Social Media in the Enterprise

Modern tool for the new product development process

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ABSTRACT

Social media has changed the world. When before everything was centered about "me", in today's world the emphasis is on "us". When the traditional product development was an internal company matter, nowadays it's possible to extend it to include also the users and customers.

The objectives for this thesis were to map different forms of social media, find out if they are usable in the new product development and give a solution how to use social media in product development. This thesis was commissioned by HAMK Automaint R&D Centre.

Information regarding the matter was researched from literature that dealt with product development models and different forms of social media. Most of the social media sources were marketing related so applying the ideas for product development required some thought. One valuable source of information about social media was Internet blogs of Social Media researchers, like Brian Solis, which had great information about this phenomenon.

Even if at the moment social media in the corporate world is most visibly used in marketing, the ideas and concepts are very well applicable also for new product development.

Keywords social media, product development, collaboration

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TIIVISTELMÄ

Riihimäki
Tietotekniikka
Tietoliikennetekniikka

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Työn nimi Sosiaalinen media apuna tuotekehityksessä

TIIVISTELMÄ

Sosiaalinen media on muuttanut maailmaa. Kun ennen pääosassa oli ”minä”, on se nykyään muuttunut muotoon ”me”. Yrityksen tuotekehitysprosessi on pitkään ollut sisäinen asia, mutta nykyään siihen voidaan ottaa mukaan myös käyttäjät sekä asiakkaat.

Tämän työn tavoitteina oli kartoittaa sosiaalisen median eri muotoja, etsiä niistä parhaimmat tuotekehitysprosessin parantamiseksi ja antaa ratkaisu sosiaalisen median käyttöön tuotekehityksessä. Työn toimeksiantajana toimi HAMK Automaint T&K yksikkö.

Tutkimusta työtä varten tehtiin tuotekehitystä ja eri sosiaalisen median muotoja käsitteleviä kirjoja. Suurin osa sosiaalista mediaa käsittelevistä kirjoista kertoi pääasiassa markkinoinnista, joten soveltaminen tuotekehitykseen vaati hieman ajattelua. Yksi suurimmista lähteistä tietoon sosiaalisesta mediasta oli tutkijoiden, kuten Brian Solis, Internet blogit joissa oli paljon tietoa tästä ilmiöstä.

Vaikka nykyisin sosiaalisen median suurin käyttötapa yritysmaailmassa on markkinointi, sen ideoita ja konsepteja voidaan silti hyödyntää erittäin laajasti myös tuotekehityksessä.

Avainsanat sosiaalinen media, tuotekehitys, yhteisöllisyys

Sivut 24 s.

CONTENTS

1 INTRODUCTION

From its appearance, social media has changed the world. The emphasis on the content has moved from “me” to “we”. Corporations are rushing to services like Facebook, Twitter and Flickr to make them known in the Internet world. In the midst of all aggressive social marketing and public relations one important use for the social media is still overlooked, the usage in the new-product development process. In this thesis, I will first be explaining the ins and outs of social media, where it all started and how it’s currently used. Then there will be an introduction to the current social media, inside corporations and some studies of the topic made by them.

In chapter 4 I will be explaining the new-product development process as described by Ulrich and Eppinger (2003) and also a slightly different take on the subject as defined by Robert Cooper. The next chapter will give solutions for applying the existing social media tools to be used in different models of product development. This will be done in a form of applying the situations in a fictional corporate environment, the company in question being a medium-sized machine shop.

The last chapter will be talking about the pros and cons of social media used in a new-product development process and as a conclusion, if social media is ready to be utilized that way already or does it still need to be developed further.

2 SOCIAL MEDIA

Before we can start talking about social media, it's important to go back few years and look at the technologies used before the social media revolution begun. In the era of Web 1.0, all the World Wide Web had was basically just static html-pages that had no interactivity or rich media content as we know it today. When WWW became more standardized and started getting rich content in a form of dynamic pages (AJAX, Flash, Database driven back ends),), video, audio and such it brought along the concept of software applications running on the WWW instead of the user's computer. It was not until the O'Reilly Media and MediaLive brought these ideas to the public in their first Web 2.0 Conference in 2004 that caused this term to gain some momentum granted it had been introduced to the world few years before.

2.1 Social media defined

The concept of Social Media can be defined in several different ways. It's an online environment established for mass collaboration (Bradley 2011), a group of Internet-based applications that builds on the ideological foundations of Web 2.0, and that allow the creation and exchange of user-generated content (Kaplain, Haenlein 2010), and more simply put, a form of media for social interaction.

What unites all these definitions is their core concepts of having the end-users create the content of a certain form of media. Before the social media revolution most of the media was generated by a defined group of people with little to none interaction from outside of the group. We do still have the traditional printed media which is mostly working according to this principle, their online part being moved slowly towards social interaction.

2.2 The different forms of social media

Social media is not just a single entity but a vast array of services consisting of everything from video sharing into micro blogging and collaborative office software. In 2008 Brian Solis and the creative interactive agency JESS3 created first version of The Conversation Prism. This graph is a visual map of the Social Media world that places the user in the center of that all (Figure 1). The Conversation Prism bases its key concept around conversations. Solis point out that as conversations are increasingly distributed, everything begins with listening and observing. The point of this map is to help one identify where relevant discussions are taking place, as well as their scale and frequency and then can be charted into a targeted social map tailored for one's own needs (Brian Solis Blog).

Figure 1 The Conversation Prism v1.0

Social Media, however, is a rapidly evolving business. Networks and services come and go, and some even merge between themselves. This prompted the updating of The Conversation Prism to the version 2.0 in the year 2009 and soon to the version 3.0 in the year 2010. When comparing the version 3 to the version 1, the difference in the services also the map category is quite remarkable. It is a great example of the Social Media space development (Figure 2).

Most of the services in the prism might be unknown to the general public, but knowledge of them isn't always a necessity at all. It's more important to understand the magnitude and diversity of the Social Media space. Whatever might the topic, area or need to be a service specializing just for that can probably be found from the web. Social media services is usually networked and thus complement each other. Together all these networked services from a Social Media ecosystem where everything is somehow connected to everything and so make drawing borders between them quite challenging (Forsgård, Frey, 2010). What this means to the enterprise world, is that it's not enough to have just i.e. a Facebook page, but along it, a Twitter and YouTube accounts. By participating in many Social Me-

dia networks, one can be sure to be heard across the vast Social Media Space.

