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Thema

Marketing a Community-Based Open Data Portal

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List of abbreviations

ann.	Annotation
app	Application (here: smartphone application)
cp.	compare
CSS	Cascading Style Sheets
D-A-CH area	Geographical area comprising Germany, Austria and Switzerland
e.g.	exempi gratia (for example)
et al.	et alli (and others)
etc.	et cetera (and so on)
HTML	Hypertext Markup Language
i.e.	id est (that is)
iOS	i Operating System for mobile devices from Apple Inc.
ISO	International Organization for Standardization
OSI	Open Source Initiative
PC	Personal Computer
Resp.	Respectively
RSS	Really Simple Syndication
SEO	Search Engine Optimization
SWOT	Strengths, Weaknesses, Opportunities, Threats

Abstract

Creating a flourishing volunteer-driven community portal is a hard task, even if the underlying social cause is good and motivating. Community founders need to reach out and market the portal, they need to seed the portal and attract volunteers, and they need to keep and grow the volunteer base. This master thesis reviews prior work and best practices for attracting volunteers to web communities, suggests new ones, and performs a longitudinal case study of these best practices by applying them to the Mydosis community portal for pediatric dosage information in the German-speaking D-A-CH area.

The main result of the thesis work is a review of existing best practices for marketing and building web-based communities and their application to a particular case, the Mydosis web portal.

The expected work results in more detail:

Best practices review

- Literature review of strategies and practices of marketing and building web-based communities.
- Summary and codification of these best practices for use in a possible operations handbook.

Longitudinal case study

- Analysis of statistical data available from users and their actions and execution of a survey.
- Combining the results of the statistical data and the survey for the creation of a social media marketing plan for Mydosis.

Mydosis is a real existing web portal. It is in its infancy stage, however.

Available is a technical staff and a product manager who are keeping the portal running and working well. A dedicated team has ideas and interest in supporting marketing activities for the portal. Some financial means may be available as well, but are not secured at this time.

1   Introduction

The Mydosis Portal was initiated November, 24th 2010 with the purpose to provide an online platform for pediatricians where they can research, collaborate and discuss dosage information for the so-called Off-label and Unlicensed-use[1] (Ekins-Daukes, *et al.*, 2005). This is done in an open source manner, i.e. the information can be accessed and modified by anyone. This project has not been initiated by others so far in Germany, Austria and Switzerland and in most other countries (so far only social media for patients has been issued [Hawn, 2009]). Together with the imperative need of more and high-qualitative information in this field which has been affirmed by various health professionals (cf. Rascher, 2007), at first glance creating a flourishing community should be easy. Nevertheless, nowadays internet users are fastidious (Buss, 2008, p. 23) and health professionals are discerning, i.e. they demand the best experience and information possible with low investment of time. The impressive example of the MySpace decay points this out (Wilkinson and Thelwall, 2010). That is why despite these favorable starting conditions the concept of how to create this online community has to be planned and implemented neatly and in a wise manner.

The thesis starts with reviewing and analyzing the most recent theory literature and best practices and a comparison with other social web services; this is done in chapter 2. Chapter 3 contains a longitudinal case study of the Mydosis project. It starts with background information of Mydosis, followed by an examination of statistical data of the portal's web access logs. The chapter closes with the evaluation of two surveys which are conducted among health professionals in order to identify their needs concerning Mydosis' technical functions and content. The results of the research (literature and theory review in chapter 2 and survey findings in chapter 3) are combined and used in chapter 4 in order to develop a marketing plan for the Mydosis portal in terms of how to create a flourishing volunteer-driven online community. Chapter 5 closes this thesis with conclusions and lessons learned.

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[1] Current legislation requires doctors to prescribe drugs beyond their licensed application scope (Off-label- and Unlicensed-use), even if there is no published information about the drug's safe use. In such cases the application risk is transferred from the pharmaceutical companies to the prescribing physician. Therefore, doctors have developed an increasing need for this missing information.

2   Best practices review

This chapter depicts definitions and explications of concepts used in the further course of this thesis. Furthermore, a literature review of strategies and practices of marketing and building web-based communities is conducted, followed by an outline of other online medical projects' strategies.

2.1   Fundamentals of social software

In the following, some basic concepts like virtual communities, social networks, wikis, open source, etc. are defined and explained. They all can be subsumed in the term "social software" which "[…] refers to systems which facilitate human communication, interaction, and collaboration in large communities". (Wagner and Bolloju, 2005; Ward, 2006)

2.1.1   Virtual-/online-/web-communities

There are different definitions of virtual communities on the web. A general definition is the following:

"Frontierless, geographically dispersed community of people and organizations connected via internet or other networks, also called online community or web community". (businessdictionary.com, 2011)

This is a more specific definition:

"A virtual community can be seen as a group in which individuals come together around a shared purpose, interest, or goal […]". (Koh, *et al.*, 2007)

Iriberri, A. and Leroy, (2009, p. 11:8) propose different benefits for individuals: Information exchange, social support, social interaction, time and location flexibility and permanency.

One benefit is **information exchange** thanks to access to different information, experiences and other members which otherwise would be obscure and inaccessible.

Furthermore, another advantage is **social support** because users can build and maintain social ties with online and offline acquaintances. There is the opportunity to help, provide, offer and receive support to a group or larger community in a climate of

trust, equality and empathy, as well as the chance to bond socially and generate social action.

Social interaction offers the possibility of meeting people and building friendships and of being entertained.

Besides, virtual communities offer **time and location flexibility** thanks to the internet environment, so there is flexible access, time management, spatial and temporal independence and visibility beyond ties of local work or a geographical community.

Permanency refers to the prospect of comfortable editing, storing and retrieving messages as well as access to worldwide research articles within the community related to a specific content. This offers the ability to edit and reflect about collaborations and establish permanent social presence through profiles, messages and the possibility to control the level of participation in the community.

2.1.2 The open source/creative commons philosophy

Open source software is software that is provided under an OSI[2]-approved license.

According to the OSI, the following conditions have to be fulfilled in order for software to be classified as open source:

- The source code is available and accessible
- Modifications of code are allowed (and desired)
- Distribution of source and binary code is unrestricted

More precise conditions of open source software are:

- Free redistribution
- The program must include source code
- Derived works are possible
- Integrity of the author's source code
- No discrimination against persons or groups
- No discrimination against fields of endeavor
- Distribution of license (the rights attached to the program must apply to all to whom the program is redistributed without the need for execution of an additional license by those parties)

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[2] www.opensource.org

- License must not be specific to a product
- License must not restrict other software
- License must be technology-neutral

Free software is a variant/subset of open source software which historically emerged before. It is not discussed here as it is irrelevant with respect to Mydosis.

The Mydosis portal software which is running on the server and the Mydosis Android smartphone app are licensed under an Open Source license.

For the Mydosis database, an *Attribution-NonCommercial-ShareAlike 3.0 Unported* license has been selected. "This license lets others remix, tweak, and build upon your work non-commercially, as long as they credit you and license their new creations under the identical terms."[3] Everyone can use and edit the data freely, no commercial use by others than Mydosis is permitted and if someone uses it in a different context, a reference to Mydosis has to be included. The data of the database belongs to the company which can do with it whatever she wants, even change the license at a later stage.

2.1.3 The Wiki philosophy

The word "Wiki" originates from a shuttle bus in Hawaii which is called "Wiki Wiki" and means *quick*. Howard G. Cunningham, the developer of the first wiki decided to name his new web service *WikiWikiWeb* after a trip to Hawaii in order to emphasize the quick collation of new information. (Daven, 2010)

Wikis are web sites which allow users not only to have access to its content but also to change the content online (Leuf and Cunningham 2001; Raitman *et al.*, 2005). They can be publicly available on the WWW or locally on company intranets. The only piece of software they require is an internet browser, so then can be easily and intuitively used by anyone. Wikis can either be used as a knowledge management platform or for educational purposes in private, economic or political contexts. (Cress and Kimmerle, 2008)

Motives: Prasarnphanich and Wagner (2009) state that "Wikiepedians have both individualistic and collaborative motives [… nevertheless] collaborative motives dominate". The quick and positive feedback from other users is a motive in itself,

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[3] Source: www.creativecommons.org

demonstrating that contribution matters. From this standpoint, there is an intrinsic motivation.

Approval process: The approval process of new and altered articles in Wikis is "based on a combination of classic integrity mechanisms from computer security and reputation systems". (Ferrari, *et al.*, 2009)

Risks: Denning, *et al.* (2005) list six risks that apply for any type of Wiki:

1. **Accuracy**: As community managers cannot revise any kind of information and often do not have the subject-specific expertise, inaccurate information can be fatal.
2. **Motives**: The motives may not always be altruistic; there may be also political or commercial opportunists, practical jokers, or even vandals.
3. **Uncertain Expertise**: As the same with accuracy, users might be exceeding their expertise and supply speculations, rumors, hearsay, or incorrect information. As the registration process is often based on pseudonyms, the community manager cannot verify their real identity and background.
4. **Volatility**: A high turnover of changes on articles leads to the question whether to cite the version read or the latest version.
5. **Coverage**: As by tendency rather young people use the internet, the information carried together might be influenced by demographics, e.g. more is written about current news than about historical knowledge. (Ann.: In recent times more and more elderly people explore the internet's possibilities as well. [cp. ScienceDaily, 2009])
6. **Sources**: Few articles contain independent resources and citations to works which are not digitized and stored in the open internet.

2.1.4 Online marketing / social network marketing

According to Beeson (2010), online and social network marketing has evolved over time in different steps:

1. Websites were found only because people saw them printed in adverts and on business cards.
2. Websites collected email addresses of users in order to send newsletters.
3. The rise of search engines like Google led to an increasing need of search engine optimization.

4. The so-called *Web 2.0* with interaction, personal relationships and multimedia became the new marketing challenge.

5. With integrated, cross-platform marketing becoming more and more important, the necessity of being present at different marketing channels like Youtube, Twitter, etc. increased.

6. Marketing via social networks, especially with Facebook and its *Like-Function* becomes increasingly important as users select the products they buy according to what their friends like or bought as well.

7. With the massive dispersion of smartphones and tablet pcs, location based services and location marketing currently is in the process of becoming more and more important. (cp. Foursquare[4])

The timeline view of a Google search with the term *social network marketing* in Figure 1[5] shows that this topic started to exist ten years ago:

Figure 1: Google timeline for the term "social network marketing"

This demonstrates the velocity of the changes in internet business and the need for companies to keep up with these transformations.

2.2 Strategies and practices of marketing web-based communities

It is very important to have a well-planned social media strategy before entering this field. Primarily it has to be defined which market niche should be addressed, what kind of target audience is implied with this and what should be accomplished. After that, different concrete operations can be realized. These operations should be put into practice very carefully; this can be conducted in two different ways:

- Putting into action one operation after another, in a slow step-by-step manner
- Addressing only a portion of the users with new operations

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[4] www.foursquare.com
[5] Source: www.google.de

This serves for a company to be able to have a trial before messing up the whole strategy. Because this field is so new, there is little literature on appropriate strategies. Besides, each company is different, so it also needs individual strategies in this field in order to be successful.

In the following some strategies and operations that come into consideration for use with Mydosis will be listed.

2.2.1 Characteristics and challenges

According to the World Economic Forum (2007), communities are "a group of people who are connected online for purposes that include communicating, sharing knowledge or exchanging content."[6]

Characteristics of communities are:

- They are highly cooperative
- They establish their own unique culture
- They involve significant time from contributors
- There is no monetary gain

"[…] the challenge for community leaders is to explore and treat the underlying needs of the community's members. Since community activities are voluntary, certain leadership roles may be especially important in the community's virtual environment. Given the voluntary social context, community leaders play an important role in developing the necessary social climate to generate community participation. Securing or developing effective community leaders is likely to be a critical success factor for the sustainability of any virtual community". (Koh, *et al.*, 2007)

Koh, *et al.* (2007) also state that initiators of social communities "must simultaneously deal with communication, motivation, leadership, and technology". Therefore, a clear vision, opinion leaders, offline interaction, basic guidelines, and useful content are required in order to run a community effectively.

If there is no social presence within the virtual community, there will be deficits in communication. Against the background of the physical dispersion of the members which besides generally are heterogeneous in terms of age, education and

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[6] Source:
http://www3.weforum.org/docs/WEF_DigitalEcosystem_Scenario2015_ExecutiveSummary_2010.pdf

profession, motivation is a difficult and manifold task. Since members mainly collaborate on a voluntary basis with intrinsic motives, those have to be stimulated in the right way, e.g. with graphical elements, avatars, etc. The term 'Gamification' embraces these techniques and is explained in chapter 2.2.8. Likewise, community leaders have the special task to develop the necessary social climate to generate community participation – leader involvement is needed for fostering members' active participation in posting and viewing community content. The technical perspective mainly covers issues concerning internet connection; in the case of Mydosis it is important to take into account that due to security concerns in many hospitals there is no or only limited internet connection permitted. To solve this problem, the Mydosis smartphone app has been developed. Table 1 (according to Koh, *et al.*, 2007) lists these issues that creators of social communities have to take into account.

Table 1: Major types of challenges for virtual communities

Category	Type of Challenge	Description	Relevant Theories
Social perspective	Communication	• Communication dynamics to be changed • Low social presence • Inhibition in building trust	• Computer-mediated communication • Social presence
	Motivation	• Much effort needed to discover and manage common goals and interests of community members	• Intrinsic/extrinsic motivation
	Leadership	• Ensuring adequate levels of community activity and membership growth • Developing supportive climate	• Leadership • Team effectiveness
Technical perspective	Technology	• Security restrictions of companies • Skills needed for a range of computer technologies	• Computer-mediated communication • User computer self-efficacy • User interface

2.2.2 Motivations and barriers to contributing to online communities

In terms of motivating users to online participation, online communities share similarities with real-world social communities. Thus, basic persuasion theories of

sociology can be consulted and applied for online communities: (cp. Cialdini, *et al.*, 2004; Oinas-Kukkonen*, et al.*, 2008)

- The **Reciprocation Theory** says that in order to motivate users, a successful online community must provide its users with "remunerations" that reward them for the costs of time, effort and materials they invest because their incentive to join these communities is a sort of reward, whether it is physical or psychological. In the case of applying this theory to Mydosis users could be remunerated with elements of Gamification like virtual status, badges, etc. (cp. chapter 2.2.8).

- The **Consistency Theory** states that after a participation in an online community the contributor feels committed to that community and, because of that, feels obliged to keep on participating in that community in the future. For Mydosis the implication of this theory could be used in the form of email notifications once another user commented on a user's contribution.

- The **Social Validation Theory** describes that if an online community is socially acceptable and popular, people are more likely to join and participate in it. This is the theory that applies most to Mydosis as it is a service to help doctors improve pharmaceutical drug safety in pediatrics.

Further theory (Ludford, *et al.*, 2004) arrives at the conclusion that most users firstly take a look at the content of online participation like for example forums and then learn by example, i.e. they follow others consequently.

However, there are some barriers an online community manager has to face. For example, new users often feel unconfident and unsafe participating in an existing community because they fear criticism or inaccuracy and that their contribution could not be important, interesting or relevant. A study in the large multinational corporation Caterpillar Inc. identified that there was even the fear of losing face in this context. (Ardichvili, *et al.*, 2003)

2.2.3 Membership lifecycle of online communities

When creating an online community there are different stages. They evolve over time and have different characteristics and needs towards the members and the whole community. They have to be taken into account at all times. According to a specific author there are different models of stages:

Wegner, *et al.* (2002) suggest five stages: potential, coalescing, maturing, stewardship and transformation. Andrews (2002) illustrates three stages: starting the online community, encouraging early online interaction, and moving to a self-sustained interactive environment. Malhotra, *et al.* (1997) propose four stages: inception, beginning of user involvement, interactivity, growth and experimentation activities of this community over a 2-year period. Iriberri and Gondy (2009) label the five stages of the online community lifecycle as follows: inception, creation, growth, maturity, and death. This concept will be looked at in more detail in the following. At the **inception stage** there is a need of the potential users to be satisfied with the service. Therefore, the online community's operators create a vision of how to fulfill these needs. Within the **creation stage** the technological components such as algorithms, user interfaces, etc. have to be provided. Once enough members have joined the community, the **growth stage** initiates. Here, a culture and identity for the community begins to develop with rules and roles evolving within the community. In the **maturity stage** there is a need for more explicit and formal organization with regulations, rewards for contributions, subgroups, and discussion of more or less specific topics. Some users leave the community and others join, bringing new ideas which can be used to reawaken the interest in the community. Many communities iterate in this stage for a long time, others leave it and enter the death stage, as for example the German Facebook derivative StudiVZ[7] or MySpace[8].

Figure 2 (Iriberri and Gondy, 2009) illustrates this process, whereas it is desirable to rest in the maturity phase.

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[7] www.studivz.net
[8] www.myspace.com

Inception
Need
Vision

Creation
Purpose
Technology
People

Maturity
Regulations
Subgroups
Trust
Relationships

Growth
Rules
Roles
Identity

Death
Lack of
Contribution
Participation
Quality Content
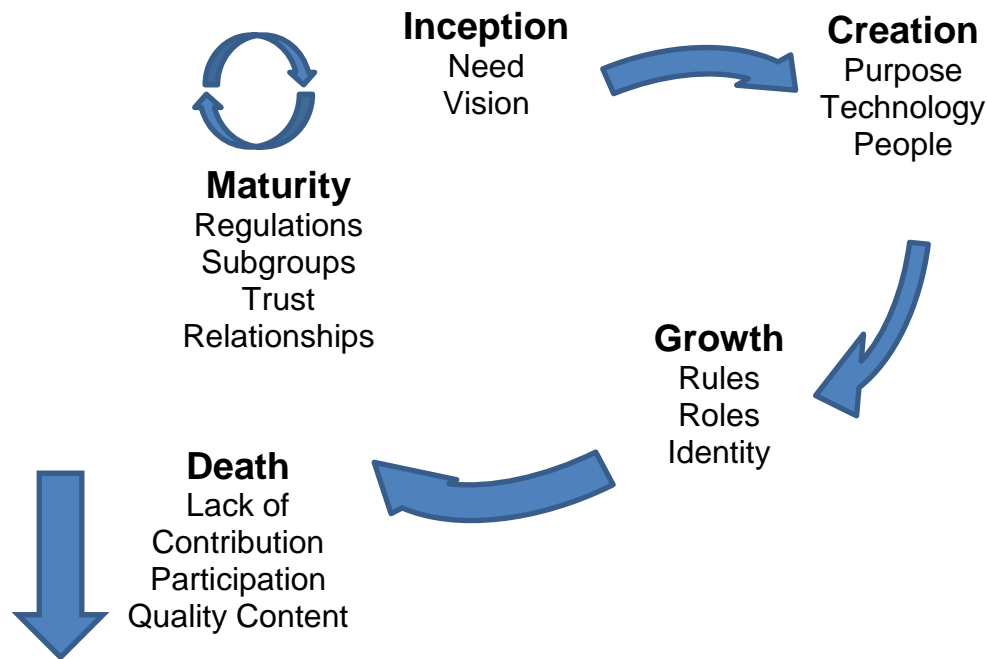
Figure 2: Online communities' lifecycle

Mydosis is momentarily situated in the creation phase and soon to take the next step to the growth phase.

In addition to the online community lifecycle model explained above there is also a membership lifecycle model of online communities' users, proposed by Kim (2000):

1. **Visitors**: people without a persistent identity in the community
2. **Novices**: new members who need to learn the ropes and be introduced into community life
3. **Regulars**: established members that are comfortably participating in community life
4. **Leaders**: volunteers, contractors, and staff that keep the community running
5. **Elders**: long-time regulars and leaders who share their knowledge, and pass along the culture

Currently most of Mydosis users reside in the novice state.

2.2.4 Mobile applications for social networks

Because mobile devices are more and more used for non-voice data applications (cp. Sorrel, 2010), together with the fact that the operating systems Android and iOS (iPhone, iPad) are the most popular ones, is seems sensible to provide a mobile

application for a social network in addition to a conventional website in order to complement the portfolio offered to the users. Lică (2010) suggests that it is not sufficient to copy the functional range of the website but to tailor it for mobile use, e.g. with location-based features, as the mobile application for Facebook demonstrates. Moreover, in his study he reveals that the usability of a mobile application should be as easy possible and that "mobile applications with social-networking functions must make sharing a truly one click, effortless experience".

Furthermore, Lică (2010) suggests nine best practices in order to be successful in creating mobile applications for social networks:

1. Clear opt out is not optional – privacy is important
2. Logging in must not be a hassle
3. Nobody wants yet another social network to use the services at hand
4. Show friends first
5. Discover and connect – suggest new users, suggest similar products
6. Make it fun, make it a game
7. Keep it simple stupid
8. Don't forget you don't have a big screen, simple serves a purpose
9. Once on the web everything is public but privacy is dead serious

2.2.5 Search Engine Marketing

The internet can be characterized as a conglomeration of unstructured information and search engines like Google enable users to search for any kind of information and facility access. It is assumed that in its early stage Mydosis is a predominantly unknown service among internet users. Therefore, it is important to make it findable via search engines, i.e. preferably to be located farthermost up in the search results. This is commonly described as Search Engine Marketing or Search Engine Optimization. There are two ways of making a service/webpage visible in this way:

- Improving the page rank
- Paying in the course of the Google AdWords program

In order to improve the page rank different factors have to be considered. Because there is a broad mixture of quality and non-quality pages available on the web, Google uses an algorithm that takes into account the quantity of links that reference to the site in order to identify its quality and pertinence. Moreover, the more links refer

to sites that in turn refer to one's own site, the more "valuable" these sites are in order to improve one's own page rank. This is the formula for calculating the page rank of a site:

$$R(u) = c \sum_{v \in B_u} \frac{R(v)}{L(v)}$$

The PageRank (R) for the Page u derives from the PageRanks for each page v (which contains a set of all pages linking to page u), divided by the number of links (L) from page v. c<1, usually 0.85 because of a number of pages with no forward links whose weight is lost from the system. (Page, *et al.*, 1999)

For the promotion of Mydosis this means that it is very important to place as many links as possible to www.mydosis.de, favorably within sites with a good reputation or online publications of renowned journals in order to improve the PageRank.

Another way to improve the PageRank and the search results is to make reasonable use of the keywords section in the HTML header.

Google AdWords is a way to appear in a separate column in the Google search results regardless of the PageRank. The website owner specifies keywords which best describe the site or service provided. When the internet user searches for these keywords, the site appears in the above mentioned column. For each keyword there is an auction, i.e. the user who offers the most amount of money for a specific keywords appears on top of the list, the user who offers the second most amount of money gets the second place from top and so on.

Nevertheless, nowadays SEO more and more gets replaced by social media marketing as Facebook possibly is going to overturn Google in terms of the most significant sites worldwide. (cp. Dunford, 2010) 'Social search' becomes more en vogue as people listen to their Facebook friends' proposals. Boulton (2010) states that "[…] there's so much interaction and information being shared inside Facebook that it has become a decent-sized replica of the Web inside the Web. And Google can't crawl and analyze much of what happens in there". The implication for Mydosis is that it is favorable to attain a preferably good reputation amongst a medicine clientele in this web inside the web.

2.2.6 Physical appearance

A professional image of the site supports building initial trust by users. McKnight, *et al.* (2002) affirm that "[…] developing and communicating reputation is a vital way to build initial consumer trust in a web site. Web site quality perceptions build initial trust because consumers tend to judge the goodness of the vendor behind the site based on how good the site looks to them." Balasubramanian, *et al.* (2003) state in a study of trust for online brokers that physical appearance of facilities, employees, equipment, employees' responsiveness and empathy lead to trust and play a central role in customer satisfaction. This concept can be applied as well for websites and the communication of the operators with their users. For Mydosis this means that the look of the portal and the smartphone app has to be professional and operable easily by the user, without technical problems like programming errors showing up. Moreover, Mydosis' employees have to be fast and competent with answers to both possible technical and functional problems.

2.2.7 Viral marketing

According to marketingterms.com (2011), viral marketing is a "marketing phenomenon that facilitates and encourages people to pass along a marketing message". It is a way to transport a message to a broad audience in a short period of time without cost of distributing this message. It is used by a lot of big companies as a complement to traditional marketing strategies in order to reach a broad audience in an effective way. Yet, for medium and small-sized companies in particular it turns out to be a good opportunity to spread the word of their products.

In the context of web-based social networks, viral marketing plays a big role. The Web 2.0 technology enables the creation of user generated content which makes it possible for consumers to assume the role of the seller or the advertiser. Social networks provide the opportunities to forward or recommend brand profiles or brand communities to their friends. Moreover, by means of these platforms users exchange opinions, impressions or experiences, thus they pass on viral messages on a voluntary basis. Because this information commonly comes from friends or acquaintances within their network, they are mostly accepted as trustworthy. (Langner, 2007)

Viral marketing makes use of the most important characteristic of social networks, the fact that people are connected amongst each other. In order to exploit this

opportunity, the aim is to create a message that is worth spreading the word. This can comprise a humorous video as well as offering financial incentives like a bonus program.

Yet, besides the benefits of viral marketing for companies, it also contains challenges (cp. Vollmer and Precourt, 2008). These include the danger that the message might be abused for a different purpose, misinterpreted by the audience or the lack of being able to reverse it in the case of a change in the corporate strategy. Because of the rapidness and the range of coverage in the internet, once a message is distributed, it is impossible to revoke it. Another disadvantage of viral marketing is that it is not enough just to create a simple page in social networks in order to trigger the viral effect. In many cases companies additionally have to invest more money for real-world marketing campaigns or free giveaways, coupons, etc. (Schmidt, 2008)

Online viral marketing can be conducted via different channels (cp. Woerndl *et al.*, 2008), for example via email, YouTube or social networks such as Facebook. Viral marketing via Facebook is notably effective; the respective methodology will be exemplified in the following (according to Gil-Or, 2010):

In the case of Mydosis, the goal is to create a community of supporters with most people possible, preferably in the health area. In the Facebook terminology these are called fans or followers. Facebook members become a fan if they click on the respective "Like it"-button. In order to achieve this, a "Facebook Pages" presence, which allows companies to have their own corporate profile on Facebook, has to be created. Because at this time Mydosis is relatively unknown, the pure reputation of the brand cannot serve for this purpose. Firstly, a short slogan like for example "I'm increasing pharmaceutical drug safety with Mydosis" could raise the followers' friends' attention. Following Mydosis on Facebook is free of charge. Clicking on the "Like it"-button does not necessarily mean that the user has ever visited the Mydosis webpage, nor will visit it in the future. Once a user has become follower of Mydosis, the Mydosis logo and name will appear in their profile. The fact of having joined Mydosis on Facebook will also automatically be distributed to all of their friends. Consequently, some of them will either question the user about it or go to the Mydosis site themselves in order to see what it is about. The positive effect of online viral- and word-of-mouth marketing is that there is no proactive action required by the users in order to become influencers – even though they do not aim to be

influencers, they simply become such. Gil-Or (2010) asserts that the concept of influencers of social networks goes beyond the concept in the traditional world where only experts exert influence. In the online world there are more influencers as for instance the best networker with a large social network.

After having created the Facebook presence, it is important to nurse it in order to be regarded as an attractive and dynamic location by the users. This can be done with integrating the Mydosis blog which includes news and actual events. For the health audience additional features like hot topics in pediatrics could be built-in. This approach has two aims: 1. keep visiting the existing fans in order to pass them information without the need of push-messages which are normally regarded as rather annoying by the internet community and 2. followers keep recommending the Mydosis fan page to their friends because of the maintained awareness.

