needs of service and product development.

For a company to achieve successful outcome for the use of online communities of co-creation the study proposes a set of fundamental operating conditions incorporated in a model for successful community building process that must be implemented and upheld. In this paper it has

been assumed that a company is committed to attending online community and subsequently innovativeness has become a core value for the company.

1.3. *Research Approach and Structure of the Study*

This study is an action research. Most of the observations are based on the author's own work in research, design and implementation of online communities. The Finnish Mobile TV project is the mostly used case for the present study. The background information and theory are provided by referring to publications in the business field as well as the most reliable and up-to-date sources from Internet defined in the references section.

In section three the case of Finnish Mobile TV is described and the structure of the implemented online consumer community is presented and explained.

Section four explains the results and analysis. As an original input the findings linked with the case involved will be expressed as well as ideas for best practices in creation and use of online communities of co-creation will be described. The challenges and key issues in community based development as well as common mistakes are also listed.

Finally, in section five, discussions and conclusions are being represented in order to create a general knowledge consensus to cover the study.

The next section will cover the theories and background of online communities as well as the development of the need for them.

2. Need for Customer Community and Co-creation

In this section the overall background and theories behind online community creation and development is declared. Also the evolution of the need for such solutions is studied.

The changing organizational environment has driven interest in organizational learning and knowledge management (Prusak 1997, 106 – 133). The increased complexity, globalization and knowledge-intensity of marketplaces require all businesses to make better use of their technological, organizational and marketing competences in order to survive.

Contemporary organizations in highly competitive and highly innovative markets must be able to build market share quickly, by delivering fast, high quality, innovative solutions (Rowley et al. 2007).

Companies' product and service development cycles are fast and new products or services are being brought to markets in fast pace. To be successful, services need to be innovatively implemented and fashionably and functionally formed digital, high technology applications. In order to survive in the competition the company must offer services with a demand. To meet these targets, companies need to implement customer-driven innovations, innovations developed in close relation and cooperation with the customer.

This requires adaptability because the both; markets and technology are constantly changing. In general, the company will face problems sooner or later when the product or service range is no longer responding to customer needs. It is proposed that a vital factor in achieving sustained innovation is the presence of a shared and inspiring vision and strategies, which fulfill the company's purpose as well as the company's ability to learn.

With the current age of customer focus, restructuring and reengineering, companies are facing a difficult task in remaining competitive. The capacity to innovate, or successfully exploit new ideas, presents a company with the

opportunity to compete in the global arena and become a leader. Competing has become an innovation contest.

Innovation, like many business functions, is a management process that requires specific tools, rules, and discipline (Davila et al 2005).

In order to further develop innovations companies need to have the right ideas and they need to be fully aware about the customer needs. User-driven virtual customer communities can be used as a learning tool to support an innovative service or product development.

Community, coupled with commerce, content and communication, are widely discussed as the essential components of successful web presence (Hagel 1999).

Those organisations that control popular virtual communities are in a position to dominate business transactions over the Internet (Farquhar – Rowley 2006). Furthermore, Pitta and Fowler (2005) argue that each of the decisions a buyer faces can be influenced by interactions with communities that are focused on the same product or service type in question. For consumers who have already made a purchasing decision, these communities also provide help with the ongoing use of that product or service. This use can vary from seeking help with troubleshooting or repair to integration and maximization of product or services.

This kind of Customer-to-Customer (C2C) relationship is a fertile area for marketing. Relationships between consumers have been shown to influence brand choice and the choice of services (Wind 1976).

2.1. Nature and Evolution of Online Communities

Virtual community is not a new concept as such. Any groups of people who share a common agenda, yet not physically in a same geographic location have formed such a community. However, Farquhar and Rowley (2006) suggest that it is only quite recently that tools for computer-mediated

communication (CMC) have permitted the construction of low-cost, online virtual community infrastructures with a global reach.

When Pitta and Fowler (2005) say that the typical online community is a niche, they mean that the interest or exchange focus is usually very narrow. Online communities try to satisfy needs that are not met in a regular social way of communication. An online community member’s own physical community may be a large population of people with few or no interest in the same subject that the virtual community is about. Furthermore, Pitta and Fowler (2005) suggest that if the focal issue is narrow, the online community will mirror that narrowness and tend toward homogeneity. Such communities contain extremely valuable market information.

All communities go through certain stages of development. Figure 2 details the community development model.

