ROTTERDAM SCHOOL OF MANAGEMENT
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Care for Social Media

Can Twitter help hospitals to build and retain a positive hospital image?

Master Thesis
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Master Marketing Management
Master Management of Innovation
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Disclaimer
The author declares that the text and work presented in this Master thesis is original and that no sources other than those mentioned in the text and its references have been used in creating the Master thesis.

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Jorien Koning
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Executive Summary

In today's Dutch healthcare environment, which is characterised by the transformation into a free market and the trend of patient empowerment, patients have become active participants in the decision making process for a health care institution. Hospital image and reputation are important instruments for healthcare marketers to develop effective marketing strategies that should ensure the flow of patients and hence a hospital's long term survival. Given that many people have incorporated social media into their daily life's, more and more hospitals have included social media in their marketing and communication mix, nevertheless only limited scientific research have been carried on the topic of social media in a healthcare environment. This study examines the goals and applications of social media in a health care environment, additionally the effects of different social media strategies are researched.

To explore the different goals and applications of social media, various industry experts (both consultants as well as professionals employed by hospitals) were interviewed. Study results confirm the in the literature identified social media applications: customer service, service recovery, patient education, public relations, crisis communications, recruitment tool and brand monitoring. Additionally three new goals were identified, namely the use of Twitter as a research tool, to create traffic to the website/increase search optimisation and finally for internal purposes.

To explore the effects of different social media strategies, a survey was spread amongst the followers of Twitter accounts of five hospitals which carry out different social media strategies. With regard to the communication mode (one-way versus two-way), which is perceived as the most determining factor of a social media strategy, the results of the survey show that patients and other followers do not prefer engaging in a dialogue over a merely sending information. Nevertheless, almost all interviewees perceive a two-way communication mode as better in comparison to merely sending information. Additionally the results show that employees of a hospital form a substantial part of the followers of the hospital Twitter accounts, however in general this group is currently neglected by the hospitals.

At last this study provides several recommendations that can be used by marketing and communication professionals during the implementation of social media. The findings of this study show that continuity of the social media channel, at all times, is essential for successful online communications. One of the most important recommendations is that by means of training of employees together with the establishment of contingency plans the largest risk of social media, that is reputational damage, can be overcome.

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1. Introduction

- Just came back from @Rijnstate hospital.
Last night my dad was urgently admitted, does not go well, hope everything will be fine. Compliments for the good care' -

- 'Hope your father gets well soon'-

On their blogs general practitioners provide a glimpse into their daily practice, patients with a specific disease or disorder find each other in online communities and hence are able to share experiences, furthermore Facebook is used by patients and relatives to share both their sorrow and joy. Social media has become an integral part of our daily life and also healthcare institutions are starting to embrace social media as part of their marketing and communication strategy.

Social media in the health care environment can be broadly classified into two categories, namely the medical content angle and the communication angle. Initiatives such as online self tests and online rehab or dieting programs are medical related. Secondly, social media is used as part of a marketing and communication strategy. Using Facebook, Hyves and Twitter as tools to inform and engage patients, hospitals aim to satisfy their (future) patients and to boost their brand. In the light of changing market conditions, satisfying the needs of (future) patients is more than ever important. In 2005 the Dutch Government started to transform the regulated sector into a free market with economic competitiveness. Additionally, today's patients are more knowledgeable than those in the past, amongst others by the widely information available on the internet.

Given the changed market conditions, hospitals are required to execute market-oriented activities in order to survive and prosper. Besides the more traditional offline marketing communication channels, such as newspapers and brochures, hospitals have found their ways to the online marketing channels. Despite the fact that social media in general and twitter in particular is increasingly implemented by Dutch hospitals, only limited research has been conducted on the use and effects of social media in a health care environment. Therefore, the general objective of this study is to enlarge the knowledge on the different goals and applications of social media. Additionally, zooming in a one social media application, namely Twitter, this study examines the use of different social media strategies, such as the implementation of diverse communication modes (one-way versus two-way). The central research question in this study is: '*Can Twitter help hospitals to build and retain a positive hospital image and reputation?*'

2. Hospital Choice Factors

2.1. Overview of Important Factors and Attributes

During the summer of 2012 several newspapers headline: "*Patients want to choose their own doctor and hospital*" (www.zkn.nl, 2012). Research commissioned by the Dutch Federation of Independent Clinics (ZKN) shows that 90% of the Dutch patients desires to be able to choose their doctor, clinic or hospital. Against the background of patients becoming active participants in the decision making process, it is important for marketers to understand which factors influence the consumer decision making process when selecting a health care provider. According to Javalgi et al (1991) '*a key aspect of success in health care marketing is the ability to develop market-driven strategies based on consumer choice behaviour*'. Below an overview of the extensive literature on hospital choice factors is provided.

Whereas the Dutch health care environment is currently transforming into a free market with economic competitiveness, the US health care market has been market driven since the 1970s. Market driven health care implies more competition and hence increased customer power. The fact that customer choice became a determining market force, spurred research on the topic of hospital choice factors first in the US and later in other countries. (Berkowitz and Flexner, 1981) (Akinci et al, 2004) Simultaneously with the introduction of managed care, hospital marketing also started to become a popular topic in the Netherlands. The Dutch scientific literature, supported by grants of the Netherlands Organisation for Health Research and Development (i.e. ZonMW), recently started to devote attention to the topic of consumer choice in health care services. (Dijs-Elsinga et al, 2010)

One of the first studies on the topic of hospitals choice was carried out by Berkowitz and Flexner (1981). Recognizing that patients could '*shop*' among hospitals and could make comparisons between health care providers, they identified four factors that were found to be important for consumers, namely *quality of care*, *cleanliness of physical facilities*, *attitudes and behaviours of hospital staff*, and finally *reputation and image of the hospital* (Berkowitz & Flexner, 1981). Following this initial research, several studies have been carried out on hospital choice behaviour. In their review of the key findings during the 1980's, Lane and Liquist (1988) labelled the various factors into seven relevant overarching themes. For example the topic '*Care'* covered several components such as the quality of care and the assortment of care (different medial specialisms). The other overarching categories they defined were: *Staff, Physical Facilities, Clientele, Experience, Convenience, and Institutional.* The last mentioned category, *'Institutional',* includes the overall reputation of the hospital. The categorisation defined by Lane and Liquist (1988) summarised the literature up till then, it clearly illustrates the complex process of patient's decision making in selecting a hospital.

Table 1 provides an overview of the key findings of studies on hospital choice factors, also including studies that are carried out recently. When comparing the research findings it is important to take into account the different research methodologies used. For example, when examining hospital choice criteria Boscarino and Steiber (1982) distinguish several service functions of the hospital: general care, specialised care and emergency care. On the other side the study of Moser et al (2010) focuses on patient's decision making process in selecting a hospital for one specific treatment, i.e. elective orthopaedic surgery. An additional essential difference in methodology in studies is the samples used. Whereas earlier studies used samples based on geographic area, later studies used samples consisting of current -, future - or ex-patients. When studies are conducted amongst a general population in a given area, it is not clear to what extent the respondents have health care needs and consequently to what extent the results reveal people's genuine thoughts when choosing a healthcare provider (Oranje, 2011). Regardless of the fact that the research findings should be

compared with caution, the varying outcomes provide us with a good glimpse of factors and attributes that are important in consumers' choice in health care provider.

	Boscarino et al (1982)	**Javalgi et al (1991)**	**Akinci et al (2004)**	**NZA* (2007)**	**Moser et al (2010)**	**Dijs-Elsinga et al (2010)**
1	Nearest to home/convenience	Located near home (convenience)	Closeness to home/ accessibility	Quality of Care	General practitioner's advice	***Good reputation***
2	Doctor Use/ Recommends	Presence of Specialist Doctors	Physical appearance (cleanliness)	Presence specialist care/ specialists	Proximity	Hospital's friendly atmosphere
3	Specialist doctors	***Reputation***	Technological capabilities	***Reputation of health care provider***	Previous experience with the hospital	Previous experience
4	Best Equipment or technology	Modern Equipment / technology	***Hospital Image***	Waiting times	Familiarity with the hospital	Opinion general practitioner
5	Quality of facility	Courtesy of employees	Access to government sponsored health program		***Reputation and quality of specialists***	
6	Know or like hospital staff	Cost of Care			Aftercare	
7	Past experience with hospital staff	Doctor's recommendation			Waiting time	
8	Less expensive	Friend's/Relative's recommendation				
9	Size	Type of Hospital				
10	Religious affiliation					

* NZA) Netherlands Authority for Healthcare

Table 1) Overview of Key Findings on Hospital Choice Factors

According to Boscarino and Steiber (1982) the most important hospital choice factor is convenience, according to them patients would choose the hospital located the nearest their home. Also in the study of Javalgi (1991) the criterion "located near home/convenience" was found to be the most important hospital choice factor. Several other hospitals are reflected in both studies such as equipment and technology available, the presence of specialist doctors and the availability of modern technology or equipment. Interestingly advice provided by the general practitioner (GP) was found to have way lesser influence on patients' choice in the study of Javalgi (1991) compared to the research of Boscarino and Steiber (1982). However, several other studies (Leister et al, 2007; Berendsen et al, 2010) confirm the importance of the GP's advice in patient's choice for a health care provider. Berendsen et al. (2010) found that 81% of the Dutch respondents indicated the advice provided by the GP as important; moreover the GP's decided for 33% of the respondents the hospital they would go to.

In line with the findings of Berkowitz and Flexner (1981), *hospital reputation* was found to be imperative during consumer decision making process in several studies (Javalgi et al, 1991; NZA, 2007). According to Javalgi et al (1992) *´it is important for hospital managers to discern what perception potential customers have of their hospital's reputation and the products and services offered'.* In order to create positive perceptions in consumers' mind a health care marketer can use several elements of the marketing mix. A hospitals marketing

mix entails courteous employees and specialist doctors (*product/service dimension)*, the cost of care (*pricing strategy*), location (*delivery of products/service)* and finally recommendations of doctors and relatives (*promotion strategy).* (Javalgi, 1991)

Following on the numerous American findings, Akinci et al (2004) carried out a study in Turkey in order to test the robustness of the earlier found indicators for hospital choice. Akinci et al. (2004) conclude that accessibility of hospital services is by far the most important factor in hospital choice. Besides proximity, also the earlier in the literature identified factors *physical appearance, existing technology* and *hospital image & reputation* are of importance in hospital choice by Turkish patients. Although there are several differences between the health care systems of the US and Turkey, the findings are corresponding, which implies the robustness of earlier studies. Hence, the earlier findings on hospital choice factors can be transferred to the Dutch health care environment as well.

2.2 Choice Factors in a Changing Healthcare Environment

As said before, understanding the factors influencing consumer's choice for a hospital enable health care professionals to formulate effective retention and expansion hospital marketing strategies. (Akinci et al, 2004) This need to develop marketing activities is fuelled by the development of the marketing driven health care system. Coherent with the increasing competition among health care providers, several changes have been observed in the healthcare environment: '*Consumers are becoming more selective and are using health-related information to make informed choices'* (Tengilimoglu, 2008). In line with this Akinci et al (2004) state that patients have become better informed and more accountable consumers of healthcare. Additionally Akinci et al (2004) affirm that patients have become '*more active participants in decisions regarding treatment processes and in choosing their healthcare providers'*. A related concept in the literature often referred to is '*patient empowerment*', meaning that '*the asymmetrical distribution of power between the doctor and the patient has become more symmetrical'* (Wolinsky, 1988). Empowered patients take control over their own health (disease management), additionally due to their enhanced knowledge they would like to be considered as full discussions partners in the communication with health care professionals.

This development of patient empowerment is spurred by internet and the wealth of information that can be found online. In the Netherlands, 84% of the care recipients visit online Dr. Google before they visit their own doctor (Engelen, 2011). Although several studies found that general practitioners still play an important role in the decisions regarding treatment processes (Moser, 2010; Dijs-Elsinga, 2010) patients more and more become active participants in choosing their health care providers.

In sum, against the background of the changed healthcare environment, it is essential for a hospital's long term survival that healthcare marketers gain insights on hospital choice behaviour to be able to prepare successful marketing programs.

2.3 Overcoming 'Fixed' Hospital Choice Factors

As from table 1 can be read, numerous factors influence the choice for a given health care provider. Some of the described hospital choice factors are 'fixed' and hence not easily changeable. For instance the location of the hospital, which is related to the highly valued factor 'closeness of the hospital' can be taken into consideration only once; namely when selecting the site of the hospital. Once established, the hospital can improve the (perceived) proximity of the hospital services merely by focusing on improvement of infrastructure, public transport and parking facilities.

Contrary to 'fixed' hospital choice factors other aspects, such as attitudes and behaviours of hospital personnel, are more controllable and hence play an important role in the marketing programs. By concentrating on these manageable areas, that are as well valued as highly important by patients, health care managers are able to execute effective marketing strategies. While recognizing that some hospital choice factors cannot be changed easily, Javalgi et al (1991) draw attention to the opportunities that can overcome patients' emphasis on location or convenience: '*What can be done is to create a positive image in the minds of consumers about characteristics that are unique to the particular institution or that give it an outstanding reputation in contrast to its competitors.*'

As can be seen from table 1, reputation and hospital image are recurring hospital choice factors. Important to mention is that other hospital choice factors, such as modern equipment can influence the perceived hospital image (Akinci et al, 2004). The relation between the hospital choice factor hospital image and other hospital choice factors is clarified in the following example. Additionally the example illustrates how a hospital could respond effectively to customer needs. The study of Akinci et al (2004) reveals that particularly for specialised hospitals it is important to employ specialist doctors. This can be accomplished throughout the recruitment of highly qualified specialists. However, merely attracting specialists is not sufficient; the presence of reputable doctors should be made known amongst consumers in order to influence how their hospital is perceived. Functions such as public relations, communication and marketing can be actively deployed to develop or strengthen a hospital image. The study of Tengilimoglu et al (2007) demonstrates that public relations activities can be important in maximizing hospital choice factors, including the aforementioned hospital choice factor 'availability of highly regarded doctors'. The concept hospital image is discussed in more detail in the following chapter.

3. Hospital Image and Reputation

As mentioned in the previous section, hospital image and reputation are important hospital choice factors recurring in several studies. (Javalgi et al, 1991; Akinci et al, 2004; NZA, 2007) In contrast to other less controllable factors, hospital image and reputation are excellent opportunity to differentiate the hospital from competing health care institutions.

Reviewing existing literature confirms that the concepts of 'image' in general and 'hospital image' in particular are subject to many interpretations (Mazursky and Jacoby, 1986). The definition of image as formulated by Kotler & Clarke' (1987, p.62) is widely used, they describe image as '*the sum of beliefs, ideas and impressions that a person holds of an object*'.

3.1. Functions of hospital image

Peltekoglu (1998, p.279) distinguishes two main functions of the corporate image, namely '*creating and maintaining persuasiveness and reliability for both internal and external target audiences*'. Elbeik (1986), author of one of the first studies on hospital image, earlier found that hospital image can contribute to several purposes related to diverse target audiences. If well managed, hospital image can contribute to both patient satisfaction, as well as to improved quality of working of employees and to community support. However several other studies focusing on hospital choice factors (Tengilimoglu, 2007), predominantly highlight the use of hospital image to influence the consumers decision making process for a health care provider as.