Facebook offers many applications that can help companies to promote their page, as for example coupon-creation applications and various statistical tools in order to analyze the way the messages are spread and to track the fans' activity (e.g. timelines for the total quantity of followers, new/removed followers, page views, demographics, etc.). With the help of these tools companies can try to filter the lead users and brand lovers out of the potential customer base. They can cultivate a relationship with them in order to let them participate with the brand. For example, companies can give exclusive information that is not publicly available to brand lovers, develop and test products with them. In doing so there is a great chance that those users get convinced of the brand and recommend it to others in their network. The dialogue between the company and consumers is very important in this process because the way information about products is communicated is essential for the effectivity of this method. Figure 3 illustrates how this dialogue could look like in the case of Mydosis.
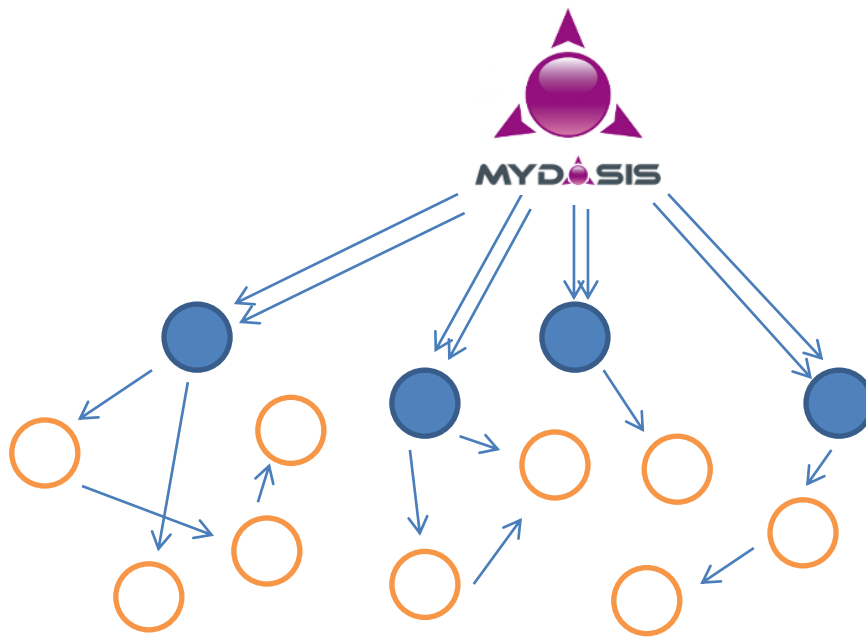
Figure 3: Word-of-mouth marketing and network effect

The blue circles represent the lead users, respectively brand lovers who communicate with the company and participate in the development of the product. With word-of-mouth marketing they interchange experiences and opinions with other persons and create the network effect.

2.2.8 Gamification

In order to capture the meaning of Gamification for today's web-oriented companies, a digression into marketing history has to be made. Not before the 1990s, the main marketing scholars concentrated on the traditional marketing theory which stands for the sequential exchange of goods between the producer and the customer, i.e. the producer creates value by creating or refining a product which then "carries" the value in it. This value is then transferred to the customer with the transaction process. (Zichermann, 2011a) Towards the end of the 20th century, however, commercial activity has more and more shifted towards service-oriented industries.

According to Gilmore (2003) and Curtis (2006), services can be characterized by intangibility, inseparability, heterogeneity and perishability. This has an influence on the marketing mix, which accordingly includes service dimensions. These new marketing axioms no longer coincide with the traditional understanding of marketing because they do not provide a sufficient understanding on services (Grönroos, 2007).

Due to this change of focus from tangibles towards intangibles such as skills, information, knowledge, interactivity, connectivity and ongoing relationships, Vargo and Lusch (2004) assert that there is a shift of orientation from the producer to the customer. That is why they postulate a new dominant logic for marketing. They state that a service-centered dominant logic of marketing will have a substantial role in marketing thought. From today's point of view, we can say that this assertion has come true. Customers are not satisfied anymore with consuming products passively; they rather want to participate actively in the value creation process. For example, mass customization of products (cp. mi adidas[9]), Humans as a Service (cp. Amazon Mechanical Turk[10]), crowdsourcing, etc. comprise possibilities for customers to actively participate in functions of companies which previously used to be performed within the boundaries of a company.

This new school of marketing perfectly fits into the sphere of Mydosis as this is a pure service-oriented company focused on customer participation. This is emphasized by the fact that the customer here is also called *user*, i.e. the frontier between customer and collaborator diminishes and the services cannot be separated from their providers anymore (cp. Kotler, *et al.*, 2009, p. 255). Because these users cover a large quantity of worldwide located persons, it is needless to say that there cannot be only financial incentives to collaborate. That is why other concepts have to come into play. One of these concepts is *Gamification*.

There are different definitions for Gamification in literature. Deterding *et al.* (2011) describe it as an "informal umbrella term for the use of video game elements in non-gaming systems to improve user experience (UX) and user engagement in non-game services and applications". Huotari and Hamari (2011) say that "Gamification is a form of service packaging where a core service is enhanced by a rules-based service system that provides feedback and interaction mechanisms to the user with an aim to facilitate and support the users' overall value creation". According to Bunchball (2010) Gamification means "integrating game dynamics into your site, service, community, content or campaign, in order to drive participation". The most general definition comes from Zichermann (2010c). He states that "Gamification is the process of using game thinking & dynamics to engage audiences & solve problems".

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[9] www.miadidas.com
[10] www.mturk.com

Normally, in order to motivate users beyond intrinsic motivation to collaborate in a web portal, a certain reward which could be a financial benefit, for example tangible goods, "buy 10 get one free", etc. would have to be delivered. In the case of Gamification, however, the cost of delivering an incremental value to the consumer is increasingly approaching zero, at the same time loyalty decisions are getting public with social networks. This is the case because Gamification tries to establish intrinsic motives for collaborators in order to provide real value and benefit for the portal.

Zichermann (2010c) paints the evolution of loyalty systems as in Figure 4:

| Tangible Goods | Cash Incentives | Localty Systems | Virtual Rewards |
| 1800s | 1930s | 1980s | 2000s |

Figure 4: The evolution of loyalty systems

Nevertheless, beyond commonly accepted stumbling blocks in Gamification design, Zichermann (2011b) directs the attention to the problem of *over-justification* in the use of Gamification. From the psychology of gifted children he derives that even though a motivation for a specific action (e.g. playing the piano) is intrinsic, once you give extrinsic rewards and then take them away, the intrinsic desire will be extinguished. Another challenge in pursuing a Gamification strategy is the *true cost of ownership*. These costs include compliance/legal costs, economic balancing, community management; policing and continuous creative avatars, challenges, etc. They create costs that many marketers are not aware of at the beginning. The last thing Zichermann mentions is the threat of *addiction/compulsion* that every gamer is exposed. Although he states that this has not been treated extensively in literature yet, it should be taken into account by the Gamification designer.

Paharia (2010) regards Gamification as "extrinsic social" in a blog post. He asserts that badges, levels, leaderboards, etc. include "extrinsic commercial" incentives.

Hoegg *et al.* (2006) suggest a different point of view. They say that a transformation from extrinsic value to intrinsic value takes place in social networks over time as there is positive feedback to the users. Figure 5 (source: Hoegg *et al.*, 2006) illustrates this process:
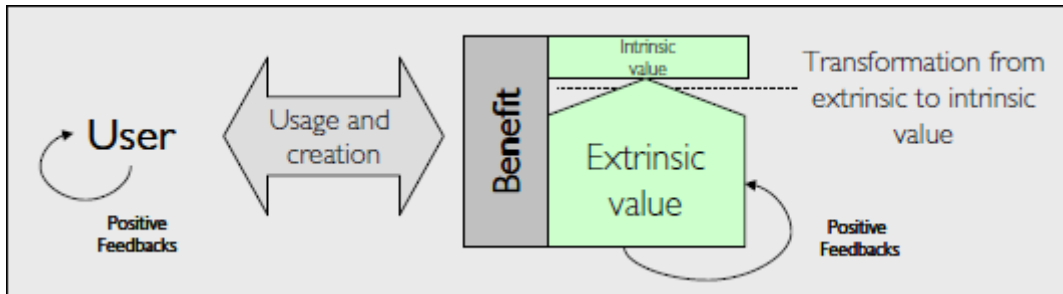
Figure 5: Information transformation process

Gomez-Arias & Genin (2009) mention a Microsoft study which revealed that some of the reasons for using online social networking sites include the "ego as the driving force, people's contribution to increase their social, intellectual, and cultural capital, keeping in touch with family and friends, being 'nosey', expressing opinions and views as well as meeting people with similar interests".

The right reward schema is very important in Gamification design as it can turn users off in the case that it looks cheap or if small dollar rewards such as trucker caps, etc. are used. The *SAPS*-concept is one answer that Gamification evangelist Zichermann (2010b) points out It comprises status, access, power and stuff:

- **Status** is what Zichermann (2010a) describes in his book as important in anthropology because people are "intrinsically competitive". This always has been present in frequent flyer programs. Airlines' frequent customers are premium ones and have a higher status, for example with priority boarding. In the online world this conforms to leaderboards which compare the virtual status of different users against each other. Status can be gained for example through points assigned, participation, time spent on the site and successful recommendation to other users.

- **Access** to things the users otherwise wouldn't get. In the traditional understanding the frequent flyer example would be access to VIP waiting lounges or priority seating in the front of the plane. In social networks this can

include a smaller amount of time than anyone else to get in, access to premium content or priority access to the company's support team.

- **Power** and money have always been something worth striving for (cp. Baldwin, 1971, pp. 578ff.), in the real world as well as the online world. Social network users might obtain power over other people in the world they are engaged with for example with moderator privileges in a forum or discussion board. They earn moderator power through a series of actions, for example if they distinguish themselves through contributions of excellent quality or a high level of commitment.

- **Stuff** is less important than status, access and power in reward schemes because it is very expensive on the long term. Zichermann (2010a) recommends avoiding this option of giveaways especially for start-ups as they are usually resource-constrained.

In chapter 4.6.1 Gamification is mentioned again with practical examples of how to integrate this concept into a social network. In order to gain a broader overview of Gamification, Table 2 (according to Huotari and Hamari, 2011) shows some more examples for Gamification in the online and real world.

Table 2: Examples of Gamification

Core service	Enhancing service	Gamified service
Profile in LinkedIn	Progress bar for measuring progress in filling personal details	The enhancing service increases the perceived value of filling all details by invoking progress-related psychological biases.
Café	Mayorship competition in Foursquare	The enhancing service creates a competition between customers where they have to visit the café frequently enough.
Dry cleaner	Loyalty stamp card – you get one stamp for every visit	The enhancing service invokes the psychological biases related to progress and thus increases the perceived value of using the same dry cleaner service.
Gym	Heya Heya	Gym experience that sets goals and helps to monitor the progress of the training.

2.2.9 Discussion of various reciprocal concepts

When creating an online community, there are different concepts which can be applied, e.g. whether access should be free of charge or not, if there should be authoritarian moderators in the communication process or if it should rather be egalitarian. Another question is if access to the site should be restricted to a closed user group or not.

Free access vs. membership fee

This topic is rather delicate because if the social network marketer makes errors from scratch here, it can impede the whole online marketing concept from working. Membership fees can make sense, there has to be a clear additional value for the user, however. Particularly, a critical mass of users has to be accomplished in order to connote a real additional benefit for the user. In the case of Mydosis, it is inevitable to have reached a certain quantity of agents and a vital and professional discussion in the forum so that it would be worth the effort paying a fee.

Hoegg *et al.* (2006) suggest *versioning* as an alternative approach. They assert that from a business model perspective it is a viable general feature of the offered services. For example, "the service could be offered in two versions: a simple free version with lower quality and at least one premium version with some quality guarantees and additional functionality".

In any case, Koh, *et al.* (2007) assert that "an important element of a viable community is the ongoing provision of content that members perceive as valuable or useful" This is the basis for any chance that users might think paying for the service can be worth the effort. So for Mydosis, a hybrid model could be reasonable, whereupon it is clear that in its initial stage the service should be free of charge in order to aggregate as much data possible from a high quantity of participating users. At a later stage switching from a free to a paid or hybrid model could be tough as users might not accept paying for a service which they were able to consume for free before. Yet, in spite in the case of Mydosis this possibility might be viable because it is the only Wikipedia concept for dosage information in pediatrics and once a database with high quality and quantity is established, users' switching costs will be high. Consequently, even for possible competitors it will not be sensible to start a new similar service due to the sheer market power of Mydosis (cp. eBay's

competitors are either bought by them or they run dry because nobody needs a second auction site market on the web).

Leadership vs. egalitarianism

In order to create an efficient online community, it is necessary to perform an appropriate community management. As a common issue in management, the question is whether to administrate the community with a strong leadership or with egalitarian direction. Here, proper management is necessary in order to create a network effect. Wikis fundamentally have an egalitarian nature (Samarawickrema, *et al.*, 2010); the example of Wikipedia, however, has showed that without any form of leadership there would be anarchy and chaos.

Seth Godin (2008) suggests an approach to leadership which applies well to social networks. His concept of tribes helps finding a tradeoff betwen both reciprocal concepts. Tribes are a collection of individuals who share a common interest. Godin argues that most leaders intend to force the tribe to gain new members. Effective leaders try to form the common interest into a desirable goal for all members and they provide appropriate instruments in order to increase communication between tribe members and the leader. Reagle Jr. (2007) enlightens an issue which is rarely regarded when thinking of the reciprocity of leadership and egalitarianism: Leadership takes a lot of work and "people don't set out to be leaders, they end up as such". He implies that it is not always worth striving to be a leader and sometimes the users can be thankful that someone attends this work. As for Mydosis leaders as medical experts are indispensable in order to ensure the quality of the drug dosage information the aspect of responsibility is a further issue; even if not juristically responsible for erroneous drug usage information, yet they are at least morally responsible. These facts could depict a barrier in their willingness to become leaders and have to be addressed accordingly, e.g. by a reward and incentive scheme.

Closed group vs. open access

Online networks live from the participation of their users, and in most cases this is the public – worldwide. Nevertheless, in the case of Mydosis the question if access should be open to anyone among the internet users or if it should be restricted to health professionals is crucial due to the delicate topic in conjunction with drug dosage information.

Closed group: Only medical professionals and experts would have access to the Mydosis database.

Open access: Any user of the internet has access to the data.

Table 3: Open access vs. closed group

	Closed group	**Open access**
Advantages	• Legal security • Higher quality • Less unqualified contributions – less work	• In accordance with the principles of open web and wikis • More users • More participation
Disadvantages	• High barrier for joining the community • Bureaucracy • Less users • Against the principles of open web and wikis	• More spam • More unqualified contributions • Legal risks • Sabotage

Just like in the case with *leadership vs. egalitarianism*, a hybrid solution that changes over time seams feasible in the case of Mydosis. At the beginning the whole system should be open to anyone in order to attract as many users as possible and not frighten off new users due to high technical and/or organizational barriers. The danger of misapplication by laypersons here is limited as the dosage information is a matter of agents and not medicaments, so only medically competent persons can use this information. Nevertheless, there is a partial restriction – anyone can view and edit the information, but new and edited database entries can only activated by a closed user group which in this particular case consists of the site administrators and approved medical professionals.

Once the portal has come to a significant amount and a high participation rate of users, the portal should be closed completely for medical professionals in order to avail of the advantages of a closed group mentioned in Table 3.

2.2.10 Challenges for creating web-based community portals

Many companies commit the mistake that they want to integrate into the online social media field precipitately, without having gathered any previous practical experience. Therefore, various examples show that this experiment can easily backfire. For example, the German-based company Henkel recently started a competition for designing the label of a detergent bottle via crowdsourcing. After a good start,

participators submitted joke-contributions which soon reached top of the voting. Understandably, Henkel did not want to have a real joke-label sticking on their detergent bottles, so they changed the rules without further ado and banned those contributions. What followed was a massive wave of protest against Henkel in different online social networks which led to the complete opposite of what Henkel had intended to achieve with this initiative. (cp. Hencke, 2011)

Other examples for controversal management of online social networks are the Skype extension *Easy Bits Media* and the new Facebook face recognition feature. Easy Bits Media is a program which automatically installs on Windows systems with an installed Skype without asking the user. A de-installer program is not available. The Facebook face recognition automatically proposes photos with friends for tagging which have not been tagged so far. Both features are automatically installed without prior asking for permission of the users and can only be deactivated with extended system-knowledge of the user and/or with a high effort which normal users are not always disposed to pursue. These actions have hit the headlines predominantly in a negative way and caused protest of many of the users in online forums. Nevertheless, the company Easy Bits could increase the number of game sessions from 850,000 to more than seven million in one weekend, whereas it had been stagnating around those 850,000 before (Meusers, 2011). Although one could argument that Facebook has ignored the privacy needs of its users (Stegers, 2011), by all means there are also articles which praise this new function and say that it even increases privacy because a user has now more control over all of his or her photos of him or her that exist in Facebook (Nieschwietz, 2011).

Another challenge for creating web-based community portals are certain elements of Gamification. As already explained in chapter 2.2.8, primer Gamification elements are badges which users can earn for having taken specific actions. These badges can reach from sticker-like pictures which users can place on their homepages, blogs, etc., unlock new functions on the website or get real-world rewards like gift coupons for café, stores, etc. From the site operator's point of view, this concept is supposed to increase customer loyalty. From the customer's point of view, there is more fun and a reason to compete against others so that they stay on a website. At first glance this concept seems sensible and in fact has served as a business model for many successful companies such as Foursquare. Nevertheless, in the last year

the term *Badge Fatigue* (Bryant, 2010) has come up and it is prognosticated to become a major tendency in the internet for the year 2011. This term stands for the fact that as long as a concept is new on the internet it is attractive for the user. Nowadays, there is a great quantity of pages employing this concept, mainly due to the ease of implementing such a feature (with the services Badgeville[11] or Bunchball[12], anyone can easily integrate gaming elements in a website). In most cases, the only thing users can win with these badges are virtual awards like stickers, they can be the virtual "mayor" of a real, physical place, etc. (Kosso, 2010).

Among experts in Gamification there are quite reciprocal notions about the relevance of its concepts. For example, Priebatsch (2010) says that "status is a very good motivator", whereas a study by Saatchi & Saatchi (2011) revealed that "discounts are the most compelling incentives" in contrast to "status in the community" (cp. Figure 6).

Figure 6: Compelling incentives

Gamification elements like gadgets can initially contribute to the popularity of a site and to motivation for the users to use this site, but at a later point of time the social

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[11] www.badegville.com
[12] www.bunchball.com

network site marketer should offer real motivational elements for the user to keep them visiting the site. In the case of Mydosis, this could be the intrinsic motivation of being able to participate in improving the quality level of dosage information in pediatrics.

Bryant (2010) gives an advice for using Gamification techniques: "[…] if you're planning on adding a gaming element to your website or service, don't just copy others in the way you implement it. Be imaginative and don't force it on users and that way you might well avoid the ire of users who tire of yet another game and would take simplicity over winning another badge."

These examples show that there is not always a "wrong" or "right" in this new field of online social media.

Another challenge for creating web-based community portals is the fast pace at which the internet and its services are changing so that there is no law which could cover any aspect. Siebert (date unknown) states that applicable legislation often lags behind actual development in the web for years. Moreover, he asserts that in almost no area of law there is such a great discrepancy between the legal situation and the practical implementation and control. Another point is that in some countries like Germany legislation concerning internet and social media is too restrictive. To give an example: It is a risk running services like Google Analytics on a website as the legislator sees problems with data privacy. (Keller and Barth, 2011) Yet, in some cases an unconventional and brave decision can change the company's situation for the better. Therefore, as stated above, it is very important to have a well-planned and sound social media strategy before entering this field.

2.3   Outline of other online medical projects' strategies

As asserted above, the Mydosis concept is a novelty in the D-A-CH area. Yet there are similar portals on the web which are dedicated to other medical issues or specific diseases. In the following, those are introduced and analyzed concerning their social media strategies.

The Personal Genome Project

The aim of the Personal Genome Project[13] is to publish the complete human genome including other medical information of selected participants in order to conduct studies on how to facilitate personalized medical investigation. All information is published publicly and available together with the name of the volunteers. The ethical commission of Harvard University obliged the first probands to be professionals in this medical field, so that they can input valuable information to the project. Later on, the organizers intend to include a large amount of laypersons in order to extent the database.

Just like Mydosis, the Personal Genome Project publishes delicate medical information which is freely available to any internet user. (cp. Lunshof, *et al.*, 2008) It is completely non-commercial and intends to attain scientists worldwide to collaborate. Moreover, the data is also published under a creative commons license. There is no active marketing identifiable. The mere fact that it has been initiated by George Church, a renowned geneticist, has led to various publications in journals, newspapers, online magazines, etc. This has caught the attention of many scientists and could therefore also be a viable strategy for Mydosis. In order to achieve this, however, a famous pediatrician would have to be convinced to collaborate with Mydosis.

LONI Image Data Archive

The LONI Image Database[14] has been developed by the Department of Neurology at the UCLA David Geffen School of Medicine in Los Angeles. It offers an interface for archiving, searching, sharing, tracking and disseminating neuroimaging and related clinical data. A very important feature is the data de-identification engine and encrypted file transmission which helps to ensure the patient's privacy and data security. In fact, this portal is not available to any internet user, so in contrast to Mydosis there is no open data but researcher groups can collaborate according to individual release of data. Becoming established as a LONI collaborator requires completing an on-line application form. Just like the Personal Genome Project, it does not follow commercial aspirations and is promoted by the University of

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[13] www.personalgenomes.org
[14] ida.loni.ucla.edu

California which makes a traditional online marketing obsolete due to connections in the science environment.

PatientsLikeMe

PatientsLikeMe[15] is probably the most similar online service to Mydosis as it is a real social network which is freely accessible to anyone in the public and the same strategy to sell users' data to drug and medical companies applies. Therefore, Mydosis can learn a lot from this portal. It has distinguished itself by a lot of positive publicity in newspapers, magazines and TV, plus a significant growth of registered users. Due to its for-profit orientation it is important not to lose trust of its users. Thus, the company is aligning patient and industry interests.

This example shows that in order to be successful in online business, it is very important to be the first one and create trust among the users. If the idea is realized in a good manner, the word spreads with its own momentum. This is demonstrated even more by the fact that the project was not founded by health specialists.

Social networks for specific diseases

Chordoma is a rare bone cancer and the Chordoma Foundation[16] is an international nonprofit organization. The respective webpage cannot be considered an online social network; nevertheless it includes similar possibilities like creating, collecting, storing and distributing scientific information, facilitating communication and collaboration. There is a Wiki on the foundation's website, it is not developed very extensively, however. Accordingly, its approach is less aimed at collecting data on the website itself, but rather to raise attention about the issue and establish connections between affected people. Because the underlying body is a foundation, it is not profit oriented. Nevertheless, for Mydosis some of their strategies might apply as well, for example the research roadmap leads through different steps from resource development to translation which results in improved treatments and ultimately a cure. For Mydosis, a research roadmap to eventually raise the evidence level in pediatrics could be established. Moreover, the foundation offers workshops which could also be applicable for Mydosis in the context of a marketing strategy to raise attention among medical experts which in turn would lead to more interest and more participating users.

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[15] www.patientslikeme.com
[16] www.chordomafoundation.org

3   Longitudinal case study

In this chapter the Mydosis project is presented and analyzed in depth. Moreover, a survey which brings new insights and serves as a basis for the social media marketing plan in chapter 4 is conducted.

3.1   The Mydosis project

The idea of Mydosis was born out of a necessity of pediatricians. Often there is no adequate drug dosage information due to high costs of additional pediatric trials (Caldwell, 2004). Furthermore, due to expired copyright protection of agents, for the pharmaceutical industry there is no financial incentive for conducting clinical studies. Moreover, there are legal and ethical concerns in society regarding these studies. Nevertheless, it is clear that pediatricians have an obligation to treat sick children. This has led to the so-called Off-Label or Unlicensed-Use of agents and subsequently to excessive undocumented knowledge. (cp. Stockinger, 1999)

With the aim to use the circumstances of this problem and to solve it at the same time, the Mydosis project has been initiated. In an open source workshop, a website and an Android smartphone app with a database in order to collect respective drug usage information in a Wiki-manner has been developed. Likewise, Gomez-Arias & Genin (2009) state that "social networks are also being adopted by healthcare professionals in health care organizations […] Ultimately, the social network is used to build intellectual property, an asset that can be used to generate incremental revenue."

The reason why no one has started the Mydosis portal before lies in the fast-changing nature of the internet environment. Wikipedia has become more and more popular across various society circles, even scientists use it as a starting point for their research, which was unthinkable not until recent times and could reorganize the academic landscape. (Mainguy, 2007) Moreover, social networks like Facebook or Twitter had their breakthrough a short time ago. (Davis, 2009) In addition to private life, social networks also find their way in more and more companies for two reasons:

- Employees take their daily habits to their workplace and want to stay informed about their friend's and colleague's status updates in social networks. (Lyncheski, 2010)

- For many companies it is now indispensable to provide their employees free access to the internet because it boosts productivity. (cf. Online Resources Boost Productivity, 2000)

Nevertheless, in the healthcare sector many hospitals have quite rigid safety regulations and internet use is forbidden in order to ensure data security and safety. In this case the Mydosis Smartphone app which is available in the Android Market Store[17] provides an alternative for users to access the Mydosis database.

3.1.1 History

Table 4: Mydosis Project - Timeline

01.07.2011	Milestone: 400 registered users
06.06.2011	Submission of Businessplan Round 3
24.05.2011	Workshop with Prof. Rascher and Prof. Neubert
17.05.2011	Milestone: 300 registered users
04.04.2011	Milestone: 200 registered users
29.03.2011	Conference of investors, Focus: Software, Internet, Mobile
22.03.2011	Submission of Businessplan Round 2
18.03.2011	**EXIST application accepted**
18.03.2011	Submission of "FLÜGGE" application
06.02.2011	Milestone: 200 drug entries
25.02.2011	Milestone: 100 registered users
08.02.2011	**Submission of Mydosis app in Android Market**
20.01.2011	Submission of EXIST application
18.01.2011	Submission of Businessplan Round 1
20.11.2010	**Launch of Mydosis Portal**
05.11.2010	Presentation of Mydosis at "Startup Weekend Nürnberg"
16.09.2010	Presentation of DosIS at "Gründercafé Erlangen"
21.07.2010	End of AMOS practical course
21.04.2010	Start AMOS practical course

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[17] https://market.android.com/details?id=de.fau.cs.osr.dosis.android

Table 4 shows the timeline of the Mydosis Project. Bold lines are important steps for the progress of the project. After the development of the software for the portal and the Android app, the portal was launched in November 2010. On February, 8th 2011 the Mydosis application for smartphones (Android app) was introduced into the Android Market. In March 2011, Mydosis gained an "EXIST" scholarship which includes secured funding for three team members in the period of one year and can be regarded as an important cornerstone for future development and success of the project.

3.1.2 Outline of the Mydosis project as of July 2011

10 months after the initial launch of the Mydosis website and five months after the submission of the smartphone app, as of July 6th, 2011, the project can count a quantity of

- 414 registered users
- 447 installations of the Mydosis Android smartphone app
- 237 agents in the database

Apart from the website, smartphone app and the actual database, other assets which are included in Mydosis comprise a video tour, a blog and presences in other social networks such as Facebook and Twitter. Though, these presences can be considered stubs with little information and activity.

3.1.3 Analysis of Mydosis' degree of awareness

In this chapter, user access statistics from the Mydosis website and Android app are depicted and interpreted. These statistics are primarily derived from web logs which have been visualized with Piwik. Piwik is an open source tool for web analytics which has been installed on the Mydosis server since April 6th, 2011 and can be accessed via a web user interface. Its functional range comprises site access, unique visits, real-time analysis, visitor's analysis (countries of origin, browser, operating system), referrer analysis and target definition.[18] In this case, Piwik has been preferred over the alternative tool *Google Analytics* because here all statistical user access data are stored on Google servers in the U.S. which leads to conflicts with privacy law. (cp. chapter 2.2.10; Keller and Barth, 2011)

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[18] http://piwik.org/docs/user-guide/

The statistics for the smartphone app result from the Android Market developer console where application developers and providers can view information about downloads, ratings and comments.[19] This console has been active ever since the provision of the smartphone app in the Android Market.