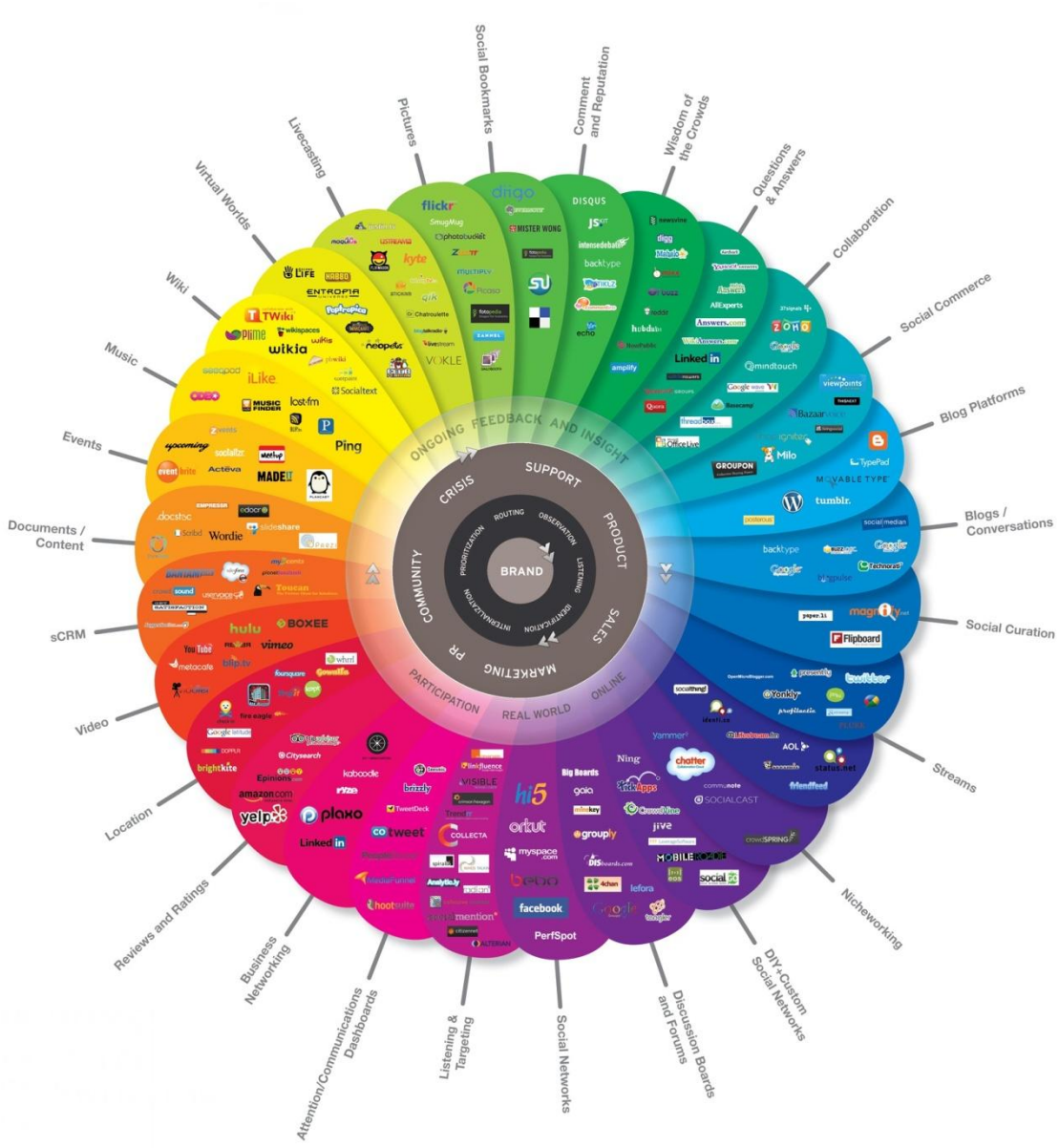

Figure 2 The Conversation Prism v3.0

2.3 Social media usability of corporate marketing

The most visible use for social media in corporations is in their marketing. Facebook pages, Twitter news feeds and such enables them to offer information to their customers and potential customers even faster than before while letting the customers also communicate straight back at the company.

One good example of this customer interaction is the Nokia's Beta Labs (http://betalabs.nokia.com) web page. On the page, Nokia makes the software they deem "stable" enough, yet not good enough for public release, available for users to try for free. During the period of beta-testing, the

customers can give feedback straight to the development team. After a while, the software is either "graduated" to final version or archived and removed from the beta lab's site. All in all, customer feedback is an important part of Nokia's software-development process. Without knowledge of what the customer wants in a product, it's very hard to make it successful.

However, if not careful, social media can turn any situation into a PR nightmare. In 2010 the environmental activist group Greenpeace released a video about the multinational company Nestlé using palm oil gathered from the destroyed Indonesian rain forests in their products on YouTube. When Nestlé managed to remove the video on copyright grounds, thus censoring content, the people got enraged and started commenting negatively on Nestlés Facebook's page. The Nestlé representative answered back in the rude and threatening manner, also censoring certain comments, which sparked a huge response from the public. Without clear guidelines on how to respond into a difficult situation like this, Nestlé became an example of a very badly handled social media PR event. It's very important to know how to represent one's company online, as it has a tremendous impact on the image and reputation.

Another good example of social media driven development is the eCorolla project. A group of people decided to build an electric car using a standard combustion engine based Toyota Corolla as a base. The development process was to be as open as possible in which everyone could participate. The hardware was designed using the same open source principle that's prominent in the IT world. This means that anyone in the public can use the design, share the design and ideas to others and develop the idea further. The hub of the eCorolla development is a public forum where developers update the current process status, and anyone can comment and share their ideas straight to the main development team. Every part of the development process will be shared back with the community for them to see and use. As of now, the first prototypes of the car are fully usable and ready.

3 SOCIAL MEDIA IN THE ENTERPRISE

In 2010, Growth Lab Consulting conducted a survey among Finnish organizations and businesses of their use of Enterprise 2.0 social media environment. Likewise, in 2010 the IBM Institute for Business Value conducted two online surveys, one for customers and one for business executives in the US, Canada, the UK, France, Germany, India, China, Australia and Brazil about their involvement in the social media space. In this chapter I will be presenting some of the results, and comparing them to each other.

3.1 IBM 2011 Survey

IBM found out in their survey that nearly 80 percent of the online consumers has accounted in at least one social-networking site, but only 5 percent actually actively participate by commenting or posting content. The biggest group with accounts is the Generation Y (born between 1975 and 1992) closely followed by the Generation X (born between 1965 and 1974). From 2009 to 2010, the social media usage of the Baby Boomers generation (born before 1964) has increased from 50% to 72%, most accounts being in media sharing sites (Figure 3).