3.2. Construction of hospital image

An important characteristic of hospital image is that it is not created by the organisation, though the image is formed by the public opinion. Obviously a hospital can aim to create their supposed ideal image in the stakeholders' minds; however the final hospital image is formed by the stakeholder and hence not necessarily corresponding with the image hospitals pursue. Furthermore, according to Javalgi et al (1992) the hospital image is not absolute nor does it stand alone, opposing the image is relative to the images of other hospitals.

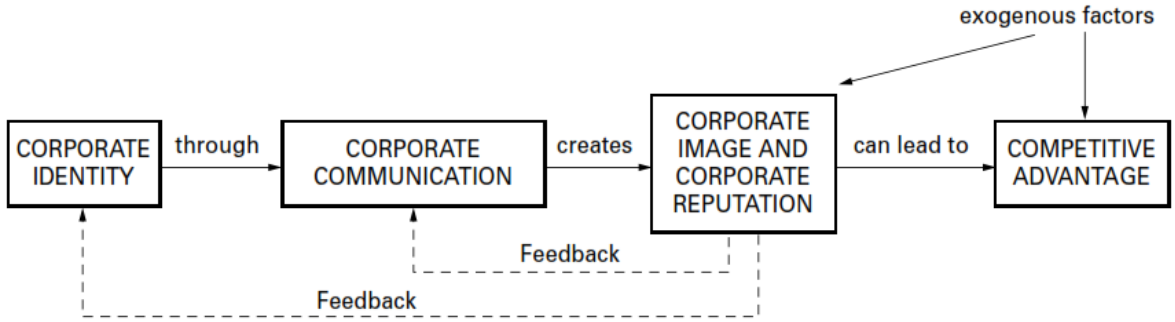
According to Javalgi (1992) health care consumers form their hospital image based on the impressions they have of the strengths and weaknesses of the hospital's offerings. These impressions are formed based on past experiences, word-of-mouth and marketing communications (Javalgi, 1992). Akinci et al. (2004) explain the formation of hospital image based on the definition formulated by Peltekoglu. (1998, p.279). They labelled corporate image as the sum of the following three aspects: corporate design, corporate communications and corporate behaviour.

Reviewing the current literature shows that there are several features and attributes used by consumers to base their hospital image on. '*Measuring hospital image poses problems because of the number and complexity of the health care products and services upon which "the image" is based* (Javalgi, 1992). Researching the public's criteria used to describe an ideal hospital's image, Elbeck (1986) found that 'Staff Integrity and Communication' was the most central factor determining a consumer's hospital image, followed by patient assistance and patient convenience. However Javalgi et al (1992) use several other features of hospitals in their research on hospital image, such as 'heart disease prevention and treatment' and 'advanced technological equipment'. Notable is that advanced technologies was also found to be an important hospital choice factor. Aforementioned demonstrates that some identified *hospital choice factors* are also used as determining factors of the *hospital image*, which is by many studies identified as a hospital choice factor itself. In sum, the concept of 'hospital image' is complex because several authors use the constructs *hospital image* and *hospital choice factors*, and also the coherence between the two, differently.

3.3. Management Literature on Image and Reputation

Although hospital image and reputation are repeatedly indentified as hospital choice factors, the literature is centred on the concept of image, hence management literature is used to explain the difference between image and reputation. Gray and Balmer (1998) distinguish corporate identity and communication as elementary building blocks in the process of managing corporate image and reputation. According to the authors, successfully managing corporate image and corporate reputation can lead to a competitive advantage, although exogenous factors may have an impact on the outcome of the process. In the figure below the model is graphically presented. The different components are explained below in further detail, moreover they are applied to the case of hospital images.

Figure 1) Operational Model for managing corporate reputation and image (Gray & Balmer, 1988)



'Corporate identity is the reality of the corporation' (Gray & Balmer, 1998). The interaction of the company's business strategy, the philosophy of its key executives, its corporate culture and its organisational design determines the 'corporate brand' or in other words the corporate identity.

Whereas the company image is an immediate mental picture held by the audience that can be developed relatively rapidly through communication programs, corporate reputation is developed and evolved over the years. The ultimate goal of managing the corporate reputation and image is to develop a competitive advantage. According to Gray and Balmer (1998) this can be realised by creating the so-called 'intended image' and a favourable reputation in the minds of the company's target stakeholders.

Corporate communication includes both official (press releases, company statements) and informal messages (word of mouth) that communicates the corporate identity to the different stakeholders of the company. Corporate communication forms the link between the company's corporate identity and the corporate image and reputation (Gray & Balmer, 1998).

3.4. Corporate Image and Reputation applied to hospitals

A good example of a hospital actively carrying out their corporate image is the RHM Hospital in Virginia. All different communication sources are aligned with the 'intended' corporate identity of being a 'green hospital'. For example the blue-and-green corporate icon, representing sky, earth and mountains, aims to communicate the hospital's commitment to being environmentally friendly. Furthermore the corporate building was designed so that it does the least possible harm to the environment, for example parking lot lighting was installed in order to reduce light pollution. Also formal statements, such as the tag line 'get well, live well', aim to emphasize nature and sustainability. All the aforementioned corporate communications aim to construct the 'green' corporate image and foster the reputation of a social responsible institution, eventually leading to a competitive advantage (www.rmhonline.com, 2012).

Also Dutch health care professionals pay attention to the corporate image, reputation and hence to the positioning of the hospital. Independent research on the topic of communication and marketing within

hospitals, executed by the European Institute for Brand Management (2011), showed that respectively 91% of the employees and 71% of the patients perceive the identity of the hospital as relevant. Of the surveyed communication professionals 82% believes that the corporate identity of the hospital provides a starting point to position the hospital in the market. Most commonly a hospital distinguishes itself from the competition by making explicit choices in medical specialties; such as the Erasmus MC-Sophia which differentiates itself by their specialisation on child care. However, according to communication professionals focusing on one or a few medical specialisms is not the only way to position a hospital in the market. 76% of the respondents sees other opportunities to create a distinctive market position, however the other ways are not specified in the research.

4. Social Media

This chapter provides a brief overview of the rise of social media and the different applications that are currently integrated into the daily lives of millions of people. Twitter, the social medium of interest in this research, is highlighted at the end of this chapter.

4.1 Social Media

Perhaps contrary to expectation, however the first social media site already existed in 1979 when Usenet was created by two graduate students of the Duke University. By means of Usenet users were able to read and post messages to so-called newsgroups. However, the first social media applications as we understand it today date from 20 years later, when the blogging website 'Open Diary' was launched in 1998. (Kaplan and Haenlein, 2009) The online diary community provided a platform for online diary writers, additionally the site provided readers the ability to post comments on others' diary entries (www.opendiary.com, 2012). The development of other social media applications and the popularity of these initiatives were fuelled by the growing availability of high-speed Internet access.

Whereas some authors (Constantinides et al, 2008) use the terms Web 2.0, and Social Media interchangeably, Kaplan and Haenlein (2009) argue that to define Social Media a clear distinction should be made between Social Media and other related concepts, such as User Generated Content and Web 2.0. Reviewing the existing scientific literature on the topic of social media, the work of Kaplan and Haenlein (2009) is with more than 750 citations the most referred to article, indicating that their findings and formulated definitions are widely accepted. "Web 2.0", a term introduced by Tim O'Reilly (2005), refers to the development of the Internet into an interactive medium. Whereas the internet up till then ("Web 1.0") was formed by websites that could only be viewed passively by users, Web 2.0 websites allowed users to interact and create content themselves. Kaplan and Haenlein (2009) consider Web 2.0 '*as the platform for the evolution of social media*'. User Generated Content can be seen as the '*the sum of all ways in which people make use of Social Media*'.(Kaplan and Haenlein, 2009) According to the Organisation for Economic Cooperation and Development (Vickery & Wunsch-Vincent S, 2007), content must meet three conditions before it is classified as user generated content, namely (1) published either on publicly accessible website or on a social networking site, (2) needs to show a certain amount of creative effort (excluding reproduction) and (3) it should have been created without professional routines and practices (excluding commercial content). Having clearly distinguished the associated concepts, Kaplan en Heanlein (2009) define Social Media as: *'a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content.'*

Social Media are used both for personal and professional purposes: Staying informed about relatives, following news (for example in their field of work), networking, searching for information and having fun. (Dekkers, 2011) In their scientific research on people's motives to use Twitter, Java et al (2007) found that *'people use microblogging to talk about their daily activities and to seek or share information'.*

Reviewing the influence of social media on the marketing environment, Mangold & Faulds (2009) argue that social media have become an important element of the promotion mix. Firstly social media can be used by companies to talk to their customers, additionally social media enabled customers to talk to each other. For this reason, social media is often associated with the term electronic word of mouth (eWOM), defined as 'a*ny positive or negative statement made by potential, actual, or former customers about a product or company, which is made available to a multitude of people and institutions via the Internet.'* (Hennig-Thurau et al, 2004). Examples of eWOM are reviews, referrals, but also complaints or praises expressed in social networking sites.

According to Constantinides et al (2008) these user generated content, is becoming increasingly important in the consumer's decision making process.

4.2 Categories of social media

Given the wide variety of social media applications, both academic literature (Kaplan & Haenlein, 2009; Boyd & Ellison, 2008) as well as marketing and communication professionals (www.frankwatching.com; Dekkers, 2011; Timmer & De Vries, 2012) use several classifications to distinguish the applications into various categories: Social networking, blogging, multimedia sharing, collaboration, communities, location based and virtual worlds. Below the categories are exemplified:

4.2.A) Social Networking

According to Boyd & Ellison (2008) a web-based service is defined as a social network site when it enables people to *'(1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system'.* In line with this Kaplan & Heanlein (2009) explain social networking sites as functions to interconnect with other users by inviting them to have access to their personal pages. Various examples of this widely used social media category are Facebook, Hyves (Dutch) and LinkedIn. As the definition already indicates, social networking sites are according Timmer & De Vries (2012) centred on forming new and maintaining existing relationships. However, Boyd & Ellison (2008) emphasize that users are mainly communicating with existing (offline) relations, rather than looking for new connections.

To provide an indication of the order of magnitude of the still growing social networking sites: Facebook is used by 955 million users worldwide. Zooming in on the Netherlands, there are currently over 7 million Facebook users, of which 4,3 million users log in on a daily basis. (www.marketingfacts.nl, 2012)

4.2.B) Blogging

Weblogs, often abbreviated to blogs, are defined by the Organisation for Economic Co-operation and Development (OECD) as '*special types of websites that usually display date-stamped entries in reverse chronological order*' (Vickery & Wunsch-Vincent S, 2007). Blogs, such as WordPress (www.wordpress.com, 2012), enable people to share their story or opinion on every thinkable topic. Although usually managed by an individual person, blogs are often interactive since readers are given the opportunity to leave comments. A variant on the normal weblogs are micro-blogging applications that allow users to send short posts of a maximum number of characters. The most famous micro blogging application, Twitter, is described in more detail at the end of this section.

4.2.C) Multimedia Sharing

The category 'multimedia sharing', also referred to as 'content community' by (Kaplan and Haenlein, 2009) is an umbrella term for all social media applications that enable people to share (user generated) media files with a large public. A subdivision can be made based on the type multimedia that is shared. Some applications, such as Flickr or Instagram, have been set up to share photo material, whereas YouTube' allows people to share videos. Other examples are Slideshare and Spotify, to share respectively presentations and music. According to the research 'Social Media in The Netherlands 2012' almost 7 million people use YouTube, of which 1 million on a daily basis. (www.marketingfacts.nl)

4.2.D) Collaboration

'*Collaborative projects enable the joint and simultaneous creation of content by many end-users and are, in this sense, probably the most democratic manifestation of user generated* content' (Kaplan and Haenlein,2009) The

most famous example of this category is the online encyclopaedia Wikipedia, which is compiled and rated by an active community.

4.2.E) Communities

Although not yet recognised as a separate group by Kaplan and Haenlein (2009), several social media practitioners (Dekkers, 2011; Timmer & De Vries, 2012) have defined the category 'Communities' to designate all social media sites and applications that focus on a given topic or theme. The most important difference between communities and social networking sites is that by the last mentioned, people's own profile and own experience are central, whereas within communities the topic or theme forms the focal point. People who join a community often have the same background or shared passion for the topic. Communities are formed for example around specific diseases or medical issues, in these communities patients can share experiences with each other.

4.2.F) Location Based

A relatively new category is called 'location based' and this includes all social media applications that allow users to share their current location, varying from their workplace to the bakery on the corner. People can 'check in' when they are at a given location and other people can reply by adding comments. Examples of location based applications are 'Facebook Places' and 'Foursquare'. While the application was originally was meant for fun, increasingly business starts to see the opportunities: Especially restaurants in the United States embraced the application by offering discounts to customers who are 'checking online in' to their place. (Dekkers, 2011; Timmer & De Vries, 2012)

4.2.G) Virtual Worlds

'Virtual worlds are platforms that replicate a three-dimensional environment in which users can appear in the form of personalised avatars and interact with each other as they would in real life' (Kaplan and Haenlein, 2009) According to Dekkers (2011) virtual worlds respond to the need for 'escapisms' or the need of people to escape from the real world by adopting another identity in the virtual world. Kaplan and Haenlein (2009) distinguish two types of virtual worlds, namely virtual *social* worlds such as "Second Life" and virtual *game* worlds as for instance "World of Warcraft".

4.3 Twitter

In this study social media in general and Twitter in particular are central. The choice to focus on Twitter is related to the adoption of this medium by Dutch hospital, which we will be described in more detail in the next section. Firstly Twitter is explained in more detail.

4.3.A) Defining Twitter

Twitter portrays itself as *'The fastest, simplest way to stay close to everything you care about'* (Twitter, 2012). Launched in 2006, the real time information network Twitter rapidly grow to currently over 500 million users worldwide (www.semiocast.com, 2012). As previously stated, Twitter falls into the social media category of micro blogging which enable users to share their current 'status' in short posts disseminated via instant messages, mobiles phones, email or the web. Comparing micro blogging applications with regular blogs, the fundamental difference is the faster mode of communication. The maximum length of a mini blog, called 'Tweets', amounts 140 characteristics, as a result the time and effort required to blog is minimised. Associated with the aforementioned, the second main difference involves the frequency of blogging. Whereas regular blogs are typically updated on a monthly or weekly basis, mini blogs such as Twitter enables users to post numerous tweets per day due to the ease of use caused by the reduced time and effort (Java et al, 2007).