3.1.4 Statistics
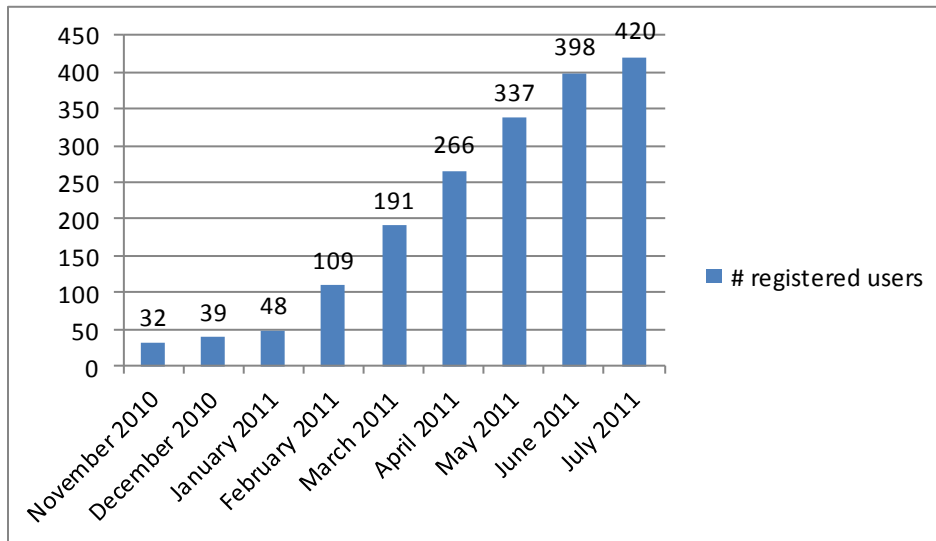
Figure 7: Development of registered portal users

Figure 7 depicts the development of the quantity of registered users of the Mydosis portal. The numbers at a time relate to the first day of each month. The 32 users at Mydosis' launch in November and 39 in December 2010 mainly come from Mydosis staff and acquaintances. As seen in chapter 3.1.1 the Mydosis smartphone app was published in Google's Android marketplace on February 8th. The chart shows that from February on an exponential growth started and slowed down again in July 2011. It is important to mention that creating a user account is not necessary in order to access the database via the web interface, but in order to be able to access the database from the smartphone. Consequently, the number of registered users can be seen as an indicator for the necessity to access dosage information independently from the access to a PC.

Finding: After having put the Mydosis Smartphone app in the Android Market, the quantity of users has been escalating. Nevertheless, the graph slowly decelerates, although at least in the first years of Mydosis' existence a continued exponential growth should be the goal. It is obvious that from July on the Android app has

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[19] https://market.android.com/publish/Home

entered a saturation phase where indeed user growth keeps on but at a slower pace. In order to keep on going the exponential path, further pushes like for example the development of an iOS app, Windows Phone 7 app, etc. will be required.

Figure 8: Mydosis portal report (as of July 6th 2011)

Figure 8 gives a résumé of the most important numbers of Mydosis site statistics. In the period between April 6th and July 6th, 2011 there were 1576 visits on the website and 6.2 actions per visit. The users prevailed on the site for an average time of about four minutes. The bounce rate of 38% is average. Because the Mydosis project embraces a narrow target group (pediatricians) this can be rated as effective, however.
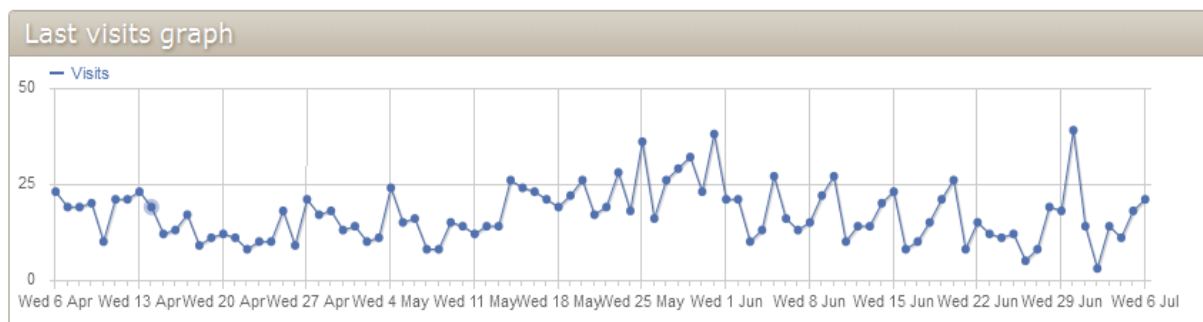
Figure 9: Mydosis portal last visits graph

The *last visits graph* in Figure 9 shows the daily number of users which have visited the Mydosis portal. If a visitor visits a page more than 30 minutes after his last page view, this will be recorded as a new visit.[20] On this graph one can see that daily visits alternate between 3 and 39 and that its devolution is rather volatile. Because Piwik has been installed 6th April there is no prior analytics. Yet, one can see that the

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[20] http://piwik.org/faq/general/#faq_36

period between April and June there is a hanging curve with an increasing quantity of users until June, only to increase again slightly until July.

List of Keywords	
Keyword	Visits ▾
mydosis	108
my dosis	26
mydosis.de	22
minprog	9
nava shishechian	8
www.mydosis.de	6
bronchospasmin	3
christoph wille	3
schwangerschaft disoprivan	3
stefan bernitzki	3
aciclovir paravasat	2
aldosteron astonin	2
alupent dosierung	2
anticholium bei sht	2
atropinhaltige pflanzen	2
bronchospasmin zum kaliumsenken	2
caspofungin wirkspektrum	2
dipidolor dosage	2
eisenverwertstörung	2
mydosis portal	2

Figure 10: Mydosis Portal list of keywords

Figure 10 depicts the search terms that users enter into search engines (Google is the predominant provenience with almost 100%) before clicking on the search result which refers to the Mydosis portal. These results also base on search terms effected in the period between 6th April and 6th June. It is remarkable that 158 search engine users precisely search for the name Mydosis. With a total number of searches of 210 this is 75%. This leads to the presumption that the Mydosis brand is already relatively known. Nevertheless, the goal is to attain more users which have not heard of Mydosis before, and respectively improve Mydosis' SEO. It is a positive sign that 33 (16%) search engine terms related to particular agents and medical issues led to a visit of the Mydosis portal. Yet the SEO's aim is to attain more users searching for more general terms like "dosage in pediatrics" or "pediatrician information", etc.

Figure 11 and Figure 12 show the browsers and operating systems which the Mydosis portal's visitors use to access the portal. Against the background of the

Figure 11: Mydosis Portal operating systems

Figure 12: Mydosis Portal visitor browsers

existence of the Mydosis smartphone app it is very remarkable that 396 (31%) of the users access the portal from their Android smartphone, but at the same time do not use the application. This leads to the supposition that indeed there is a great need for accessing dosage information anytime, anyplace from mobile devices. Nonetheless, obviously the existence of the application has to be communicated in a better way to the users in order to show its advantages in respect to offline use where there is no radio reception or where the use of radio equipment is prohibited, like for example due to interference with sensitive medical equipment in clinics.
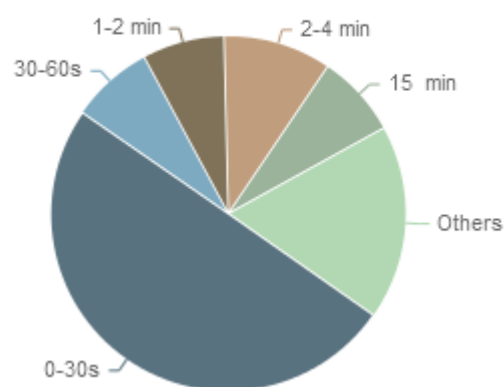
Figure 13: Mydosis portal visit duration

Figure 13 shows the lengths of the user duration on the portal. 50% (804 visits) prevailed on the site between half a minute and less. This could have two reasons: 1. the users visit the portal and leave it immediately because they do not find the information or agents they are looking for, 2. the users just check quickly for information and then leave the site instantly.

Websites

Website	Visits ▼
www.android-hilfe.de	28
www.uni-erlangen.de	19
www.google.de	11
www.facebook.com	9
de.wikipedia.org	8
twitter.com	7
www.google.com	7
osr.cs.fau.de	6

Figure 14: Mydosis portal incoming websites

Figure 14 indicates the referrer websites where the Mydosis portal's visitors come from. It is outstanding that 28 (29%) of the originating websites is *Android Hilfe*[21], a forum where people can discuss about problems with Android applications. The high number of visits can be explained with support activity and an appeal to collaborate on the portal from a Mydosis team member. Apparently, it is a sensitive way of action to promote Mydosis in pertinent internet forums. In spite of the fact that Mydosis is not being promoted actively on Facebook and Twitter, there is a relatively high provenience from these social networks. This also leads to the presumption that an active promotion of Mydosis in respective networks can augment even more the number of visitors and in turn the wiki collaboration process. Hence there is more potential which can be exploited relatively easy and without exhaustive capital expenditure.

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[21] www.android-hilfe.de

Total active installs of de.fau.cs.osr.dosis.android

Figure 15: Development of registered Mydosis smartphone app users

Figure 15 shows the quantity of registered Mydosis Android apps. The curve progression is linear and on the date of determination, July 5th 2011, shows 447 installed apps. Yet, just like in the case with registered users, an exponential growth is desirable.

In chapter 3.1.2 we have seen that the number of registered users as of July 6th is 414. Obviously some users of the app possess various smartphones and use them to access Mydosis.

Table 5: Mydosis app installations per country

English (USA)	64.8%
Korean (Korean Republic)	6.0%
Japan (Japan)	4.6%
English (UK)	4.6%
French (France)	2.7%
German (Germany)	2.2%
Spanish (USA)	1.8%
Spanish (Spain)	1.6%
Mandarin (Taiwan)	0.9%
Dutch (Netherlands)	0.8%

Table 6: All apps in Mydosis' app category (medicine) for different countries

German (Germany)	86.8%	388
German (Austria)	4.5%	20
German (Switzerland)	2.9%	13
English (USA)	1.1%	5
English (UK)	1.1%	5
Spanish (Mexico)	0.4%	2
Portuguese (Brazil)	0.4%	2
Indonesian (Indonesia)	0.4%	2
German (Luxembourg)	0.4%	2
Norwegian (Norway)	0.2%	1

In the Android Market, the Mydosis smartphone app falls in the category *medicine*. Table 5 depicts a comparison of how many apps of this category exist in different countries. It astonishes that in in D-A-CH area only a very small portion of all Android apps (2.2%) fall in the category *medicine*, although this area belongs to the most developed countries in healthcare. Apparently Mydosis enters relatively unknown

territory with its services in the German speaking world. This offers a great vision for the future of Mydosis.

Table 6 shows the Mydosis app installations, itemized to the top countries of all installations. The fact that 17 out of 440 total Mydosis apps (almost 4%) have been installed in non-German speaking countries shows a probable worldwide need for such an app which would indicate a future possibility for international expansion.

3.1.5 Findings and conclusions

Below the findings above are summarized and put into a nutshell:

After the submission of the smartphone app the quantity of users has been rising significantly, nonetheless the growth lacks further stimulus.

Many visitors come from Google, but most users directly search for the term "Mydosis", i.e. they already know Mydosis. The goal is to attract new users, so it has to be made sure that users typing in search terms other than "Mydosis" like specific drug names get the Mydosis website as a search result. Consequently, SEO effort has to be extended.

The browser most used is Android – there is a big demand for accessing the database from mobile devices, but the question is why the users do not install the Mydosis Android app. The users' attention has to be drawn to the possibility of offline use.

Another important finding of the above analysis is that many users with high conversion rates of *edit* and *sign up* come from *android-hilfe.de*, an internet forum for problems with the Android system. This suggests the assumption that it is beneficial for more user growth and especially more participation to be present in pertinent forums. Moreover, the occurrence of Mydosis as a keyword and link in numerous forums will improve Mydosis' PageRank (cp. chapter 2.2.5).

3.2 Mydosis Survey

Because the Mydosis service aims at a very specific user group (health professionals), it is necessary to get to know better this user group – there are no previous studies how they comport in social networks so far.

3.2.1 Objectives of the survey

The purpose of the survey

The aim of this survey is to attain more information about the (potential) users of the Mydosis portal and the smartphone app. This information comprises their needs and their habits of use. Moreover, weak points, technical and functional gaps of competing products which could be substituted with Mydosis are to be revealed.

As a result of this information, for one thing a user profile can be constructed. This enables adjusting Mydosis to their needs. For another thing the findings of the result permit the realization of a target-oriented marketing strategy which allows animating the users for active collaboration so that the Wikipedia process gets going.

Outcomes of the survey

- What is the target group of the Mydosis portal
- What is the target group of the Mydosis smartphone app
- Are there target groups we are not aware of in the moment
- How is the usability of the portal and the app
- How high is the share of users who are interested in collaborating actively in the Wikipedia process and what are the present obstacles for that

3.2.2 Hypotheses

Mydosis portal

- The Mydosis portal is the first point of contact for information about pharmacotherapy with children.
- Target group: In addition to pediatricians, particularly general practitioners, emergency doctors, internists, pharmacists and other specialists are interested in Mydosis data.
- By the end of the year 2011 Mydosis can attain a quantity of 1000 users and a quantity of five to ten reviewers with the appropriate conditions.
- The Mydosis smartphone app is user-friendly, yet for technical laypersons there is still potential for improvement.
- Doctors use the Mydosis portal in order to look up dosage information, yet there is a lack of incentives for active participation.

Mydosis smartphone app

- The majority of doctors possesses a smartphone.
- A proportion of >20% of the doctors who possess smartphones has acquired an app with costs at least once.
- The doctor has installed the *Rote Liste* app[22].
- The doctor appreciates the added value of the Mydosis app in comparison to looking up dosage information in a book stored in his white coat.
- The doctor is willing to pay for the additional benefit of the Mydosis smartphone app.

3.2.3 Survey design

Because of the nature of Mydosis which is situated exclusively in the web, the survey was performed entirely via internet as well. The invitations for the survey were sent via email. Its questions comprise a mixture of qualitative (free) and quantitative (predetermined options to choose) questions. The design is auto-applied because during the course of the survey in the internet there is no possibility for the interviewees to make inquiries.

There are two different surveys: A short one which was sent to registered users of the smartphone app and a long one which was sent to random pediatricians all over Germany. This division was necessary because existing registered users have a different perception of Mydosis and different needs as users who do not know Mydosis yet

Both surveys can be found in appendix V.

3.2.4 Execution of the survey

For the execution of the survey the open source software *Limesurvey*[23] was used. This software is installed on the servers of the Open Source Research Group at the University of Erlangen-Nuremberg[24].

The short survey was sent to a selection of 200 of the more than 400 registered users on the Mydosis portal which have signed in with their email address in order to be able to use the Mydosis Android app. The selection was conducted on a random

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[22] https://market.android.com/details?id=com.medicus.android
[23] www.limesurvey.org
[24] http://osr.cs.fau.de/

basis, whereas only users who have given their full name have been taken into account, in the assumption that they are more committed with Mydosis. About a quarter of these people (53) have actually filled out the survey. This can be seen as a success as online surveys like this are often considered spam by the users. This relatively high participation rate can be tracked back to Mydosis' positive social purpose which is in fact appreciated by its users. Not a surprise is the fact that two thirds is 40 years and beneath, as this group is knowingly more using the internet and social networks.

The long survey was sent via email to 324 randomly selected pediatricians all over Germany. As doctor's email boxes commonly run full of spam mail, the 16 filled out surveys can also be seen as a success because assumedly these people have never heard anything of Mydosis and therefore were invited in the survey to explore the service. Because the survey was sent to pediatricians exclusively, it shows no evidence of Mydosis' relevance for other medical fields. As Mydosis momentarily concentrates on pediatrics, this is subject to further investigation work which will be done on behalf of Mydosis. Moreover, the results of the long survey have shown that some users have only taken a cursory look at Mydosis, yet their answers give some clues for additional functionality which pediatricians might need.

3.2.5 Results of the survey

In this chapter a selection of the most important results and findings of the long and the short survey will be presented. These results have been displayed and analyzed with help of the software tools *Limesurvey*, *IBM SPSS* and *Microsoft Excel*. The comprehensive results and corresponding illustrations (tables, diagrams and charts) can be found in appendix V.

The professional situation of most participating users is either assistant of advanced training, paramedic or medical specialist and they predominantly work in a clinic setting with almost 75% (short survey) in total (100% of the long survey's respondents work as medical specialists in a doctor's office because of the analogical email sample). Moreover, more than half (57%) of the short survey's respondents and even 81% of the long survey's respondents use the internet mainly in their profession and one quarter (short survey) is expert/digital native. In the long survey the Wikipedia skills were inquired also. While more than two thirds (69%) perform regular consults, only 6% have contributed at least once. With one contribution per

year and 1000 Mydosis users at the end of the year 2011 this would mean 60 contributions per year, which – if it could be realized – could be seen as a considerable success for the time being.

Almost half of the participating users (short survey 40%) use the Mydosis service on a weekly basis, yet survey results from the open questions have shown that the users wish an amplification of the agents' database. So, with this amplification in conjunction with an intensification of the Wikipedia process, however, the usage of Mydosis is suspected to be leveraged even more. In contrast, only 13% of the long survey's respondents would use the Mydosis service on a weekly basis, even 80% would use it only rarely or irregularly. This shows that the users which have signed up and use the service are more convinced of its usefulness, so incentives to get to know Mydosis for the non-users should be created.

Almost three quarters (72% short survey, 67% long survey) say that the overall impression of the Mydosis portal is good, even nearly 20% (short survey) and 13% (long survey) say it is very good, only 9% (short survey) and after all 20% (long survey) contested that it is mediocre.

The most important answers to the question *Please describe what you like / do not like with Mydosis or what could be improved* comprise the amplification of the database. This is quite astonishing as it is exactly the users who are supposed to edit agents and add new ones. So, this goes in line with the above-mentioned answer that many users do not know the Edit-Button. One can say that many users do not understand the idea of Mydosis and how it works, so more effort has to be put in the communication of its philosophy and idea. This can be achieved with an accordingly designed start page and implementing Gamification elements. Actual ideas for this are depicted in chapter 4.6. Another feature users often claim is a smartphone app for the iPhone.

In the long survey the reasons for the users to contribute actively on Mydosis were asked. Most respondents declared *interchange of opinions and perspectives* as their main reasons. Consequently, the functions of the forum should be amplified.

Laudation: 13% of the long survey's respondents say that the start of Mydosis is a good idea. 6% like the design and the absence of pharmaceutical advertising.

Critics: 6% of the long survey's respondents propose the possibility of a calculation of dosage for agents.

Because the persons contacted for the long survey are pediatricians solely, they did not significantly claim a Mydosis for other areas. Yet, it is remarkable that 13% of them propose a Mydosis for the HIV disease. This leads to the assumption that among other medical specialists indeed there is a need for a Mydosis.

87% of the long survey's respondents would recommend Mydosis to others.

Analysis of the survey's outcomes

What is the target group of the Mydosis portal and the smartphone app: As two thirds of the short survey's respondents are 40 years and beneath, the group of interested users mainly consists of young and internet-affine users. Yet, the long survey reveals that more than 90% of pediatricians who largely did not use Mydosis yet are more than 40 years; thus the target group is exactly this one. Consequently, Mydosis services should be aligned with the needs of this group concerning user-friendliness, support, etc. For example, it cannot be presupposed they are very familiar with the use of the internet or the idea of online social networks.

The majority of the user's reasons to use the Mydosis portal are consulting drug usage information, adverse effects and interactions (83% short survey, 81% long survey) and only 4% (short survey) and 19% (long survey) are interested in scientific research. Thus, the focus of the database should lie in practical information doctors can use rather than in scientifical accurateness. Still, of course the practical correctness of the information in the database has to be complied neatly and thoroughly.

What are the target groups we are not aware of in the moment: The study revealed that the Mydosis idea can be transferred to other fields of medical activity other than senior pediatricians and doctors. These fields to be considered, however, are to be revealed in a separate survey in the future.

How is the usability of the portal and the app: *User friendliness*, *operability* and *overall impression* is rated not very good or not good in very few cases (7%, 4% and 13%), whereas *error proneness* is rated not very good or not good in one quarter of all cases and *range of functions* even by half of all responding users of the short

survey. So it can be concluded that Mydosis is user friendly but more functions should be added (like for example a possibility to calculate the dosage automatically). An important proposition was made from some users who requested the possibility to show an alphabetic list of all medicaments which is basically already integrated in the portal – all medicaments starting with a specific letter can be displayed when typing this letter in the search field. Though, a bar with all letters in the search mask would be desirable to make the search more comfortable.

Share of users who are interested in collaborating actively in the Wikipedia process and what are the present obstacles for that: 57% of the interrogated Mydosis users in the short survey have no or very little interest in taking part in the amplification of the database, 45% in discussing in the forum and 60% in participating in the validation process. 94% of them are not even aware of the possibility to take part actively in Mydosis. The reason for this poor performance is that 79% state that they do not know this function and 21% have no interest or do not see any advantages for them. On the other hand it is clear that with a high quantity of users that an online Wikipedia permits, already a relatively low percentage of actively participating users is enough to get a self-sustaining process going. The fact that 24% of the interrogated users can absolutely or almost absolutely imagine to amplify the database, 21% to take part in the discussion forum and 20% to participate in the validation process is very promising because it shows that a little less than one quarter of the users are actually disposed to take an active role in Mydosis one or the other way.

Analysis of the hypotheses

Mydosis portal

The Mydosis portal is the first point of contact for information about pharmacotherapy with children: Given the fact that many interrogated users complain about missing agents or incomplete information, the Mydosis portal can be a starting point but because of these unfulfilled expectations it does not serve as such yet. This is subject to change once the self-sustaining Wikipedia process will have come to a start. There are favorable conditions for that as 93% of the long survey's respondents state that they have the possibility to access a computer with internet access during their medical or professional activity.

Target group: In addition to pediatricians, particularly general practitioners, emergency doctors, internists and other specialists and pharmacists are interested in

Mydosis data (according to the short survey). The long survey revealed that a Mydosis could indeed be applicable in other medical fields.

By the end of the year 2011 Mydosis can attain a quantity of 1000 users and five to ten reviewers with appropriate conditions: Sending out the survey to 324 pediatricians alone has made Mydosis more known among them. Assuming that the users' growth rate is steady like in the past, a quantity of 1000 persons can be reached by the end of the year 2011. Given the outcome of the short survey that little less than a quarter of the interrogated persons are disposed to take an active part in Mydosis, the envisaged quantity of ten reviewers can be accomplished as well within this timeframe.

The Mydosis smartphone app is user-friendly, yet for technical laypersons there is still potential for improvement: This hypothesis could be approved above as the users are satisfied with the handling, yet technical errors are common and more functions like personal comments are desired by the users.

Doctors use the Mydosis portal in order to look up dosage information, yet there is a lack of incentives for active participation: The long survey revealed that on a scale from 1 to 5 (1: I cannot imagine at all, 5: I can absolutely imagine), 14% responded with 4 or 5 when it comes to an amplification of the database. This corresponds with 140 of the 1000 designated users for the end of the year 2011. 20% responded with 4 or 5 regarding a discussion in the forum concerning agents and also 20% responded this in relation to a participation in the validation process. This would correspond to 200 users for the end of the year 2011.

Mydosis smartphone app
The majority of doctors possess a smartphone: The long survey's results show that 60% of the addressed pediatricians possess a smartphone and 33% of those who do not possess a smartphone plan to acquire one in the near future. The iPhone is the model which most persons use and/or plan to acquire. Consequently, the development of a Mydosis iOS app should be promoted with priority.

A proportion of >20% (short survey) of the doctors who possess a smartphone have acquired an app with costs at least once: 78% of the long survey's respondents who possess a smartphone have at least once paid money for a smartphone app. The

range is between 3 € and 60 €, whereas one of them is out of the ordinary with 450 €.

The doctor has installed the *Rote Liste* app: The long survey has revealed that 25% of the respondents have installed the app on their smartphone. Another 13% use the ifap and iQvisit apps.

The doctor appreciates the added value of the Mydosis app in comparison to looking up dosage information in a book stored in his white coat: 33% of the long survey's respondents state that it is very important or important for them to be able to access drug information from a smartphone or tablet PC. In contrast, 67% say that this is either barley important or unimportant for them. As a result, it is important to convince medical professionals of the benefits of digital access to dosage information.

The doctor is willing to pay for the additional benefit of the Mydosis smartphone app: Given the fact that 78% of the doctors have already paid at least once for smartphone apps in combination with the additional benefit and the handiness of such an app in the medical field (74% of the long survey's respondents estimate the benefit of a collaborative collocation of drug usage information with the Off-label-use as very high or high), it can be concluded that generally doctors indeed are willing to pay for this.

3.2.6 Analysis and conclusions

The two surveys have revealed that the users' overall impression of Mydosis is good and that 87% of them would recommend Mydosis to others. Nevertheless, this alone is not enough to create a flourishing web community. It could be discovered that many respondents desire more comfort in search functions like clicking on a letter shows all medicaments starting with this letter and more interactivity in the smartphone app like the possibility to make user-specific comments for database entries. A high proportion of the study's participants can imagine a forum discussion about agents. Given the fact that momentarily the forum is poorly integrated into the Mydosis portal with a separate user sign-in, etc., it is clear that creating a comfortable and tailored forum for the Mydosis portal should have priority.

Many current users do not know the Edit-Button and particularly do not understand the idea and philosophy of Mydosis as they complain about missing agents and the slow pace of updates, since it should be the users who perform these steps,

according to the Wikipedia idea. Therefore, this should be illustrated on the start page – possibly with a professional and animated introduction video. Besides, user contribution has to be incentivized through Gamification elements.

The study has also brought to light that a high proportion of the users possess an iPhone and desire a dedicated app, so the development of a corresponsive iOS app should have precedence.

4 Social media marketing plan for Mydosis

Kotler (1999, p. 112) proposes the following contents of a marketing plan, which are depicted in Table 7's left column. Kotler's traditional marketing plan cannot be applied one-to-one to actually creating a social network. Thus, this table shows a marketing plan tailored for this purpose and converses both approaches.

Table 7: Traditional marketing plan vs. social media marketing plan

Traditional marketing plan structure (Kotler)	Social media marketing plan structure for Mydosis
Executive Summary	4.1 Strategic fundamentals
Current marketing situation	4.2 Marketing actions realized
SWOT analysis	4.4 SWOT Analysis
Objectives and issues	4.1 Strategic fundamentals
Marketing strategy	4.5 Marketing mix
Actions programmed	4.3 Issues to be addressed
Budgets	Not analyzed in this thesis
Controls	3.1.4 Android market statistics and Piwik results

4.1 Strategic fundamentals

Purpose of the company

The purpose of Mydosis is to help pediatricians find high-quality drug dosage information. Moreover, the aim is to connect domain experts in order to foster discussion with contentious issues related to this information. Once established in pediatrics, at a later stage the Mydosis services shall be extended to other medical fields.

Target group

The target group of Mydosis primarily comprises pediatricians, but general practitioners, pharmacists and associates of the pharmaceutical industry are also envisaged. This brings along certain implications for the marketing of Mydosis, for example the site should give a professional overall impression. In spite of the application of Gamification techniques, its look and feel should not be too playful. Of course, the limited circle of users has consequences for the promotion part. For example, it is not sensible to promote the website in any kind of mass media.