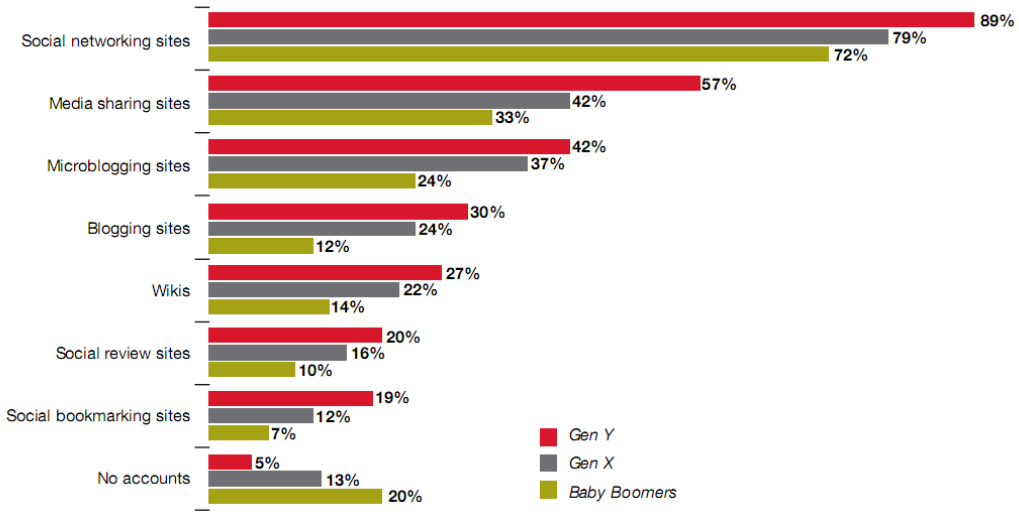

Figure 3 Percentage of consumers with account on social media sites (IBM 2011)

Of the surveyed enterprises, 79% have established presence in some social-networking site, media sharing and micro blogging (i.e. twitter) coming as second and third (Figure 4). Nearly 70% of executives say their companies will be perceived as "out of touch" if they don't engage, and over half believe their competition is successfully reaching customers through social media (IBM Survey).

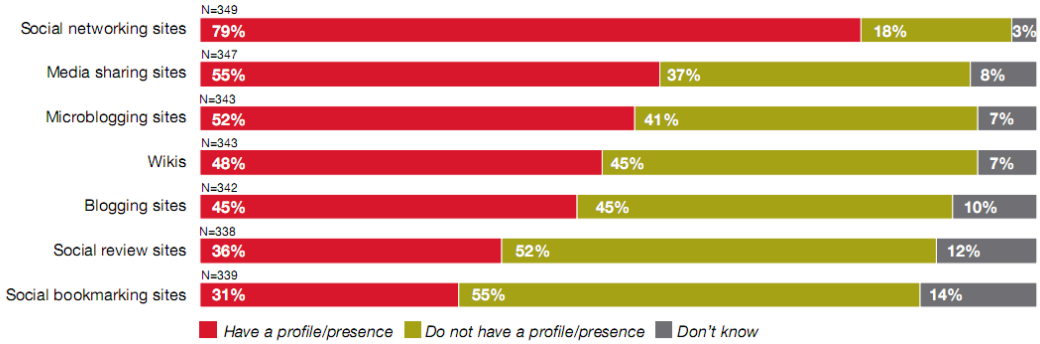

Figure 4 Percentage of companies with social media site profile (IBM 2011)

Most of the consumers use social media sites to connect with friends and family, and only 23% to interact with brands. Majority of the ones that do interact with brands say that they need to feel a company is communicating honestly before any interaction can happen. So in reality, less than half of the enterprises customer base is likely to interact with them in the social made space.

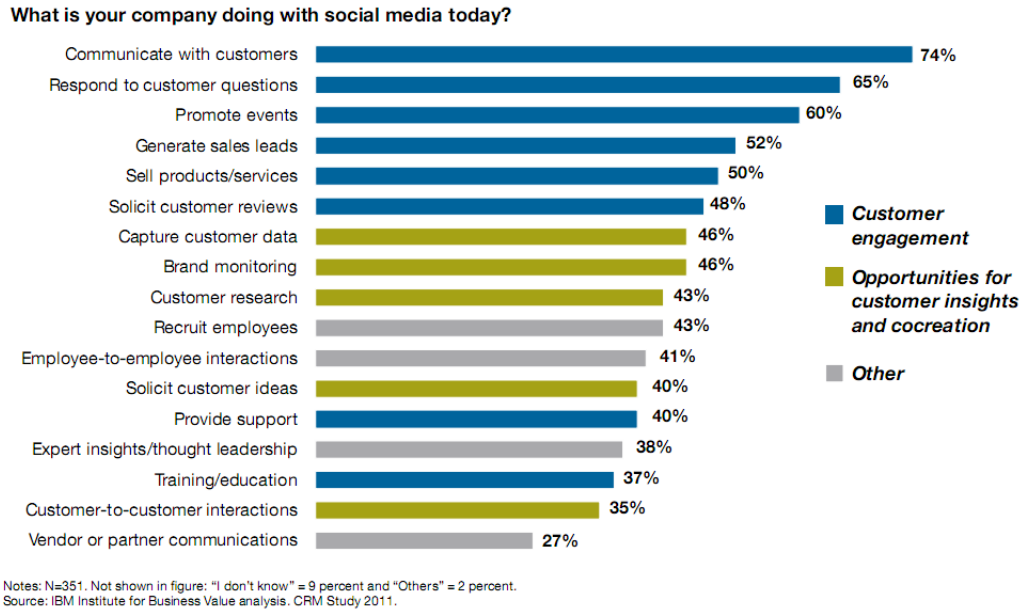

Figure 5 What companies do in social media (IBM 2011)

According to the study, most companies use social media to interact with their customers, respond to their questions and for event promotion (Figure 5). Interestingly, Business to Business communication is only 27% of the enterprise social media use. It seems that businesses prioritize their communication towards customers than other companies.

As the concept of Enterprise 2.0 is still in its infancy, there are many challenges for its adoption. IBM found in the study the top three to be the establishment of ROI strategy, monitoring employees' social media use and the possible negative brand exposure (i.e. the Nestlé case). In addition, the

lack of strategy and concern about privacy are important factors (Figure 6).

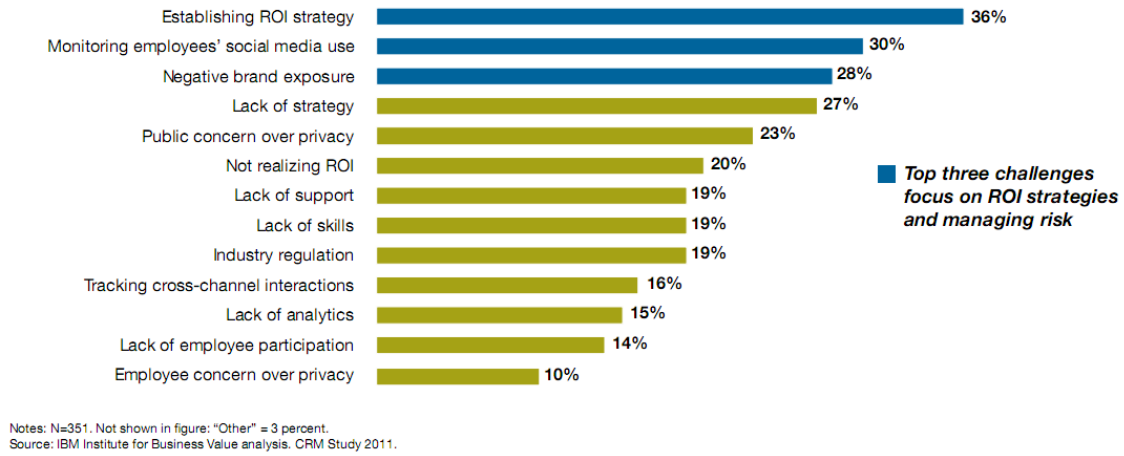

Figure 6 Challenges in Social Media (IBM 2011)

The biggest issue in ROI strategy is the lack of a recognized ROI standard. It's not the realization of an ROI that concerns executives so much as determining the right methodology for measuring the return (IBM 2011).