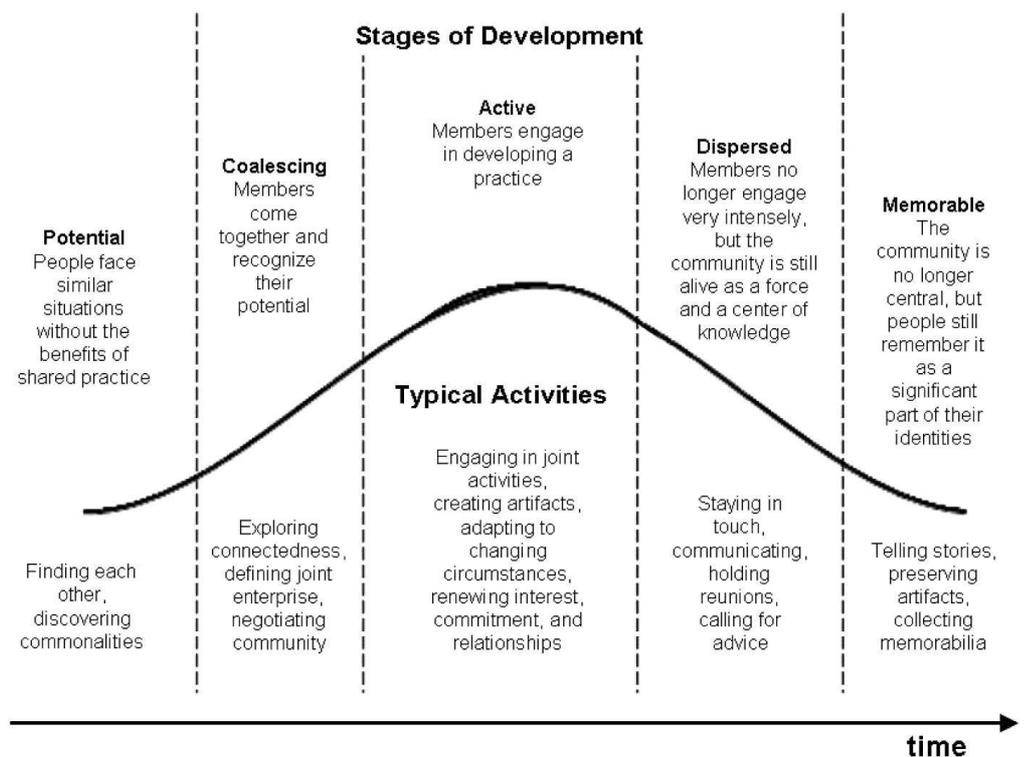


Figure 2. The community development model (Pitta – Fowler 2005)

In Figure 2 the different stages in community development are shown. The curve indicates the level of value gained from the community. Stage one presents the potential for creating online community. However, the needs ought to be acknowledged first. Most of the newly established online communities tend to come into being at the stage two. From there it is not easy to promote the community into the next, Active, stage. It will require a lot of effort in order to a sufficient number of targeted users to find and adopt the community. Active stage can be sustained if the number of enthusiastic new members is equal or greater to the number of old members losing interest over time. However, nurturing forces may hold the community together over time, such as reinforcing interests and relationships.

2.2. *Experienced Users*

In the industrial marketing arena, companies have discovered a potentially valuable source of consumer information – experienced product users. This group of customers also known as lead users can serve as a problem forecasting and problem solving aid (Pitta – Fowler 2005).

Lead users offer a more useful approach than randomly selected consumers. They tend to have more experience than others and due to their familiarity with products or services in hand they can more easily confront with problems others have not encountered (Herstatt – von Hippel 1992).

Furthermore, Pitta and Fowler (2005) describe that the lead users are usually highly involved in using services or products for problem solving. As a result, these users may put them to extreme tests. Consequently, such users are a rich source of testing information. The notable point is that they can explain why the occurring problem is significant to them in the first place.

If companies do not identify new applications, they will not perceive any resulting new markets. That is why information of this type is vital for staying a step ahead in competition and maintaining competitive advantage.

In addition to that, targeted use of online forums and communities can allow not only product or service testing but also an assessment of fit between the product and market (Pitta – Fowler 2005). Of course this approach is also double-edged: when users are free and encouraged to report their experiences on that site or any other, a bad experience would be disseminated as far as a good one.

Interaction among the members is the engine that fosters the growth of online communities (Hagel – Armstrong 1997, 26 – 33). This communication process takes place in a computer-mediated environment (CME). These environments have some strength that aid communication effectiveness. One of these strengths is the use of discussion forums that allow asynchronous communication. A user can post comments and others can respond to them later. In addition, the quality of comments may increase since asynchronicity reduces haste and miscommunication in responses (Pitta – Fowler 2005). One of the drawbacks would be that the asynchronous nature sterilizes spontaneity and communication modes are fairly limited.

The emphasis on interacting with customers and co-production, extending to co-learning, lifts the focus from collecting data and information in order to learn about customers to learn with customers (Rowley et al. 2007). However, this can be achieved only through successful utilization of an active and growing online customer community, community that supports the goal and contains eligible users.

In the following section more detailed approach to an online community is provided by reporting the case of the Finnish Mobile TV community and its structure.

3. Case Study of an Online Community

In this section an example of a running user community is described by studying the Finnish Mobile TV (FiMTV) community. The structure and functionality of the community is declared as well.

The role of the author in FiMTV project was to design and implement the online community including also the public web sites. After launch, the author took control of the site and act as a webmaster and web developer. Furthermore, the author has continued to host the community and offered guidelines for further development work.