Strengths of Mydosis

As already mentioned in the introduction, the realization of the Mydosis idea is completely novel in the D-A-CH area, so Mydosis has the first-mover advantages. Its unique selling proposition is the free access to the database for anyone.

Objective target in marketing

The marketing function of Mydosis should strive to create a flourishing online community made up of domain experts.

4.2 Marketing actions realized

As of the creation of this thesis, the following actions which contribute to the social media marketing strategy have been realized:

A Mydosis blog has been implemented in order to familiarize the users with the Mydosis team and the ideas behind the project. Furthermore, they are supplied with news and new developments what makes them curious and return to the site.

Moreover, a Mydosis tour has been created. This tour is a video in which the user is guided through different steps about Mydosis. It facilitates the handling of Mydosis especially for users who do not want to read long instructions. So far, four videos have been realized: "Introduction", "Which information do we offer", "How to access the data" and "How can I take part in Mydosis".

The registration process has been facilitated. Before, it was a two-step procedure where two pages were displayed: one page with an input form for the personal user data and a second page for accepting the terms and conditions. Now there is a link to them on the sole registration page and a checkbox for accepting them.

4.3 Issues to be addressed

In addition to the findings in the survey, observance has revealed additional aspects of the Mydosis website which have to be tackled:

The discussion forum for the agents is not integrated into the overall site design. It has been installed on the Mydosis server from the readymade forum software *phpBB*. Its CSS[25] file has been modified provisionally in order to fit better with the original Mydosis design. Likewise, the look and feel of the forum is completely different in

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[25] CSS (Cascading Style Sheets) is a is a style sheet language used to describe the look and formatting of HTML pages respectively websites

comparison with the actual Mydosis website so that there is the impression for the user to change to a different website. Moreover, in order to contribute in the forum, a separate user-registration is necessary. In order to solve this issue it is desirable to create new forum software tailored to Mydosis. The forum should integrate seamlessly into the existing Mydosis website from a technical and esthetical point of view. For example, for each agent the last forum contributions should be displayed on the agent's entry. Also, there should be a text field ready to be filled with the visitor's comment in order to foster participation and discussion.

Figure 16: Wikipedia logo

Another issue of the Mydosis website which has been observed is that the whole page looks too "perfect". On the first sight, the site design and the agent view does not make the users feel that their contribution is required. There is rather an impression that all information is already there and ready to be retrieved. Visual elements in the style of the Wikipedia logo could connote the need to continuous development (cp.

Figure 16[26]).

Moreover, an indication on the top of each agent record could suggest problems or missing information in order to call the user's attention to it (cp. Figure 17[27]).
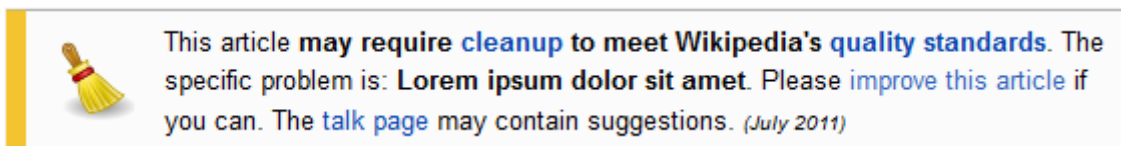
Figure 17: Wikipedia advice

This implies the possibility for users to tag agents with problems, such as "information missing", "content inappropriate", etc.

Another issue that has to be addressed is the search results. In the moment, a blank space is presented to the user after a search for a non-existent agent. Instead, propositions for linguistically similar agents (for the case of a spelling error) and a possibility to create a new database entry should be displayed with the aim of

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[26] Source: www.wikipedia.org
[27] Source: www.wikipedia.org

encouraging the user to participate and to clarify the need to amplify the database. Figure 18 shows how this feature is implemented in Wikipedia.

Figure 18: Wikipedia search results for non-existent article

4.4 SWOT Analysis

In Table 8 a SWOT analysis according to Hill and Jones (2009, pp. 19ff.) is performed. It analyzes Mydosis' internal strengths and weaknesses, as well as its external opportunities and threats.

Table 8: SWOT analysis for Mydosis

Strengths	Weaknesses
• Experience in business formation • Coverage of the necessary specialist areas • Community growth	• Still relatively small community • Low number of reviewers
Opportunities	**Threats**
• Practical use and innovation • Generation Facebook • Market dominance • Other application domains • Internationalization	• No community • Liability concerns

Strengths

For the creation of a social network it is very important to have the appropriate and qualified persons in the team. The Mydosis team incorporates different areas of experience in business foundation, informatics, project management and business

planning. Another strength of Mydosis is the continuous growth of registered users, even though up to date no considerable marketing actions have been performed and the target group is relatively narrow with the focus on medical professionals.

Weaknesses

Despite the steady growth of user registrations, with about 400 users the community still is relatively small. For the creation of a real flourishing community much bigger scales are necessary. Also, the number of reviewers leaves a lot to be desired.

Countermeasure: The high increase of registered users after the publication of the smartphone app in the Android market implies an even faster growth after the release of the planned iOS and Windows Phone 7 app. As soon as the community surpasses a critical threshold, there will be intrinsic motives for the users to collaborate as a reviewer. Moreover, online marketing activities such as Gamification will increase the disposition of experts to review the database entries.

Opportunities

Mydosis serves an obvious need in the medical industry to mitigate the problems in the Off-Label and Unlicensed-Use. Because of the recent emergence of Facebook, now is the time to approach this issue. As the first mover, Mydosis occupies the market dominance in the D-A-CH area. Beyond that there is further potential for other application domains like adult medicine or other diseases and the possibility to export the idea to other countries.

Threats

One threat is that in spite of all effort no community can be achieved. Moreover, due to the delicate medical field in which Mydosis is operating, there is the threat of liability issues.

Countermeasure: The activities in the promotion part of the marketing mix in Chapter 4.5 show different steps in order to improve the level of awareness of Mydosis. The Mydosis portal merely acts as an intermediary of dosage information which have been verified in independent studies, and not as an actual data provider. Study references are absolutely necessary for changes to an entry. And a certification of the processes in accordance with common quality management standards is planned. These actions reduce the risk of liability issues.

4.5 Marketing mix

Once the company has developed the overall competitive marketing strategy (cp. chapter 4.1), the marketing mix can be established. According to Kotler *et al.* (1999, pp. 109ff.), it is "the set of controllable tactic-id marketing tools product, price, place and promotion", also known as the four Ps. Originally the marketing mix has been elaborated for traditional, tangible products. With the emergence of the service industry in the early 21ˢᵗ century (service industry, 2011), a service extension has been added to the mix which includes process, people and physical evidence. In the following, the service extension will be used according to Curtis, 2006. In literature the marketing mix is predominantly applied in the context of promoting products or services *in* social media but it is not applicable well for creating social media services *themselves*. In order to solve this dilemma, the four Ps will be viewed as the customer's four Cs, as Kotler (1999, pp. 110f.) suggests:

Table 9: Four Ps and Cs with service extension

Four Ps	Four Cs	
Product	Customer needs and wants	Classical four Ps
Price	Cost to the customer	
Place	Governance	
Promotion	Communication	
Process	Confirmation	Service Extension
People	Confirmation	
Physical Evidence	Confirmation	

Product / Customer needs and wants

In the introduction of this thesis the pediatrician's dilemma with the Off-label- and Unlicensed-Use was pointed out. Hence, it is clear that Mydosis strives to eliminate this issue or at least mitigate it, so Mydosis serves for a clear purpose and fulfills a market need. At this moment, the "tangible" products are the database for pediatricians and the Android smartphone app. The database will be extended for more medical sectors such as diabetes, etc. in the future and the smartphone app will be ported to other platforms such as iOS. On one side this will attract more customers respectively users for Mydosis and on the other side the services for these customers will be enhanced and improved more and more in order to serve the

sophisticated and special needs of the target group. For example, the smartphone app provides users with the additional benefit to access the database in a fast, uncomplicated and ubiquitous manner.

In the long run it is important that the Mydosis name becomes a well-known and reputable brand. It is envisaged for it to become *the* first place to go for medical professionals with respect to dosage information.

Price / Cost to the customer

The prize for accessing the Mydosis database is zero and always will be. This is essential because the model for Mydosis is the real Wikipedia and in order to create a flourishing community with intrinsic motivation for collaboration and contribution this is necessary. Still, from the customer's point of view, there is a cost to the user. This is the time they invest to add/alter qualitatively high content in the database or to evaluate the changes. Because access to the database is free of charge, the remuneration for the customer can only be this very same access and therefore the cost (the user's time) has to be funded out of intrinsic motives.

For the long term a potential fee for premium services such as individual user support and assistance in medical questions is envisaged.

Place / Governance

In contrast to traditional products or services offered by companies to the customers, Mydosis is present on the internet. In combination with the smartphone app this means ubiquitous access at any time so that traditional channels like distributors become obsolete. The "place" of distribution in the case of Mydosis is the website or the smartphone. At the moment, it is freely accessible to any internet user. Because of the delicate medicine subject-matter a confirmation checkbox will be added in the user registration process in which they have to confirm to be a medical professional. Possibly later on this will be checked via the service *DocCheck*[28], so that access to the place is indeed restricted, comparable to identity checks at the gate of traditional industries.

As already mentioned above, it is important to make a good and professional impression with a professional corporate identity design. Likewise, it is self-evident

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[28] www.doccheck.com

that Mydosis' functions should be intuitive, easy to use and error-free. The blog, the tour and the facilitated registration process mentioned above have already contributed to an enhanced governance and user experience. Still, the issues to be addressed in chapter 4.3 will further contribute to a better "place" for the users.

Furthermore, several actions will be taken to improve the user experience and motivation in the virtual place like for example Gamification, RSS feeds, etc. Those are explained in detail in chapter 4.6.

Promotion / Communication

The promotion element in the marketing mix of traditional industries refers to advertising, promotions, personal selling and publicity. Likewise, in the online and social media sector, the product has to be promoted so that potential customers and users hear about the service. From the customer's point of view in service industries this is about communication and and particularly in social networks communication is the crucial function. The predominant target group in the German-speaking D-A-CH area embraces 470,000 doctors (bundesaerztekammer, 2009; statistik Austria, 2011 and Swiss federal statistics agency, 2011), 21,000 pharmacists (Taubert, 2010; Österreichische Apothekerkammer, 2008 and interpharma.ch, 2010) and 100,000 students (Müller, 2008; orf.at, 2007 and Frölicher-Güggi, 2005). This makes a total of approximately 600,000 persons. The Mydosis survey has revealed that 60% of doctors possess a smartphone. This market is dominated by two operating systems: Android and iOS. The successful *Rote Liste app* illustrates that there is no reservation from doctors to use smartphone apps in the medical field (3sat.de, 2011). Accordingly, no persuading should be necessary for doctors to use the Mydosis app.

In order to further make the Mydosis brand and services known among the defined target group, the following advertising and publicity operations should be taken into account.

- Mydosis app (instrument for market penetration),
- Professional journals (press releases, professional articles, advertisements)
- Open source magazines
- Events (conferences and fairs)
- Partnerships (institutions, pharmaceutical industry and other influential persons)

- The Mydosis user community itself
- Social media
- Personal contacts
- Google Adwords
- Banner advertisements
- Viral marketing
- Presence in forums, e.g. *android-hilfe.de*

Service extension to the marketing mix

According to Curtis (2006), there are four characteristics of services: Intangibility, inseparability, variability and perishability.

Intangibility: It is important for the marketing function to make the intangible tangible so that the customer gets reassurance and confirmation of the service. This can be achieved with physical evidence. The service extension of the marketing mix provides reassurance and communicates quality and acceptability of the service.

Inseparability: The provider and the customer have to be brought into contact with each other in order to achieve a good networking effect and recommendations which are very important and critical in the internet (cp. chapter 2.2.7: Viral marketing).

Variability: Person-to-person interaction results in a variation of perceived service quality, so in the case of Mydosis the appearance of the customer interaction points such as the website and the smartphone app has to be tailored to medical professionals.

Perishability: User participation on social media cannot be stored, so once a fruitful discussion has started, the community managers should take this opportunity to support and stimulate it.

In accordance with these characteristics, Curtis (2006) developed the service extension to the marketing mix: People, physical evidence and process.

People

In today's service oriented industries and in particular in the internet business it is very important to have a congruent team. Users and clients expect 24/7 service and almost instant reactions for email requests. The professional image they get from the

website's presentation and the technical processes on the website, are conferred for the communication with its employees. In traditional industries managers have to leave control to front-desk employees which often have to be able to make quick decisions in front of the customer. In the social media industry, accordingly, Mydosis inevitably has to leave control to the community. With worldwide dispersion of the service, both the technical infrastructure and governance of the entire service have to be conducted in a professional way. Corporate values, culture and style as well as the question who has the power to change things in the company have to be considered well. In today's internet companies, employees work more self-determined and liberal as in traditional industries – a great portion of the work can be pursued from a home office.

Also, employees have to be either trained regularly or given the opportunity to inform themselves about new developments in internet business because it is changing very fast. This includes internet law (liability, copyright, etc.), competitors (in the internet business a direct competitor can potentially sit in a small town in Thailand) and customers (interaction and involvement).

Physical evidence

Physical evidence provides something tangible enabling people to 'feel' the quality of the service. As with the *product* function of the marketing mix, the general impression of the site has to be professional and in convergence with the target group; aesthetics – here, design and ambience are sensitive aspects referring to the environment. "Physical" checks can be made with the quality of the database entries, for example "this agent was last inspected by user X". Fundamentally, it is not easy to provide tangible clues, something people can "touch" with a pure web service. Nevertheless, it can be provided on events like conferences and fairs, where customers are given the opportunity to communicate with Mydosis staff members in person.

Process

The company's internal and external processes have to be published clearly and openly to create users' confidence. They have to know what to expect when they make a contribution, edit or review drug dosage information. That is why Mydosis should strive to document and publish all process information as clear and obvious

possible. This can be achieved with an accreditation in accordance with the ISO 9001:2008[29] standard.

4.6 Social web strategy

In this chapter various options for a social web strategy are presented. When implementing these elements it is important not to demand too much of the users. Thus, not all of the given options should be implemented at the same time. Chapter 4.7 gives detailed advice which elements to implement at what time in the case of Mydosis.

4.6.1 Gamification

As already described in chapter 2.2.8, Gamification means integrating game elements into a non-game context on a website in order to motivate users' participation. In this chapter, the depicted theory will be put into practice and applied to the Mydosis portal.

A basic aspect for a positive user experience and further motivation to participate is voluntariness. Users do not have to become a member first, they become a member after. The idea is not having any burdens for the users to inform themselves about the service, so they firstly have the experience, e.g. browse the Mydosis database. After that, they are given an incentive to become a member, for example with unlocking extra features.

According to the Gamification platform gamify.com (2011), elements of Gamification can be subdivided into rewards (points, levels, etc.), widgets (user profiles, progress bars, leaderboards, etc.) which are components of a graphical user interface and games (surveys, etc.). The platform proposes more elements; in the following the most applicable ones for Mydosis have been selected, though.

Points

Points are basic components in game mechanics. They can be given to users according to their progress in doing certain actions. In doing so, the user can be subtly influenced to do certain things. In the case of Mydosis points could be given for extending the database, forum entries or recommendations to other users that lead to

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[29] http://www.iso.org/iso/iso_9001_2008

a successful new user registration. Based on points, many other elements of Gamification such as levels, progress bars or leaderboards are derived.

Levels
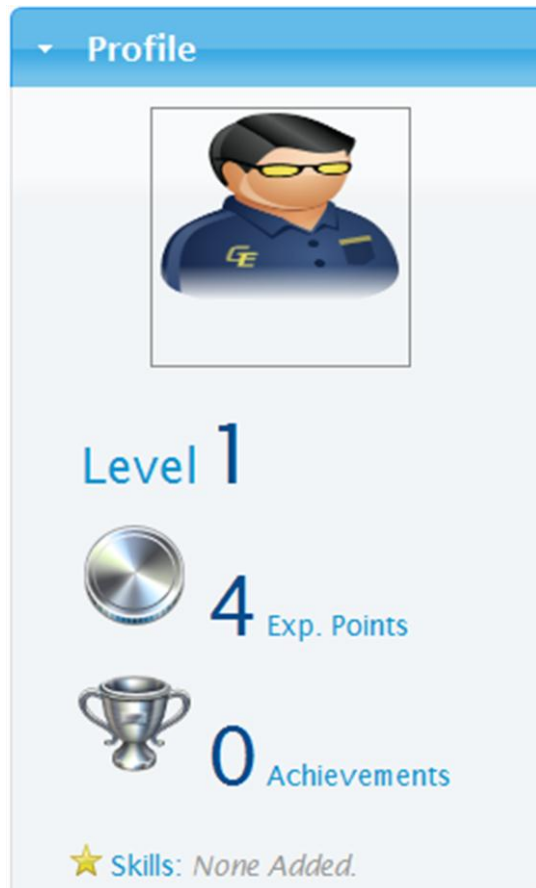
Figure 19: Example for a level system

Levels originate from traditional products like credit cards. Here, clients obtain different card colors according to their status, for example in relation to their monthly purchases (Gold, Platinum, Black, etc.). In Gamification design with Mydosis, users could be assigned a certain level according to their contributions (quantity, quality), log ins, etc. In this respect levels coincide with point systems or activity indices because according to a certain quantity of points, the users get assigned to respective levels or get rated with an activity index percentage. Figure 19[30] depicts an example of how a user could be assigned to a certain level. In the case of Mydosis, this could be displayed in the user profile and on the first page after the respective user has signed in with his/her credentials.

When implementing a level system it is very important not to be locked into a fixed design, i.e. if a user superpasses the most upper level, a further challenge has to be invented. It is also important to reward the users instantaneously for the actions they take so that they are aware of what they did well. Likewise, it is useful to take them by the hand: during signup they should be told instantaneously what they can do as a next step, something that they cannot do wrong. In the case of Mydosis this could be "add more information to your profile, like the area you work in as a medical practitioner". According to these actions, the users get their first points assigned. Here, the pattern is: small challenge – reward – increasing challenge – reward, ever

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[30] Source: http://gamify.it/experts

increasing challenge and so on. An increasing challenge for example could be the invitation of other medical practitioners.

User Profile

The user profile is the user's home where they can view their identity within Mydosis. They see their points, levels, and overall stats they are proud of (cp. intrinsic and extrinsic motivation). Establishing a possibility for integration in further social networks (e.g. Facebook) is sensible here, so that the users can show their results and achievements of Mydosis in these social networks as well. This will create increased motivation for the users to participate.

Progress Bar
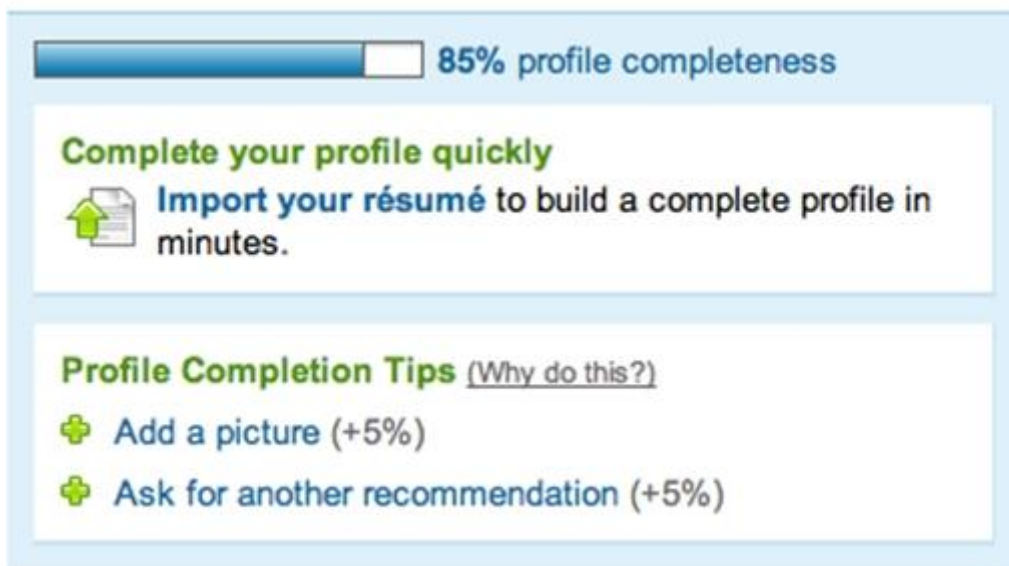
Figure 20: Example for a progress bar

A progress bar is very simple to integrate into a user's profile but very effective to change their behavior to a certain manner. Once the user has undertaken the first steps, the consecutive steps can be harder tasks that take more investment of time. Figure 20[31] shows an example progress bar where the users are explicitly requested to complete their profile information.

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[31] Source: mccann.com.au

Leaderboards

Top Contributors

Weekly | All-Time | Lang.

1	🇩🇪	imhotep7
14729		
2	🇩🇪	Halmafelix
9611		
3	🇩🇪	bommi
9552		
4	🇩🇪	hansmartinbraun
9392		
5	🇦🇹	ddr
8017		
6	🇨🇭	climatepatrol
7067		tri-lingua.blogspot....
7	🇩🇪	senator-bremen
6605		
8	🇩🇪	parker11
6287		
9	🇭🇺	Heflamoke
5867		
10	🇩🇪	Wenz
5362		

Figure 21: Leaderboard for top contributors

As explained above, points and levels are important elements in Gamification to motivate users. Still, in this course human beings strive for the confirmation that they are not normal, i.e. they compare themselves with others and want to see how they are doing in comparison, so even here socializing matters. In order to foster this process even more, the rewards of these users should be included into the leaderboard so that everyone can see what others have achieved. (cp. Figure 21[32])

It is important to give the users challenges they can achieve. For example, if only the top scores are displayed, users easily get demotivated and cease participating. Here, a relative leaderboard which does not only show the top scores but also users in the middle league, the next best and the next worse user, as well as their best friends' performance is the solution. Besides, giving the users a specific action they can take to level up of the person ahead of them can be motivating (e.g. "you need to make 2 contributions to surpass the user ahead of you"). This addresses human being's basic needs like acknowledgement and recognition.

Another possibility to achieve this is putting

Featured Experts

Aaron S.

Level 1

1 Exp. Points

0 Achievements

Julie

Level 1

1 Exp. Points
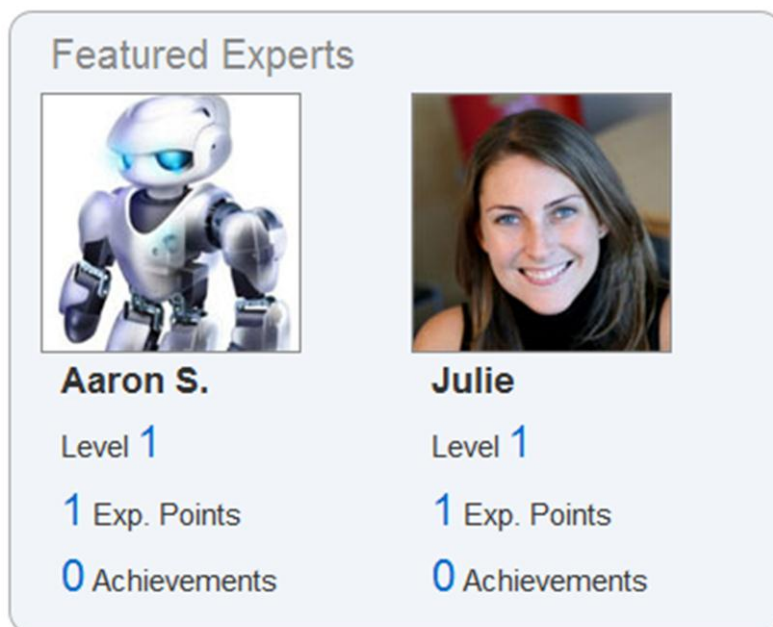
0 Achievements

Figure 22: Example for comparison of a level system

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[32] Source: dict.cc

selected users on the start page and show their levels, points and achievements to compare them and foster competition and motivation among the users (cp. Figure 22[33]).

Surveys
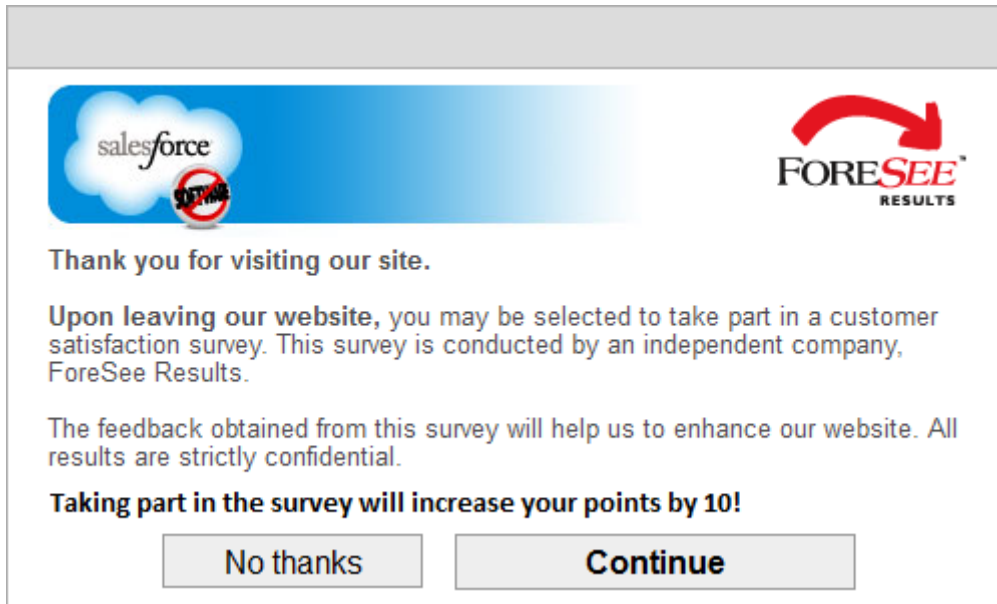
Figure 23: Example for Gamification integration for a survey
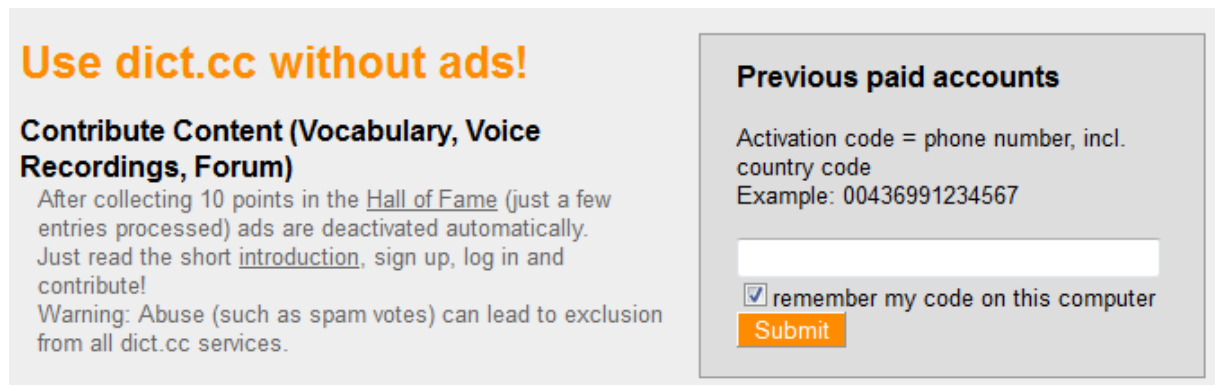
Chapter 3.2 depicts how a survey has been conducted among the registered user of Mydosis. Yet it is important to have constant up-to-date information about the users' opinions and feelings. Regular long surveys would be exhausting and demotivating for the users. In order to motivate them, these important continuous surveys should be short and reward the users with points so that they recognize that they will be rewarded for the time they take. (cp. Figure 23[34])

Unlocking features

Unlocking features (cp. *access* in chapter 2.2.8) is another way to steer user's actions and to foster motivation.