3.2 Growth Lab Consulting 2010 Survey

In Finland, the adoption of Enterprise 2.0 strategies is not that big yet. Only 36% of the enterprises recognize and use them, and 17% does not have any idea what Enterprise 2.0 means (Figure 7). The biggest barriers in adopting social media tools to Finnish organizations and companies are the lack of understanding, corporate culture and low priority (Figure 9).

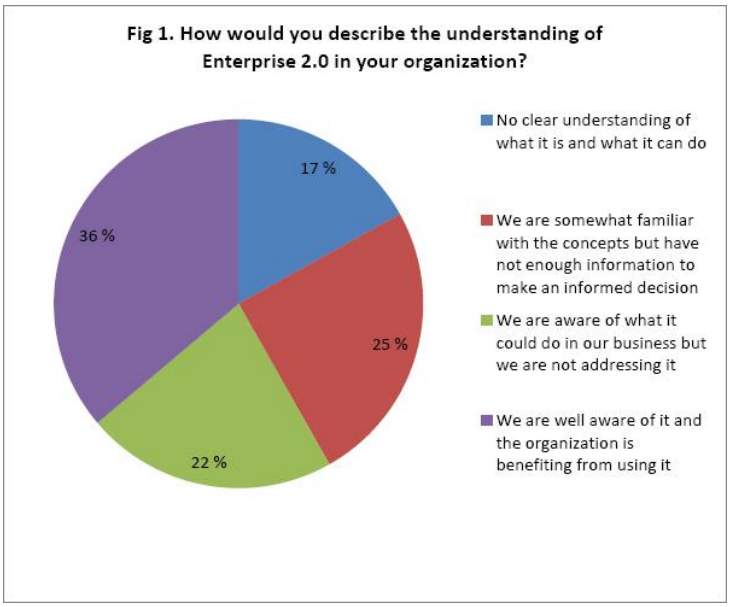

Figure 7 Understanding Enterprise 2.0 (Growth Lab Consulting 2010)

As expected, marketing and communications departments are the strongest users of Enterprise 2.0 tools, IT coming third. Moreover, in the top 5, sales and R&D have over 35% usage (Figure 8). The weakest users of Social Media tools are in the Finance and Legal Administrations departments.

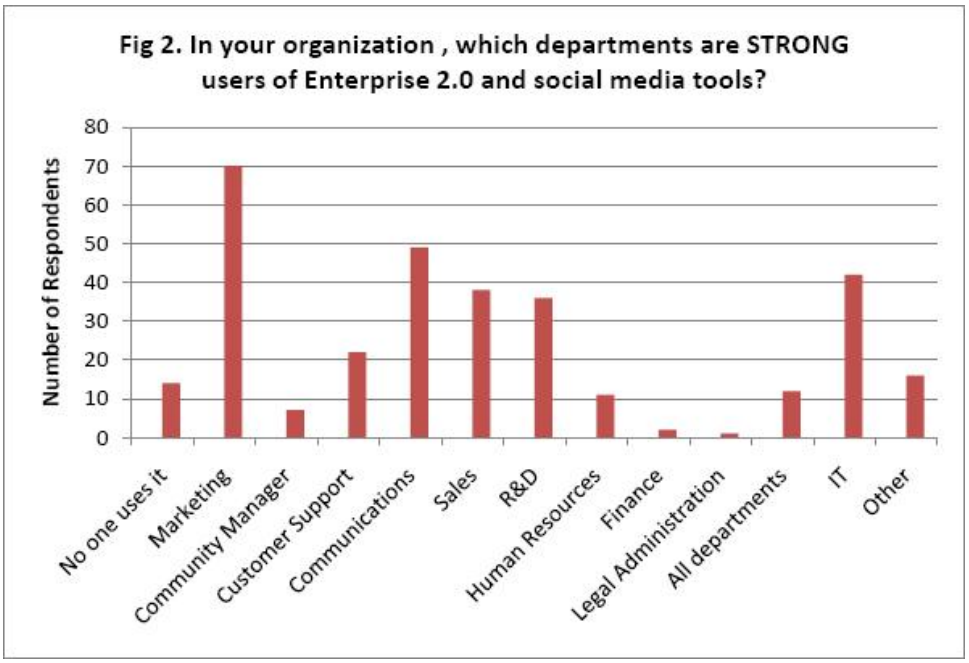

Figure 8 Social media usage by department (Growth Lab Consulting 2010)

Among the aforementioned barriers, also lack of business case, concerns over time wasting and data security are challenging the Enterprise 2.0 adoption. The least troubling are the immaturity of the technology and its complexity as well as costs (Figure 9).

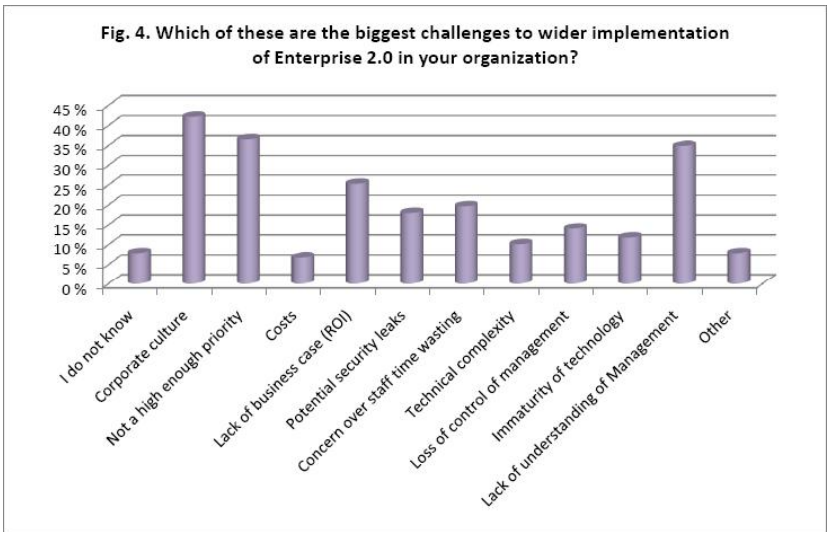

Figure 9 Biggest challenges in Enterprise 2.0 implementation (Growth Lab Consulting 2010)

When used well, Enterprise 2.0 tools can give significant benefits to the company. However, according to the survey 54% of the companies in Finland have not gained any measurable effects or benefits. Again as expected, the biggest benefit is in marketing with nearly 25% of the responses stating that its effectiveness has increased and nearly 20% stating that marketing costs have been reduced. The smallest benefit is the reduction of IT costs with less than 5% (Figure 10).