Similar to other social media applications, users of Twitter are required to create a profile including a name and avatar. A characteristic of Twitter is that relations can be both reciprocated or one-way, implying that a Twitter user (A) can follow another user (B), not necessarily meaning that this person (B) follows back the updates posted by user A (Java et al, 2007). For example politicians and celebrities are followed by enormous numbers of followers, however these relations are often one-way. (www.twitaholic.com, 2012)

Users can post their tweets in public or in their personal network. By means of using hashtags (#) in tweets, Twitter users or 'tweeters' can indicate keywords or themes, hence tweets can be organised and are easily findable. The most popular topics or keywords indicated with a hashtag become so-called 'trending topics'. Using the at sign (@) users can direct a tweet to another Twitter user, hence a conversation can arise. Another utility of Twitter is the 'Retweet' (RT) function, which allows users to share a tweet posted by another user with their own community of followers. Besides the option to share tweets in public or with a bounded community, Twitter also allows users to send private messages by means of direct messages ('DM'). (www.Twitter.com, 2012)

In their study on reasons why people use Twitter (Java et al, 2007) found that most tweets are related to 'daily chatter' about every day practices and current doings. Additionally people use Twitter to communicate with each other, to share information (posting URLs) and to report or comment on news items. Some authors argue that Twitter should be seen more as a source of information, instead of a social network like Facebook. (Kwak et al, 2010)

4.3.B) Twitter as a marketing tool

An increasing number of companies embrace social media as a diverse marketing tool. Besides an additional communication channel to provide consumers with information or to advertise promotions, Twitter offers opportunities to support the creation of brand communities. (Muniz & Oguinn, 2001) Additionally Twitter is used by organisations to carry out market research and to offer customer support, as KLM does with their 24/7 service. (www.facebook.com/KLM, 2012)

As earlier referred to, social media are often associated with electronic word of mouth (eWOM). Zooming in on Twitter, Jansen et al (2009) found that Twitter '*affects brand awareness and brand image, hence managing brand perception in the microblogging world should be part of an overall proactive marketing strategy*'. Their study showed that 19% of all researched microblogs contained the mention of a brand, indicating that companies can receive either positive or negative brand exposure, depending on the sentiment of the message. In sum, as part of the marketing and communication mix, Twitter can add to the development and maintaining of brand relationship with customers. (Jansen et al, 2009)

5. Social media in the Healthcare Environment

As described in the previous sections, social media is integrated in many individuals' daily routines. Given that numerous patients are also social media users, the social media landscape is becoming more and more important in the health care environment. In this chapter the social media presence of health care institutions is illustrated. Moreover the different goals for implementing social media are discussed according to Bennett's best practices (2010) and research carried out by Keckley & Hoffman (2010) commissioned by the Deloitte Centre for Health Solutions.

5.1 Social media presence and adoption by hospitals

International research among European hospitals (Belt et al, 2012) shows that Dutch hospitals are frontrunners when it comes to the adoption of social media. According to the longitudinal study, 83% of the Dutch hospitals are present on LinkedIn compared to for example 3% of the German hospitals. Noteworthy is that although the Dutch health care institutions are seen as frontrunners, the research of Belt et al (2012) shows that the percentage of hospitals active on Facebook (15%), lags far behind in comparison with the high presence on Facebook among British hospital (93.1%). Nevertheless this finding is not in line with research carried findings of Kessels Van der Heijden (2011), who found 83 hospital Facebookpages of which 42% were actively managed. Moreover the results of Belt (2012) do not correspond with the numbers of the Social Media Monitor Healthcare (2011) which indicate that almost 50% is active on Facebook.

Concentrating on Twitter, the research of Belt et al (2012) shows that 56% of the hospitals is active on the microblogging medium. This research finding is in line with the list of 'Klout Scores' for Dutch hospitals, publicised by Van Boven (2012). The Klout Score is an indicator of the overall social media influence on a scale of 1 to 100 (www.klout.com, 2012). The list currently includes 71 hospitals, whereas the total number of Dutch hospitals is currently 126. Several researches affirm that Twitter is, together with LinkedIn, the most used social media channel by hospitals. (Messing, 2011; Bennett 2009; Engelen, 2011).

Analyzing the hospitals included in the Klout list (record of august 2012), the total number of sent tweets amounts 46.732. On average the hospital accounts gathered 617 followers, however active hospitals have collected thousands of followers. Noteworthy is that several hospitals have more than one Twitter account, generally an additional account is set up as a recruitment tool, which is discussed in more detail in the next section. According to Kessels and Van der Heyden (2011) hospitals have gathered almost three times more followers than the number accounts they follow themselves, this implies '*that hospitals have a greater missionary drive, rather than a drive to truly interact with Twitter users*'. Kessels and Van der Heyden (2011) also found that 32% of the active Twitter accounts owned by hospitals replies to tweets.

5.2 Social Media Implications and Applications in Healthcare

Social media can be used for a variety of goals. Bennett's (2009) subdivision is embraced by several authors (Eckler et al, 2010). According to Bennett (2009), web manager for the University of Maryland Medial System and a blogger on the topic of social network activity in healthcare, several implications of social media distinguished, namely *customer service, service recovery, community outreach, patient education, public relations, crisis communication, recruitment tool and brand monitoring.* Below the different implementations of Bennett (2009) are explained in more detail, supplemented with the applications as indentified by Keckley & Hoffman (2010) who researched the social networks in healthcare on behalf of Deloitte Center for Health Solutions and other literature on the topic of social media.

5.2.A) Customer service

Besides telephone and face-to-face contact, '*social media is an additional contact point for customers'* (Bennett, 2009*)*. According to Eckler et al. (2010) who applied Bennett's findings within hospitals to the practices of general practitioners, social media can facilitate, enhance and improve physician-patient communication. Eckler (2010) perceives a hospital blog also as a customer service, because by sharing stories, patients are able to find each other online. Examples of social media that deliver customer service are applications or websites or applications that provide information, match people with similar diagnosis, provide patients a tool to track their disease progress and share experiences with other patients in similar medical condition. (Keckley & Hoffman, 2010)

5.2.B) Service Recovery

Grönroos (1988) defined service recovery as '*the actions a service provider takes in response to service failure'*. The underlying foundation of service recovery is the thought that mistakes and failures are unavoidable, however by immediate action this does not necessary have to lead to dissatisfied consumers. Service recovery implies monitoring the negative word of mouth, providing a quick response with the aim of converting a negative impression into a positive one. In fact Hart et al (1990) state that by means of a good recovery, a company can even achieve a client to be more satisfied than he or she would have been in a normal situation. Social media allows organisations to take immediate action in case consumers are posting online negative remarks: *'A health care provider can anticipate by stepping in to help and to early resolve the problem'* (Bennett, 2009).

5.2.C) Community Outreach

Given that people in the physical community are on social networking sites, it is an opportunity to involve (future) patients or other involved persons in so-called 'community activities'. A good example of community outreach is involving stakeholders in the building plans of the health care institution at issue. By posting photo's about the progress of the building project and by writing regularly a blog on the latest news, the local community can be engaged. (Bennett, 2009)

5.2.D) Patient Education

According to Bennett (2009) social media forms a '*natural extension of efforts to reach & teach*'. Providing information on health topics can inform and educate patients. For example the Henry Ford Hospital (USA) uses Twitter to live-stream surgeries, called 'live surgical Twitter-casts', with the aim of educating doctors, medical students but also patients. Additionally the Henry Ford Hospital has set up online 'Question and Answer' sessions between patients and surgeons. Following American Hospitals, also Dutch hospitals found their ways to implement social media as an education tool. In January 2012 the first surgery could be followed live via Twitter (www.frankwatching.com, 2012 a), moreover several hospitals organize so called 'Twitter consultation hours' (www.jbz.nl; www.mmc.nl)

According to Eckler et al. (2008) '*providing education through social media extends the patient visit into the pre-, during-, post visit continuum, which can improve information flow and consistency of care, especially for illnesses that require long-term care'*. Moreover patients can get comfortable with a surgical or medical procedure in advance when they are provided with information through social media (Bennett, 2009). Eckler (2010) states that by means of online education, patients become more active in self-management or disease prevention. This is in line with the social media health care applications: 'Maintaining health and wellness', 'Disease management' and 'Personal Health Records' as defined by Keckley & Hoffman (2010).

5.2.E) Public Relations

Online social media is a channel to directly speak to (future) patients. Additionally it is great way to publicize the health care institution among journalists and reporters. Nowadays the media is using blogs, tweets and social networks as a source for their stories in the traditional media. A strong social media presence can thus lead to voluntary positive news stories. However, the downside is that not only positive, but also negative reports could be picked up by journalists. (Bennett, 2009)

5.2.F) Crisis Communications

The term crisis communications can be interpreted in different ways. Firstly a crisis situation can refer to a natural disaster, terrorism, or another situation occurring external to the hospital. During the California wild fires, inhabitants used the internet on their mobile phones in order to be informed about road closures, fire line status and other relevant information. According to Jim Rettew, chief communications officer of the American Red Cross, '*online communications are besides TV, radio and print, the fourth leg in table in any communication plan'* (2009).

Also hospitals can use social media to inform the community in crisis situations such as a natural disaster, explosion or closing of a facility. The Deloitte Center for Health Solutions point out s that a social network such as Twitter is also used to spread instructions to act, for instance in case of the H1N1 flu pandemic preparations (Keckley & Hoffman, 2011).

Secondly the expression crisis can also refer to an internal crisis. Applied to the case of hospitals examples can be a fatal incident, a MRSA outbreak or any other scandal that (potentially) can harm the reputation or image of the healthcare institution. Provided that communication in online social networks is largely out of control the hospital, social media can start and fuel such a crisis. False rumours, incorrect information and bad word of mouth are easily spread on Twitter and hence it is crucial for a health care institution to pre-emptively early step into the discussion to avoid (further) reputational damage. (Clark, 2012) '*Fast response via online social media such as Twitter allows a hospital to take control of the message and hereby keeping the community updated in real-time'* (Bennett, 2009).

5.2.G) Recruitment Tool

Given that social media is incorporated into the daily life of many people, social media provides a large database of candidates for the human resource department of a hospital. Especially the social media application LinkedIn provides an organisation with opportunities to recruit staff, given that this application is focused on people's professional network and business relations. (www.linkedin.com, 2012) However, also other social media could be implemented as recruitment tool, for example by communicating job opportunities, posting recruitment videos on YouTube or by leveraging the employer brand online on Facebook.

5.2.H) Brand Monitoring

'People are talking about you, what are they saying?' (Bennett, 2009). There are several reasons for a company to online monitor their brand, firstly monitoring is required to be able to deliver service recovery (see 5.2.B). However, brand monitoring can also be used to examine market needs and to keep an eye on the brand reputation. Additionally brand monitoring could be implemented to identify people in need of the service or product you are offering. (Ziegler, 2006; www.mashable.com, 2012).

According to Ziegler et al (2006) '*the ever-increasing growth of the Web as principal provider of news and opinions makes it impossible for individuals to manually spot and analyze all information of particular importance for global large-scale corporations.'* Hence several organisations are currently using brand monitoring tools. Murdough (2009) provided several categories of applications that could be used to evaluate a

brand in online social media: Enterprise listening platforms, text mining partners and site analytical solutions. Text mining partners support organisations to extract important topics, moreover they enable sentiment analysis or opinion mining, which indicate the attitude (positive or negative) of a consumer. Important to mention is that these automated processes are not 100% accurate.

5.3 Social Media Strategy

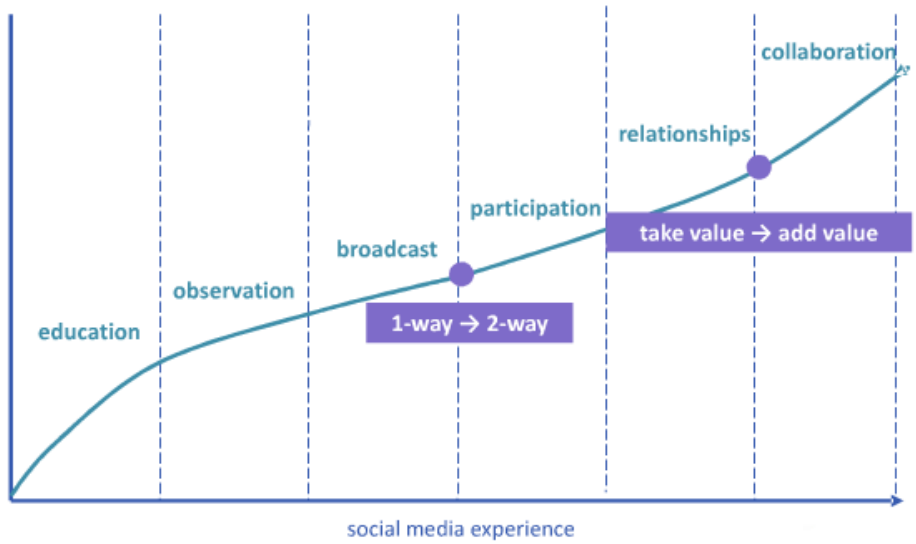
5.3.A) One-way versus Two-way communication

According to Kent & Taylor (1998) one of the advantages of Internet is that it allows a dialogue between an organisation and its public. In communication literature, two-way communication is related to concepts as conversation and dialogue (Duncan & Moriarty, 1998). Whereas traditional media such as TV, radio and newspaper are by nature one-sided, meaning that the message is send to the public without a response, social media channels facilitate interactivity. The fast growth of social media applications have spurred the opportunities for companies to engage in a dialogue with their followers, fans, (potential) customers and other stakeholders.

In their research on using new media tactics during crises situations, Perry et al (2003) confirmed of use of Internet sites as opportunities for two-way interactive communication. According to the authors an organisation could encourage a community to react on a certain matter. '*Feedback encourages dialogue and interaction between the organisation and its stakeholders, allowing an organisation to manage conflicts more effectively'.* Besides crises communication, two-way communication can for example also be applied to gather consumers' insights for new product development or to provide consumer support.

Important to mention is that the different types of communication mode should be seen as continuum; with no interactivity at all on end of the continuum and two-way communication on the other end. Between the two extremes, there exist several in between forms such as passively replying to message or actively setting up a discussion. So, although social media applications facilitate interconnectivity, organisations do not necessarily implement the media automatically as two-way communication channels. According to MixtMedia (2008) the chosen communication strategy is interrelated with the adoption of social media (see figure 2). Whereas the first two phases consist out of merely learning and observing, the organisation starts using the social media medium in the third phase. In this initial phase, organisations usually only broadcast information, hence implementing it as a 'traditional' medium. In the fourth phase, defined as 'participation' organisations embrace the two-way communication mode, resulting in dialogues. On top of conversation organisations aim to develop a relationship in the fifth phase. The end stage of the adoption curve is formed by 'collaboration', implying that in this stage the organisations work together (co-creation) with others to create more value. (MixtMedia, 2008).

Figure 2) Social Media Adoption Curve (MixtMedia, 2008)



Using the research findings on the adoption of social media among Dutch hospitals, a number of hospitals are still in the first two phases, whereas the majority is mainly broadcasting. Based on the research of Kessels and Van der Heyden (2011) almost 30% of the Dutch hospitals are in the phase of 'participation', based on their policy to reply to messages.

5.3.B) Structuring of multiple Twitter accounts

Several hospitals maintain more than one Twitter account. There are various principles that could be used as a starting point for structuring the Twitter accounts. Firstly, hospitals could organize different Twitter accounts based on market segmentation (Groenewoud, 2008). 'Heterogeneity in demand functions exists such that market demand can be disaggregated into segments with distinct demand functions' (Dickson & Ginter, 1987). Frank et al (1972) classified the segmentation bases into general and product-specific categories. General segmentation bases include cultural, geographic (location), demographic (sex, age) and socio-economic (income) variables. Also psychographic characteristics, referring to personality traits and life-style, fall into the category of general bases of segmentation. Secondly, Frank et al (1972) defined product specific variables for segmentation, such usage frequency of consumers and their (desired) preferences and benefits.

Besides market segmentation, the hospital can also use the internal organisation, namely the different departments, as the foundation for structuring the Twitter accounts. Firstly the different market segmentation opportunities applied to hospitals discussed, after that the use of the internal organisation is also exemplified.

B.1) Segmentation as bases for structuring Twitter accounts

Segmentation: Different Stakeholders…different Twitter accounts?