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[33] Source: http://gamify.it/experts
[34] Source: www.salefsorce.com

Figure 24: Example for unlocking features

Figure 24[35] illustrates an example of how users can be motivated to contribute in a social network with unlocking features. In this case the feature consists of removing the banner ads as a compensation for contribution. In the case of Mydosis for example this could mean an advertising-free website as well, extra points in the Gamification function, faster access to changed database entries or faster service attendance from the Mydosis team.

4.6.2 Other options in a social web strategy

Gamification is a powerful instrument for a social web strategy in order to foster users' participation. However, there are other concepts that help to reach this goal:

Social network presence

According to the web-analytics service Alexa[36], Facebook ranks number two on the world's most visited sites on the web, Wikipedia occupies the seventh rank and Twitter is on the ninth place. In order to create user awareness, a presence on these social networks is crucial for business success on the web. A Facebook campaign could look like this:

A message to the existing registered Mydosis users could be sent to their email addresses with the offer of getting special offers from time to time when they become fan of the Mydosis Facebook presence. Moreover, they should be asked to invite their doctors' friends. This gives the users a reason to become friends with Mydosis on Facebook and/or Twitter. As already shown in chapter 2.2.7: Viral marketing, their friends will be noticed of the fact that they have become friends of Mydosis. Assuming that people working in the medical industry have an above-average

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[35] Source: dict.cc
[36] http://www.alexa.com/topsites

quantity of friends in the same professional area, this will create a boost in the viral marketing effect to Mydosis' target group.

RSS Feed

An RSS feed is a way to keep the user informed about changes within their familiar environment because they can use their favorite tool to read the information. In the case of Mydosis, an RSS feed could be offered to the user for the following elements: the blog, new drug entries, changed drug entries and the forum.

Personalization

A personalized website makes the visit a unique experience to the user. Technically, this can be achieved with two ways: user sign-in and cookies in the browser. Accordingly, the start page can be tailored to the users with their recent agents, answers to their forum posts and Gamification elements like points and leaderboards.

User involvement

Users like it to be able to make a difference. Therefore, as much interaction as possible should be integrated within the website. Social networks can be easily integrated with HTML code snippets, as for example Twitter (Tweet button), Facebook (Like button), Google+ button, and social bookmark services like Delirious and Mister Wong. This has two advantages: It gives the user the feeling to interact with a dynamic website and at the same time it raises awareness for Mydosis on the internet thanks to the users' recommendations.

Moreover, buttons for users like "How do you like the entry of this agent, is it professional, is there anything missing", should be provided.

Facebook Connect and Google Account for sign in
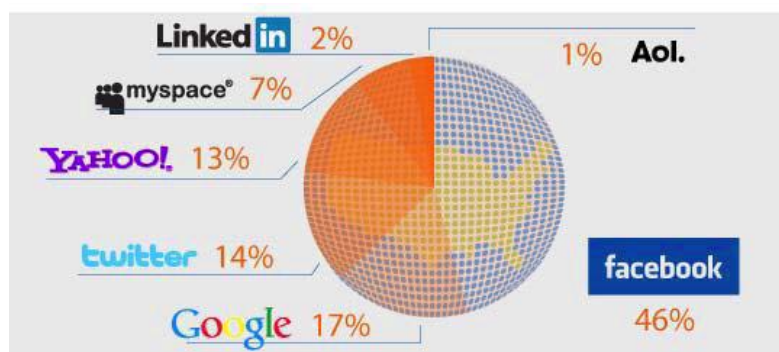
Figure 25: Most used online IDs to sign in around the web

"Users have made one thing clear to sites: When it comes to using an existing identity on the web, they want a choice of providers." (Patrick, 2010) Figure 25 (source: Patrick, 2010) illustrates that most users prefer Facebook to sign in (46%), followed by Google (17%). In order to simplify the sign-in process as much as possible, accordingly Mydosis should provide the possibility for users to do so. The gain for the users is that they do not need to remember the account information of yet another web service.

The web service provider Getsatisfaction.com provides an API for websites called "Janrain" which can be integrated into Mydosis. This company charges for the service, however. Figure 26[37] shows its login options with Mydosis itself, Facebook, Google, Twitter, Windows Live and OpenID.
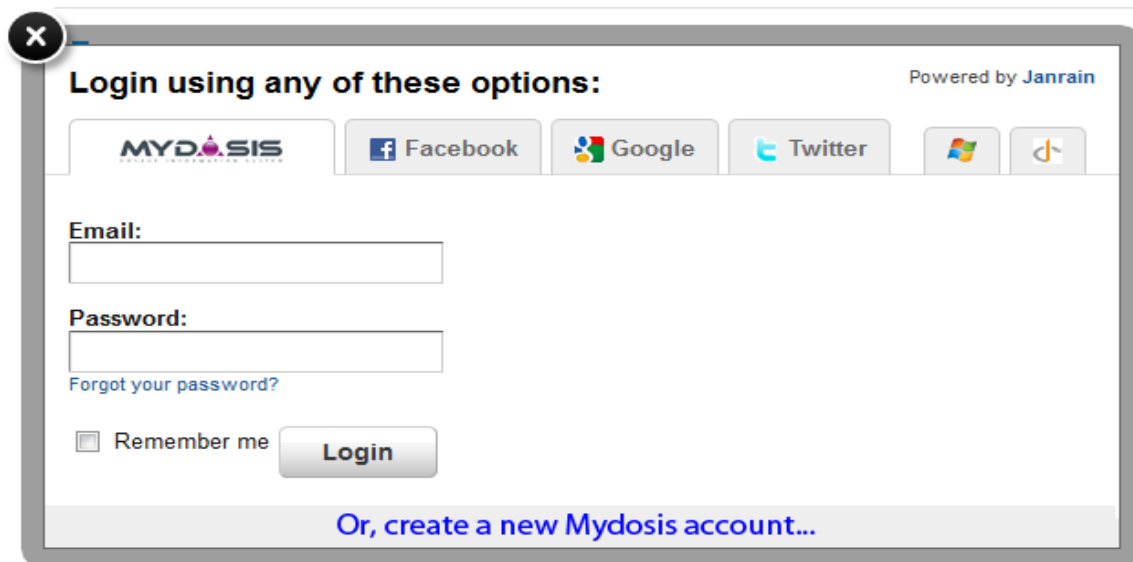
Figure 26: Multiple login options

Statistics with quantitative data on start page

Figure 27: Tag cloud example

As with the agent wish list, other statistical data that can foster users' participation should be shown on the start page. For instance, a tag cloud is an easy and intuitively understandable way to visualize basic statistics to the users. In the case of Mydosis it is

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[37] Source: www.getsatisfaction.com

recommendable to visualize the most discussed or requested agents. In doing so, the user's attention is raised to explore these agents which in turn benefits user contribution. Figure 27[38] illustrates Flickr's all time most popular tags as a visualization example.

Agent wish list / Priority list with opportunity to vote for new agents

In order to encourage the users' participation, they should be given the acknowledgement that their opinion matters and that they can make a difference with their contribution. In order to achieve this, there should be an agent wish list. This can be incorporated in the case they search for a non-existent agent (cp. chapter 4.3). Likewise, at the Mydosis start page, these solicited agents should be displayed together with an opportunity to vote for the most-needed agent. Users who create a valuable database entry with that agent should be rewarded with extra points in the Gamification layer.

Social translation

In the course of the planned internationalization of Mydosis in the future, the entire service with all texts will have to be translated into various languages, which means high financial expenses. With the help of social media this is facilitated. Anyone can translate the pages to different languages and even the database could be translated to other languages by users. As a reward, the users should gain points in accordance with the Gamification idea.

4.7   Implementation of the marketing plan

As already stated, it is not sensible to implement all elements of the social web strategy at the same time because users easily could feel overstrained. In accordance with the results from the survey in chapter 3.2, a timeline will be given as an advice. It shows which marketing options should be implemented for what reason and in which order.

The survey has revealed that a majority of users did not capture entirely the Wikipedia idea of Mydosis and start from the premise that the Mydosis team should provide the information and update the database. Therefore, the first and foremost task for the marketing plan is to clarify the Wikipedia idea and to encourage user's

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[38] Source: www.flickr.com

participation which leads to the first five steps. These steps are mainly internal and require the following programming expenditures (times indicated for one person):

1. **Explain Wikipedia idea and creative commons license on the start page**: This is a quick step and can be accomplished within one day.

2. **Encourage user participation in search results**: Here, four days of programming expenditure are estimated.

3. **Indication on the top of each agent record to suggest problems or missing information**: Here, two weeks (ten days) of programming expenditure is estimated.

4. **Agent wish list / Priority list with opportunity to vote for new agents**: This programming task is more complex, thus three weeks are expected.

5. **Integrate forum**: Forum integration is the most complex task. Therefore, two months are anticipated for programming effort.

Once the steps to clarify the idea of Mydosis and to foster users' participation are realized, it is crucial to attract new users to the portal. This can be achieved by marketing Mydosis in the public, respectively. with the target group.

6. **Social network presence**: Create Facebook and Twitter presence, later on XING and possibly LinkedIn: In order to create a professional looking representation on these networks, a working effort of two weeks is projected.

7. **Mydosis app**: In order to create the app for further platforms (iOS, Windows Phone 7), there is an expected programming effort of three months. This can be conducted either by the Mydosis team itself (disadvantage: no resources for other programming tasks in the meantime) or an external agency (disadvantage: financial expenses).

8. **Google Adwords**: This marketing operation does not consume a considerable amount of time, but financial expenses.

9. **RSS feed**: The implementation of an RSS feed is not considered crucial but it makes the usage of Mydosis more comfortable for the users. The estimated programming effort is five days.

10. **Facebook Connect and Google Account for sign in**: Here, an external service provider like for example Janrain[39] should be considered in order to minimize time expenses on this feature.

11. **Personalization**: Tailoring the start page is a complex programming task with an expected programming effort of two months.

12. **User involvement**: Integrating HTML snippets for Google+, Facebook Like-Button, etc. is a minor task and can be accomplished within few days.

13. **Statistics with quantitative data on start page**: This feature is expected to take four weeks of programming effort.

14. **Social translation**: The translation itself will be conducted by the users, the infrastructure, however, has to be programmed which will take about two weeks' time. As already stated, this feature is not under consideration momentarily because it takes a lot of programming effort and an internationalization of the Mydosis service is not envisaged for the near future.

The next activities are not bound to a certain point of time because they either take a lot of time to realize or they are constant activities. The following sequence represents the order priority in which the steps should be initiated.

- **Presence in forums**: As found out in chapter 3.1.5, participation in relevant forums of the Mydosis team has led to new active users, thus forum participation should be expanded. This activity is constantly conducted during the other activities.

- **Articles in journals and magazines**: Press releases, professional articles and advertisements in medical (e.g. *Deutsches* Ärzteblatt[40]) and other (e.g. open source magazines) prints. To leapfrog the community growth, these presences should be started at an early stage.

- **Gamification (points, levels, user profile, progress bar, leaderboard)**: As a major possibility to encourage user's participation, this should be considered at an early point of time. For the implementation of the Gamification layer there are also the two options to buy in the logic or to create the program. Because everything has to be tailored to the needs and sensitivity of medical professionals, it would be favorable to create own game mechanics. This

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[39] www.janrain.com
[40] www.aerzteblatt.de

activity is rather complicated and realization takes a lot of time, therefore it is a constant endeavor.

- **Events**: Events include occasions like conferences and fairs and should be constantly monitored for relevant ones to make personal contacts and increase Mydosis' level of awareness in professional circles.

Postponed activities

- **Viral marketing**: Viral marketing can be very effective, it takes a lot of effort to create successful viral marketing campaigns, however, and it can be fraught with risk because it is hardly controllable. That is why this action will be postponed to an undetermined point of time.

- **Banner advertisements**: These measures can be placed in respective websites. This does not take a significant amount of working time, but financial expenses. Since banner advertisements have been outpaced from social advertising on other social networks like Facebook, no one really notices banners due to information flooding, and this activity should be put aside.

5   Conclusions and lessons learned

With the problematic of the Off-label- and Unlicensed-use in the background, Mydosis has a favorable starting position as the first Wikipedia established to solve this problem. Yet, online social networks are a relatively young field and currently developing further rapidly. There is not *the* right or *the* wrong strategy in order to be successful in this domain; the actions rather have to be tailored to the current situation and to the target group. Some anchors for orientation are the concept of Gamification and the creation of a marketing mix which structures the ideas. Yet, even the traditional marketing mix does not fit into the new world of online networks and has to be custom-made to the circumstances of online social media as well.

Despite those diffuse conditions in the online media field, there are some tools that support the marketer here, for example the analysis instrument Piwik which allows tracking of the users' actions with the purpose to understand them. Furthermore, online surveys permit reaching a wide range of users with fast and broadly automatic evaluation of the outcomes. Also, in forums the marketer can easily oversee the user's opinions and perspectives about a product or service. These instruments have been used in the course of this thesis.

The Mydosis service could achieve quite a success when it comes to registered users' growth. Nevertheless, a self-sustaining Wikipedia process has not come to a start so far. As this relies on the users' voluntary participation without any benefits for them at first glance, it is clear that some threshold energy will be necessary. This can be understood as giving the users the best conditions they need and the highest grade of convenience using the service. The two surveys which were sent to two different groups of medical practitioners (registered users of Mydosis and pediatricians who are new to Mydosis) showed some changes which have to be conducted in order to provide these conditions. They include more comfort in search functions, user-specific entries in the smartphone app, a better integration of the discussion forum, an iOS app and better explanations of the Mydosis idea and philosophy combined with the introduction of Gamification elements into the portal. Furthermore, the advantages of the Mydosis smartphone app have to be promoted in a better way as the analysis tools have unveiled that many users utilize the Android browser on their smartphone instead of the smartphone app.

As the field of online social network marketing is sparsely predictable, the situation of Mydosis has to be analyzed again and again periodically in order to estimate these measures and define new ones. Performing the appropriate actions, the needs of the users can be satisfied at any point of time. This includes the consideration of new web- and marketing-techniques which will have been thought at a future point of time and the conduction of new surveys to keep track with the fast-changing environment of the internet.

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II. Piwik report

III. Google Android market report

android
market

Total active installs of de.fau.cs.osr.dosis.android

Zoom: 1d 5d 1m 3m 6m 1y Max   Juli 05, 2011

● Install 447

| Feb 2011 | Mär 2011 | Apr 2011 | Mai 2011 | Jun 2011 |

Attributes breakdown as of July 5, 2011

Platform version

	de.fau.cs.osr.dosis.android		All apps in my category	
1	Android 2.2	56.2% (251)	Android 2.2	59.3%
2	Android 2.3.3	24.2% (108)	Android 2.1	19.5%
3	Android 2.1	15.4% (69)	Android 2.3.3	11.6%
4	Android 2.3	0.4% (2)	Android 1.6	3.4%
5	Android 3.0	0.4% (2)	Android 1.5	2.8%
6			Android 2.3	0.5%
7			Android 3.0	0.4%
8			Android 2.0.1	0.1%
9			Android 1.0	0.0%
10			Android 1.1	0.0%

Others
Android 2.1
Android 2.2
Android 2.3.3

Device

	de.fau.cs.osr.dosis.android	
1	Samsung Galaxy S	23.0% (103)
2	HTC Desire HD	12.5% (56)
3	HTC Desire	11.6% (52)
4	Samsung Galaxy Ace	5.6% (25)
5	Motorola Defy	4.9% (22)
6	HTC Wildfire	4.7% (21)
7	Samsung Galaxy S2	4.0% (18)
8	Samsung Galaxy Tab	3.8% (17)
9	LG Optimus 2X	2.9% (13)
10	HTC Desire S	2.7% (12)

Others
Samsung Galaxy S
HTC Desire HD
Samsung Galaxy Tab
Samsung Galaxy S2
HTC Wildfire
Motorola Defy
Samsung Galaxy Ace
HTC Desire

Country			All apps in my category	
① Deutschland	86.4% (386)		Vereinigte Staaten	65.2%
② Österreich	6.0% (27)		Republik Korea	6.0%
③ Schweiz	3.8% (17)		Japan	4.7%
④ Indonesien	0.9% (4)		Vereinigtes Königreich	3.2%
⑤ Mexiko	0.9% (4)		Frankreich	2.5%
⑥ Vereinigte Staaten	0.7% (3)		Deutschland	2.1%
⑦ Brasilien	0.4% (2)		Spanien	1.3%
⑧ Ukraine	0.2% (1)		Schweden	0.9%
⑨ Norwegen	0.2% (1)		Kanada	0.9%
⑩ Italien	0.2% (1)		Niederlande	0.8%

(Country pie chart labels: Others, Schweiz, Österreich, Deutschland; header: de.fau.cs.osr.dosis.android)

Language			All apps in my category	
① Deutsch (Deutschland)	86.8% (388)		Englisch (Vereinigte Staaten)	64.8%
② Deutsch (Österreich)	4.5% (20)		Koreanisch (Republik Korea)	6.0%
③ Deutsch (Schweiz)	2.9% (13)		Japanisch (Japan)	4.6%
④ Englisch (Vereinigte Staaten)	1.1% (5)		Englisch (Vereinigtes Königreich)	4.6%
⑤ Englisch (Vereinigtes Königreich)	1.1% (5)		Französisch (Frankreich)	2.7%
⑥ Spanisch (Mexiko)	0.4% (2)		Deutsch (Deutschland)	2.2%
⑦ Portugiesisch (Brasilien)	0.4% (2)		Spanisch (Vereinigte Staaten)	1.8%
⑧ Indonesisch (Indonesien)	0.4% (2)		Spanisch (Spanien)	1.6%
⑨ Deutsch (Luxemburg)	0.4% (2)		Chinesisch (Taiwan)	0.9%
⑩ Norwegisch (Norwegen)	0.2% (1)		Niederländisch (Niederlande)	0.8%

(Language pie chart labels: Others, Deutsch (Österreich), Deutsch (Deutschland); header: de.fau.cs.osr.dosis.android)

Notes:
▸ Application statistics are updated daily.
▸ Total active installs represents the number of devices on which the application is currently installed. This is inclusive of updates.
▸ While tables will display values of 3% or less, these segments are grouped into the "Others" segment on the pie chart.
▸ "All apps in my category" represents a general aggregation of attributes from all applications in the same category in Android Market, for informational purposes only.

IV. Mydosis survey

Long survey

Mydosis Survey

Dear colleague,

we plan the formation of a Wikipedia for drug dosage information in pediatrics where domain experts and other users can collaboratively put together information in order to contribute to drug safety. We would like to improve our service and adjust it to the actual needs in physician's everyday practice. Therefore, we would like to ask you to participate in a short online survey. (it will take about 10 minutes)

The Mydosis portal is accessible here:
www.mydosis.de

If the Mydosis portal and the smartphone app should be unfamiliar to you we kindly ask you to sign up for it and to test its funcionality in order to be able to respond to all questions.

This survey contains 29 questions.

Questions concerning the person

1 [01]Age *

Please choose only one of the following answers:

- ○ 40 years and beneath
- ○ more than 40 years

2 [02]Gender *

Please choose only one of the following answers:

- ○ female
- ○ male

3 [03]Professional situation *

Please choose only one of the following answers:

- ○ Nurse / Care assistant
- ○ Paramedic
- ○ Student (medicine / others)
- ○ Assistant of advanced training
- ○ Medical specialist
- ○ Senior physician
- ○ Chief physician
- ○ not medically active (e.g. maternity protection, job-seeking, etc.)
- ○ Pharmacist / Pharmacologist

4 [04]In which setting do you work? *

Only anwer this question of the following conditions are fulfilled:
The answer was 'Medical specialist' or 'Senior physician' or 'Chief physician' at question '3 [03]' (Professional situation)

Please choose only one of the following answers:

○ Doctor's office

○ Clinic

5 [5]How do you estimate your internet skills? *

Please choose only one of the following answers::

○ Expert / Digital native

○ User in profession

○ User from time to time

6 [6]How do you estimate your Wikipedia skills? *

Please choose only one of the following answers:

○ I have contributed at least once

○ I have not contributed, but perform regular consults

○ I have not contributed, and perform rare consults

Questions concerning Mydosis Portal

7 [07]How is your overall impression of the Mydosis portals? *

Please choose only one of the following answers:

○ very good

○ good

○ mediocre

○ bad

Please write your coments here:

8 [08]

Which are the reasons for you to use the Mydosis portal? *

Please choose only one of the following answers:

☐ Consulting drug usage information, adverse effects and interactions

☐ Scientific research

☐ Contribution to increase of knowledge

☐ Other: _____

9 [09]

Which would be the reasons for you to contribute actively on Mydosis? *

Please choose only one of the following answers:

☐ Self-affirmation

☐ Contribution to your own social, intellectial and cultural asset

☐ Curiosity

☐ Interchange of opinions and perspectives

☐ Find colleagues with similar interests

☐ Other: _____

10 [10]

How often do you use the Mydosis portal? *

Please choose only one of the following answers:

○ rarely (until now 1-2x)

○ irregular (each 1-2 months)

○ weekly

○ several times in a week

○ daily

11 [11]

What could be improved on the Mydosis portal concerning usability?

Please enter your answer here:

Questions concerning the Mydosis smartphone app

12 [12]

Which smartphone apps in the medical area do you use?

Please choose only one of the following answers:

☐ Mydosis

☐ Rote Liste

☐ Other: _____

13 [13]

How important is the possibility for you to access drug usage information from your smartphone or tablet PC? *

Please choose only one of the following answers:

○ very important

○ important

○ barely important

○ unimportant

14 [14]

Do you possess a smarthone and/or tablet PC? *

Please choose only one of the following answers:

○ Yes

○ No

15 [15]

Do you plan to aquire a smartphone in the near future? *

Only anwer this question of the following conditions are fulfilled:
The answer was 'No' at question '14 [14]' (Do you possess a smarthone and/or tablet PC?)

Please choose only one of the following answers:

○ Yes

○ No

---

16 [14b]Your smartphone model *

Only anwer this question of the following conditions are fulfilled:
The answer was 'Yes' at question '14 [14]' (Do you possess a smarthone and/or tablet PC?)

Please enter your answer here:

---

17 [15b]Model which you would buy

Only anwer this question of the following conditions are fulfilled:
The answer was 'No' at question '14 [14]' (Do you possess a smarthone and/or tablet PC?) *and* the answer was 'Yes' at question '15 [15]' (Do you plan to aquire a smartphone in the near future?)

Please enter your answer here:

---

18 [16]

Have your ever payed money for a smartphone app? *****

Only anwer this question of the following conditions are fulfilled:
The answer was 'Yes' at question '14 [14]' (Do you possess a smarthone and/or tablet PC?)

Please choose only one of the following answers:

○ Yes

○ No

---

19 [16b]Approximately which is the highest price you have paid for your smartphone apps (in â�¬) *

Only anwer this question of the following conditions are fulfilled:
The answer was 'Yes' at question '18 [16]' (Have your ever payed money for a smartphone app?)

Please enter your answer here:

---

20 [17] What bothers you, respectively what functions do you miss with

Only anwer this question of the following conditions are fulfilled:
The answer was 'Mydosis' at question '12 [12]' (Which smartphone apps in the medical area do you use?)

Please choose the appropriate anwers and write a comment:

☐ Mydosis App

☐ Andere App

---

21 [18]

Please evaluate the Mydosis app concerning the following factors on a scale with grades from 1 (very good) to 6 (not sufficient). *

Only anwer this question of the following conditions are fulfilled:
The answer was 'Mydosis' at question '12 [12]' (Which smartphone apps in the medical area do you use?)

Please choose the appropriate answer for each of these options:

	(1) very good	(2) good	(3) satisfactory	(4) sufficient	(5) below the requirements	(6) not sufficient
User-friendliness	○	○	○	○	○	○
Operability	○	○	○	○	○	○
Error-proneness	○	○	○	○	○	○
Range of functions	○	○	○	○	○	○
Overall impression	○	○	○	○	○	○

General question concerning Mydosis

22 [19]

How do you estimate the benefit of a collaborative collocation of drug usage information with the Off-label-use? *

Please choose only one of the following answers:

○ very high benefit

○ high benefit

○ mediocre benefit

○ little benefit

○ no benefit

Please give a comment to your choice

---

23 [20]

During your medical or professional activity, do you have the posisbility to access a computer with internet access? *

Please choose only one of the following answers:

○ Yes

○ No

○ Not without further ado

24 [21]

Which agents do you miss in the Mydosis database?

Please enter your answer here:

25 [22]

What kind of active collaboration in Mydosis could you imagine? (1: I cannot imagine at all, 5: I can absolutely imagine vorstellen) *

Please choose the appropriate answer for each of these options:

	1	2	3	4	5
Amplification of the database	○	○	○	○	○
Discussion in the forum concerning agents	○	○	○	○	○
Participation in the validation process	○	○	○	○	○

26 [23]

Would you recomment Mydosis to others? *

Please choose only one of the following answers:

○ Yes

○ No

27 [24]

Laudation: Please describe what you like with Mydosis:

Please enter your answer here:

28 [25]

Critics: Please describe what you do not like with Mydosis (e.g. do you miss additional functionality):

Please enter your answer here:

29 [26]

For which other areas would you be desirous of Mydosis?

Please choose all applicable answers:

☐ Diabetes

☐ HIV desease

☐ Oncology

☐ Adult medicine

☐ Other: _____

We would like to thank you for taking part in this survey. If you have any questions, please do not hesitate to contact our support team.
support@mydosis.de

The Mydosis-Team.

Short Survey

Mydosis survey

Dear user:

we would like to thank you for having registered with Mydosis, the wikipedia for pediatricians. Our intention is to improve and adapt our services to your needs more and more. Therefore, we ask you to take part in a short survey.

You can halt the survey at any time and resume it later on. All information provided will be treated with absolute confidentiality, ensuring that no one will be able to determine your identity based on the answers provided.

This survey contains 14 questions.

Questions concerning the person

1 [01]Age *

Please choose only one of the following answers:

○ 40 years and beneath

○ more than 40 years

2 [02]Professional situation *

Please choose only one of the following answers:

○ Nurse / Care assistant

○ Paramedic

○ Student (medicine / others)

○ Assistant of advanced training

○ Medical specialist

○ Senior physician

○ Chief physician

○ Not medically active (e.g. maternity protection, job-seeking, etc.)

○ Pharmacist / Pharmacologist

3 [03]In which setting do you work? *

Only anwer this question of the following conditions are fulfilled:
The answer was 'Medical specialist' or 'Senior physician' or 'Chief physician' at question '2 [02]' (Professional situation)

Please choose only one of the following answers:

○ Praxis

○ Klinik

4 [04]How do you estimate your internet skills? *

Please choose only one of the following answers:

○ Expert / Digital native
○ User in profession
○ User from time to time

Questions concerning the Mydosis Portal

5 [05]How often do you use the Mydosis services? *

Please choose only one of the following answers:

○ rarely (until now 1-2x)
○ irregular (each 1-2 months)
○ weekly
○ several times in a week
○ daily

6 [06]How is your overall impression of the Mydosis portal? *

Please choose only one of the following answers:

○ very good
○ good
○ mediocre
○ bad

7 [06a]Begründung

Only anwer this question of the following conditions are fulfilled::
The answer was 'mediocre' or 'bad' at question '6 [06]' (How is your overall impression of the Mydosis portal?)