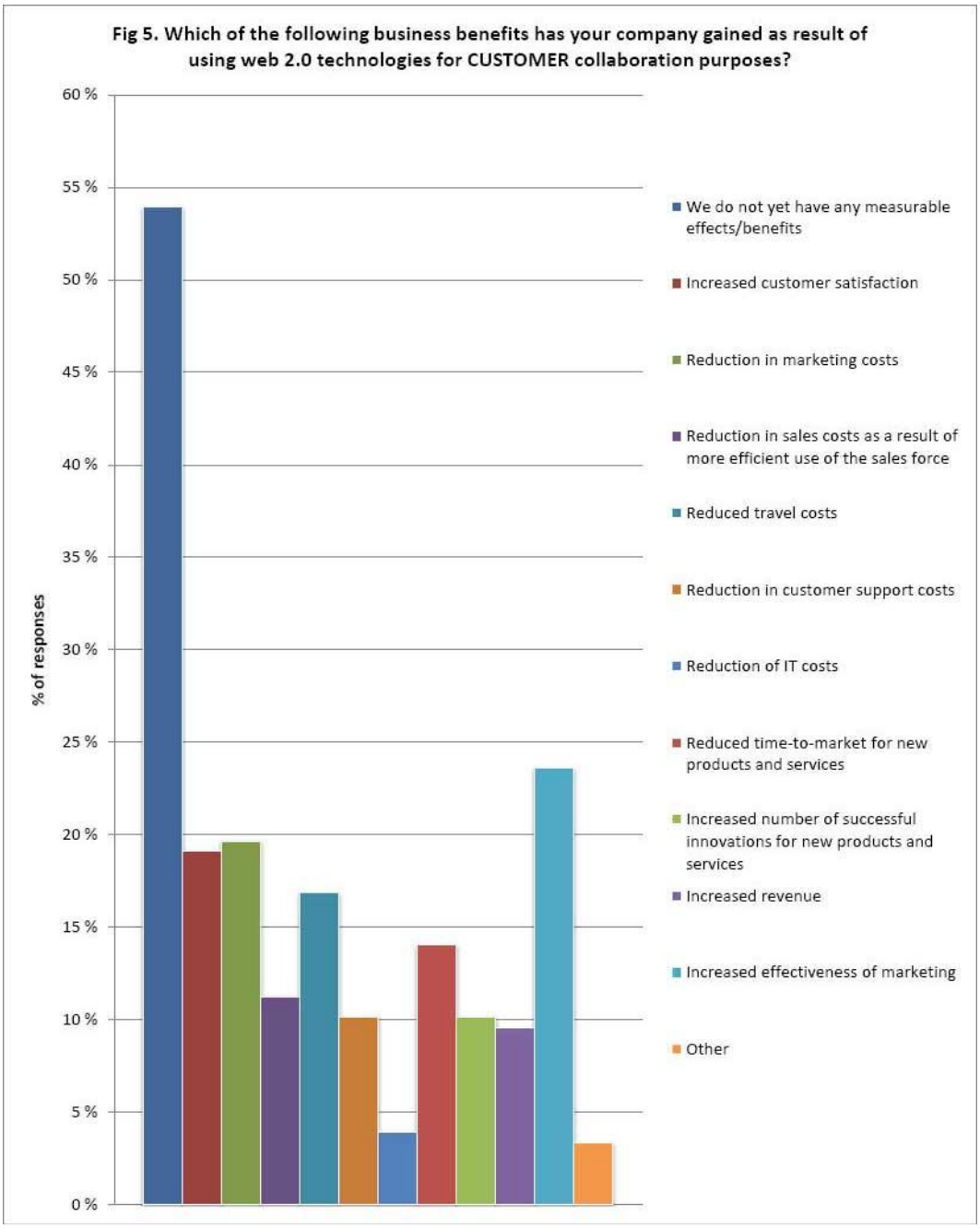

Figure 10 Benefits from Enterprise 2.0 tools (Growth Lab Consulting 2010)

Finnish companies are still in very early stages of Enterprise 2.0 adoption. More than 50% have not achieved benefits, either by not using social media or not having knowledge of how to use the tools to gain these benefits.

3.3 Comparison

Comparing these results show us that as in Finland ca. 55% of companies have not yet found social media to be useful, at least half of the companies

outside of Finland have, 70% of the executives stating that they need to be in the social media space to be successful.

Challenges also vary a little. When in Finland, the biggest barrier for social media adoption is corporate culture, lack of understanding and low priority, outside of Finland ROI Strategy, social media usage monitoring and negative brand exposure take the lead. It's very concurrent in the findings that Finnish companies really don't participate in Social Media Space at all.

4 NEW PRODUCT DEVELOPMENT

Development process is a series of procedures in which needs and requirements are evaluated from a four points of view:

- Customer
- Functionality
- Construct
- Process

4.1 Product development defined

Product development is the process in which a new product is brought to the market or in the process of improving an existing product. Those products can be machines, appliances or other articles as artifacts such as software or services.

Product development is a process which includes activities starting from the product idea and ending to a product, which are delivered to the market. In project management, the emphasis is on methods and measures, which can be used to optimize and speed up the process and thus improve the competitiveness of the product and also to save in development expenses. The process of product development also has a substantive effect on the expenses of the product's life cycle and i.e. the environmental effect.

There are several different views on the product development models in the literature. These different models represent particularly the project management's point of view on product development (H-P 2009, p. 34)

Product design is an important part or sub process of the product development (H-P 2009). Other sub processes are i.e. production, marketing, management and research process. Huhtala and Pulkkinen (2009) propose that the product-development process focuses on producing solutions, reviewing the solutions and putting them into practice. Product design is a process that produces a technical solution for given requirements; product-development process defines requirements for product design. Combined into productive operation the design process consists of technical functions and doesn't usually include management operations such as risk management, assistance in decision making or financial analysis (H-P 2009, p. 46).