3.1. Case: Finnish Mobile TV Community

The goal of the FiMTV project is to promote the creation of innovative and interactive content for mobile TV in cooperation with Finnish and international service developers.

The first phase of the two-year Finnish Mobile TV project was launched in November 2005. It was inspired by an extensive user pilot, launched with the goal of collecting information on the experiences of end users. The findings indicated that the users want more varied content for their mobile TV and are prepared to pay for the services.

During 2006 the FiMTV project supported service developers by providing Digital Video Broadcasting Handheld (DVB-H) network capacity, and also started an active developer forum with opportunities to network. Alongside the virtual test user community was established. During 2007 the project's second phase, the FinPilot 2, focused on the end users of mobile TV, especially regarding consumer feedback on interactive services.

Further reading can be obtained from the official website of the project (Finnish Mobile TV Community 2006).

The community site was built using a content management system architecture called Drupal which supports community interactions successfully and has an active developer community of its own. Drupal is a free software package that allows an individual or a community of users to easily publish, manage and organize a wide variety of content on a website. Drupal community creates and updates constantly new modules used for building the operational mechanisms of the site. Also new version releases are available regularly and the discussion forum at Drupal.org home site act as a useful problem solving tool when help is needed. Drupal is an open-source software distributed under the General Public License (GPL) and is maintained and developed by a community of thousands of users and developers. (Drupal.)

The Finnish Mobile TV project was a significant project for FVH cluster's community tools building process. For further use the FiMTV community site has also been compressed into repeatable community site bed which can easily be re-established and reformulated for the use of similar cases.

3.2. *Public Web Layout*

Figure 3 indicates the general public web layout of the community's website.

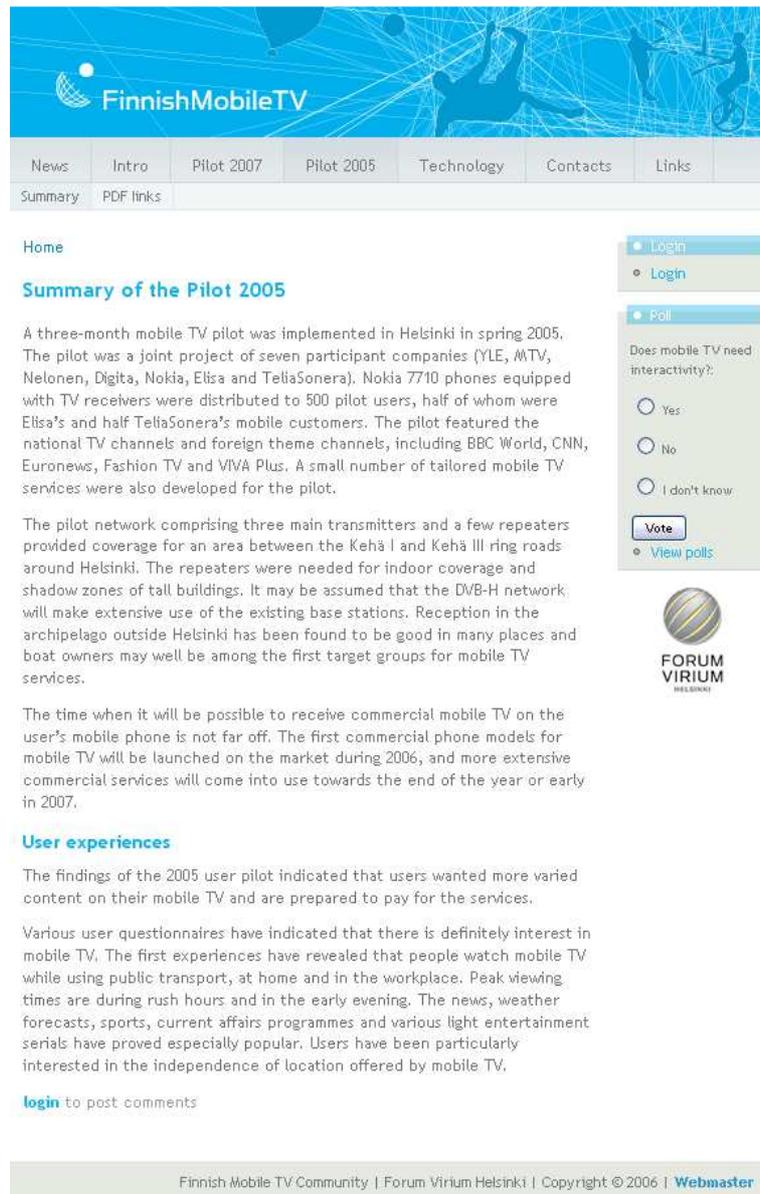


Figure 3. Finnish Mobile TV community website

In Figure 3 the basic public web functionality can be seen. The horizontal two-layered (menu – submenu) menu bar structures the content of the public web pages. On the upper right corner the login-link can be acknowledged which will log in to community section.

Next the different functionalities and structures of the community website are introduced.

3.3. Structure of Community Section

Figure 4 shows the structure of the community section of the Finnish Mobile TV website. The community has been divided into three sections: Developers, Steering Group and Test User block.