Please enter your answer here:

[   ]

8 [07]Which are the reasons for you to use the Mydosis portal? *

Please choose all applicable answers:

☐ Consulting drug usage information, adverse effects and interactions
☐ Scientific research
☐ Contribution to increase of knowledge
☐ Other: [   ]

9 [08]Please evaluate the Mydosis portal concerning the following factors on a scale with grades from 1 (very good) to 6 (not sufficient). *

Please choose the appropriate answer for each of these options

	(1) very good	(2) good	(3) satisfactory	(4) sufficient	(5) below the requirements	(6) not sufficient
User-friendliness	○	○	○	○	○	○
Operability	○	○	○	○	○	○
Error-proneness	○	○	○	○	○	○
Range of functions	○	○	○	○	○	○
Overall impression	○	○	○	○	○	○

10 [09]Please evaluate the Mydosis portal concerning the following factors on a scale with grades from 1 (very good) to 6 (not sufficient). *

Please choose the appropriate answer for each of these options

	(1) very good	(2) good	(3) satisfactory	(4) sufficient	(5) below the requirements	(6) not sufficient
User-friendliness	○	○	○	○	○	○
Operability	○	○	○	○	○	○
Error-proneness	○	○	○	○	○	○
Range of functions	○	○	○	○	○	○
Overall impression	○	○	○	○	○	○

11 [10]What kind of active collaboration in Mydosis could you imagine? (1: I cannot imagine at all, 5: I can absolutely imagine) *

Please choose the appropriate answer for each of these options

	1	2	3	4	5
Amplification of the database	○	○	○	○	○
Discussion in the forum concerning agents	○	○	○	○	○
Participation in the validation process	○	○	○	○	○

12 [11]Have you ever clicked on the 'edit' button? *

Please choose only one of the following answers:

○ Yes

○ No

13 [11a]What is the reason why you have never clicked on the 'edit' button? *

Only anwer this question of the following conditions are fulfilled::
The answer was 'No' at question '12 [11]' (Have you ever clicked on the 'edit' button?)

Please choose only one of the following answers:

○ I do not know this function

○ I have no interest

○ I do not see any advantages for me

○ Other [   ]

---

14 [12]Please describe what you like / do not like with Mydosis or what could be improved

Please enter your answer here:

We would like to thank you for taking part in this survey. If you have any questions, please do not hesitate to contact our support team.
support@mydosis.de

The Mydosis-Team.

V. Survey results

Long survey

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	40 years and beneath	1	6.3	6.3	6.3
	more than 40 years	15	93.8	93.8	100.0
	Total	16	100.0	100.0	

Age
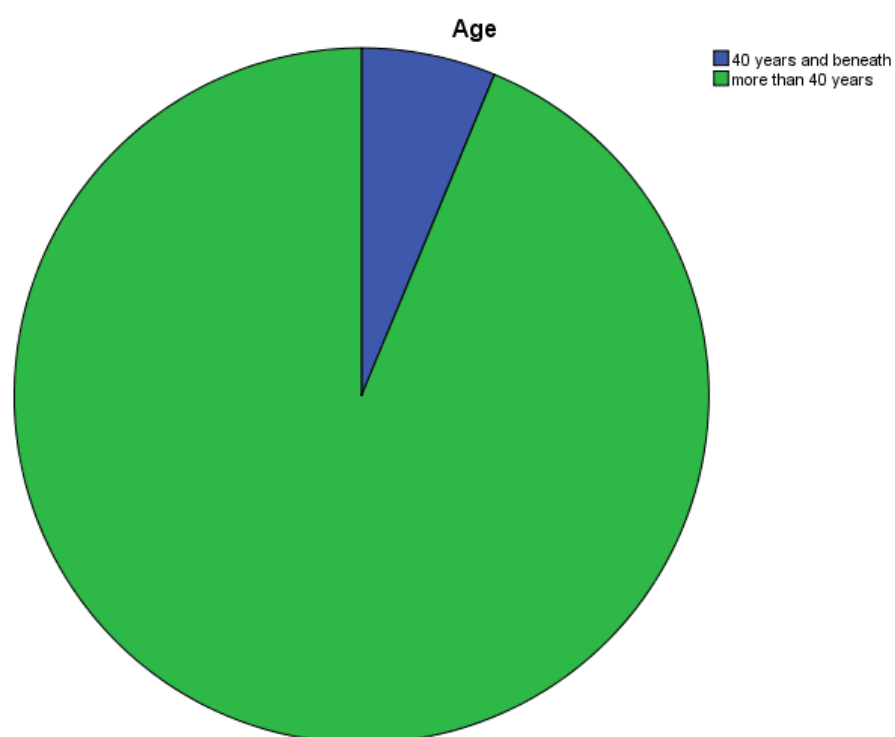
Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	female	6	37.5	37.5	37.5
	male	10	62.5	62.5	100.0
	Total	16	100.0	100.0	

Gender
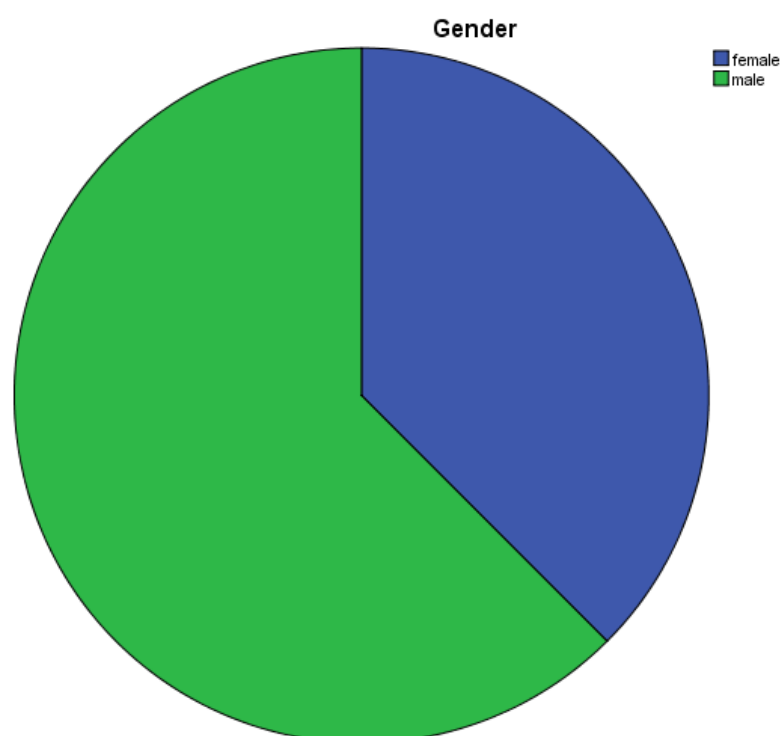
Professional situation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Medical specialist	16	100.0	100.0	100.0

In which setting do you work?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Doctor's office	16	100.0	100.0	100.0

How do you estimate your internet skills?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	User in profession	13	81.3	81.3	81.3
	User from time to time	3	18.8	18.8	100.0
	Total	16	100.0	100.0	

How do you estimate your internet skills?

How do you estimate your internet skills?
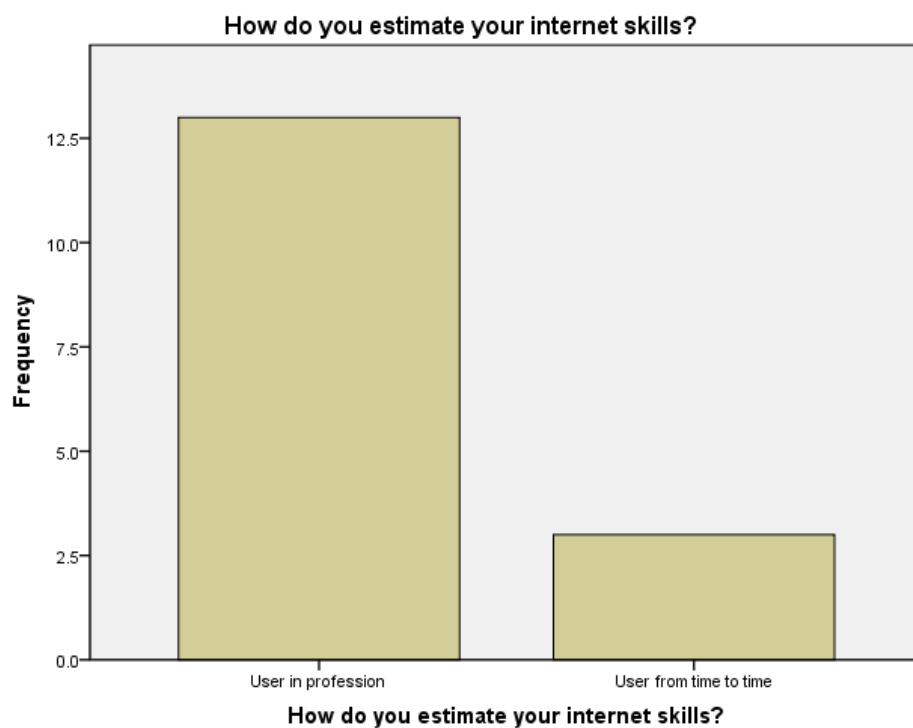
How do you estimate your Wikipedia skills?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I have contributed at least once	1	6.3	6.3	6.3
	I have not contributed, but perform regular consults	11	68.8	68.8	75.0
	I have not contributed, and perform rare consults	4	25.0	25.0	100.0
	Total	16	100.0	100.0	
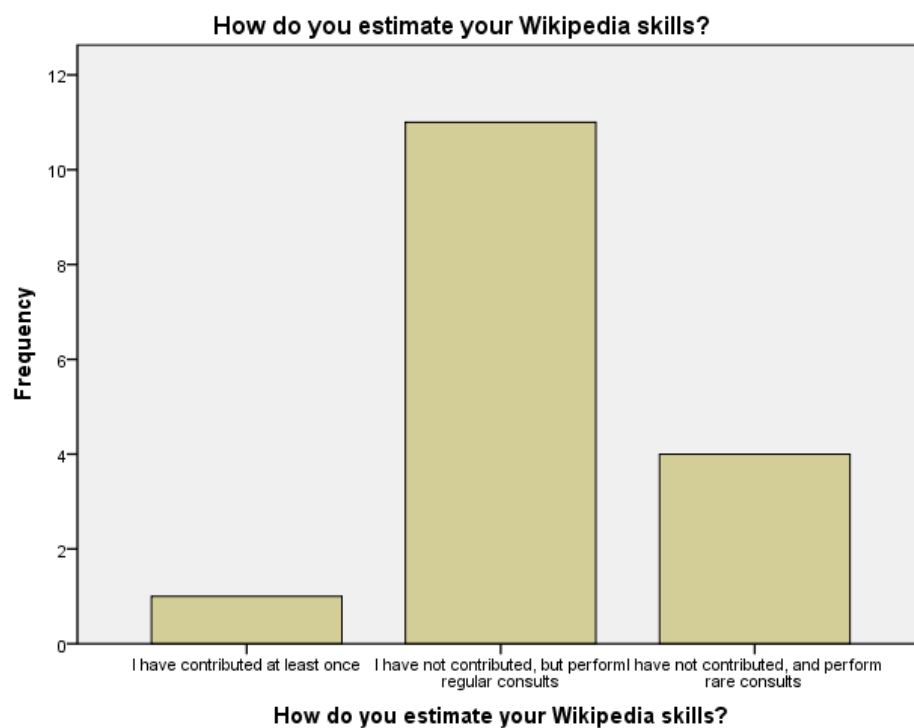
How do you estimate your Wikipedia skills?

How do you estimate your Wikipedia skills?

How is your overall impression of the Mydosis portal?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very good	2	12.5	13.3	13.3
	good	10	62.5	66.7	80.0
	mediocre	3	18.8	20.0	100.0
	Total	15	93.8	100.0	
Missing	System	1	6.3		
Total		16	100.0		

How is your overall impression of the Mydosis portal?

Wie ist Ihr Gesamteindruck des Mydosis Portals?
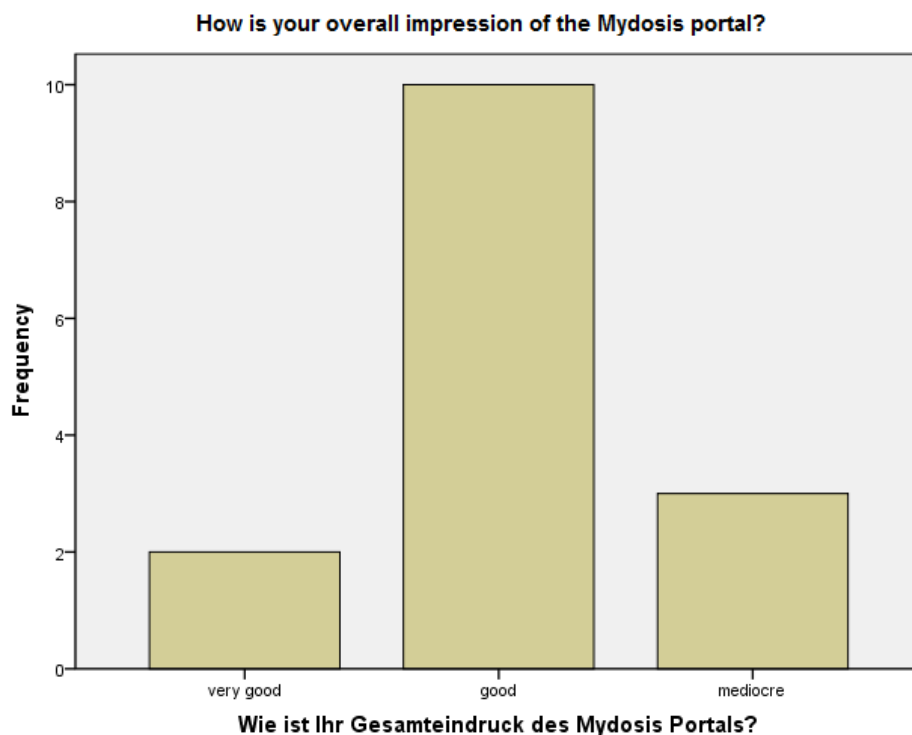
[Comment] How is your overall impression of the Mydosis portals?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	13	81.3	81.3	81.3
as long as i can see there is no info i cannot get elsewhere.	1	6.3	6.3	87.5
some agents missing, no specific reference from users beyond standard expert information	1	6.3	6.3	93.8
well arranged, unfortunately there is no iphone app	1	6.3	6.3	100.0
Total	16	100.0	100.0	

[Consulting drug usage information, adverse effects and interactions] Which are the reasons for you to use the Mydosis portal?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not selected	3	18.8	18.8	18.8
	Yes	13	81.3	81.3	100.0
	Total	16	100.0	100.0	

[Scientific research] Which are the reasons for you to use the Mydosis portal?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not selected	13	81.3	81.3	81.3
	Yes	3	18.8	18.8	100.0
	Total	16	100.0	100.0	

[Contribution to increase of knowledge] Which are the reasons for you to use the Mydosis portal?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not selected	14	87.5	87.5	87.5
	Yes	2	12.5	12.5	100.0
	Total	16	100.0	100.0	

[Other] Which are the reasons for you to use the Mydosis portal?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		15	93.8	93.8	93.8
	do not use yet.	1	6.3	6.3	100.0
	Total	16	100.0	100.0	

	Consulting drug usage information, adverse effects and interactions	Scientific research	Contribution to increase of knowledge
Yes	81%	19%	13%
No	19%	81%	88%

[Self-affirmation] Which would be the reasons for you to contribute actively on Mydosis?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not selected	15	93.8	93.8	93.8
	Yes	1	6.3	6.3	100.0
	Total	16	100.0	100.0	

[Contribution to your own social, intellectual and cultural asset] Which would be the reasons for you to contribute actively on Mydosis?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not selected	11	68.8	68.8	68.8
	Yes	5	31.3	31.3	100.0
	Total	16	100.0	100.0	

[Curiosity] Which would be the reasons for you to contribute actively on Mydosis?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not selected	14	87.5	87.5	87.5
	Yes	2	12.5	12.5	100.0
	Total	16	100.0	100.0	

[Interchange of opinions and perspectives] Which would be the reasons for you to contribute actively on Mydosis?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not selected	7	43.8	43.8	43.8
	Yes	9	56.3	56.3	100.0
	Total	16	100.0	100.0	

[Find colleagues with similar interests] Which would be the reasons for you to contribute actively on Mydosis?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not selected	15	93.8	93.8	93.8
	Yes	1	6.3	6.3	100.0
	Total	16	100.0	100.0	

[Other] Which would be the reasons for you to contribute actively on Mydosis?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		13	81.3	81.3	81.3
	I do not have other things to do.	1	6.3	6.3	87.5
	maybe active participation	1	6.3	6.3	93.8
	no idea.	1	6.3	6.3	100.0
	Total	16	100.0	100.0	

	Self-affirmation	**Contribution to your own social, intellectual and cultural asset**	**Curiosity**	**Interchange of opinions and perspectives**	**Find colleagues with similar interests**
Yes	6%	31%	13%	56%	6%
No	94%	69%	88%	44%	94%

How often do you use the Mydosis portal or would use it in the future?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	rarely (until now 1-2x)	7	43.8	46.7	46.7
	irregularly (each 1-2 months)	5	31.3	33.3	80.0
	weekly	2	12.5	13.3	93.3
	several times in a week	1	6.3	6.7	100.0
	Total	15	93.8	100.0	
Missing	System	1	6.3		
Total		16	100.0		

How often do you use the Mydosis portal or would use it in the future?
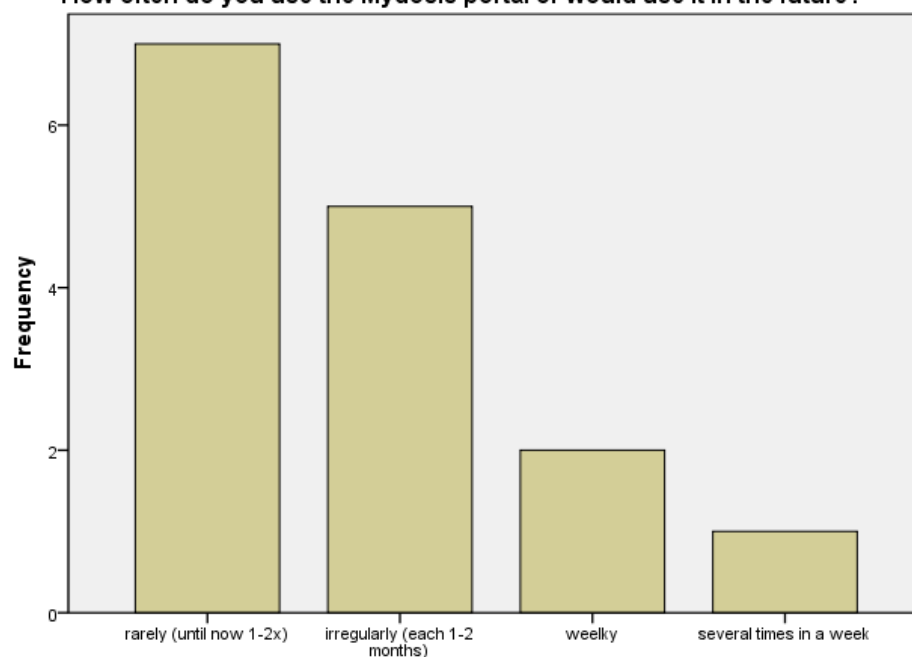
How often do you use the Mydosis portal or would use it in the future?

What could be improved on the Mydosis portal concerning usability?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	12	75.0	75.0	75.0
A button with "Search"	1	6.3	6.3	81.3
cannot overlook yet	1	6.3	6.3	87.5
Medicaments list according to alphabet	1	6.3	6.3	93.8
see above iphone app	1	6.3	6.3	100.0
Total	16	100.0	100.0	

[Rote Liste] Which smartphone apps in the medical area do you use?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not selected	12	75.0	75.0	75.0
	Yes	4	25.0	25.0	100.0
	Total	16	100.0	100.0	

[Other] Which smartphone apps in the medical area do you use?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		13	81.3	81.3	81.3
	ifap	1	6.3	6.3	87.5
	iQvisit	1	6.3	6.3	93.8
	none	1	6.3	6.3	100.0
	Total	16	100.0	100.0	

How important is the possibility for you to access drug usage information from your smartphone or tablet PC?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very important	3	18.8	20.0	20.0
	important	2	12.5	13.3	33.3
	barly important	3	18.8	20.0	53.3
	unimportant	7	43.8	46.7	100.0
	Total	15	93.8	100.0	
Missing	System	1	6.3		
Total		16	100.0		

How important is the possibility for you to access drug usage information from your smartphone or tablet PC?
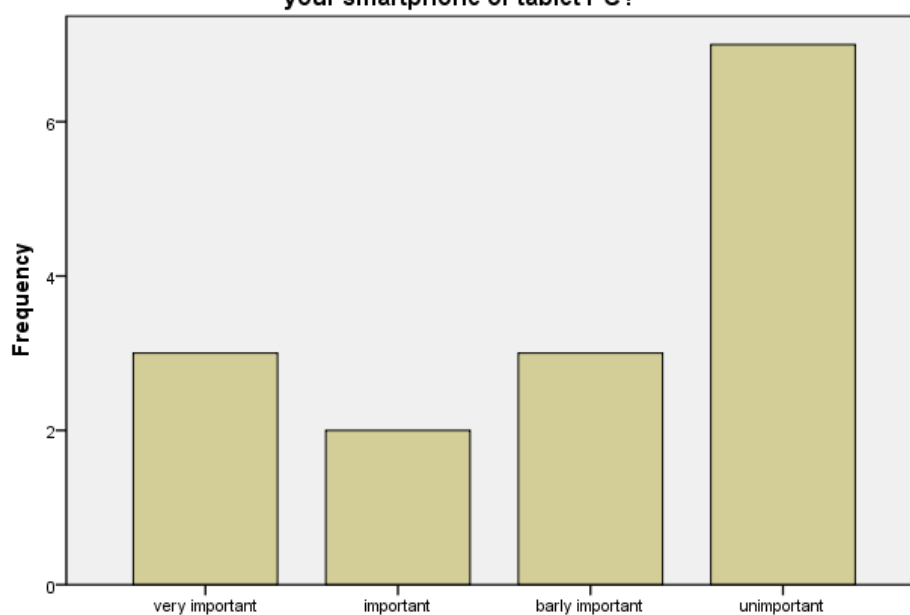
How important is the possibility for you to access drug usage information from your smartphone or tablet PC?

Do you possess a smartphone and/or tablet PC?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	56.3	60.0	60.0
	No	6	37.5	40.0	100.0
	Total	15	93.8	100.0	
Missing	System	1	6.3		
Total		16	100.0		

Do you possess a smarthone and/or tablet PC?
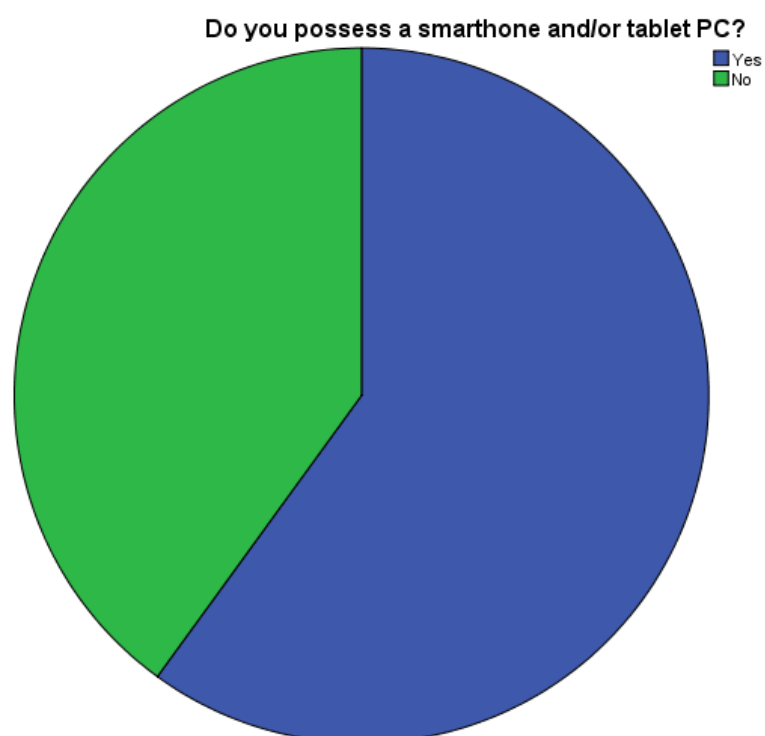
Do you plan to acquire a smartphone in the near future?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	2	12.5	33.3	33.3
	No	4	25.0	66.7	100.0
	Total	6	37.5	100.0	
Missing	System	10	62.5		
Total		16	100.0		

Do you plan to acquire a smartphone in the near future?

Legend: Yes (blue), No (green)
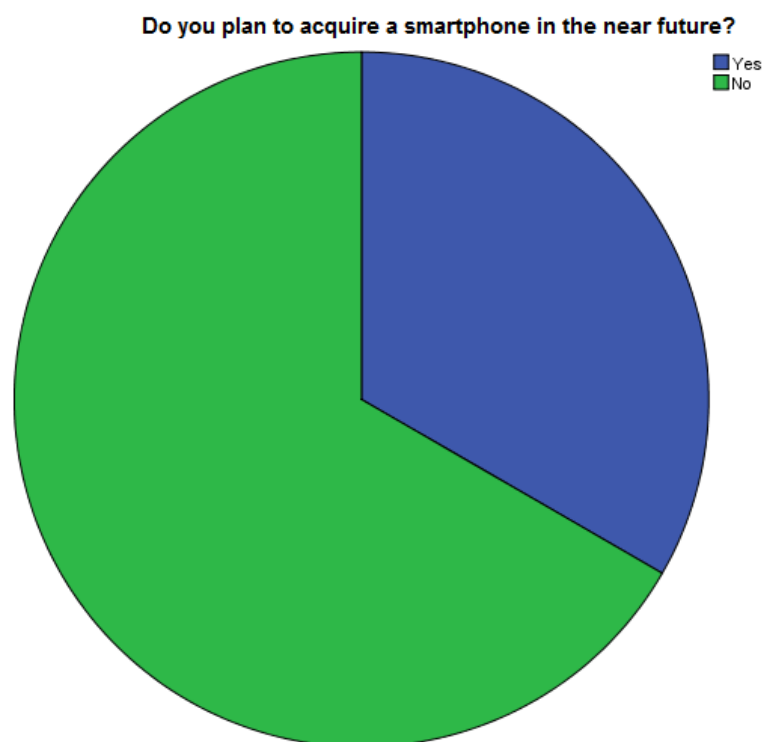
Your smartphone model

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	7	43.8	43.8	43.8
iPad	1	6.3	6.3	50.0
iphone	1	6.3	6.3	56.3
iPhone	2	12.5	12.5	68.8
IPhone 3	1	6.3	6.3	75.0
iphone 4	1	6.3	6.3	81.3
IPhone IPad	1	6.3	6.3	87.5
mozart 7	1	6.3	6.3	93.8
Samsung SI9000	1	6.3	6.3	100.0
Total	16	100.0	100.0	

Your smartphone model

Your smartphone model
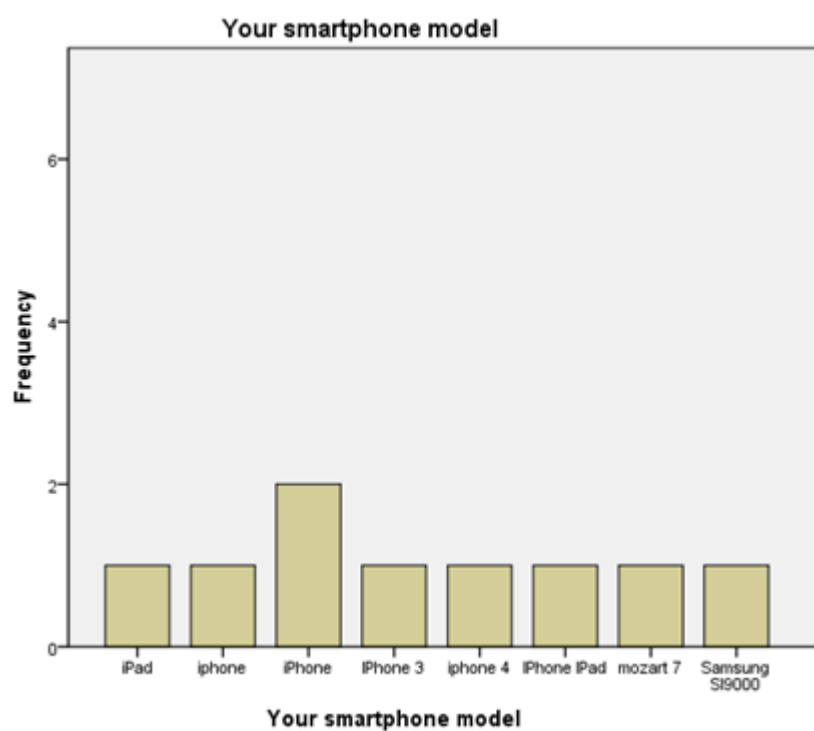
Model which you would buy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		15	93.8	93.8	93.8
	i-Phone	1	6.3	6.3	100.0
	Total	16	100.0	100.0	

Have your ever paid money for a smartphone app?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	7	43.8	77.8	77.8
	No	2	12.5	22.2	100.0
	Total	9	56.3	100.0	
Missing	System	7	43.8		
Total		16	100.0		

Have you ever paid money for a smartphone app?