4.2 Ulrich-Eppinger development model

Especially in appliance and bulk production, the Ulrich-Eppinger model has been used extensively. It builds on six different phases in the process: planning, concept development, system-level design, detail design, testing and refinement and production ramp-up. This process can be presented graphically as follows:

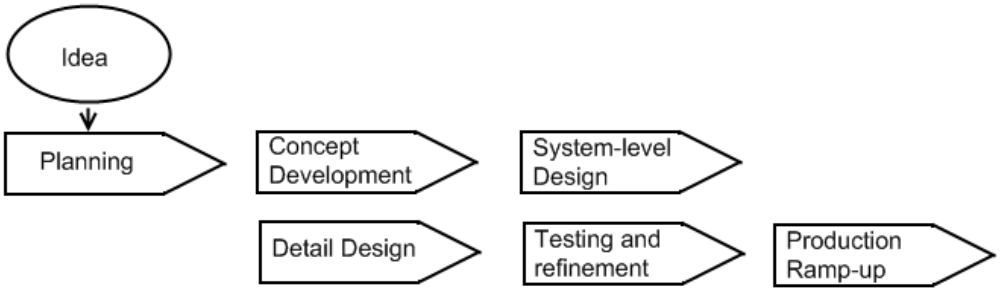

Figure 11 The Ulrich-Eppinger product development model

Ulrich and Eppinger divide the product-development process into six phases, which are as follows.

Planning phase, wherein the project mission statement that contains among other things a description of the markets to be targeted, business objectives and resources and technologies available are defined. This contains the necessary details for the second phase of the process.

During the concept development phase, the needs of the customer or the user are clarified and according to these needs the features of the product being designed are perceived. Along these needs and the product features new-product concepts are composed and among those concepts most promising are chosen. In this phase, it is also possible to do an analysis of the competing products and test the product concept with customers to assess the preliminary market potential and profitability. This may also demand the manufacturing of prototype products.

The next two phases, system-level design and detail design, usually take place simultaneously and are primarily technical design. In system-level design the product is, if possible, divided into parts and components, which have their defined functions. Blueprints and specifications of the parts are made. Part assemblies planned and the final assembly schematics detailed. In the detail design phase, complete schematics and specifications are made for production process and final assembly. Decisions concerning potential subcontractors and collaboration can be made within this phase. In addition, exact calculations of the total production expenses are carried out within this phase.

Testing and refinement, the fifth phase of the product-development process consists of manufacturing and testing of product prototypes. The first, so called alpha prototypes help to find out if the product works as designed and whether it satisfies the customer needs. In this alpha-phase the production processes can still be different from the final processes. The later so called beta prototypes are manufactured according to the designed final production processes, and they are tested in the manufacturer’s use environment as well as in the customers' final use environment. The reliability and performance of the product are also evaluated during the beta phase.

In the last phase, the production is started. There may still be some problems regarding the productions which are solved during this phase. The transfer to the actual production usually happens gradually, and in some point of this transition, the product is launched for a widespread distribution.

During the ongoing process, it's imperative to conduct audits after every phase to make sure that the set objectives are fulfilled and that the product still conforms to the demands set by the customer. Issues encountered i.e. during the design or production requires iteration cycles between phases to find solutions. Management for the whole project is of the essence here. To make management easier, several project management software and other methods have been made. Ulrich and Eppinger emphasize that there is lots of information generated during the product-development process, and that information needs to be handed quickly and efficiently to all whom it may concern. The essence here are cooperation and communication in-house as well as towards customers (or business to business cooperation), and especially in this has social media stepped in as an important tool.

4.3 Stage-Gate –model

From the traditional development models, there have been new versions developed. As an example, there's the so called Stage-Gate –model created by Robert G. Cooper. In this model, like the previously mentioned Ulrich-Eppinger –model, the emphasis is on the between-phases –audits (Gate) which also serve as the decision point for continuation of the process and in this regard resembles the Ulrich-Eppinger –model greatly. This Stage-Gate –model is mostly used in the United States where companies prefer it in their product development.

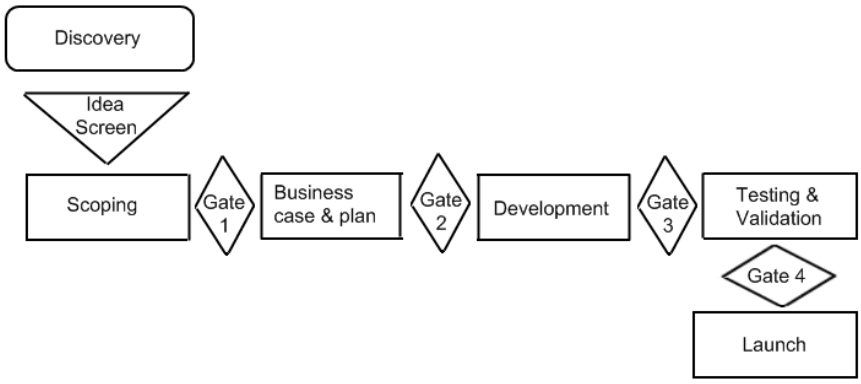

Figure 12 Mario Vellandi's remix of the Stage-Gate Model

The phases of the model are as follows:

1. Scoping, a quick specifying of the process
2. Business case & plan, a specified inquiry of the target market and technical requirements. This phase also includes a proper product description and project plan.
3. Development, the detailed design and preliminary testing of a new product. Initial production and marketing plans are also made in this phase.
4. Testing and validation, the final evaluation of the product internally as well as in the customer's use environment.
5. Launch, the start of production, marketing and distribution.

The process itself as well as the content of the phases is quite the same as in the Ulrich-Eppinger model. The original five-phase –model was later updated with an additional phase, discovery, which includes brain storming and preliminary research of different possibilities for a product, their general features and opportunities for production and marketing. For simple and low risk product development projects, a reduced Stage-Gate –model is available.

Every phase of the Stage-Gate –model consists of three parts that are followed by the model-centric Go/Kill –Gate, which involves the decision for continuing the project. These phases (or stages in this model) are explained by Cooper as follows:

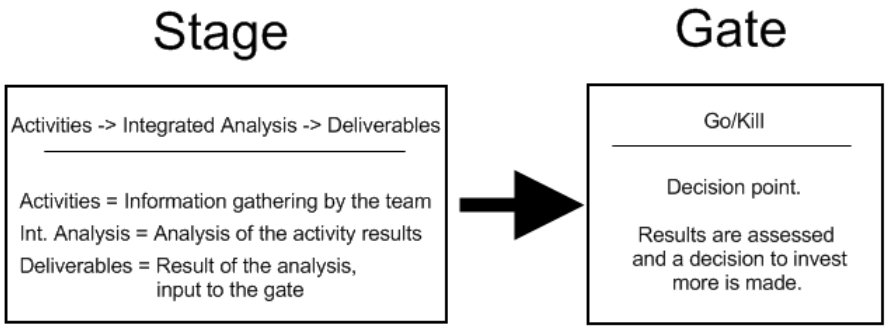

Figure 13 Stage activities followed by the gate activities (Cooper 2008)

Go/Kill –gate is supposed to prevent projects that are poor and likely to fail for ever continuing past the less-expensive starting phase, and by doing that, saving expenses by ceasing the development before beginning of the actual product design.