Looking at the floor pan of a random hospital, one could observe several entrances meant for all different individuals entering the hospital. The main entrance, usually recognised by a large logo, is used by all kind of visitors: Ranging from chronic patients to incidental care users and from visiting relatives to journalists, researchers and doctors. Besides the main entrance, there is separate entrance easily accessible for ambulances, meant for patients who are in need of acute help. Additionally a hospital often has an entrance

exclusively for employees, who can only enter using a tag or badge. The complexity of the several entrances to the hospital building is analogous to the complexity of all different stakeholders a health care institution has to manage.

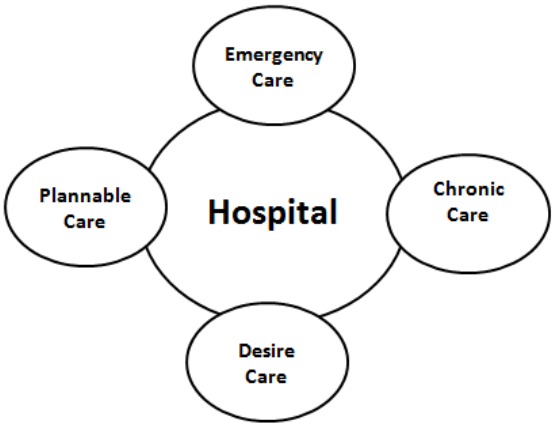
All aforementioned stakeholders have different interests: For example patients are interested in openings hours and accessibility of the hospital, while general practitioners or researchers might want to learn more about new treatment methods. Although some topics are of interest of several stakeholders, it is conceivable to make use of targeted marketing approaches.

Considering social media as part of the communication mix, the stakeholder segmentation can be transited to the social media strategy. Focusing on Twitter, the analogy of the hospitals' entrances is used to illustrate the possibilities for segmentation of Twitter accounts. When complete segmentation is applied, different Twitter accounts are created for each 'entrance' or stakeholder group. The main entrance of the hospital is corresponding with the corporate Twitter account. As said before an increasing number of hospital maintains several accounts besides their corporate account. The most common added account is related to human resources or recruitment, such as @WorkingatRijnstate (@WerkenbijRijnstate). The Erasmus Medical Center Rotterdam is an example of a hospital carrying out a detailed segmentation, besides @ErasmusMCjobs they have an account, @ErasmusMCnews (@ErasmusMCnieuws), through which they spread news updates and an account, @ErasmusMCPress (@ErasmusMCPress) via which the hospital posts tweets about press releases.

Segmentation: Different Patients… different Twitter accounts?

Zooming in on the stakeholder group of interest in this research, that of patients, they can be sub classified based on the care asked for (Lenderink, 2012). Using the framework of Frank et al (1972) the type of segmentation is based on the preferences and attributes of the consumers, which fall into the 'product specific' variables. Additionally also the 'frequency of use' plays an important role when segmenting consumers into for example chronic patients and incidental care users. Emphasizing the importance of external communication in order to convince patient to choose for a certain hospital over a concurrent hospital, Lenderink (2012) proposes a patient segmentation for marketing communications, see figure 3.

Figure 3) Patient Segment based on care asked for adapted from Lenderink (2002)



Whereas the segment of *emergency care* naturally is not suitable for marketing activities, a commercial strategy can be carried out for the three other formulated segments: *chronic care*, *plannable care* (for example knee surgery) and *desire care* (for example cosmetic surgery), given that that patients have the opportunity to look for information and verify whether the hospital offers what they wishes for.

Research (Groenewoud, 2008) indicates that factors such as education, illness and disease stage may affect the information and communication preferences of patients. Chronic patients often attach more value to communication about the patient orientation of a hospital, compared to the quality of medical treatments. For patients orientating on plannable care, the opposite is true. In the lights of these research findings it would possibly worthwhile to use different communications, and consequently different social media strategies, for different kind of patients.

B.2) Internal organisation as the bases for structuring Twitter accounts

Different Hospital Departments …different Twitter accounts?

With the aim of realizing a market-driven healthcare sector, the Dutch government's policy steers hospitals to the redistribution and concentration of care. One of the consequences of this policy is that hospitals attract larger number of patients for a given specialism, also from outside their traditional geographical service area. Given that geographical distance is becoming an inferior factor in the decision for a hospital, competition based on price and medical expertise is becoming more important.(Kraaij et al, 2012) According to Kraaij et al (2012) '*specialisation is a manner to coop with the trend of dispersion and concentration*'. Focusing their research on specialisation within a department (such as orthopaedics), they distinguish three types of specialisation: Specialisation based on (1) *efficiency*, based on (2) *focus areas* and (3) *categorical specialisation*. Kraaij et al (2012) exemplified the goal of '*specialisation based on focus areas'* as building medical expertise and reputation, given that these assets are hard to copy for competitors.

While Kraaij et al (2012) focus on specialisation *within* a specialism, Lenderink (2012) advocates specialisation of different specialism's separately: *'Only when departments can position itself independently, they are able to profile their unique selling points'* (Lenderink, 2012). According to Lenderink (2012) profiling per specialism is necessary given that the quality of specialism's can differ largely.

Transferring the above outlined Kraaij's findings to the topic of structuring the Twitter accounts, the focus areas of a complete hospital or a hospital department (such as cardiovascular diseases or urology) could be used as guidance for the communication and hence social media strategy. Specialisation of hospitals automatically influences their marketing and communication approach and hence their social media strategy. Examples of this kind of segmentation are @OncolgycentreMUMC (@OncologiecentrumMUMC) maintained by University Medical Centre of Maastricht and @RijnstateGynObs, a Twitter account kept by the Rijnstate hospital purely focusing on gynaecology and obstetrics.

Once decided to maintain several Twitter accounts either based on market segmentation or based on the internal organisation, the following dilemma arises: The same strategy can be replicated for several accounts, however also different strategies can be used for the different accounts. For example a Twitter account focusing on kids differs from a Twitter account intended for elderly.

5.3.C) Personal versus Corporate Accounts

Consistent with the segmentation based on specialisation of care, there is a Twitter account named: Neurologist Refaja Hospital, @Neurology Noord accompanied the following additional information in the username: Axel Portman, neurologist Refaja Hospital Stadskanaal. Besides the clearly link to the Refaja Hospital, the username also explicitly states the name and job position of the medical professional 'behind' the Twitter account. The choice to personalize the corporate Twitter account forms another element of the Twitter strategy.

One step further than mentioning the name of the person who is maintaining the social media channel is the development of 'blended' accounts. Blended accounts mean that employees maintain a account for private purposes, however also twitter work-related. A good example of this is Dokter Bertho (http://twitter.com/DokterBertho, 2012), a gynaecologist at UMC st. Radboud who tweets both on work related topics (news, research and experiences) as well as on private subject matter (such as politics). Many followers of the personal Twitter account maintained by the medical professional could result in positive effects such as brand awareness, publicity and even more (loyal) patients.

5.4. Risks of Social Media in Healthcare

The use of social media by both health care providers as well as (future) patients provides the health care sector several opportunities ranging from knowledge sharing to enhanced information services. On the other hand, the rise of social media also exposes the health care sector to new potential risks. The risks of social media can be illustrated from different perspectives, namely the patient, the health care institution (the hospital) and individual employees of the organisation.

The Royal Dutch Society of Advanced Medicine (KNMG), a federation that represents more than 53.000 doctors and students of medicine, promotes the use of E-health, including the use social media. With the aim of making social media a natural part of the health care sector, they published the 'Handbook Doctors and Social Media', that provides nine recommendations on the use of social media. In the meanwhile also health care organisations have developed policies for the use of social media by their employees (for example Rijnstate Hospital and UMC st. Radboud). Both guidelines will be discussed in more detail below.

5.4.A) Risks for patients

Social media provides (future) patients the opportunity to share very personal details online. It is the preference and the responsibility of the patient to decide on what information he or she is willing to share online, whether it is on a public site or in a private community. Accordingly, the privacy of patients is to begin with a consideration for the patient himself. By using direct messages on Facebook or Twitter the send messages are screened for a larger public, nevertheless the privacy of messages sent by patients cannot be guaranteed completely. Several hospitals' disclaimers caution patients that Twitter does not provide privacy protection, nor security against infringement by third parties'. (www.mmc.nl, 2011; www.jbz.nl, 2011)

Patients are in control of their own privacy by deciding what to share on internet and what not, however a patients' privacy is not completely in the hands of the patients. Patient's privacy can be violated by doctors or medical professionals disclosing too much detail about a patient's case, especially without the patient's consent. Guidelines, for both offline and online environments, prescribe that when discussing a patient's case with colleagues for example for the purpose of knowledge sharing, a doctor has to use anonymised data or the patient has granted permission to use his or her case. The patient in question can only consent after the doctor provided sufficient information, for instance about the exact information that will be used and to whom the information will be spread, however with social media it can be hard to define the exact receivers of the information. Important to mention is that in case a doctor violates the rules concerning privacy or confidentiality, he breaches professional secrecy and consequently runs the risks to receive a disciplinary complaint, a fine of the Data Protection (CBP), a civil claim for damages or even criminal prosecution. (KNMG, 2011)

The emerging online technologies and ubiquitous use of social media networking fuelled a debate among medical professionals on the topic of ethical implications of privacy invasion. (Grover, 2010; Ben-Yakov & Snider, 2011) The main issue is how doctors and physicians should integrate on-line content with the patient

relationship. Whereas one could argue that retrieving online information about a patient is objectionable, Ben-Yakov & Snider (2011) affirm, based on their own experience, that in some cases it is for the benefit of the well being of the patient, imaging cases when the patient is too ill to provide information, to consult online social networking sites.

Besides issues related to the privacy there is another important risk for patients: *Patients may misinterpret a physician's online comments and act upon them, which could be potentially harmful* (Eckler, 2010). While research by Eckler focused on physicians and GP practices, also information disseminated by healthcare organisations could lead to false impressions or misreading by patients. Acknowledging the aforementioned risk, the guideline recommends to do not provide individual medical advice in case of insufficient and/or unreliable medical information about the patient. Moreover the KNMG (2011) recommend informing patients, for example by a disclaimer, in advance about the possibility that individual recommendations are not possible, for example by means of a disclaimer. Some hospitals, especially the ones that facilitate a 'online consultation hour', have incorporated this in their disclaimer on Twitter. The purport of the terms, almost similar for several hospitals (MMC, JBZ, Amphia), is that an online Twitter consultation cannot be regarded as a substitution of a regular consultation, moreover hospitals emphasize that neither the hospital, nor the specialist can be held liable for the provided information when not completely accurate or complete. Finally, the hospitals that facilitate an online consultation hour explicitly mention that the use of information spread by Twitter is on the user's own risk. Obviously this hedges hospitals against any allegation or claims, nonetheless the question is what value patients would attach to the information spread via Twitter taking into considering the disclaimer. (www.jbz.nl/Publicaties/111277/Twitterspreekuur, 2011)

As mentioned earlier 84% of the Dutch care recipients, visit online Dr. Google before they visit their own doctor (Engelen, 2011). According to the chairman of the Doctors Federation, A.C. Nieuwenhuijzen Kruseman (2011), it is very common that a patient comes to a consultation hour already having established a diagnoses and an associated treatment plan with the help of social media. This is in line with the finding of Van der Heyden and Kessels (2011) that the current generation wants to search for the most optimal and high quality care themselves. For these kinds of care users the doctor is becoming more and more a kind of consultant, which is regarded as a second opinion in addition to their own judgment. The previous shows the importance of the accurate information spread online. A possible risk for patients is that they get lost in all information online available and *consequently cannot see the forest for the trees anymor*e (Nieuwenhuijzen Kruseman, 2011). According to Eckler (2010) patients might rely too much on social media to connect with their physicians and ignore traditional and more immediate channels of communication (eg, phone calls, visits).

5.4.B) Risks for Health care Institutions

As outlined in the previous chapter on the applications of social media, a hospital can take several advantages by implementing a social media strategy. An important mentioned advantage of social media is the positive buzz, or word of mouth, that is spread online about your product, service (treatment, waiting lines) or brand (hospital image). Obviously it is beneficial for a hospital's reputation when positive news is spread via online social media. However, the downside is that not only positive, but also negative reports are spread way faster on the internet compared with the traditional word of mouth. The negative experiences or stories of patients could lead to loss of reputation of the hospital image. For example consumers post unsolicited complaints about issues related to a hospital, such as delay of a consultation. In this case hospitals' actions are limited to service recovery (Bennett, 2009).

Given the increased importance of online word of mouth in marketing campaigns, organisations not only monitor and respond to online posts and discussions; they also actively start to encourage people to share their stories, experiences and opinions online. Likewise with unsolicited positive stories shared online, also solicited stories could be beneficial for the organisation reputation or image. Nevertheless, campaigns that actively broadcast messages via online social media or campaigns that actively ask for people's opinion can also

backfire the organisation. For example MacDonald's Twitter campaign called #MeetTheFarmers resulted in several negative experiences and opinions shared by Twitter users. Using promoted tweets, which mean that MacDonalds pays for letting the tweet appear on the Twitter homepage, the company wanted to share the pride of suppliers to be a partner of MacDonalds. One of the promoted tweets was: '*When u make something w/pride, people can taste it'*- McD potato supplier #McDStories. The hashtag used in the promotion tweet quickly begun to follow its own course when people used #McDStories to share their bad experiences such as: *Fingernail in my Big Mac once #McDStories*. The counterproductive campaign resulted in McDonalds own content being buried with tweets referring to food poisoning, vomiting and weight gain (Ordinio, 2012; Lubin, 2012).

Besides electronic word of mouth caused by users or unsuccessful marketing campaigns, the corporate image may also be compromised by an employee posting wrong or improper information on online social network sites. These risks related to the lack of control over the corporate content can be avoided by writing clear policies on the use of social media by employees (Ilanaarazie, 2010). For example the hospital Rijnstate published guidelines on their website that are according to the hospital both for the employees personally as well as for the hospital important (Rijnstate, 2012). Employees are for example advised to '*be respectful to your patient and your colleague*' and '*be aware of different business and private use*' (Rijnstate 2012). Likely there exists an internal guideline designed for employees in charge of the corporate Twitter account. Besides designing clear policies, also the capacity to keep and log all communications is a way to keep control of what your employees send the world in (Ilanaarazie, 2010).

According to Bennett (2009) *'the bar in healthcare is extremely low'*: Whereas customers already are used to online banking and making online travel reservations, they currently not expect the healthcare sector to help patients using social media. According to Bennett the current response of *'shock and amazement'* by patients who are receiving a reply on their tweet is of a temporary nature. Within a couple of years patients will be surprised in case the hospital did *not* reply after a couple of hours. (Bennett, 2009) The use of Twitter can be regarded as an extra opportunity for hospitals at the moment, nevertheless in the coming years social media presence could change from an opportunity to differentiate yourself, to a customers' minimum request or expectation. Building on the believe that social media presence becomes a requisite part of the communication mix, a possible future risk for hospitals could be that customers might have high expectations of the customer service via Twitter. When expectation of future patients have bound up, replies by the hospital could be easily perceived as delayed, eventually resulting in dissatisfaction on the patients' side. Ensuring sufficient staff to handle all social media communications and including a clear timeline for responses in the disclaimer are manners to manage customers' expectations (Ilanaarazie, 2010).