Legend: Yes (blue), No (green)
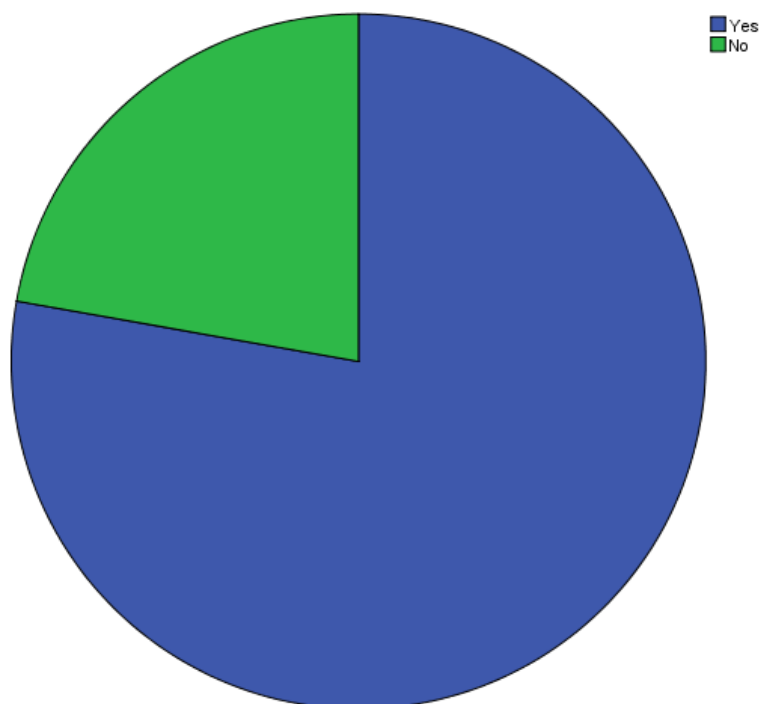
Approximately which is the highest price you have paid for your smartphone apps (in €)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3.00	1	6.3	14.3	14.3
	4.00	1	6.3	14.3	28.6
	7.00	1	6.3	14.3	42.9
	10.00	1	6.3	14.3	57.1
	30.00	1	6.3	14.3	71.4
	60.00	1	6.3	14.3	85.7
	450.00	1	6.3	14.3	100.0
	Total	7	43.8	100.0	
Missing	System	9	56.3		
Total		16	100.0		

Approximately which is the highest price you have paid for your smartp... apps (in €)
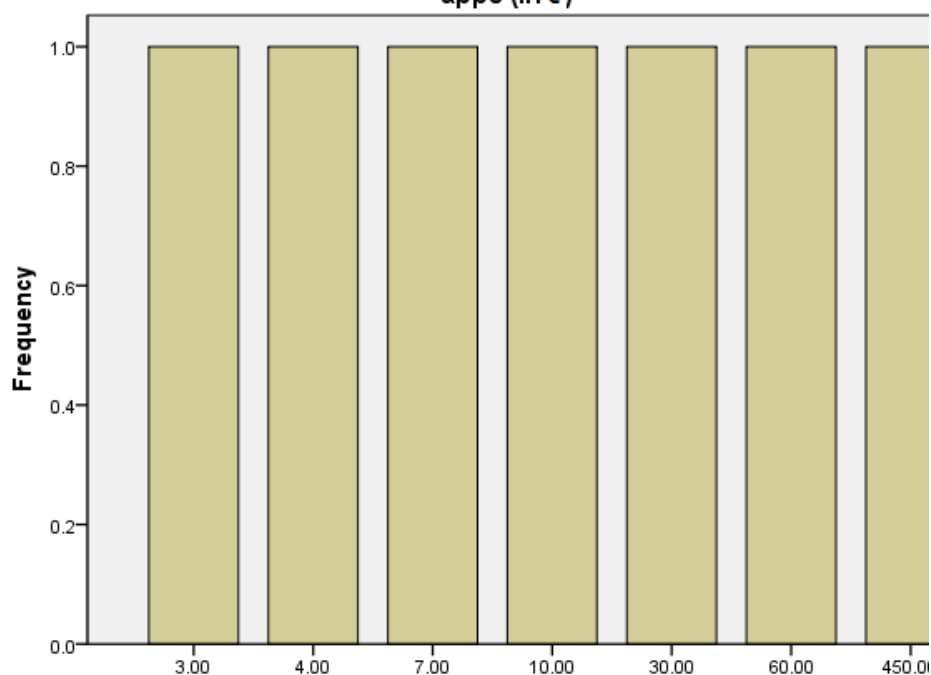
[Mydosis app] What bothers you; respectively what functions do you miss with Mydosis?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not selected	16	100.0	100.0	100.0

[Comment] What bothers you, respectively what functions do you miss with

		Frequency	Percent
Missing	System	16	100.0

[Other app] What bothers you, respectively what functions do you miss with

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not selected	16	100.0	100.0	100.0

[Comment] What bothers you, respectively what functions do you miss with

		Frequency	Percent
Missing	System	16	100.0

[User-friendliness] Please evaluate the Mydosis app concerning the following factors on a scale with grades from 1 (very good) to 6 (not sufficient).

		Frequency	Percent

[User-friendliness] Please evaluate the Mydosis app concerning the following factors on a scale with grades from 1 (very good) to 6 (not sufficient).

		Frequency	Percent
Missing	System	16	100.0

[Operability] Please evaluate the Mydosis app concerning the following factors on a scale with grades from 1 (very good) to 6 (not sufficient).

		Frequency	Percent
Missing	System	16	100.0

[Error-proneness] Please evaluate the Mydosis app concerning the following factors on a scale with grades from 1 (very good) to 6 (not sufficient).

		Frequency	Percent
Missing	System	16	100.0

[Range of functions] Please evaluate the Mydosis app concerning the following factors on a scale with grades from 1 (very good) to 6 (not sufficient).

		Frequency	Percent
Missing	System	16	100.0

[Overall impression] Please evaluate the Mydosis app concerning the following factors on a scale with grades from 1 (very good) to 6 (not sufficient).

		Frequency	Percent
Missing	System	16	100.0

How do you estimate the benefit of a collaborative collocation of drug usage information with the Off-label-use?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very high benefit	4	25.0	26.7	26.7
	high benefit	7	43.8	46.7	73.3
	mediocre benefit	4	25.0	26.7	100.0
	Total	15	93.8	100.0	
Missing	System	1	6.3		
Total		16	100.0		

**[Comment] How do you estimate the benefit
of a collaborative collocation of drug usage
information with the Off-label-use?**

	Frequency	Percent
Missing System	16	100.0

**How do you estimate the benefit of a collaborative collocation of drug usage
information with the Off-label-use?**
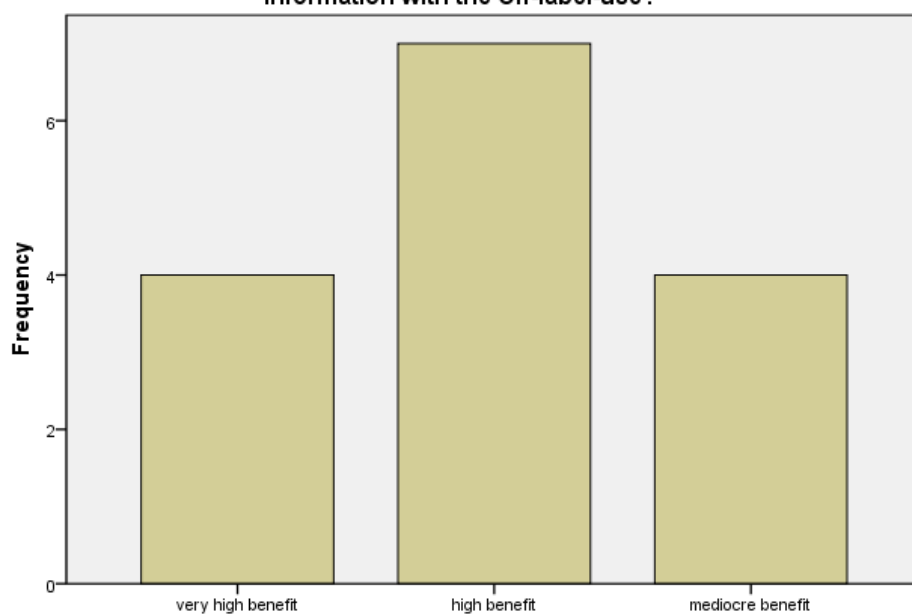
How do you estimate the benefit of a collaborative collocation of drug usage
information with the Off-label-use?

**During your medical or professional activity, do you have the possibility to
access a computer with internet access?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	87.5	93.3	93.3
	No	1	6.3	6.7	100.0
	Total	15	93.8	100.0	
Missing	System	1	6.3		
Total		16	100.0		

During your medical or professional activity, do you have the posisbility to access a computer with internet access?
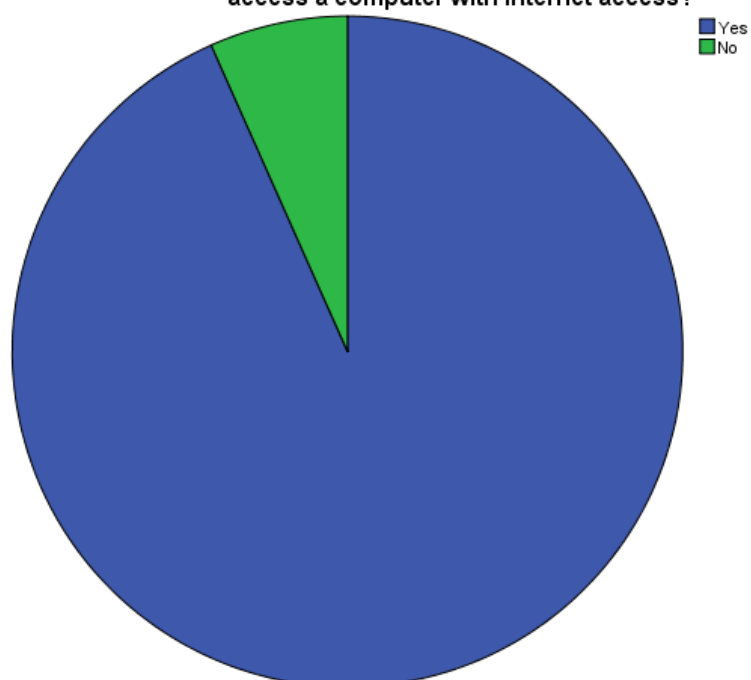
Which agents do you miss in the Mydosis database?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10	62.5	62.5	62.5
Atomoxetin, vaccine	1	6.3	6.3	68.8
Cannot estimate yet	1	6.3	6.3	75.0
have not seen yet	1	6.3	6.3	81.3
i do not know the portal enough to be able to say anything to that	1	6.3	6.3	87.5
Roflumilast (Daxas)	1	6.3	6.3	93.8
z.B. Sulfasalazine, Chloral Hydrate	1	6.3	6.3	100.0
Total	16	100.0	100.0	

[Amplification of the database] What kind of active collaboration in Mydosis could you imagine? (1: I cannot imagine at all, 5: I can absolutely imagine)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	4	25.0	26.7	26.7
	2	4	25.0	26.7	53.3
	3	5	31.3	33.3	86.7
	4	1	6.3	6.7	93.3
	5	1	6.3	6.7	100.0
	Total	15	93.8	100.0	
Missing	System	1	6.3		
Total		16	100.0		

[Discussion in the forum concerning agents] What kind of active collaboration in Mydosis could you imagine? (1: I cannot imagine at all, 5: I can absolutely imagine)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	1	6.3	6.7	6.7
	2	6	37.5	40.0	46.7
	3	5	31.3	33.3	80.0
	4	2	12.5	13.3	93.3
	5	1	6.3	6.7	100.0
	Total	15	93.8	100.0	
Missing	System	1	6.3		
Total		16	100.0		

[Participation in the validation process] What kind of active collaboration in Mydosis could you imagine? (1: I cannot imagine at all, 5: I can absolutely imagine)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	8	50.0	53.3	53.3
	2	3	18.8	20.0	73.3
	3	1	6.3	6.7	80.0
	4	2	12.5	13.3	93.3
	5	1	6.3	6.7	100.0
	Total	15	93.8	100.0	
Missing	System	1	6.3		
Total		16	100.0		
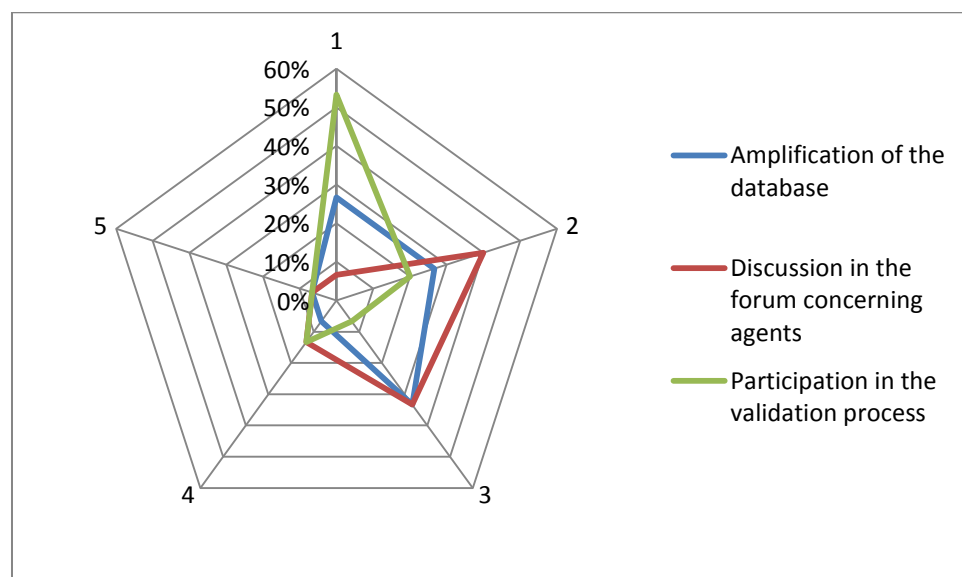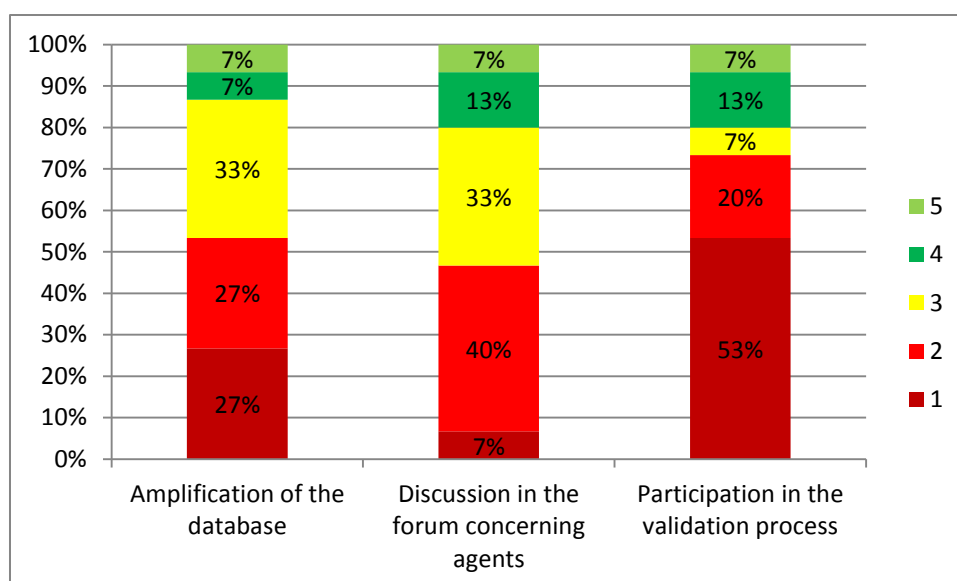
Would you recommend Mydosis to others?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	13	81.3	86.7	86.7
	No	2	12.5	13.3	100.0
	Total	15	93.8	100.0	
Missing	System	1	6.3		
Total		16	100.0		

Would you recommend Mydosis to others?

Would you recommend Mydosis to others?
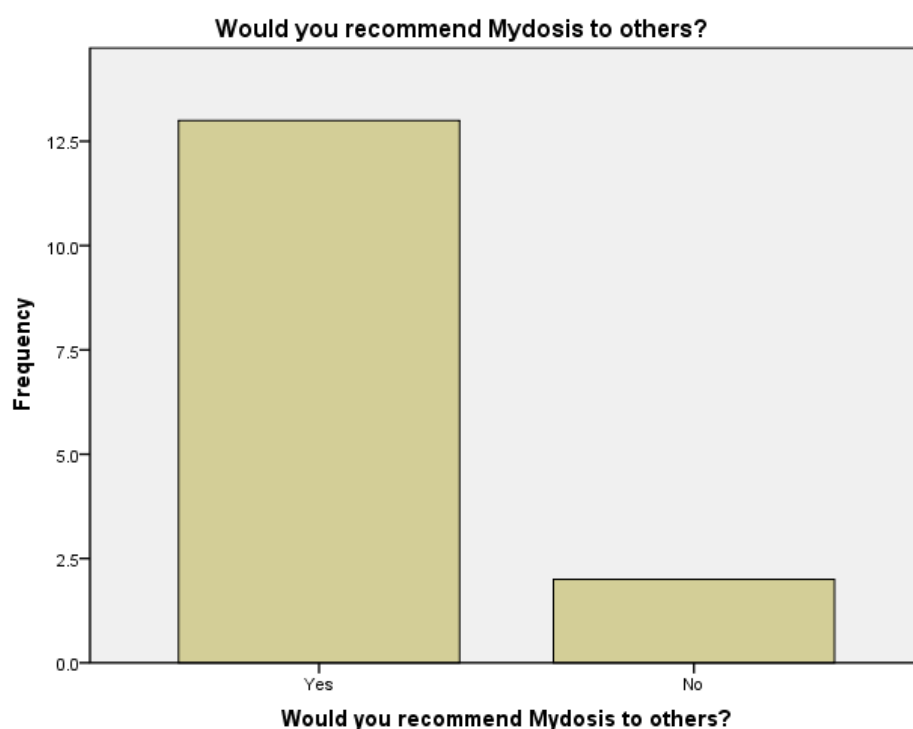
Laudation: Please describe what you like with Mydosis:

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	10	62.5	62.5	62.5
basic concept	1	6.3	6.3	68.8
Cannot estimate yet	1	6.3	6.3	75.0
Do not know Mydosis, was requested to participate in survey	1	6.3	6.3	81.3
Generally the starting of such an interactive portal by and for medical specialists	1	6.3	6.3	87.5
good idea, because more and more critics because of off-label use in infancy	1	6.3	6.3	93.8
the fresh design and the absence of pharmaceutical advertising	1	6.3	6.3	100.0
Total	16	100.0	100.0	

Critics: Please describe what you do not like with Mydosis (e.g. do you miss additional functionality):

	Frequency	Percent	Valid Percent	Cumulative Percent

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	12	75.0	75.0	75.0
Alphabetic view of agents, i.e. click on a letter shows list with "B" or "L" and so on (see fit-for-travel country selection)...	1	6.3	6.3	81.3
calculation of dosage for agents (very importantant in pediatrics) i.e. user enters size and weight and the system calculates the ideal single dose and the package size related to the therapy timeframe	1	6.3	6.3	87.5
I desire additional information to Embryo-/Fetotoxicity resp. to the question how one can continue suckling if the mother takes a substance	1	6.3	6.3	93.8
still too little information	1	6.3	6.3	100.0
Total	16	100.0	100.0	

[Diabetes] For which other areas would you be desirous of Mydosis?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not selected	15	93.8	93.8	93.8
	Yes	1	6.3	6.3	100.0
	Total	16	100.0	100.0	

[HIV disease] For which other areas would you be desirous of Mydosis?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not selected	14	87.5	87.5	87.5
	Yes	2	12.5	12.5	100.0
	Total	16	100.0	100.0	

[Oncology] For which other areas would you be desirous of Mydosis?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not selected	16	100.0	100.0	100.0

[Adult medicine] For which other areas would you be desirous of Mydosis?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not selected	15	93.8	93.8	93.8
	Yes	1	6.3	6.3	100.0
	Total	16	100.0	100.0	

[Other] For which other areas would you be desirous of Mydosis?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		9	56.3	56.3	56.3
	Asthma in infancy	1	6.3	6.3	62.5
	Pediatrics	3	18.8	18.8	81.3
	Phytotherapeutics	1	6.3	6.3	87.5
	see above	1	6.3	6.3	93.8
	Vaccines	1	6.3	6.3	100.0
	Total	16	100.0	100.0	

	Diabetes	HIV disease	Oncology	Adult medicine
Yes	6%	13%	0%	6%
No	94%	88%	100%	94%

Short survey

Frequency Table

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	40 years and beneath	35	66.0	66.0	66.0
	more than 40 years	18	34.0	34.0	100.0
	Total	53	100.0	100.0	

Age
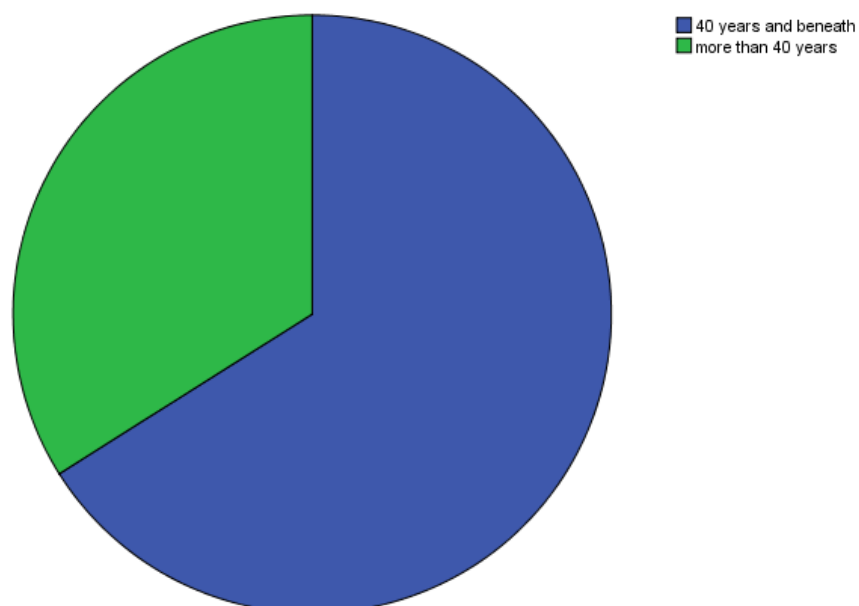
Professional situation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Nurse / Care assistant	3	5.7	5.7	5.7
	Paramedic	11	20.8	20.8	26.4
	Student (medicine / others)	4	7.5	7.5	34.0
	Assistant of advanced training	18	34.0	34.0	67.9
	Medical specialist	10	18.9	18.9	86.8
	Senior physician	5	9.4	9.4	96.2
	Not medically active (e.g. maternity protection, job-seeking, etc.)	2	3.8	3.8	100.0
	Total	53	100.0	100.0	
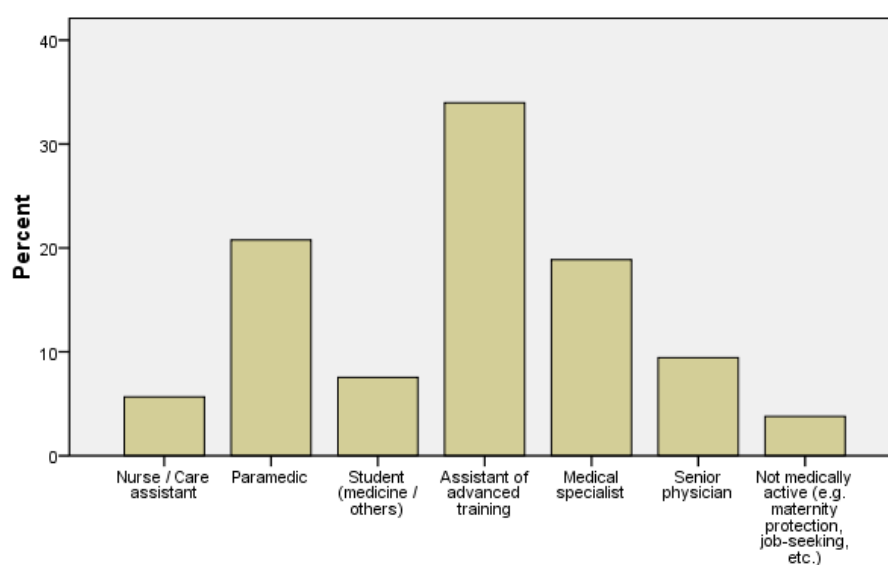
Professional situation

In which setting do you work?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Doctor's office	4	7.5	26.7	26.7
	Clinic	11	20.8	73.3	100.0
	Total	15	28.3	100.0	
Missing	System	38	71.7		
	Total	53	100.0		

In which setting do you work?
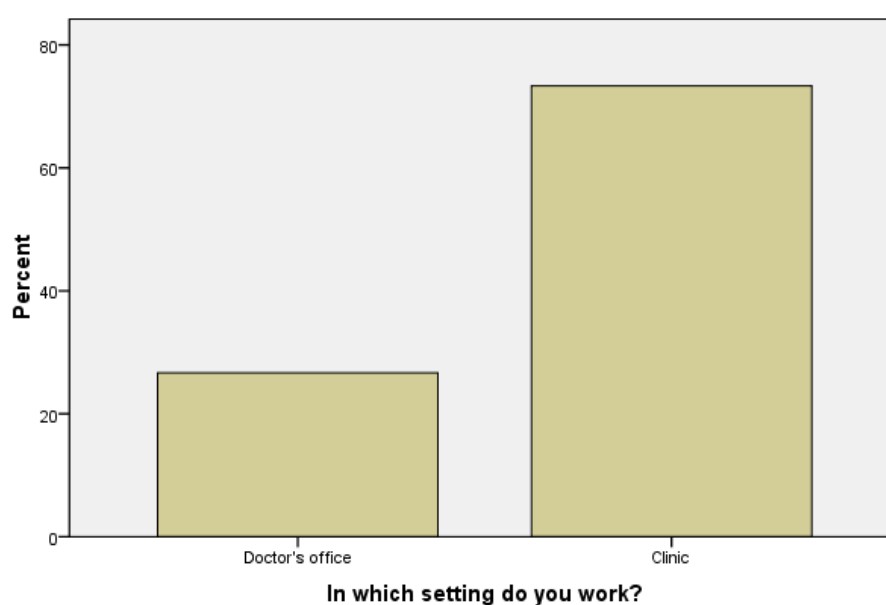
How do you estimate your internet skills?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Expert / Digital native	13	24.5	24.5	24.5
	User in profession	30	56.6	56.6	81.1
	User from time to time	10	18.9	18.9	100.0
	Total	53	100.0	100.0	

How do you estimate your internet skills?