4.4 Capability Maturity Model Integration

More comprehensive frame of reference for enterprise functions and product development is the Capability Maturity Model Integration (CMMI). The model contains over 22 key process areas. Improving the operation takes place step by step based on CMMI best practice documents. There are three of these documents available, each for different area of interest; CMMI-DEV for development, CMMI-ACQ for acquisition and CMMI-SVC for services (http://www.sei.cmu.edu/cmmi/).

4.5 User centered product design

In product development and design, there is a strong emphasis on taking the end user needs and requirements into a consideration and because of this especially in the design phase user-centricity is important. This requires taking the user along into the development process, having him/her give feedback in every phase of the process from the preliminary design to the final testing. The earlier user's needs and wishes can be taken into consideration the less likely there is to be modifications and fixes in the latter phases of development. The feedback given by the user improves the product usability.

In modern product development, the user's point of view to the product quality needs to be secured during the interactive process. The standard for user-centered product design was specified as ISO 13407, Human Centered Design Process for Interactive Systems in 1999. The standard has been applied especially for software products, hardware/software systems, websites and services, but it can as well be applied to mechanical bulk production. The new revision of this standard is ISO 9241-210 specified in 2010 (Timo Jokela Blog).

This new standard, like the old revision, specifies the principles and activities of the user centered design. The principles are:

- The design is based upon an explicit understanding of users, tasks and environments.
- Users are involved throughout design and development.
- The design is driven and refined by user-centered evaluation.
- The process is iterative.
- The design addresses the whole user experience.
- The design team includes multidisciplinary skills and perspectives.

The essential activities are:

- Understanding and specifying the context of use
- Specifying the user requirements
- Producing design solutions
- Evaluating the design

According to Jokela, the principles of this new standard are notably different than in the old ISO 13407. The activities, however, are quite the same, just revised.

The activities of a human centric design process form are quite often an iterative process which is described in the standard according to the scheme below. This process can as well be said to be "iterative product development." When the user's demands have been made clear, the design decisions are made, the solutions tested and corrections made according to the found shortcomings. Every stage is repeated until user demands are met (Figure 14).

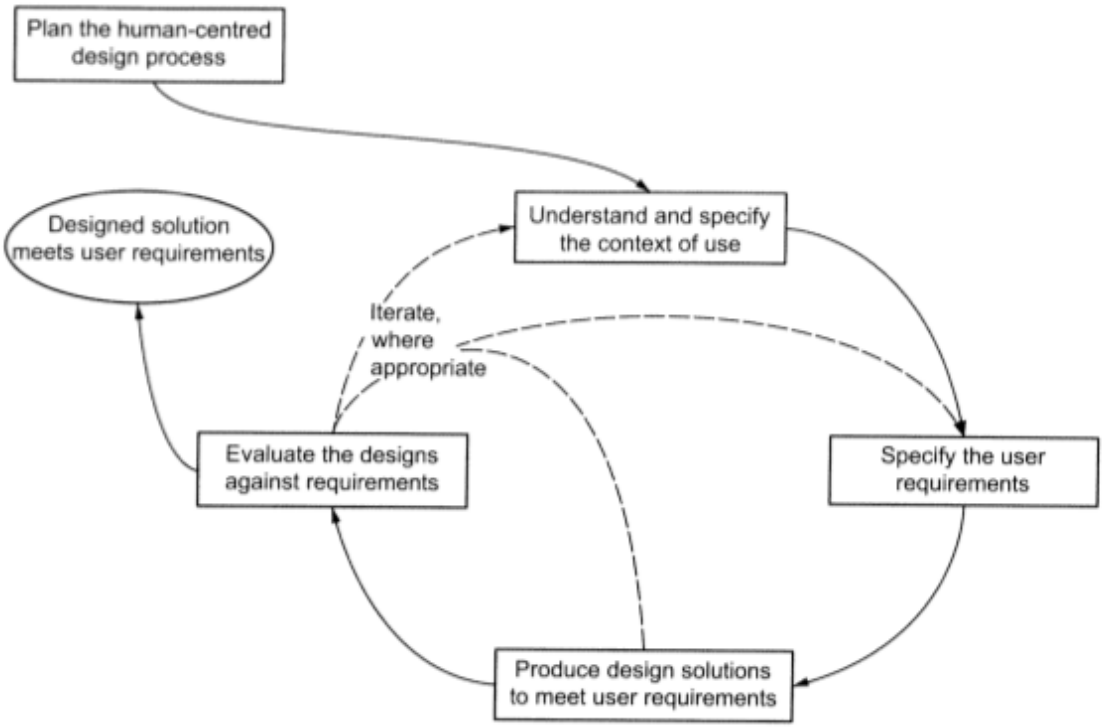

Figure 14 Human centric design process

Taking user demands, feedback and experiences into consideration during the design process is a challenge for creating an effective interactive process. Utilizing social media as a tool is an excellent option to achieve this.

5 TOOLS OF PRODUCT DEVELOPMENT

How can we then utilize these tools in a real-world situation? For the sake of clarity. It will be using an imaginary company as an example of how to combine the necessary techniques in the process of product development.

New Port Aerospace Co. is a small 25 person design company having one office in the capital city, and they do not have any previous experience of social media tools. They are a subcontractor for a company that manufactures ultra-light aircraft for hobbyist use and are about to bring a new model codename “Project 01” to the market.

New Port Aerospace Co is in the process of designing a new wing profile to be used in ultra-light aircraft. They want to bring the customers along to the design process, and use their knowledge and ideas on making the product better.

5.1 Integration to the Stage-Gate model

Generally, Social Media concepts can be integrated in all the product development models explained in chapter 4. In this chapter, we will explore the possibilities of Social Media in the Stage-Gate model.

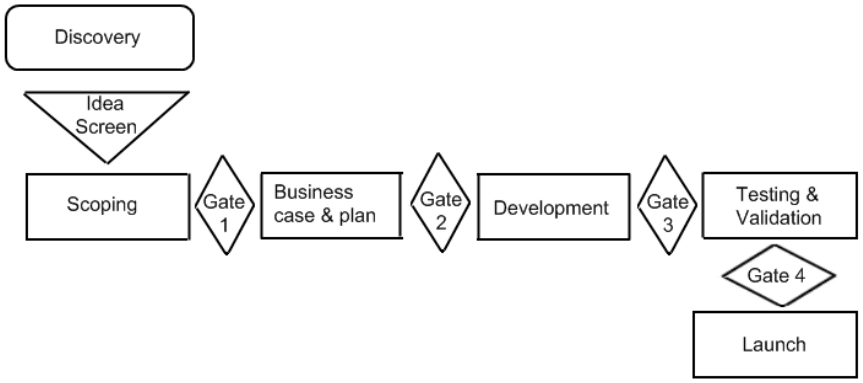

Figure 15 Mario Vellandi’s remix of the Stage-Gate Model

In the development of a new product, everything starts with developing the idea for the product. As social media is built on community content, it provides excellent tools for brainstorming product ideas. Depending on the required openness on the product, the brainstorming can be steered to the right direction. It does not matter how much information is given in the beginning. It's all about the point in the idea development from where the company wants to include their customers to the development. For example, there can be just the basic idea which is then “set loose” on the community site for refinement, or the idea could be well formed and certain guidelines set already which the refinement must happen on.