5.4.C) Risks for Individual employees

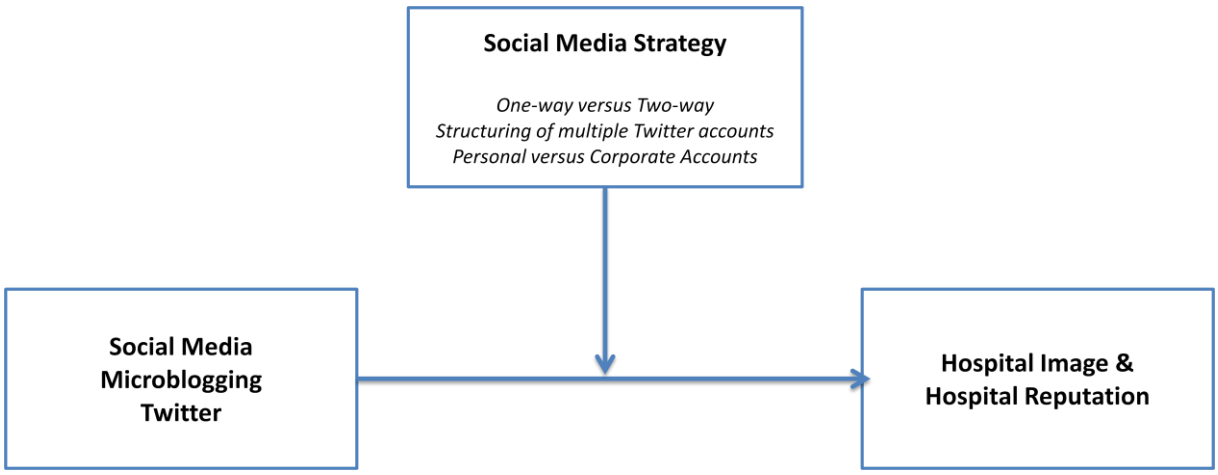
As already touched upon before, doctors run the risk of receiving a disciplinary complaint, a fine of the Data Protection (CBP), a civil claim for damages or even criminal prosecution when violating the rules of his professional secrecy (KNMG, 2011).
Another earlier mentioned risk, is the reputational damage caused by a medical professionals posting inappropriate information or photo's. Besides the risks for the health care intuition, the concerned employee risks an impaired working relationship with his employer. Uncertainty about what their employer considers appropriate online activity may affect an employees' social media behaviour. Additionally, according to Eckler et al (2010), *a physician may feel that their own privacy is at stake when disclosing more information than is typically shared during a traditional patient office visit*. This finding does possibly hold for medical professionals working in a hospital as well.

6. Conceptual Model

Figure 4 shows the conceptual model of this research based upon the literature study. The model proposes that social media, such as Twitter, influences the hospital's image and reputation. In the literature it is suggested that social media presence and activity can contribute to a positive hospital image and reputation: *Can Twitter help hospitals to build and retain positive corporate image and reputation?*

Additionally it is suggested that the implemented strategy influences the effect of social media on the hospital image and reputation. Exploratory qualitative research will be used to examine the in the literature identified elements of a social media strategy, hence further hypotheses will be formulated later based upon the results of the qualitative study.

Figure 4) Conceptual Model



7. Methodology

7.1 Overall Research Design

The objective of this theory-oriented research is to contribute to the development of theory on the topic of social media in healthcare, moreover the theory could be beneficial for practical use by healthcare professionals. Although social media is implemented in practice by more and more hospitals, academic literature on the use of social media in health care, in the broadest sense of the word, is still scarce. Given that scientific research on the concerned topic is still in its infancy, several 'grey' resources such as presentations by expert users, blogs written by social media experts and articles in renowned health care magazines, were used in addition to scientific literature to develop the background of the research area.

A synthesis of both the academic and practical resources resulted in an elaborate literature research on all applications of social media in health care and other associated issues, such as privacy and associated risks (see chapter 2-6). Given that not all of the in the literature review presented applications of social media are scientifically tested propositions, the first part of this research included qualitative research in order to explore the theory and confirm the initial literature foundation on the goals and applications of social media. The findings of this initial exploratory study form the foundation of the second quantitative part of this research.

8. Study 1 - Qualitative Research

8.1. Methodology Study 1

8.1.A. Research Objectives & Design

As already touched upon before, the objective of this first part of the study was to define the research area thoroughly. By means of in-depth interviews with people from the industry, initial findings in the literature were confirmed. Additionally the interviews have been carried in order to discover possible overlooked implications of social media in the health care environment. In sum, the research objectives were: (1) to define the different goals and (2) strategies of social media within the health care sector. Moreover other (3) additional insights were gathered, so that a relevant course of action for the quantitative research could be identified.

The information of experts from the industry was obtained by means of semi structured in-depth personal interviews. A list of topics and potential questions (see appendix A) were developed in order to make sure the most important topics were covered during the interview. However, during the interviews was aimed for minimal interviewee intervention to avoid the researcher affecting the data. The central topics were selected based on the research objective, which are the different purposes and strategies of the use of social media within health care. Important to mention is that the order in which the topics were discussed was not predetermined, this allowed for greater flexibility in capturing the insights of the experts. (Malhotra & Birks, 2007)

8.1.B. Data collection

Six semi-structured in-depth interviews with industry experts were conducted between mid-January 2012 and mid-April 2012. The emphasis in the sampling procedure was focused upon the 'quality of the individuals', which in this case refers to the level of expertise and experience of the individuals. Thus, although the sample was small and non-representative, the interviews resulted in useful insights arising from the knowledge of the interviewees. (Malhotra & Birks, 2007)

Given that social media in general and its application in healthcare in particular is not a crystallised topic, it was considered to be valuable to include a broad spectrum of stakeholders in the sample in order to get all points of view on the table. Based on this quality criterion, named triangulation, professionals with diverse backgrounds were selected to be interviewed: The sample included two professionals working in a hospital who are responsible for the social media communications[1]. Whereas one of the interviewees is working for a hospital that is known as a front runner, the other interviewee is employed by a hospital that was not active on online social media. By revealing both perspectives, a one-sided view is avoided. The other interviewees are all experts having experience with advising or researching hospitals on the topic of social media. Table 2 below provides an overview of the details of the sample.

[1] For reasons of clarity on the different voices and different perspectives, the interviewees employed by a hospital will be indicated with the abbreviation (H) for hospital.

Industry Expert	Link to the topic	Company / Hospital	Type of interview
Renate Wijma & Joost Schrage	Consultants on social media in the health care sector	Twitterkliniek	Face to face 2.5 hours
Pieter-Frank van Boven	Blogger on social media in general and social media in health care in particular. Consultant on marketing issues and customer satisfaction in hospitals.	De Praktijk Index	Face to face 1.5 hours
Ruud Kessels	Executed research on the topic: Use of social media by Dutch Hospitals (2011).	Kessels Communicatie & Media	Telephone 45 minutes
Maarten Elsinga	Manager Marketing Services. Project Leader of independent research: Social Media Monitor Healthcare (2012)	Redmax – Full service internet agency in the healthcare sector	Face to face 1 hour
Ralph van Disseldorp (H)	Manager Marketing, Communication and Client relation	Maxima Medisch Centrum Eindhoven (*Hospital*)	Face to face 1 hour
Mayke Breeuwer (H)	Team leader Communication	St. Jansdal Gasthuis Weert *(Hospital)*	Face to face 1 hour

Table 2) Sample of interviewees

The experts were invited by e-mail to participate in the research. The introduction e-mail merely revealed the topic of the interview to ensure the interviewees would start the interview 'blank'. Both general terms such as 'goals' and 'strategy,' as well as specific concepts, such as 'public relations' and 'one-way versus two-way communication', were left out on purpose to avoid socially desirable answers. The interviewees were informed that the details of the research, such as the goals and hypothesis, were disclosed after the interviews had taken place.

Most interviews were conducted during face to face meetings, although one interview was carried out by telephone for practical reasons. The topic list for all interviews was fairly similar, however some subject matters were tailored to the background of the relevant interviewee. Whereas the healthcare professionals employed at the hospitals elaborated on their experiences and considerations whether to or not to implement social media, consultants spoke about their experiences when advising a hospital. All interviewees gave permission to record the interview, subsequently all interviews were transcribed and coded.

The qualitative research first and foremost focuses on the interviews with the six interview experts mentioned above. Besides these interviews also conversations have taken place with several communication professionals of the hospitals participating in the second study of this research. These conversations were mainly carried out for the quantitative part of the study, however noteworthy insights will be incorporated into the qualitative analysis, with the reference to 'marketing and communication professionals of participating hospitals'.

8.2. Data Analysis Study 1

In this section the insights gathered during the interviews are reflected with the findings in the literature in order to confirm the initial findings in the literature (deductive), furthermore not earlier found insights will be discussed (inductive).

First the different social media applications and goals will be discussed, followed by the differences in strategy. Finally additional insights and remarkable differences and similarities between the experiences and insights of the interviewees are exemplified.

8.2.A. Social Media Application and Goals

Of the eight identified social media applications in healthcare, seven of them were confirmed at least once by one of the interviewees. Using social media for the purpose of 'community outreach' was not confirmed in any interview. On the other hand, also not earlier in the literature acknowledged goals were identified.

Below the insights are shared for each of the social media goals and applications as described in chapter 5. For a detailed overview of all quotations organised per interviewee for each social media goal, see the table in appendix B.

A) Customer Service

The application of social media as an extension of the customer service is confirmed by several interviewees. According to Elsinga (2012) hospitals aim to give patients a warm welcome when they enter the hospital, already starting with the receptionist at the entrance hall. 'However, '*more and more of these contact points are online and all these moments are customer touch points, in which you would like to deal service-oriented with your patients'*. Additionally Elsinga (2012) confirms that social media could be used to answer patients' questions, which can be seen as a customer service as well.

Enhancing communication and providing a platform where patients could provide feedback on the delivered service is according to Bennett (2012) also a component of customer service. Kessels (2012) confirms this application given that he mentions the opportunity of hospitals '*to organize accounts where you can discuss quality improvements with your patients one to one*'.

B) Service recovery

Also 'service recovery' is recognised as an application of social media by several interviewed industry experts (Van Boven, 2012) (Elsinga, 2012). However, according to Van Boven (2012) not many hospitals use it for that purpose in practice. Some hospitals immediately reply to a negative remark with a tweet such as: '*Okay, here we need to do something, this is not okay'*. On the other hand Van Boven (2012) also mentions examples in which he pointed a hospital on negative tweets with the suggestion that a reply by the hospital was desired, yet the hospital did not respond in any way. In addition, Elsinga (2012) emphasizes that Twitter lowers the threshold in the area of interaction. *'Earlier you were 'a simple mortal' when you wanted to complain about something, however with the arrival of Twitter you are able to talk to large institutions. You can express your dissatisfaction with a hashtag fail' (#fail).* In line with this some hospitals set up webcare team that focuses on handling complaints. The conversations with marketing and communication professionals of participating hospitals revealed that some hospitals set up shifts in order to ensure continuous monitoring.

C) Community Outreach

The social media application of 'engaging the local community' was not mentioned by one of the interviewees. All interviewees extensively elaborated on the communication with patients, however community outreach is mainly about engaging all stakeholders, such as nearby residents and other parties.

D) Patient education

The application of social media as a '*natural extension of efforts to reach and teach'* (Bennett, 2010), or in other words patient education, is widely confirmed by several interviewees. All interviewees refer to the possibility of organizing 'online consultation hours' aimed at patients. Whereas the interviewee employed by a hospital that organizes online consultation hours on a weekly basis, evaluates the initiative positively: *'We actually use this as an information and education channel. And that works quite well, especially the interaction between Twitter and Facebook'* (Van Disseldorp, 2012) (H), other interviewees see little future in the public online discussion between doctor and patient due to several reasons. For example the boundary of 140 characters per tweet is repeatedly mentioned as a limitation. Additionally Van Boven (2012) mentions that a doctor cannot share private medical information on Twitter, hence he can only say something 'in general', making the information not specific and valuable enough for clients. Independent of the different opinions on the usefulness or the functioning of online consultation hours, the application of Twitter as a medium to educate patient is confirmed.

Additionally the literature mentions the opportunity of social media *'to extend the patient visit into the pre-, during-, post visit continuum, which can provide information flow and consistency of care* (Eckler et al, 2008). Consistent with this, Elsinga (2012) emphasizes the added value of social media as an element of E-health (Electronic Health): '*for example online education; that you're behind the computer and actively watch videos about what is going on with you, whether it is a somatic or mental disorder. You can learn a lot about that before you talk to your doctor, finally this results in a more efficient conversation with your doctor'.*

By means of online education, patients become more active in self-management or disease prevention (Eckler, 2010). Hence, social media is - also during the interviews- often mentioned in the same sentence with 'patient empowerment'. Without elaborating on this trend, the application of social media as an instrument to educate patients is affirmed.

E) Public Relations

'The press follows us. The moment that we have a power outage and we switch to back up power, we communicate this via Twitter and a minute later it is on the websites of regional news stations' (Van Disseldorp, 2012) (H). This quotation confirms the in the literature described application of 'public relations'. Also interviewees who work outside of the hospital, for example as communication consultant, notice opportunities for hospitals to manage their public relations via social media: '*If you decide 'we use Twitter for media and press relations', then you need to collect journalists <as your followers>.'* (Kessels, 2012)

F) Crisis Communications

The application of social media as a tool during 'crisis communication' has a twofold interpretation. A distinction can be made based on whether the crisis occurs internal or external to the hospital.
Several resources describe how social media could be used as a communication channel during crises *external* to the hospital, such as a major accident or a natural disaster. None of the interviewees mentioned this function of social media, however crisis communications for the purpose of a interacting during *internal* crisis was repeatedly mentioned during the interviews.

According to Schrage (2012) the vast majority of organisations, hospitals included, consider social media as something '*hip and fun*', for example to post tweets about open days and events. However, when proclaiming to engage in a dialogue with your patients, social media is no longer non-committal according (Schrage, 2012). Being active on social media creates expectations: '*When there is such an outbreak of a bacterium, it is crucial to use the social media channel as well'.* Also Kessels (2012) confirms that social media is an element of the communication mix during a crisis situation: '*Obviously there are several resources available for you to use; television, newspapers, a spokesman. Twitter is also an aspect.'*

Besides consultants employed external to the hospital, also Van Disseldorp, marketing manager of a hospital, emphasizes the added value of using social media in the event of an internal crisis. Within his hospital he propagates the vision that especially in the event that something is or seems to be wrong, it is essential to use this medium. An illustration of what he labels as 'issue management' is the case about a furious dad, who was posting tweets using coarse language to express his anger. After analyzing his tweets it appeared that his daughter was released from the psychiatric ward earlier that day. Although the psychiatrist assessed the daughter was well enough to let her go home, the father strongly disagreed with that, resulting in posts akin to: *'If my daughter hurts herself now, then the hospital is to blame'.* The hospital replied via its corporate Twitter account with the following tweet: '*Botheration to hear. You understand that we do not use social media to discuss the case of your daughter in public, since we respect her privacy. If you are so discontented you want to lodge an official complain, then this is possible via our complaints officer*' accompanied with a hyperlink to the complaints functionary. After an hour of silence the man replied that his earlier posted tweet was very emotional, full of anger and sadness and he did not wanted to file a complaint at all. By handling crises or negative news in the aforementioned manner, Van Disseldorp (H) aims to avoid further negative publicity. According to him a hospital could even increase its reputation by adequately handling unconfirmed rumours or negative news.