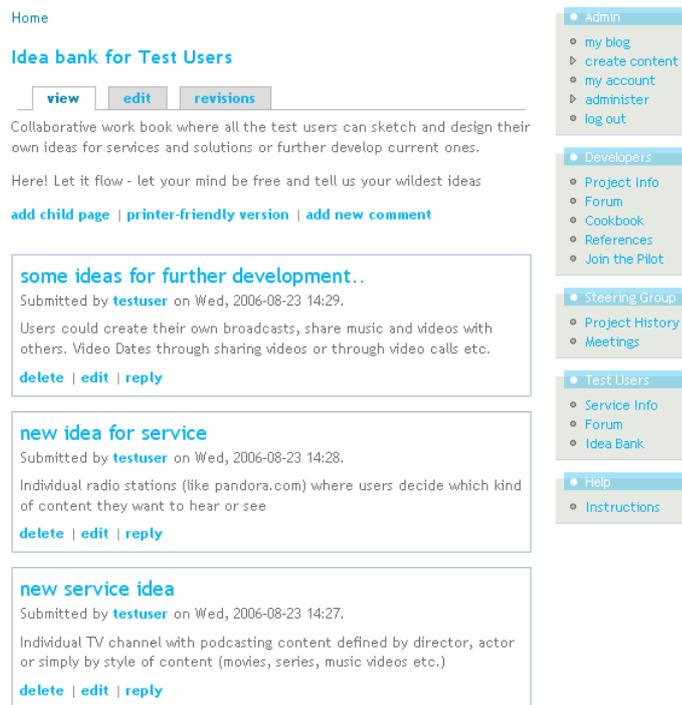


Figure 4. The structure of the functionality in community section

In Figure 4 the different functional blocks of the community section, visible only for the users logged in with a sufficient user role, are shown. Currently, in Figure 4, one is been logged in as an administrator and according to this all the blocks are visible. Also for a Steering Group role all the blocks would be visible. For a user of Developer role Test Users and Developers blocks would be visible and a Test User role would only see its own block. The explicit URL addresses leading to content nodes are also encrypted to identify the proper role. Due to this content provided in particular block can only be seen through logging in as a user holding a status of a suitable role.

In addition to these, there are also a role-wise help section and a block for individual user activity, in this case an administrator section.

The different functionality according to the role is listed below.

In Figure 5 the Developers block's functionalities include:

- Project Info; a blog-like description of the state of the project.
- Forum; discussion forum for developer and steering group role members.
- Cookbook; a wiki-like collaborative work book for project and service development.
- References; a link to crypt document sharing area.
- Join the Pilot; a page to get information and download participation form for joint ventures.



Figure 5. Developer block

In Figure 6 the Steering Group block's functionalities include:

- Project History; a page about the evolution of the project.
- Meetings; a link to crypt document sharing area.



Figure 6. Steering Group block

In Figure 7 the Steering Group block's functionalities include:

- Service Info; a blog-like information page for all the services available.

- Forum; a discussion forum hosted by the developers and work project leaders.
- Idea Bank; a wiki solution for users to collaboratively add and edit their own service ideas or enhancements.



Figure 7. Test Users block

In addition to previous functionality listed, the user experiences and user information were gathered through survey polls and web-based question forms.

In the following section more detailed proposals will be represented to enhance the future community-based service development.

4. Proposals for Innovative Community-based Service Development

In this section the profound characteristics of an online customer community are interpreted. Furthermore, suggestions are presented to support the online customer community-based service development. The suggestions and detailed definitions are based on the author's work in FiMTV case and in other Forum Virium Helsinki's community building projects. Some of the ideas are derived from the theory presented earlier.

Companies must be able to continuously learn in order to predict changes and understand weak signals in market. Service development cycles need to be fast and mistakes can be lethal and expensive to business; services need to be based on customer needs. The ability to learn fast can be achieved by building a customer based product or service development infrastructure. This can be done through implementing social software e.g. developer and test user communities and forums where developers and service providers can share ideas, problems; learn and work together in a collaborative manner as well as end-users can share their knowledge and give constructive feed back and establish brainstorming. Such idea banks and development wikis are crucial to companies since customer-driven innovations are held to be the key to compete.

4.1. *Online Community of Co-creation*

The operating model of an online community of co-creation is described here. In Figure 8 a representation of the relations of user and developer community can be seen. Next, the outcomes of a community modeling process formed through studies and work by the author since 2006 are presented.