How to communicate the idea to the customers then? Thinking from our example company's perspective, their customers are pilots, hobbyists and other aerospace industry experts. The company would set up a blog to keep everyone interested up to date with the development process. Another option to a blog would be to create a project wiki. Because wiki is designed from ground up to be a platform for collaboration, it is perfect for sharing the relevant information about the project to all parties involved in the development process. One way to combine blog and wiki in the process would be to have the wiki in the company intranet working as a "databank" for everything and share only what information is required in the different phases of product development via the public blog. If the development process is to be as open as possible, the wiki can also be set public and open for everyone to add their ideas, for example working as a collaborative "brainstorming platform".

The next step would be to communicate the existence of that blog or wiki to the communities they want to include in the process. A one good way is to send a message via micro blog service like Twitter. As New Port Aerospace Co. is followed by many of the target communities, they will instantly know that something is happening. Most likely, they will also propagate the information further to Internet discussion forums and other micro blogging services.

Screening the ideas can be done with social media as well. When the brainstorming part has been completed, and all the ideas from the community gathered, it's time to choose which ones to start taking to the next phase. The company can either make the decision by themselves, or ask the community vote on their own choice.

Scoping part will be company's company's internal matter. During this they will evaluate the ideas received in the community brainstorming part and take decisions if to develop them further. The competition must also be researched to know if there's any point in developing the product at all. This part of the process doesn't need social media interaction.

Business case & plan phase requires the creation of product definition and analysis as well as building the business case and project plan. The company must conduct a survey to find out the benefits provided for customer. There must be a market analysis that consists of the market size and segmentation as well as customer trends and behavior and the channels used to reach the customers. Competitor analysis is an important part of this phase. It consists of assessment of the strengths and weaknesses in the current and potential competitors on the product's area.

Business case document consists of the definition of the product and reasons for developing it. Project plan is the schedule of the whole development process and its milestones.

When thought from the perspective of Social Media, the only part really benefiting from it is the customer surveys that can be conducted in com-

munity web pages. The survey can be open and allow discussion about the questions among the users.

During the development phase, all the data gathered from the previous stages are made into reality. It's very important during this phase to share information to the customers. Keeping the development blog current and engaging in discussion with the users will establish good customer relations already during the development process. Sharing videos via i.e. Youtube gives more insight to the process than pictures or text, and makes everything more interesting to follow for the customer. During the prototype stage, it's important to get as much feedback from the customers as possible. This can be done i.e. by conducting an open or closed "beta-program" that allows the customers try the product themselves. This type of beta testing is very popular in software development, and can as well in some extent be used also with physical products. When the prototype has been manufactured in the end of this phase, it goes to the testing and validation phase.

When doing the testing and validation of the product and depending on the openness of the development, social media tools are not required widely anymore. In this phase, the product prototype has already been manufactured and sent to the customer for evaluation. So unless the development has been community based, it is not really used to take along outsiders for this phase. In the example company, this would have the prototype wing sent to the aircraft manufacturer for installation in their prototype plane and let them run the final testing and give feedback to New Port Aerospace Co. before making the final decision of continuing to the product launch phase.

During the launch phase, social media becomes relevant again. It's an excellent tool in marketing to spread information and receive customer feedback about the product. All the feedback received during this phase can be incorporated to the new revisions of the existing product, or in the development of a completely new product thus taking the development process back to the beginning.

Now, because we're using the stage-gate model, there is also one more option in social media utilization. During every gate, the company could take along customer participation in deciding if to continue with the project.

5.2 Information security

A very important matter to consider when operating in the public Internet is the information security. It can be said that what goes to the Internet, stays there forever. Depending on the project, it is important to make sure to give away just enough information one is willing to lose. It is extremely easy for the competitors to dig up information about the other companies and their products, and incorporate ideas to their own projects.

5.3 Licensing

One option for getting the product into development is to use an open-source model. By sharing all the relevant data of the product's specifications and allowing the others build upon it. The company can ensure that everyone benefits from its work. There are several options of possible licenses available for use, most of them work extremely well in software products, but can also be applied for hardware design. Two of the most-used licenses are as follows:

The BSD license grants the user unlimited rights for usage. Products licensed under this can be used in non-commercial as well as in commercial use, can be modified in every way without giving back the modifications to others. For corporations this is good, as they can benefit from the BSD licensed products and decide on what to give back to the public. Many other widely used licenses like MIT, ISC and X11 are very similar to the BSD-license.

The GPL license also grants the user rights to use the product in commercial and non-commercial use, but if modifications are made, they must be licensed under GPL and thus made open for everyone. This ensures that the product stays free to use and modify. This can be dangerous in corporate use if the product is required to stay in the company's control.

The use of open licensing can be very beneficial to the company if used correctly. In the example project, New Port Aerospace Co could license their wing profile design with BSD-style license for everyone to use. This would give hobbyists as well as their competitors the possibility to incorporate the design in their own projects, and also develop the design further. However, it is possible that those improving the design do not share their own improvements. The copyright to the original design will stay within New Port Aerospace Co, and they are free to develop their own design either closing it from competition or as openly as before. If the modified designs are shared back, the whole community can use the improved design and develop it further. It granted this kind of licensing works better with software products, there is no reason not to try it in hardware also.

6 CONCLUSIONS

From bulletin board systems to Facebook, social Internet has come far. The possibilities are almost limitless, and the whole Social Media Space is expanding all the time.

New product development has been company internal matter for long time, but in this modern world it's not viable option anymore. The products need to be designed for the customer needs, and what better way would be than to take them along to the development process. Thanks to the Internet, the customer can be in any part of the world and still give valuable feedback for the company.

For me, researching the subject has been most educational. The only things about social media I knew before was pretty much Facebook, Youtube and Twitter. During the thesis project I came to realize how much of the today's Internet services actually are based on social media concepts, and how they are used in reality. Also diving into the process of product development has taught a lot about how a product actually is made and brought to the market.

By all means, the ideas presented in this thesis are not anything new. They have been around for few years already, and some of them are being considered in companies already. The unification of social media tools and traditional development models is an important matter of today's product development, and a "must have" for any company who wants to stay along the competition in this fast changing world of modern technology.

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