G) Recruitment Tool

'You recruit nurses with nurses, doctors with doctors… as you catch crooks with crooks' (Wijma, 2012). The use of social media for the purpose of recruitment was widely confirmed by several interviewees. Not only the professional networking site LinkedIn, but also other less obvious forms of social media such as Hyves and Twitter were mentioned as opportunities for health care institutions to profile themselves as a good employee. Zooming in on Twitter, the application of this medium as a recruitment tool can first of all be derived by the fact that numerous health care institutions own a Twitter account only used for labour market communication. Besides their corporate account they set up a separate account such as @workingat<nameoftheinstitution>. (Elsinga, 2012) Moreover the consultants of the Twitterkliniek provided several real life cases in which they advised health care providers on how to use social media for the purpose of recruitment. According to them a large university medical center saved 1,3 million euro on labour market communication, purely by effectively using social media (Wijma, 2012). Another example from their experience was the case of a hospital that had to recruit 40 specialist nurses without any budget. On Hyves, the most popular Dutch social network site, the Twitterkliniek found a group of 34.000 nurses. By instructing the nurses of the given hospital on how to use social media, they managed to reach the job seeking nurses and eventually succeeded to fill all vacancies without the use of expensive advertisements. Also Kessels (2012) confirms the use of social media to recruit employees. According to him it is extremely convincing to use genuine, positive, social media postings of your own employees in your labour market campaign, as the Haga Hospital did in the past.

H) Brand Monitoring

Also the last identified goal 'brand monitoring' was confirmed by more than one interviewee. According to Van Boven (2012) 'you *can broadcast and you can respond. But you can also monitor what is said about your brand - if you consider a hospital or a doctor as a brand'.* Although he believes that a number of hospitals is proficient in scanning for their name and monitoring their brand, the insurance companies are ahead of in this activity compared to the hospitals. Insurers monitor what is said about them, but also what is said about the world they act in. According to Van Boven (2012) insurance companies use all these gathered insights as valuable input for their strategy. According to Kessels (2012) it is becoming more and more important to differentiate yourself from competitors given the changing market conditions. To be able to differentiate yourself it is important to have a feeling of what is going on in your target group and social media could be used to gather these insights. (Kessels, 2012)

Newly identified goals

Besides the confirmation of the in the literature found social media applications, the insights gathered during the interviews resulted also in some new applications. Below an overview of the newly identified goals.

I) Create traffic / Search Engine Optimisation

Online social media presence is pivotal to increase the natural search results and hence to create traffic to your homepage (Wijma, Schrage, 2012). Search Engine Optimisation (SEO) aims to improve the visibility of websites in search engines. The higher a website scores in a search engine, the more visitors a website receives. Given that search engines make use of 'Blended Search' (text, blogs, video's and images) and 'Link Building' (weight incoming links from external web pages), social media presence is (in)directly becoming increasingly important to realize high ranks in search engines. Important to mention is that being present on social media is merely a necessary and not a sufficient condition: The content available on the website and generated by the crowd is key for good search results. "*It does not make sense for a hospital to be active "single-handedly", it should be carried by the complete organisation and even outside the organisation"* (Wijma & Schrage, 2012). According to them not only the hospital institution, but also specialism's, individual doctors and nurses should be active online. Although search engine optimisation most likely will not be formulated as a standalone goal, it is worthwhile to mention it here as an important application of social media given the potential additional advantage.

J) Research Tool

Another not earlier identified goal in the (practical) literature on the topic of social media in healthcare is the implementation as research tool. Currently one of the university medical centers is carrying out research about Chron's disease (Schrage, Wijma, 2012). The medical center is the first institution known that initiates a research making use of data gathered via Twitter. Analyzing about 6500-8500 tweets that were sent over a period of three years, the researchers can draw several conclusions related to the chronic disease. Given the novelty of the data collection method, the ethical commission that amongst others guards the prudent handling of collected patient data, could not rely on existing procedures. With regard to this Schrage (2012) states: '*Hospitals, ethical commissions included, have to think about the consequences of new media*.' The research referred to is still running, as things currently stand the ethical commission has approved the method of data collection.

K) Internal purposes

According to one of the interviewees social media could be used for internal purposes (Kessels, 2012). Although not elaborated upon the different internal applications in detail, Kessels (2012) emphasizes the importance of shielding content for external visitors. Imaginable internal purposes could be collegial contact, disseminating news internally and spreading and sharing knowledge.

4.2.B. Social Media Strategy

Besides the different goals and applications of social media, also the different 'social media strategies' were a topic of discussion during the interviews. Expected was that hospitals' social media strategies with respect to the way of communication could be classified in at least two types, namely a one-way and a two-way (interactive) social media approach. Also other elements of the strategy, such as segmentation and personalisation, were addressed during some of the interviews.

A) One-way versus Two-way communication

The difference between one-way and two-way communication was mentioned by all of the interviewees without any moderation or intervention of the interviewer. Noticeable is that almost all of the interviewees perceive engaging in a dialogue as the better and more developed way of communication compared to merely sending information. In accordance with the diagram of MixtMedia (2008), also used by Bennett (2009), most

interviewees regard two-way communication as the ultimate target of the use of social media. Having experience with advising health care institutions, Elsinga (2012) considers that some institutions understand the essence of social media better than others: *'They understand that it is not about communicating anymore, but about conversing. The equivalence between doctor and patient plus the conversation and interaction, instead of authoritatively broadcasting…These are the developments of today".* Schrage and Wijma (2012) even perceive the communication mode as a threat during the implementation of for instance Facebook or Twitter. '*Largest risk of using social media is that you use it as a traditional medium; like a horn… to christen how good you are and which prestigious awards you won'*. Instead of self-aggrandizement and merely distributing press releases or other hospital news, the majority of the interviewees agree that social media should be utilised to build relationships with the stakeholders by means of interaction. "*Given that hospitals easily collect lots of followers, automatically sent news updates reach a large audience. However this is not the way it is going to work well".* (Van Boven, 2012)

Besides one- and two-way communication, Van Boven (2012) distinguishes two other stages or ways of executions of social media. According to him some hospitals do not have a fixed plan or are "*still seeking*", this trial-stage is somewhat comparable with the first two stages as defined by Bennett: Education and Observation (Bennett, 2009). On the other side of the continuum, Van Boven (2012) believes that some hospitals raise the bar to high and make social media too mandatory, resulting in the opposite of the desired effect (Van Boven, 2012).

Related to the topic of one-way versus two-way communication several interviews mentioned associated risks and hurdles during implementation. An often cited issue is the one of creating expectations amongst followers when starting with a two-way communication strategy. For a detailed overview of risks and stumbling blocks during the implementation, also with respect to the use of different communication modes, see section 8.2.C. Additional Insights.

In sum, the difference between merely sending information and engaging in a dialogue is the most significant difference in strategy, as evidenced by the insights gathered during the interviews. The chosen communication mode by hospitals was the most prevalent topic elaborated on by all interviewees. Below other differences in execution of social media are illustrated.

B) Structuring of multiple Twitter accounts

From the literature (see Chapter 5.3) it was expected that different Twitter accounts could be set up intended for different stakeholders, such as patients, (future) employees and general practitioners. Focusing on the stakeholder group of patients, an additional subdivision could be made, based on the care asked for. Also the possibility to use the internal organisation, that is the different hospital departments or specialism's, as a starting point to structure the Twitter accounts was exemplified.

The topic of maintaining several Twitter accounts was addressed by a number of industry experts. The subject of using market segmentation and using the internal organisation as a foundation for structuring different Twitter accounts was confirmed as a strategy element. Important to mention is that the interviewees hold varying opinions on the best way to structure Twitter accounts.

One versus Several Accounts

The first consideration with regard to structuring the Twitter account is the choice to either maintain one account or to set up several accounts. Kessels (2012) elucidates the trade off at hand as follows: The advantage of maintaining one general account is the '*mass*' - or in other words the wide range of followers- a hospital is able to reach. Downside of having merely one account is that there is a lot of '*waste*', implying the amount of messages that are irrelevant to a number of your stakeholders. '*On the other side, when establishing specific Twitter accounts, you target your audience with great precision and effect, however you have very little mass*'. (Kessels, 2012)

Different Stakeholders, different Patients and different Hospital Departments
Once decided to establish different Twitter accounts, the second consideration involves the way of segmenting: different stakeholders, different patients or the internal organisation could be used as a guidance for segmentation. Whereas in the literature several authors (Kraaij et al, 2012 ; Lenderink, 2012) emphasize the importance of profiling based on medical expertise and specialism, different interviewees do not agree with this view.

Marketing manager Van Disseldorp (2012) (H) does not believe in a dilution of Twitter accounts: '*Actually every specialism wants to maintain their own account. Certainly, I will not allow 24 separate accounts'.* Instead of an inside out reasoning, Van Disseldorp (H) aims for an outside in approach, or in other words: a target audience approach. Besides focusing on one large, impactful corporate account, the hospital Van Disseldorp is employed by has defined a limited amount of target audiences, namely sportspeople, women ('*Woman, Mother, Child'*) and elderly. Underlying principle is that the identified target audiences appreciate tweets that are relevant for them: '*As a young mother it is fun to read all kinds of facts and stuff about children'*

In line Van Disseldorp (H), Elsinga (2012) states that segmentation based on specialism results in a spectrum of accounts, potentially leading to a fragmented picture of your health care institution in consumers' minds. According to him a different message should be tailored to different stakeholders, hereby referring to all stakeholders, not only to patients. 'The message you send to insurers can be different compared to messages you send to jobseekers or potential clients'.

From the conversations with communication and marketing professionals of the participating hospitals was learned that the issue of fragmentation of the Twitter accounts applied to some of the hospitals. Whereas in some hospitals independent departments and partnerships of doctors come to the marketing department with the request to help them to engage with online social media, other communication departments did not recognize that from their experience. Some hospitals were busy with setting up guidelines for setting up a social media account under the flag of the hospital. Noteworthy is that one of communication professionals mentioned that departments do not always realize the amount of time it takes to maintain a social networking site, such as Twitter. By means of good guidelines for their colleagues, the communications professional hopes to avoid that an account 'bleeds to death'.

C) Corporate Account versus Personalised Accounts
In the literature several forms of personalisation in hospital Twitter accounts were discussed. Firstly, hospitals could mention the name the employer maintaining the social media channel. Secondly, individual medical professionals could set up a Twitter account that explicitly makes known they are employed by a given hospital. These privately owned accounts could be used to merely send information on work-related topics, however they could additionally be used for private purposes, resulting in a 'blended' account. From the interview with marketing professionals of one hospital was derived that they actively encourage a specific group of employees, referred to as social media ambassadors, to be active in online social media (simultaneously private and work-related). By means of stamp of the hospital logo over the personal avatar, the private twitter account is clearly linked with the hospital name.

With respect to the difference between personal and corporate accounts Schrage and Wijma (2012) state that '*Corporate accounts are completely irrelevant in social media, people want to communicate with people, not with institutions'.* Although the consultants of the Twitterkliniek consider 'a large corporate account' as a requirement, they believe individual employees should be active online, as business cards of the organisation. What they observe is that many hospitals propagate that every employee can be active on social media, however they are not prepared for possible mistakes made by employees. *'Once things go wrong, they overreact, employees are severely punished – up to dismissal- and strict protocols are developed'.* In some cases all tweets have to be approved by the communication department, which according Schrage (2012)

undermines the essence of social media. Corresponding with this, Kessels (2012) believes a controlling function of the communication department is untenable. '*The communication department can have an educating and steering role, however they have to accept that for example a nurse wants to blog about her experience.'(*Kessels, 2012). Both Kessels (2012) as well as Wijma and Schrage (2012) observe that employees underestimate or do not realize the potential impact of statements on online social media, hence positive support is required. In sum, both Schrage and Wijma (2012) and Kessels (2012) believe that every hospital employee individually can '*boost the brand*'. They acknowledge the potential risks of employees twittering actively, nonetheless these risks can be overcome by educating and supporting people.

Whereas the external consultants and experts advocate of the use of social media by individual employees, the interviewees employed by a hospital have a less enthusiastic attitude towards employees talking about work-related topics on online social media. It was to be expected that the communication professionals of the hospital currently not active on social media have a worried attitude towards twittering employees: '*We consider that as very scary, as we have no grip on it. But we cannot forbid employees to tweet'.* Surprising is that the marketing manager of the hospital considered as a front runner in social media, is also reluctant to promote employees to engage in social media: '*I believe such big mistakes are being made on an individual level on social media, that I do not want to blindly make all my employees brand ambassadors'* (Van Disseldorp, 2012)(H). Part of a long term plan is that Van Disseldorp (H) gives presentations to doctors, nurses and other employees on both the opportunities as well as the risks of social media. '*Of course positive personal stories of employees can be posted online, however when the boss is blackguarded or when privacy-sensitive information is leaked, we monitor that.*' Social media guidelines or rules are developed to overcome undesirable behaviour. According to Van Disseldorp (H) there are few cases of objectionable behaviour; most of them are solved by means of a direct message of the communication department directed to the concerned employee.

8.2.C. Additional Insights

To verify the different goals and strategies of social media a deductive method was chosen to analyze and code the gathered data. Additionally a more inductive way of coding was used to look for relevant similarities and remarkable contrasts between the views of the interviewees. Below the most important additional insights are clustered per topic.

A) Trends in the Health Care Environment

As also elaborated on in the literature review, a majority of the interviewees explain the developments of social media in healthcare against the background of changing market conditions (Elsinga, 2012) (Van Disseldorp, 2012) (Wijma & Schrage, 2012). Free market forces in the healthcare sector will according to Elsinga (2012) result in fastidious customers: '*people will look for the hospital that is renowned for a given treatment or for a known specialist*'. In line with this Wijma (2012) considers the competition between hospitals as the reason to be active on online social media: '*Nowadays patients are able to choose which hospital and which specialist they want to go to. So it is very important that a hospital, but also individual specialists, profile themselves online'.* Whereas the majority of interviewees agrees that *'the battle for the patient has begun',* Kessels (2012) remarks that the hospital market is currently not truly commercial, hence he thinks that not all hospitals see the immediate need to profile themselves online. Nevertheless also Kessels expects the healthcare environment to be competitive in the future.

Another trend repeatedly referred to in different language is 'participatory health'. (Elsinga, 2012; Kessels 2012) The term participatory health is used as an umbrella for all models of medical care that actively involve patients. Elsinga (2012) mentions that UMC Nijmegen is a frontrunner when it comes to participatory health: *'The doctor and patient are establishing a treatment together, of course the doctor is expected to know more of the illness and obviously he performs the surgery, however the opinion of the patient is taken into the treatment plan.'* (Elsinga, 2012) This trend of participatory health goes together with a more assertive and empowered

patient. Social media provides opportunities to engage in a discussion with patients, moreover discussions via online social media demonstrate the equivalence between healthcare institution and patient.

B) Positioning and Profiling

Associated with the topic of competition between hospitals, the terms 'Positioning' and 'Profiling' were repeatedly mentioned by several interviewees (Van Boven, 2012; Kessels, 2012; Wijma, 2012). It is noteworthy that both Van Boven (2012) and Kessels (2012) make the comparison between healthcare institutions and large companies such as Coca Cola and Apple: *'You are just a company. MacDonalds also has the attract customers like: 'Come to me, instead of to the neighbour'.* According to the interviewees customers can be attracted by clear positioning and profiling, which can be supported by communication, hence also by social media.