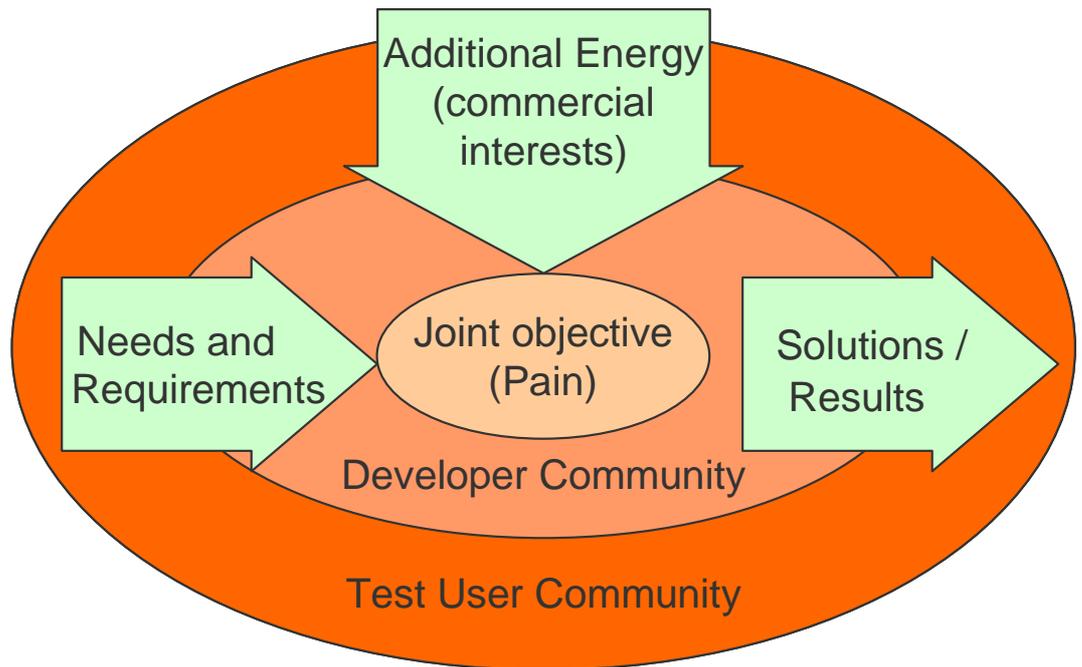


Figure 8. The model of an online community of co-creation

By analyzing Figure 8 the very essence of an online community can be internalized; it starts with a shared objective that has a particular business value or the value has been proved to exist by analyzing information gained from the community and markets. That commercial interest towards the objective is the additional energy, the driving force needed to create the whirl needed – to oblige and to enable the development. Needs and requirements to meet the targets are obtained from the customer community (Test User Community) and then integrated and brought together in the developer community. Then the outcome; solutions and results have been, again, tested with the customers in a sense of co-production and co-creation. Such a development process is always iterative by its character. It is constantly spinning in order to re-evaluate and evolve the product or service in hand to meet the needs and requirements.

In order to be able to develop any kind of successful innovation companies will need dozens of good ideas to be further investigated. This can be done efficiently through proper tools, only.

4.2. *Lessons Learnt*

The ability to learn as such is not enough – companies need to react rapidly to occurring changes in the demand on market. In fact this agility is what matters when it comes to competence. Even when it is said that companies should focus on core business it does not mean that this is enough or that a company can maintain successful by operating on its core business only.

While a company is earning most of its revenue from core business it is, in fact, the niche part of product line or the sketch on management table that holds the true value on future. Naturally, the sketch and future predictions must base on knowledge of some kind. Companies must even be able to change the whole branch of business if necessary. That is why all the ideas are welcome. Companies must be alert, awake and prepared for rapid change of direction if indicators alarm. Online communities can be used as a tool for measuring future trends and gaining tacit knowledge from the end user interface.

However, important question for companies to answer is weather to implement a community of their own or use an online customer community that already exists and includes a motivated user base. Too often it can be seen that communities are being created just for the reason that it is fashionable to do so and the aspects of the requirements, objectives and results are not being given any serious thought. A badly managed, static community will give a negative impression and act against the company.

Another important factor is the community's user management. It will not create an operable and value-producing community if random user accounts are created for segment users. That will not be an adequate effort to set the community to fly. The enthusiasm of new users should be exploited efficiently by offering interesting, dynamic and active content and collaboration methods right from the start. If this is not done properly at start, the ardor of users is very difficult to fuel later on. It will also be a very strong negative stimulus for users if the community seems empty and static; it will give the impression that the user input is not respected at all.

There should be a process for collecting information for recruiting potential lead users, then introducing them the objectives and goals of the community. This is very important since through experienced lead users the community will gain the most; not only will these lead users be able to give a constructive and valuable feedback and create usable new ideas and indicate problems but they can work as development team leaders and motivate other users as well. It would be important to realize how lead users could be motivated. They should be highly interested about the issues the community has built around so for giving them an active and responsible role in the community and perhaps some benefits could be a stimulus adequate enough to fuel their commitment.

Of course it is also crucial to obtain a sufficient number of other users for the community as soon as possible and then nurture those users by showing active presence in the community. That can be done by actively posting new blog entries, hosting on-going conversations and creating new interesting conversation topics as well as updating the site content on a daily bases.

It has been seen in several online community cases that the most efficient outcome for forum discussions can be achieved by making the discussions burst-like events setting their time length for lasting a week or so. This way the discussions can be hosted all the time and the zeal of the users will last. Also, the starting discussions shall be boosted and puffed by short message service (SMS) notification, on a front page of an online community, sending email alerts to users – the more action and happening there is the better.