How do you estimate your internet skills?
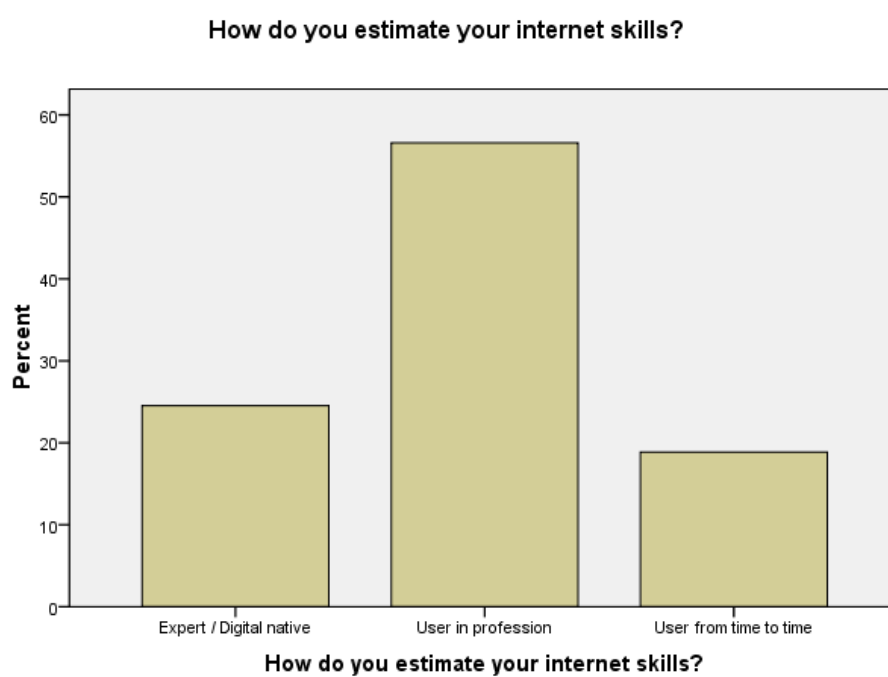
How often do you use the Mydosis services?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	rarely (until now 1-2x)	11	20.8	23.4	23.4
	irregularly (each 1-2 months)	13	24.5	27.7	51.1
	weekly	19	35.8	40.4	91.5
	several times in a week	3	5.7	6.4	97.9
	daily	1	1.9	2.1	100.0
	Total	47	88.7	100.0	
Missing	System	6	11.3		
	Total	53	100.0		
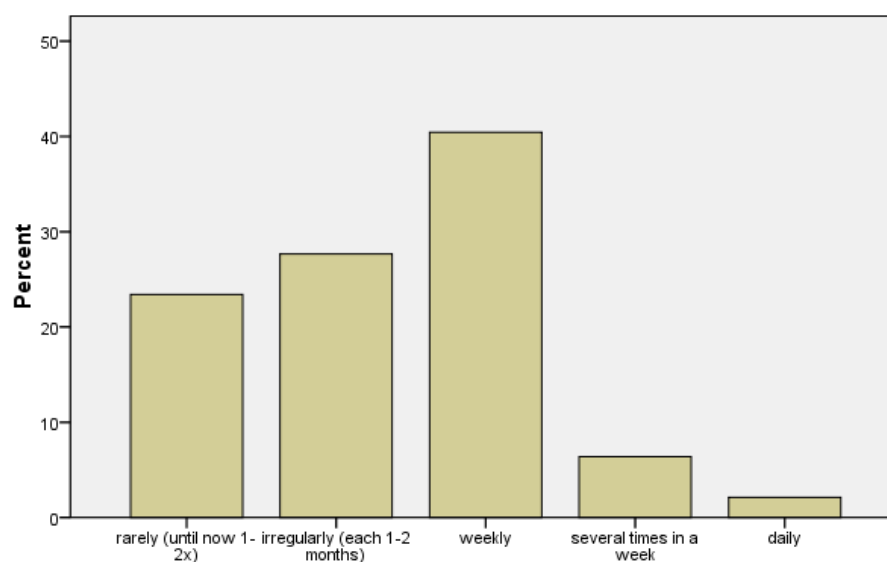
How often do you use the Mydosis services?

How is your overall impression of the Mydosis portal?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very good	9	17.0	19.1	19.1
	good	34	64.2	72.3	91.5
	mediocre	4	7.5	8.5	100.0
	Total	47	88.7	100.0	
Missing	System	6	11.3		
	Total	53	100.0		

How is your overall impression of the Mydosis portal?
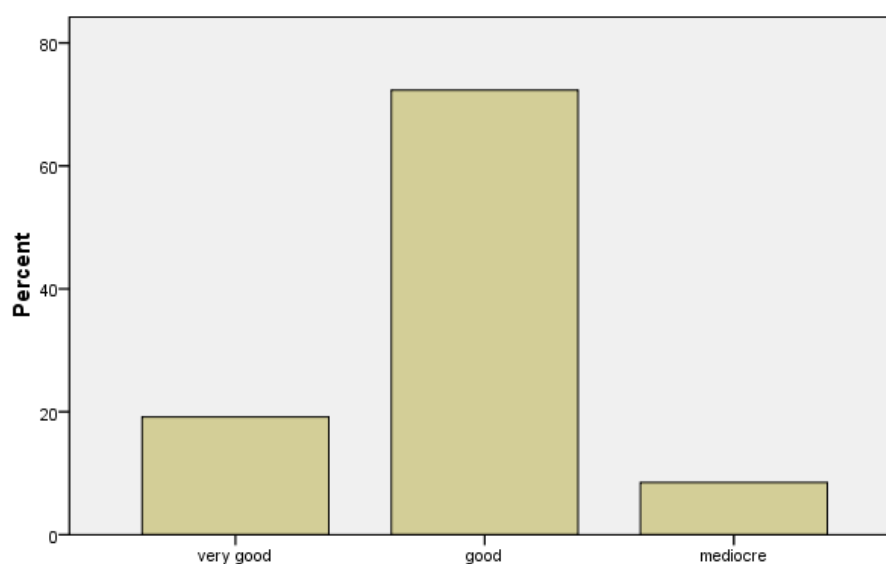
How is your overall impression of the Mydosis portal?

[Consulting drug usage information, adverse effects and interactions] Which are the reasons for you to use the Mydosis portal?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not selected	9	17.0	17.0	17.0
	Yes	44	83.0	83.0	100.0
	Total	53	100.0	100.0	

[Scientific research] Which are the reasons for you to use the Mydosis portal?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not selected	51	96.2	96.2	96.2
	Yes	2	3.8	3.8	100.0
	Total	53	100.0	100.0	

[Contribution to increase knowledge] Which are the reasons for you to use the Mydosis portal?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not selected	49	92.5	92.5	92.5
	Yes	4	7.5	7.5	100.0
	Total	53	100.0	100.0	

[Other] Which are the reasons for you to use the Mydosis portal?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		51	96.2	96.2	96.2
	Interest in pharmacology and pediatrics	2	3.8	3.8	100.0
	Total	53	100.0	100.0	

	Consulting drug usage information, adverse effects and interactions	Scientific research	Contribution to increase knowledge	Other
Yes	83%	4%	8%	4%
No	17%	96%	92%	96%

Other: Interest in pharmacology and pediatrics

[User-friendliness] Please evaluate the Mydosis portal concerning the following factors on a scale with grades from 1 (very good) to 6 (not sufficient).

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	(1) very good	8	15.1	17.4	17.4
	(2) good	35	66.0	76.1	93.5
	(3) satisfactory	3	5.7	6.5	100.0
	Total	46	86.8	100.0	
Missing	System	7	13.2		
	Total	53	100.0		

[Operability] Please evaluate the Mydosis portal concerning the following factors on a scale with grades from 1 (very good) to 6 (not sufficient).

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	(1) very good	11	20.8	23.4	23.4
	(2) good	34	64.2	72.3	95.7
	(3) satisfactory	2	3.8	4.3	100.0
	Total	47	88.7	100.0	
Missing	System	6	11.3		
	Total	53	100.0		

[Error-proneness] Please evaluate the Mydosis portal concerning the following factors on a scale with grades from 1 (very good) to 6 (not sufficient).

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	(1) very good	6	11.3	12.8	12.8
	(2) good	29	54.7	61.7	74.5
	(3) satisfactory	12	22.6	25.5	100.0
	Total	47	88.7	100.0	
Missing	System	6	11.3		
	Total	53	100.0		

[Range of functions] Please evaluate the Mydosis portal concerning the following factors on a scale with grades from 1 (very good) to 6 (not sufficient).

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	(1) very good	5	9.4	10.6	10.6
	(2) good	19	35.8	40.4	51.1
	(3) satisfactory	18	34.0	38.3	89.4
	(4) sufficient	5	9.4	10.6	100.0
	Total	47	88.7	100.0	
Missing	System	6	11.3		
	Total	53	100.0		

[Overall impression] Please evaluate the Mydosis portal concerning the following factors on a scale with grades from 1 (very good) to 6 (not sufficient).

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	(1) very good	6	11.3	12.8	12.8
	(2) good	35	66.0	74.5	87.2
	(3) satisfactory	6	11.3	12.8	100.0
	Total	47	88.7	100.0	
Missing	System	6	11.3		
	Total	53	100.0		

Please evaluate the Mydosis portal concerning the following factors on a scale with grades from 1 (very good) to 6 (not sufficient).

	User-friendliness	Operability	Error-proneness	Range of functions	Overall impression
(1) very good	17%	23%	13%	11%	13%
(2) good	76%	72%	62%	40%	74%
(3) satisfactory	7%	4%	26%	38%	13%
(4) sufficient				11%	
(5) below the requirements					
(6) not sufficient					

[User-friendliness] Please evaluate the Mydosis smartphone app concerning the following factors on a scale with grades from 1 (very good) to 6 (not sufficient).

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	(1) very good	12	22.6	26.1	26.1
	(2) good	24	45.3	52.2	78.3
	(3) satisfactory	9	17.0	19.6	97.8
	(5) below the requirements	1	1.9	2.2	100.0
	Total	46	86.8	100.0	
Missing	System	7	13.2		
	Total	53	100.0		

[Operability] Please evaluate the Mydosis smartphone app concerning the following factors on a scale with grades from 1 (very good) to 6 (not sufficient).

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	(1) very good	13	24.5	28.3	28.3
	(2) good	22	41.5	47.8	76.1
	(3) satisfactory	11	20.8	23.9	100.0
	Total	46	86.8	100.0	
Missing	System	7	13.2		
	Total	53	100.0		

[Error-proneness] Please evaluate the Mydosis smartphone app concerning the following factors on a scale with grades from 1 (very good) to 6 (not sufficient).

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	(1) very good	9	17.0	19.6	19.6
	(2) good	20	37.7	43.5	63.0
	(3) satisfactory	17	32.1	37.0	100.0
	Total	46	86.8	100.0	
Missing	System	7	13.2		
	Total	53	100.0		

[Range of functions] Please evaluate the Mydosis smartphone app concerning the following factors on a scale with grades from 1 (very good) to 6 (not sufficient).

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	(1) very good	3	5.7	6.5	6.5
	(2) good	15	28.3	32.6	39.1
	(3) satisfactory	22	41.5	47.8	87.0
	(4) sufficient	6	11.3	13.0	100.0
	Total	46	86.8	100.0	
Missing	System	7	13.2		
	Total	53	100.0		

[Overall impression] Please evaluate the Mydosis smartphone app concerning the following factors on a scale with grades from 1 (very good) to 6 (not sufficient).
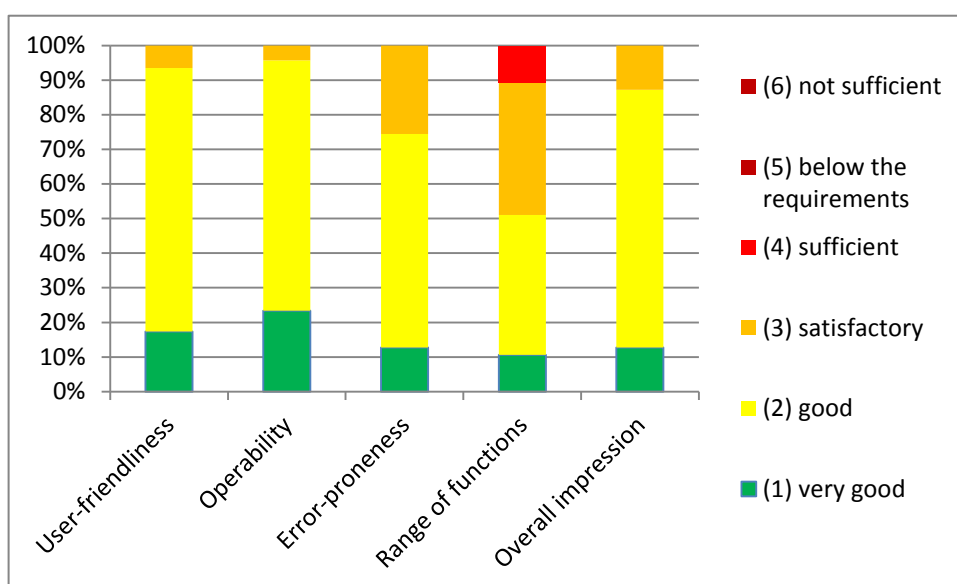
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	(1) very good	7	13.2	15.2	15.2
	(2) good	27	50.9	58.7	73.9
	(3) satisfactory	12	22.6	26.1	100.0
	Total	46	86.8	100.0	
Missing	System	7	13.2		
	Total	53	100.0		

Please evaluate the Mydosis smartphone app concerning the following factors on a scale with grades from 1 (very good) to 6 (not sufficient).

	User-friendliness	Operability	Error-proneness	Range of functions	Overall impression
(1) very good	26%	28%	20%	7%	15%
(2) good	52%	48%	43%	33%	59%
(3) satisfactory	20%	24%	37%	48%	26%
(4) sufficient				13%	
(5) below the requirements	2%				
(6) not sufficient					
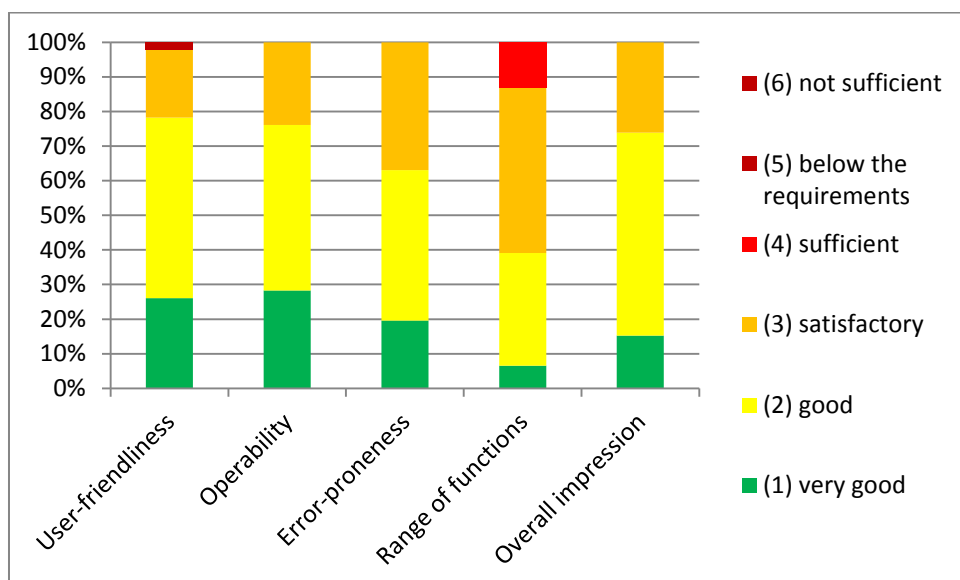
[Amplification of the database] What kind of active collaboration in Mydosis could you imagine? (1: I cannot imagine at all, 5: I can absolutely imagine)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	16	30.2	34.0	34.0
	2	11	20.8	23.4	57.4
	3	9	17.0	19.1	76.6
	4	7	13.2	14.9	91.5
	5	4	7.5	8.5	100.0
	Total	47	88.7	100.0	
Missing	System	6	11.3		
	Total	53	100.0		

[Discussion in the forum concerning agents] What kind of active collaboration in Mydosis could you imagine? (1: I cannot imagine at all, 5: I can absolutely imagine)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	10	18.9	21.3	21.3
	2	10	18.9	21.3	42.6
	3	17	32.1	36.2	78.7
	4	7	13.2	14.9	93.6
	5	3	5.7	6.4	100.0
	Total	47	88.7	100.0	
Missing	System	6	11.3		
	Total	53	100.0		

[Participation in the validation process] What kind of active collaboration in Mydosis could you imagine? (1: I cannot imagine at all, 5: I can absolutely imagine)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	20	37.7	42.6	42.6
	2	8	15.1	17.0	59.6
	3	10	18.9	21.3	80.9
	4	4	7.5	8.5	89.4
	5	5	9.4	10.6	100.0
	Total	47	88.7	100.0	
Missing	System	6	11.3		
	Total	53	100.0		

What kind of active collaboration in Mydosis could you imagine? (1: I cannot imagine at all, 5: I can absolutely imagine)

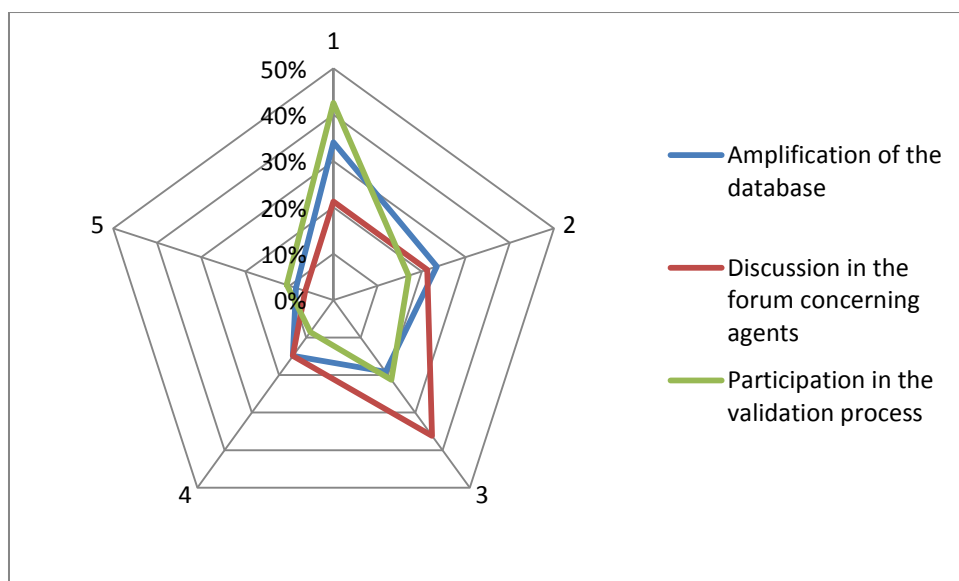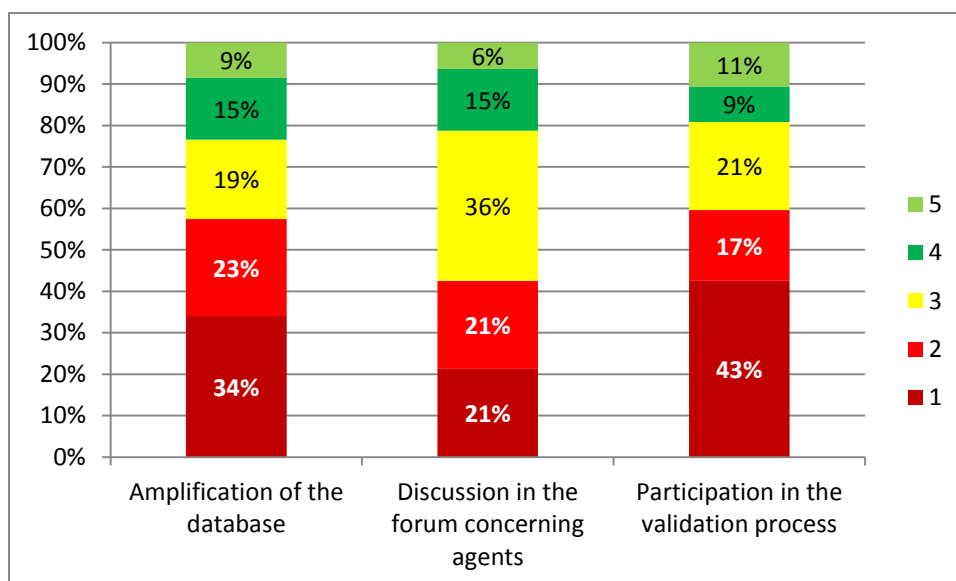|	Amplification of the database	Discussion in the forum concerning agents	Participation in the validation process
1	34%	21%	43%
2	23%	21%	17%
3	19%	36%	21%
4	15%	15%	9%
5	9%	6%	11%

Have you ever clicked on the 'edit' button?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	3	5.7	6.4	6.4
	No	44	83.0	93.6	100.0
	Total	47	88.7	100.0	
Missing	System	6	11.3		
	Total	53	100.0		

Have you ever clicked on the 'edit' button?
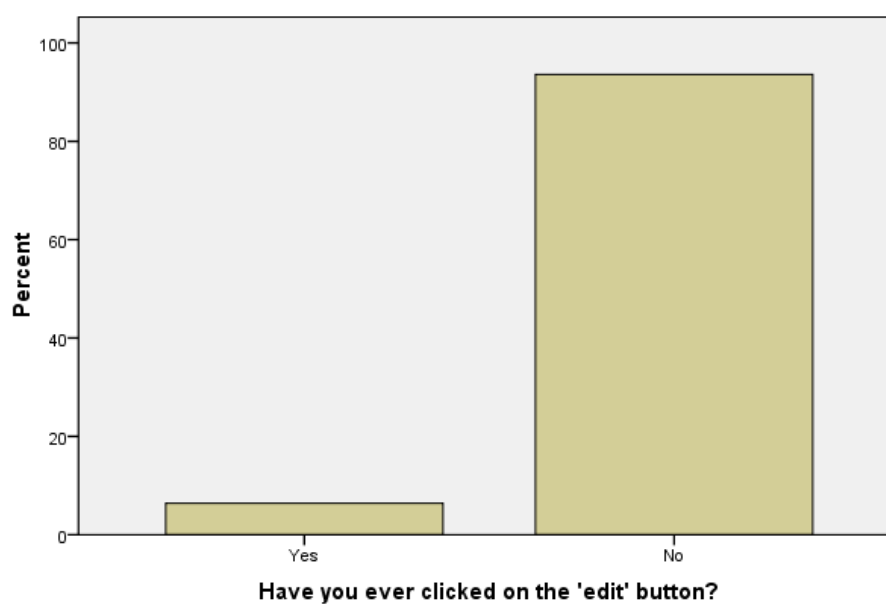
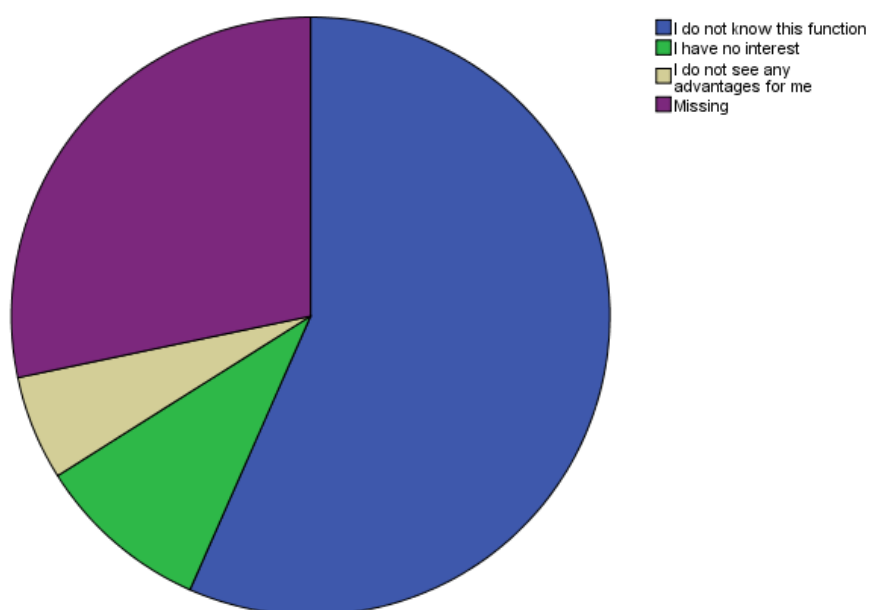Have you ever clicked on the 'edit' button?

What is the reason why you have never clicked on the 'edit' button?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	I do not know this function	30	56.6	78.9	78.9
	I have no interest	5	9.4	13.2	92.1
	I do not see any advantages for me	3	5.7	7.9	100.0
	Total	38	71.7	100.0	
Missing	System	15	28.3		
	Total	53	100.0		

What is the reason why you have never clicked on the 'edit' button?

[Other] What is the reason why you have never clicked on the 'edit' button?

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	48	90.6	90.6	90.6
I am no expert for that	1	1.9	1.9	92.5
I am no expert in this field	1	1.9	1.9	94.3
Never needed yet	1	1.9	1.9	96.2
No necessity yet	1	1.9	1.9	98.1
not got around to doing that	1	1.9	1.9	100.0
Total	53	100.0	100.0	

Please describe what you like / do not like with Mydosis or what could be improved

- very good: always there as app, can check thing rapidly....- coverage could be improved (should be comparable to Neofax)- within the app there should be the possibility to add own comments in order to note house-specific characteristics
- Amendment with analgesics (although no intensively typical medicaments, but useful in emergency service), perhaps for the future, but should include a pharmacological interactions app (e.g. EPha.ch interactions from Switzerland) as amendment or add-on
- Amplification of the agents necessary, in this case I would use it more frequently
- As a paramedic I use the program to get more information about medicaments of the patients. An amplification of the medicaments in paramedic medicine would be sensible.
- as smartphone app ubiquitous access. regular updates and add-ons desirable.
- Particularly the app is very useful, I have the feeling there is nothing equivalent for Android. Yet, the quantity of medicaments is too low. And a calculator for infusions would be great (enter KG, output how much per hour, etc.).But a big thank you that you offer such a thing at all!!!
- Greater database
- Everything important is described shortly.
- Few medicaments in the list
- good program. If possible amplification of the available medicaments.
- I am satisfied with the app, sometimes some medicaments are missing
- I have not seen such an app until now. It is practical and gives you more safety in the treatment of children, particularly if you are not a pediatrician!
- i like that it is free of charge and still comprehensive. keep on going this way !!
- I would like to use Mydosis on a Nokia C7. Therefore, question about smartphone use responded partly only.
- iOS-Version of the smartphone app.
- More specific medicaments for certain specialist departments (oncology, cardiology)(Perfan, Nipruss)! Good operability, good information!

- Good usability, good information!
- Partly erroneous dosage which are not in accordance with the given literature
- Please apk2sd!!