Building on the comparison between large multinationals and hospitals, Van Boven (2012) and Kessels (2012) both see opportunities for hospitals to create 'fan-bases'. '*Strong brands have strong fan bases: Apple, Nike, Adidas and Starbucks. In healthcare this is far from being reality, however eventually we will go there.'* (Kessels, 2012). One-way to profile itself as a caring hospital is to respond to check-in of patients who are using presence applications. According to Kessels (2012) this is a manner to '*create a network of ambassadors and enthusiastic clients and patients around you*.'

C) Risks associated with Social Media

After emphasizing the different goals and opportunities, most interviews naturally moved towards the subject of risks associated with social media. Below the insights gathered during the interviews are compared with the findings of the literature review. In chapter 5.4 the risks of social media were outlined for each concerned party; the patient, the hospital and individual employees. Below the risks are described in the order of times mentioned by the interviewees. Additionally the case of the Dutch hospital VUmc is provided as an empirical example of the role social media plays during crises situations (see separate frame on the next pages).

C.I) Reputational Damage

With respect to the risks of social media, the topic of reputation management was mentioned most often by the interviewees. A shared view amongst the interviewees is that being active on social media channels creates expectation amongst followers, also or even especially in crises situations. In case the hospital cannot satisfy these self produced expectations, followers will be disappointed and consequently the built up reputation is offset.

Noteworthy is that several interviewees independently of one another refer to the case of the Maasstad hospital when explaining the potential reputation damage that may occur. Being very active on a number of online social media sites, Maasstad created expectations that they could not live up to after the outbreak of a bacterium. Numerous interviewees agree that the period after the outbreak of the Klebsiella bacterium was the crucial moment to be transparent and to give openness of business, however in reality the Maasstad Hospital shutdown all their social media communications. '*They should have told their story to neutralize all the media attention and to share the facts with the public. This would not have made the bacterium less severe, but they could have been able to maintain their reputation*.'(Elsinga, 2012) Important to mention is that reputational damage can also have negative economic consequences: *'Maasstad did not only suffered reputational damage, but truly less patients have come to the hospital and hence much needed income was lost'.* (Van Disseldorp, 2012)(H) Noteworthy is that although the interviewees acknowledge the risks of reputational damage suffered by the Maasstad Hospital, they also use this case to explain that the risk is not inherent to the use of Twitter itself, but to the way it is being implemented. *'Reputational damage will only be an issue in case if you perform poorly: For example when you spread lies or you pretend to be transparent but in fact you are not'*. (Schrage, 2012) The shared belief is that in case the hospital is '*open*', '*transparent*' and '*honest*' the hospitals will not suffer loss of reputation.

The issue of reputational damage caused by not meeting expectations of followers corresponds to some extent to Bennett's view '*that in case expectations of future patients have bound up, replies by the hospital can be easily perceived as delayed, eventually resulting in dissatisfaction'*. (Bennett, 2009) Bennett focuses particularly on the speed of reply, however he does not mention the importance of continuity in the activity of Twitter, which is thus frequently mentioned as key for success by the interviewees.

Related to the topic of reputational damage, the possibility of negative electronic word of mouth spread by both patients as well as by employees was mentioned in the literature review as a risk for the health care institution. During the interviews the risk of unsuccessful marketing has not been addressed by the interviewees, however the issue of negative word of mouth caused by patients or employees was referred to repeatedly. With regard to the negative word of mouth spread by patients, the interviewees acknowledge that due to online social media sites, word of mouth is spread way faster, additionally complaints or negative reports by patients can be picked up by peer patients and by the press. However, this characteristic of online social media is also placed in perspective, alluding to the fact that a hospital never has had the control over the stories that patients spread about the health care institution. (Schrage, 2012)

As earlier mentioned in this chapter under the section 'Corporate Account versus Personalised Accounts' the interviewees have varying opinions on twittering employees. The core of the disagreement is that some interviewees asses twittering employees as a large risk, whereas others mainly emphasize the opportunities for employers twittering to leverage the employer brand. In sum, the risk of employees posting negative reports, blackguarding the boss or leaking private information is confirmed by all interviewees, nonetheless the magnitude of the risk is assessed differently.

CASE VUmc: 'The hospital appears to be ill… #VUmc

Thus far, 2012 has been a turbulent year for the University Medical Centre of Amsterdam (VUmc). Internal crises that at this time of writing are still ongoing, accompanied with lots of media attention have put pressure on the image and reputation of the hospital. The case of the VUmc is used to highlight the role of social media in crisis situations and the importance of training employees and setting up contingency plans.

Eyeworks

Late February 2012 there was much commotion about the television program: '24hours between life and dead'. For the recordings of the program, a co-production between Eyeworks and the VUmc, 35 cameras were installed at the emergency room of the VUmc. The controversy about the program arose after it became known that people were filmed without their knowledge and only afterwards were asked for their permission, hence the patients' privacy was compromised. The broadcast was discontinued after the first episode, however at that time the confidence of both patients as well as employees was damaged. (www.nu.nl, 2012)

Increased supervision by the Inspectorate of Health

In August 2012 the VUmc was subject to increased surveillance provided by the Public Health Inspection (IVG). In 2011 a lung patient came to die in the VUmc, where after research by the Inspection showed that this was partly caused by the distorted cooperation between medical specialists. In June 2012 the VUmc reported to the Inspection that improvements have been made, however the board of directors withholds a letter signed by 11 surgeons which states that the collaboration between specialists is still not as it should be. On top of this, much commotion arose about the proceedings of the board of directors: They inactivated two lung specialists who had reported their concerns about the patient safety to the Inspectorate. (www.volkskrant.nl, 2012)

Trending Topic on Twitter #VUmc

As outlined in the literature, online social networks are largely out of control of the hospital. Given that social media is increasingly important in daily life, it plays an ever growing role in the formation of hospital image.

False rumours, incorrect information and bad word of mouth are easily spread on Twitter. In the two cases illustrated above, social media fuelled the crises: Both in February as well as in August the VUmc was trending topic on Twitter. (http://Twitter2.nl/topic.php?q=VUmc, 2012)

During the second crisis tweets that included the search term 'VUmc were collected. Besides the various news organisations that used Twitter to publicize their news items, the crisis was also picked up by the larger public. In order to provide an impression of the statements on Twitter, a small selection of the thousands of tweets collected are presented below:

#VUmc That the person who reported the problems is fired, says everything about the VUmc. I hope to never end up there. #VUmc (jac1324 Tweet 23/8/2012 2:40 p.m.)

Kill the messenger! Dismissal of the whistleblower is "improvement measure" #VUmc very unhealthy club - http://t.co/k4G3cgqP http://t.co/k4G3cgqP (harry sight Tweet 23/8/2012 2:25 p.m.)

#Good Idea! Hidden camera in conference room #Board of VUmc! #and then asking for permission afterwards (drukkerijpascal Tweet 23/8/2012 1:48 p.m.)

 # VUmc #Communication management "@MarilkavZ: @Folkerttoosting From now on everything 3x for approval to Directors: End of #webcare #VUmc (folkertoosting Tweet 08/23/2012 2:42 p.m.)

The pulmonologist Postmus (now inactive as whistleblower) has greatly helped my father during his illness! I believe him! #VUmc #Support (hsalverda Tweet 23/8/2012 7:11 p.m.)

Avoiding the VUmc for years: lost files, drug toxicity due to control failures & disinterest, many unfriendly & arrogant staff. (djipsie Tweet 24-8-2012 7:15 p.m.)

Doctors who - by mutual distrust and therefore unprofessional behaviour- let patients die are murderers. #VUmc (ericb666 Tweet 24/8/2012 8:11p.m.)

Late #FF for all other hardworking and passionate employees who heavily suffer from the re-occurred reputational damage @VUMC # (mrvanbalken Tweet 08/25/2012 7:53 p.m.)

As can be read from the tweets, the general thought amongst Twitter users was anger and unbelief about the state of affairs in the VUmc. Many tweets are messages of support for the 'whistleblower', that is the lung specialist who reported his concerns about patient safety to the Inspection. Also lots of Twitter users ask for the resignation of the board of directors. Some tweets include warnings to not choose for the VUmc when in need of medical care. To end with, some tweeters ask attention for the employees who do their jobs well and are affected by the reputation damage as well.

Crisis Communication

As confirmed by several interviewees, Twitter can be used during crisis situations as an element of the communication mix. According to Bennett (2009) fast response via online social media allows hospitals to take control of the message and hereby keeping the community updated in real-time. Analyzing the crisis communications of the VUmc throughout the first days after the commotion arose, shows that the VUmc chose for the approach of 'corporate silence'. Meanwhile the community formed their opinion and used Twitter to share it with a larger public, resulting in negative electronic word of mouth.

Currently several independent social media advisers as well as consultancy firms provide advice on the use of social media. Applying the most important recommendations on the case of the VUmc, firstly the hospital could have provided regular updates on the social media platforms. This prevents speculations that may worsen the crisis. Interviewed communication professionals agree that no communiqué at all only emphasizes the internal turmoil (Elsinga, 2012; Schrage, 2012). Additionally the VUmc did not respond to the predominantly negative comments, nor did they reply to 'wrong interpreted' statements of tweeters. On Twitter lots of people talk about the dismissal of the lung specialist, however the lung specialist was at that moment not fired but only inactive. Providing information (being open and transparent) as well as rectifying incorrect rumours could avoid further reputational damage. The practical case of VUmc shows the importance of the continuation of communication via online social media channels after a crisis has occurred. Important to mention is that the long term effects or developments could not be provided given that the crisis situation occurred recently.

C.II) Privacy

Besides reputational damage, the second most mentioned topic in relation to risks is privacy of the patient (Van Boven, 2012; Elsinga, 2012; Kessels, 2012). Referring to the much debated case of the VU University Medical Center (that allowed producer Eyeworks to make camera recordings without the consent of patients), Kessels (2012) emphasizes that compromising the privacy of patients is a very delicate subject. Although in this example the medium (TV) differs from online social media, the negative effects can be similar. Several interviewees emphasize that privacy is of utmost importance in the healthcare sector, however the guarantee of privacy is a point of discussion in the online social media world. The insights gathered during the interviews on the topic of privacy are in line with what was being expected from the literature review. The interviews verify that there is either a risk for the patient (his or her privacy is at stake), as well as for the employee (fines and penalties), and finally also for the hospital (hospital image and reputation).

D) Barriers to implement Social Media

The risks associated with the use of social media, as described in the section above, can be put forward by communication professionals as reasons to not engage in social media. Below this barrier of fear and other additional hurdles to implement social media are discussed. In particular the interview with the communication professional employed by the hospital not active on Twitter was used to provide an in-depth view of the most important barriers.

D.I) Fear

According to Breeuwer (2012), who is employed as communication professional by a hospital, fear is one of the reasons why communication professionals are reluctant to implement social media for their hospital. There exists anxiety about the unknown, which sometimes results in resistance amongst employees (Elsinga, 2012). Furthermore there exists fear that the use of social media will have negative and undesired effects, for instance reputational damage as discussed in the section above. From her experience Breeuwer (H) (2012) knows that: *'hospitals are afraid to implement a new thing, such as social media, without having a foolproof plan'.* Not having clear protocols about for example what to do in case of an internal crises, results in uncertainty and hence in powerlessness of employees. What makes it even more complicated is that social media is evolving very rapidly, hence the guidelines are never finished and consequently the launch of the social networking site is postponed time after time (Breeuwer, 2012) (H).

D.II) Ignorance & Lack of knowledge

Besides fear also ignorance of the need of social media forms a barrier to implement social media. According to Kessels (2012) hospitals do not always see the immediate need for begin active online. Coherent with this ignorance, also lack of knowledge about the new media amongst communication and marketing professionals is a barrier to implement social media (Breeuwer, 2012) (H).

D.III) Workload

According to Breeuwer (H) (2012) and Elsinga(2012), the limited amount of time that can be devoted to the launch and maintaining the social media sites is another cause for lagging behind with the implementation of social media. On the other side Van Disseldorp (2012) (H) refutes the idea that the implementation of social media results in an increasing of the existing workload: '*How much budget you spend on social media, or how many full time equivalents are employed, is difficult to pin down because I believe social media is an integral part of what a marketing and communications should do here*'. According to him the world has changed and whereas some communication channels disappeared, social media has come into view. Nevertheless, workload and a lack of time are put forward as barriers for implementation of social media by some marketing and communication professionals.

D.IV) Limited budget

To a certain extent related to aforementioned barrier, another possible difficulty for implementation is budget. For the implementation of social media hospitals could develop it both internally, by hiring an expert or by integrating it with the mandates of existing employees, possibly influencing the workload. Depending the available budget, a hospital could hire extra personnel.

Besides internally developing a social media approach, a hospital could also hire consultants to support them in setting up or even in maintaining the social media applications. The costs involved with hiring a consultancy firm, depends on the type of support delivered. For example the Twitterkliniek developed several packages composed out of different activities. For the simplest module named 'Start Package', including establishing the social media applications, social dashboard, 4 hours training and monthly social media reports, the company charges € 5.000 per year. The agency also assists in developing a social media strategy, including interactive work sessions and internal coaching of communication professionals (€ 15.000/year). Also they provide an education package, including 6 hours of training, which costs a hospital € 500 per employee per year.

E. Pitfalls during implementation

Besides potential risks and possible reasons to not embed social media, also possible stumbling blocks were a recurring topic during the interviews. Once decided to implement social media, there are according to the interviewees at least three potential pitfalls.

E.I) Ignorance and lack of knowledge of communication professionals

Earlier mentioned as a barrier to implement social media, reasonably ignorance and lack of knowledge of communication professionals is also repeatedly mentioned as one of the most important stumbling blocks for good implementation. (Breeuwer, 2012; Elsinga, 2012; Kessels, 2012). '*Besides they do not know how to use the new media, it is hard for them to realize that it is not controlled by the communication department anymore*'. Additionally Schrage (2012) emphasizes that communication professionals tend to inform and educate people instead of communicate with them. This traditional way of communication is in conflict with the current trends of open discussion and dialogue on social media. Accordingly Schrage & Wijma (2012) and Van Boven (2012) a pitfall of during implementation is that social media is used as a traditional channel to only send information.

E.II) Lack of support of the Board of Directors

Having experience with implementing social media in a hospital environment, Van Disseldorp (2012) (H) knows that the lack of support of the board of directors is a potential stumbling block: '*social media is actually not difficult at all if you believe in the vision to be open and transparent. However the difficult part is to explain to your board of directors why it is so important to be open and transparent'.* The culture clash between conservative members of the board of directors and communication professionals could lead to conflicts and in the worst case to a prohibition on communication via social media, especially in times of crises. Discontinuation of expressions in online social media could lead to rumours, bad reputation and so forth, hence it is for a communication department important to be supported by the board of directors. (Van Disseldorp, 2012)(H) Also Schrage (2012) emphasizes the importance of support from a higher level, therefore he includes the involvement of the board of directors as in his recommendations for a good implementation of social media in a hospital.

E.III) ICT & Technology

Another mentioned potential stumbling block is ICT (Elsinga, 2012; Kessels, 2012). *'The department of ICT can throw a spinner in the works, for example because some systems cannot be integrated or the client management systems are outdated.'*(Kessels, 2012). Additionally Elsinga (2012) mentions that employees are not allowed to log in to Facebook or Twitter during working time, this makes it impossible for employees to be active on online social media.