The media should be embedded into community building right from the start. Publicity should be given a serious thought being a major force in creating reliability and public interest over the matter in hand. Also, it is a good way to motivate users. The community's members must have a feeling that they are participating in something valuable and important.

4.3. Use of Online Community in Iterative Service Development Process

Competitors come and go, technological change occurs at an ever-increasing rate, customer wants and needs are constantly shifting, and a product's life cycle may be shorter than its development time. In such a fast-paced environment, product and service development must be transformed into a continuous, iterative learning process focused on customer value.

Hughes and Chafin (1996) describe one means for making this transformation: the value proposition process (VPP). The objectives of this development approach are continuous learning, identifying the certainty of knowledge used for decision-making, building consensus, and focusing on adding value. The VPP consists of a framework of continuous planning cycles, called the value proposition cycle (VPC).

The VPC comprises four iterative loops, addressing the following activities:

- Capturing the market value of the proposition (Does the customer care?)
- Developing the business value (Do we care?)
- Delivering a winning solution (Can we beat the competition?)
- Applying project and process planning (Can we do it?)

From this theory a community-based testing method can be derived (Figure 9.)

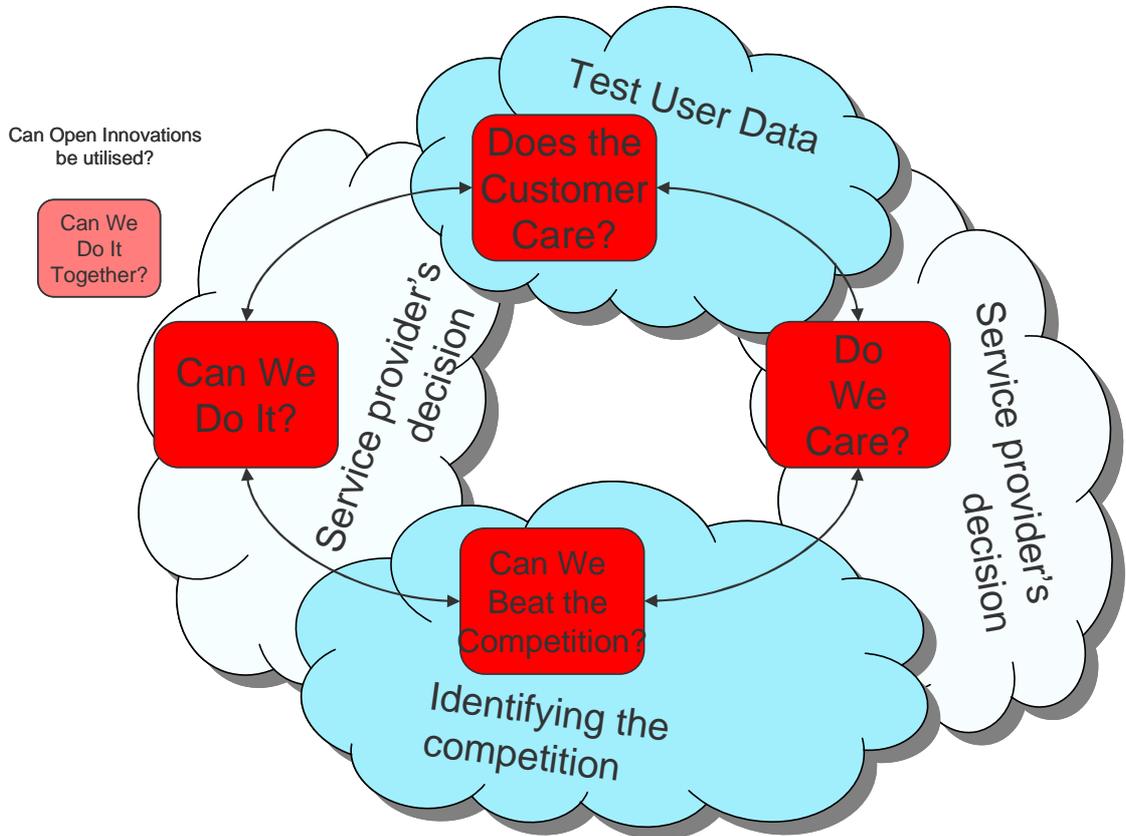


Figure 9. The use of community-based testing method in iterative development process

In Figure 9 a part of an iterative product development process theory is used to derive a community-based approach for product or service development assessment. In this model the loop's assessment questions are answered using the information gained from the customer community as followed:

- Evaluating the market value of the proposition by answering the question "Does the customer care?" is done by valuating the customer generated content from the community.
- By answering the question "Do we care?" the service provider will assess the success potential of new service ideas as well as the level of business value gained.

- By utilizing weak market signals gained from the community identifying and evaluating competition, the question “Can we beat the competition?” is answered in order to assess the potential of delivering a winning solution.
- Applying project and process planning as well as evaluating the information gained from the community, the question “Can we do it?” is answered.
- Further on, the question “Can we do it together?” is there to evaluate whether open innovations -approach would come in question in that particular case and would that approach bring value for organization if success would seem impossible to overcome alone.

Using the online customer community effectively as an assessment tool, a company can learn and be agile – ready for constantly changing markets.

4.4. Information Flow

When all the ground work has been done and the infrastructure and capable personnel has been established it is time to concentrate on the data processing. When social software and virtual community mechanisms are running, the data gathered using these tools need to be properly processed. A great amount of data as such does not possess any true value. When the data is linked together correctly to produce information, the information must be understood, interpreted and distributed properly. Only then it will turn into knowledge. This knowledge must be then managed properly in order to create process-like structure which will operate as a tool to predict fast reaction for companies. To go even further, this knowledge management can be taken into a new level by understanding the principles, utilize insight, maintain moral and create archetype. This is wisdom management. Achieving this kind of profound understanding can only be possible with great devotion of employees and constantly evolving and new-

coming information – one aspect to achieve this is a successfully established online community.

The community may be constructed of many different sections. Some of the generally used tools are discussion forums, blogs, poll questionnaires, wikis and different kind of question forms. A large running customer community produces a huge amount of information through these different channels. The challenge is how to get the tacit knowledge; potential new ideas, constructive feedback and competition indicators collected in a cost efficient way.

Polls and question forms are easy and preferable ones because information sent with them will be stored in a database and different queries can be done easily to create knowledge consensus. Wikis are also fairly easy to process since they carry the most up-to-date version of the content all the time, unless the history of collaborative development wants to be searched.

Blogs and discussion forums are the ones that create problems for cost efficiency because someone must read through all of them in order to learn the content, although the information gained from these sources are generally the most valuable one. That is why companies implementing community building should invest on personnel suitable for boosting the community; hosting discussion by steering the conversation into right direction and asking the right questions by interact as members sharing thoughts or presenting potential service concepts for comment, write interesting blog threads for users to comment and simply just show the presence proving the dedication the organisation has for the community. For successfully doing this companies need to have a clear vision of what are the expectations and requirements for the utilisation of the online customer community; “What do we want to learn?”

The content of the community must also be interesting and inviting for users to browse and it should always give some value for the users. The use of emulators embedded into community web sites that customer could use, even if it the operability would be limited from the original solution, would

positively strengthen the interest for that particular service and makes it more easily adoptable and even more luring for customers.

4.5. *The Service Usability Measuring Method*

Furthermore, usability is one of the core issues of service development. The online customer community as such needs to be inviting, effortless and simple to use. Companies cannot develop winning solution for “intelligent customers” only. The actions need to be user-driven in order to provide credible and usable need-equivalent solutions. Purchasing decisions are mostly made due to emotions (positive vs. negative responses). Persons are unconsciously driven by emotions. Therefore the level of happiness will define the use decision of the service.

This unconscious, built-in emotion control is an ancient automation that works alongside with a newer, concept-driven and conscious control. The emotion control is a lot older and more powerful than the conscious one. Together, they affect to one another creating the inner control system of human being. This basic fundamental structure of human should be taken in serious consideration in service development. (Lehto 2001, 85 – 88.)

There is one fairly scanty used, easy and efficient parameter to measure this kind of emotion-driven state which is named “Happiness Meter” in this study. Figure 10 indicates the Happiness Meter as it is thought to be used in

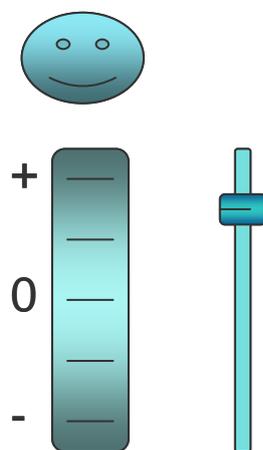


Figure 10. Happiness Meter

service development.

This device could be embedded into a tested service and then set to prompt up after certain phases or steps of the service usage. When the user sets the meter according to the emotion felt at that moment, the system will register that into the usage data and link it to the phase of the service it was given. In that way developers will gather a credible pool of user experience

data that can be easily processed. In that data certain divergences will rise up and they will be efficiently acknowledged. For example, if in some stage of a service, there is a high peak of negative responses from users it will certainly indicate that there is something wrong in that part of the service. Figure 11 demonstrates the data flow gathered.

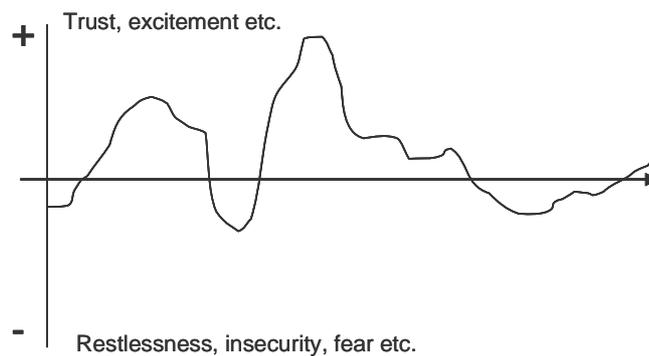


Figure 11. User experience data flow gained from happiness meter

The more detailed explanations to meet qualitative requirements can be requested to be posted to discussion forums etc. but this kind of approach will give accurate, quantitative user experience information. Furthermore, this kind of application can be added to almost any kind of digital product, service or website giving valuable user information with a low answering threshold and an ease of use.

One of fairly new and important on-going service segments are mobile digital services. The matter of usability is even more exposed when it comes to mobile accessibility and user experience. The .mobi-domain projects are one approach to make web content more easily viewable using mobile devices. For development of mobile digital services a Happiness Meter can provide usability feedback efficiently. It will not require a lot of space in the screen of a mobile device. Such application will not be too heavy so it does not require a fast connection or a lot of bandwidth and besides it is effortless and quick method to give feedback.

However, the conceptualisation and successful use of such a usability measuring method is not simple or problem free and it would require a lot of effort and research work before it can be commercialised and used as a part of any product or service.

4.6. Value of an Online Community

Part of the challenge of launching online communities is offering something valuable for participants right from the start. As the value of the system is provided by users, the system has nothing to offer to its first users. One solution to overcome this challenge is to provide interesting content and present opportunities to engage with it. The other is to seed the community with participation from an invited group of people who have a reason to help the new member or increase the community's content value as such.

The value of a network or community is almost universally agreed to be proportional to the number of users. For general communication networks, in which users can freely interact with each other, it has become widely accepted that Metcalfe's Law applies, and value is proportional to the square of the number of users (Odlyzko – Tilly 2005). Figure 12 presents the value created through community building linked with the users of the community.



Figure 12. Community value development process (Web Social Architecture - The Mad Science of Online Community)

Figure 12 shows explicitly how the value of an online customer community is bind with the number of users in that community, due to the Metcalfe's Law where **Value = Users²**. In the picture it can be seen that at the beginning, on test phase there are not a lot of users and naturally the value that the community in question poses is not that grand either. It is also visible that a threshold of perceived quality is preset – this is the point where new users instantly recognize the value of the site and want to participate. Over time, when this stage is reached, the community is considered suitable for wider release. When the value of the site reaches a point where people begin to spread the word the number of users can start increasing with an accelerated pace. If one manages to build a community this far then the potential is unlimited and the project will fly.

Although, there are lot more valuable aspects in an online community than just the volume of activity and a number of users. In Figure 12 it seems that after the point where people start to spread the word, users and value start to

increase almost exponentially. This can hardly be the case in the real world. Also, there has to be a limit for the value created. After some point the user generated content will exceed this limit and become superfluous – it will become uncontrollable and self reiterated. However, Metcalfe's Law gives a good impression about the power of users and it also helps to adjust the priorities right when creating or managing an online community of co-creation.

5. Discussion and Conclusions

In this section the most important findings of this study are presented to build up a clear consensus about the topic.

The company's ability to learn has become the crucial aspect for companies to maintain successful in highly dynamic markets. Organisations participating in digital service business are trying to find more efficient ways of co-create and co-produce. The open innovations approach combined to a user-driven online community-based development is gaining foothold rapidly. Companies are trying to learn with the customers. Information obtained from the community will increase the efficiency of the marketing as well as the new service development process. Developers will get accurate information to create desirable services, reducing significantly the failure rate and increasing the chances for success.

The community itself does not provide the winning solutions automatically; instead the services are developed in an iterative "trial and error" kind of way. However, through the accurate and on time information concerning needs and requirements as well as changes in market, provided by an online customer community, the decision to fail fast can be made resulting in notable savings in time and money.

Furthermore, online communities can provide specific and usable new service ideas. Anyhow, companies should have a clear vision of how to manage and use the information gained from the online community; otherwise they will run the risk of missing opportunities.

The information gained from the use of online customer communities can enable an early, fast and penetrable market entry and as such hold a great value for a company. Although, users create the value of the community so the community's user management is an essential matter for success. Furthermore, the role of experienced lead users should be acknowledged and cherished. The most valuable feedback and ideas are generally noticed to be generated by them. These users should be carefully selected and they

should be offered a sufficiently responsible role in the community in order to keep them motivated and committed.

The tools and solutions to learn efficiently with the customer need to be adequately set up. A great flow of usage or customer generated data does not possess any true value as such; it needs to be properly processed and linked together to produce information. The information must be understood, interpreted and distributed properly. Only then it will turn into knowledge. This knowledge must be then managed properly in order to create a process-like structure which will operate as a tool to enable fast reaction for companies.

Customer experience and usability are becoming more and more important factors for success due to the complexity and large variety of digital services. Learning with the customers, creating and offering the experience equal to the user needs and requirements, measuring the success rate as well as continually fine-tuning the services offered will be the very essence of creating sustainable competitive advantage.

Much of the writing on online customer communities is speculative in nature and a lot more empirical testing is needed. The author suggests studying the integration of online customer communities and business models or processes for further research area.

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