8.3. Intermediate Conclusion Study 1

The findings of the interviews are summarised in the table below. The main goal of this first study was to research the in the literature stated social media goals and applications. Additionally several elements of a social media strategy were considered. During the execution of interviews it appeared that social cannot be discussed without given a large place to the associated risks, the possible barriers for implementation and the pitfalls during implementation.

Topic	Social Media Applications and Goals	Social Media Strategy	Associated Risks	Barriers for implementation	Pitfalls during implementation
Findings	1. Customer Service 2. Service Recovery *3. Community Outreach** 4. Patient Education 5. Public Relations 6. Crisis Communication 7. Recruitment Tool 8. Brand Monitoring 9. Create Traffic / SEO** 10. Research Tool** 11. Internal Purposes** **Not confirmed during* *** Newly identified*	1. One-way versus Two-way 2. Segmentation 3. Corporate versus Personalised accounts	1. Reputational Damage 2. Privacy Issues	1. Fear 2. Ignorance and lack of knowledge 3. Workload 4. Limited Budget	1. Ignorance during and lack of knowledge 2. Lack of support of the board of directors 3. ICT / Technology

Table 3) Summary of findings qualitative research

9. Study 2 - Quantitative Research

9.1. Methodology Study 2

9.1.A. Research Objectives & Design

In the second part of this research, the effect of Twitter on hospital image, taking into account different communication strategies, is tested. In order to test these relations, a survey was spread amongst actual followers of the Twitter accounts owned by the hospital. Given that the situation, circumstances or the experience of the participants are not manipulated, this research is referred to as a *non-experimental research design*. Consequently the demonstration of causality is not possible in this study, nevertheless the coherence between the variables can be determined. Cross sectional data was collected, meaning that the current attitude, beliefs or opinions of respondents was measured at one point in time. (Malhotra & Birks, 2007)

To answer the overall research question: "*To what extent can Twitter help hospitals to build and retain a positive hospital image?"* several hypotheses are formulated based on the literature and insights gathered during the qualitative part of this research. Both elements of a *relational research design* (to investigate the connection between attitude towards Twitter and hospital image), as well as elements of *comparative research* (to investigate the causes of possible differences between the respondents in the group 1 way-communication versus two-way communication).

9.1.B. Data Collection

To test the conceptual model, an online survey with questions on the valuation of the Twitter account and the hospital image was conducted. In the pursuit of the most realistic answers there was chosen for novel way of data collection, namely via the communication channel of interest in this study itself: Twitter. With the cooperation of five hospitals the online survey was spread via links placed on the Twitter channels owned by the hospitals. In this manner respondents were actual followers of the Twitter account they were questioned about. All participating hospitals posted the announcement with the link to the survey three times to enable comparison of the amount of replies. Given the feature of Twitter that tweets rapidly become less visible in the overview of all latest tweets, the link to the survey was placed more than once to increase the number of respondents.

In order to be able to compare the effect of different social media strategies, there was aimed for inclusion of different types of hospitals comparing them on their activity on Twitter. The actual sample of hospitals highly depended on their willingness to participate. The incentive for hospitals to contribute in this study was the opportunity to gather insights on their performance on Twitter, moreover they had the chance to learn from other hospitals' practices. On request the hospitals could include some questions they considered interesting.

To determine the communication mode of the participating hospitals a quantitative analysis on their activity on Twitter was performed, provided that this is more reliable than the proclamation of the hospitals themselves. For the period of two and a half month all sent tweets of the hospitals were collected using a special syntax. On the basis of these data it could be determined how many tweets were sent on average per unit of time, furthermore it provided insights on the percentage of replies, which is an important indicator of the communication mode.

9.1.C. Survey

Basically the survey is divided into three sections. Firstly the respondents were questioned about the Twitter account of the hospital, thereafter the survey includes questions to measure the hospital image. The last part of the survey is related to the determination of demographics of the respondents. Before the survey questions

were presented to the respondents, a brief introduction was shown to provide the respondents with information about the goal and relevance of the research, the length of the survey and the policies on privacy and handling of information. It was explained that the study is a comparative Twitter research that will contribute to better use of the Twitter channel in the future. To protect the findings from response bias, no further in-depth information was disclosed. Most probably the followers of the participating hospitals are Dutch; hence the survey was prepared in Dutch to increase respondents' likelihood of completing the survey. Worth mentioning is that due the limited opportunities of the website used to built the survey, the questionnaire is not randomised. This means that respondents at all times are questioned on their attitude towards the Twitter account first, before they are asked about the hospital in general. Ideally these sections of questions would be randomised given that answering questions about Twitter possibly affect how people answer questions about the hospital in general and vice versa. The survey instrument was co-developed with and checked by the marketing and communication professionals, additionally the questionnaire was pre-tested by a number of respondents familiar with social media in order to prevent difficulties with filling in the questionnaire. Based on the respondents' input, minor improvements were processed in the questionnaire.

5.1.D. Measures

The questions included in the survey were selected based on previous research in literature, on the interviews held with industry experts as well as on the conversations conducted with marketing and communications professionals of the participating hospitals.

Questions Related to Twitter Account

To measure respondents' *attitude towards the Twitter account* three questions were included. The questions regarding the Twitter account are derived from earlier adopted studies (Yoo & MacInnis, 2005) and moreover based on the qualitative study. On a seven point likert scale ranging from strongly disagree to strongly agree, respondents had to indicate whether (1) the Twitter account - @username of the hospital)- appeals to them and whether they consider the tweets sent by the account as (2) useful and (3) interesting.

Additionally, independent of the scale measuring the attitude towards Twitter, some questions to measure the activity of the users in relation to the specific hospital Twitter account were included. Respondents were asked to indicate how often they retweeted tweets posted by the hospital, additionally they had to indicate how often they mentioned the hospital in a tweet and if mentioned whether this was in a positive, negative or neutral way.

Questions related to the Hospital Image

As already touched upon in the literature, there are several opinions on how the concept of hospital image should be measured. For example Matt and Elbeik (1987) have distinguished several factors, such as staff integrity and communication, hospital location and patient assistance that determine a patient's hospital image. However in this study the overall image of the hospital is central, given that is researched whether a positive image in the minds of customers can overcome the emphasis on other hard to change characteristics, such as location or convenience (Javalgi, 1991).

Given that there is no existing measurement scale of this overall hospital image, a self developed scale based on several resources was developed. The scale consisted out of the following three questions: On a seven point likert scale ranging from negative to positive, respondents had to indicate what is their general attitude towards the hospital (Yoo and MacInnis, 2005). Secondly, the respondents had to indicate whether to what extent they agreed with the statement: 'I would recommend hospital X to a friend' (Reichheld, 2003). For question three the respondents had to designate whether they feel connected to the hospital of interest. The aforementioned question was included based on the insights gathered during the interviews with experts (Kessels; Van Boven). Several interviewees repeatedly mentioned the opportunity of social media to build a

relationship with the patient. In their explanation they compared hospitals with big brands that build up a fan base that feel attached to a brand, such as Apple or Nike, according to the industry experts the feeling of connectedness is part of a positive hospital impact. For a the complete survey (in Dutch), see appendix C.

9.2. Data Analysis Study 2

9.2.A. Analysis of participating hospitals

Several hospitals were contacted to participate in this study. Striving for a good quality sample of hospitals, the contacted hospitals varied on several dimensions. Both university medical centers as well as peripheral hospitals were contacted, additionally the hospitals varied in size and of course in social media strategy. As mentioned before, the final sample depended on the willingness of cooperation of hospitals. Five hospitals, of which two university medical centers, confirmed to participate in the research.

Before statistical analysis could be run to compare the effect of communication mode on hospital image, the participating hospitals should be classified based on their social media strategy and activity. In order to be able to distinguish the hospitals, quantitative data has been collected. All tweets sent between the 1st of March 2012 until the 16th of May 2012 were downloaded using a syntax. Most elementary is the assessment of the communication mode, however also the other elements of the Twitter account such as the activity of the account and the topic of the tweets sent are analyzed. These additional analyses are important to control for other variables when assessing the effect of communication mode on hospital image. In case an increase in hospital image is observed, this cannot be automatically attributed to the difference in communication mode, for example it could also be associated to the activity of the Twitter account or the topic of the sent tweets.

Activity of Twitter account

Table 4 provides an overview of the most important characteristics of the Twitter accounts, such as total tweets sent, the number of followers and the number of accounts followed by the hospital.

	EMC @ErasmusNieuws	**JBZ @JBZDenBosch**	**UMCU @UMC_Utrecht**	**MCL @MCLeeuwarden**	**Rijnstate @Rijnstate**
Following	20	1070	5690	1533	245
Followers	2989	2345	5881	2410	2232
Total Sent Tweets	638	1312	707	1893	2771
Analyzed Sent Tweets	65	96	193	316	284

Table 4) Activity of Twitter Accounts per hospital

Analyzing the amount of 'followers', the UMCU collected with 5690 followers the most 'fans'. Commonly the success of social media is in terms of the number of followers, however Calzolari (2012) state that due to the existence of Robot Twitter accounts, the number of followers is no longer a valid measurement instrument. In his study on Twitter accounts of companies who are having a strong presence on Twitter, Calzolari (2012) found that up to 46% of the followers could be generated by robots, also referred to as bots. Although the existence of Twitter robots is not necessarily the case for hospitals, it devotes attention to the issue that possibly not the number of followers but the 'quality' or the followers value, in terms of interest or relationships are important.
Comparing the number of 'followers' with the amount of accounts followed by the hospital ('following'), it appears that all hospitals, however to different degrees, have more followers compared to accounts following. Especially the EMC stands out; they count 150 times more followers (2989) than accounts followed by themselves (20). On the other side, for the UMCU holds that the ratio following/followers is almost in balance.

The finding that the hospital accounts are followed more often is in line with the finding of Kessels & Van der Heyden (2011). According to them the ratio following/followers implies a stronger drive to send information compared to the drive for interaction. Noteworthy is that technically it is not required to follow someone to engage in a dialogue, depending on the privacy setting of the individual.

The total number of tweets provides an impression of the size of the account, yet comparison is hard due to different starting dates of the Twitter accounts. Comparison is only possible when taking just the downloaded tweets for a given period into account, an additional advantage of this selection is that the data results are more up to date. Of the participating hospitals, MCL sends with an average of 28.7 per week the most tweets, followed by Rijnstate with 25.8 tweets per week. Generally EMC and JBZ send the least tweets, respectively 5.9 and 8.7 tweets per week. Noteworthy is that almost all of the tweets are send on weekdays, yet for the calculation of average sent tweets also the weekends are included given that the Twitter channels operate 24/7.

One-way versus two-way communication

All tweets are subdivided into three types, namely 'message', 'reply' and 'retweet'. Replies are, as the designation already indicates, tweets that respond to an earlier tweet. Contrary, a 'message' is a tweet sent by the hospital that is not specifically addressed to one follower. Messages indicate a one-way strategy, whereas replies indicate a dialogue between a hospital and a follower and hence indicate a two-way strategy. Important to mention is that in reality the communication modes should be not be seen as either one-way or two- seen as continuum, but rather as a place on the continuum between the two extremes. However, for the purpose of statistical analysis it is required to form a strict classification.

	EMC @ErasmusNieuws	**JBZ @JBZDenBosch**	**UMCU @UMC_Utrecht**	**MCL @MCLeeuwarden**	**Rijnstate @Rijnstate**
Analyzed Sent Tweets	65	96	193	316	284
% Message	100	62,5	69,9	25	31,7
% Reply	0	37,5	27,9	62	66,9
% Retweet	0	0	2,1	13	1,4
Communication Mode	One-way	One-way	One-way	Two-way	Two-way

Table 5) Categorisation of sent tweets per hospital

Given that 100% of all tweets sent are 'messages', evidently the communication strategy of Twitter account @ErasmusNieuws (EMC) is classified as 'one-way communication'. Also the communication strategies of UMCU and JBZ are classified as one-way communication because the majority of tweets, respectively 69.9% and 62.5% are 'messages'. For the two remaining hospitals applies that the majority of tweets are individual replies to an earlier tweet. With 66.9%, Rijnstate has the highest percentage of replies. This high proportion of replies indicates that they engage in a dialogue with followers and other tweeters, consequently their communication mode is classified as 'two-way'. Also MCL carries out a two-way communication strategy (62% replies). MCL has the lowest percentage of messages (25%) due to the relative high percentage of retweets (13%).

In sum, subdividing the participating hospitals into two categories based on their communication mode: EMC, JBZ and UMCU fall into the category one-way communication, whereas the communication strategies of MCL and Rijnstate are classified as two-way communication.

Topic of tweets

In order to get an understanding of what hospitals are Twittering about, all downloaded tweets are coded based on the topic of the social media posts. In total 13 categories were defined, such as 'Symposium/Event', 'News', 'Research' and categories related to contact with different stakeholders, such as patients and

employees. The tweets were deductively coded based on the occurrence of a kind of topic. Comparing the defined categories with the goals and application from the literature review and study 1, the large majority of the goals and applications are covered, expect for the goal 'brand monitoring' given that this is an unilateral effort made by the hospital that naturally does not results in sent tweets. Some goals are specified into more than one category, for example the category Public Relation is divided into the categories 'News', 'Symposium / Event', 'Charity and 'Sponsorship', in this manner a more detailed insight was gained on the diverse topic of tweets.

In order to compare the participating hospitals, the importance of a topic is expressed as the percentage of tweets about a specific topic in proportion to the total tweets sent by the hospital. For a complete overview of the percentages for all 13 categories per hospital see appendix D. The table below provides an overview of the top three topics for the participating hospitals.

	Nr 1 Topic (% of messages)	**Nr 2 Topic (% of messages)**	**Nr 3 Topic (% of messages)**
EMC - @ErasmusNieuws	Research (33.8 %)	News (32.3 %)	Symposium/Event (12.3%)
JBZ - @JBZDenBosch	Patient Contact (22.9 %)	News (16.7 %)	Symposium/Event (16.7%)
UMCU - @UMC_Utrecht	Symposium/Event (48.7 %)	Contact general (21.8 %)	Research (11.4%)
MCL - @MCLeeuwarden	Patient Contact (40.8 %)	News (17.7 %)	Contact general (12.7 %)
Rijnstate - @Rijnstate	Patient Contact (44.4 %)	Contact general (15.8 %)	Symposium/Event (10.6 %)

Table 6) Top three topics of the tweets sent per hospital.

The content and topics tweeted about by the hospitals differ fairly. Every hospital has its own policies with regard to use of language and for responding on tweets, hence resulting in differences in look and feel of the Twitter accounts. Whereas some hospitals are more informative, others respond with a personal and emotional touch.

Although there are major differences between the accounts, there are several themes returning in the top three topics of several hospitals, hence some general trends can be deduced. By four out of the five hospitals the category 'symposium/event' is represented in the top three, thus hospitals show to be acquainted with the application of social media as public relation of events, lectures and conferences. As already confirmed during the interviews (Study 1), also the quantitative analysis of tweets confirms the application of social media as a public relation tool.

Another recurring topic is contact with patients, for three hospitals applies that most of their tweets are dedicated to patient contact. Approximately 40% of the tweets sent by MCL and Rijnstate are replies to questions or posts of patients. The topic of patient contact is discussed in more detail later in this chapter.

Another recurring topic is 'News', referring to informative messages about for instance a new agreement for cooperation between several hospitals or the opening of a new building. Important to mention is that there is some regularity in the kind of news messages sent by the different hospitals. Whereas the EMC mainly reports on news on healthcare in general, MCL frequently tweets about news related to their hospital, such as landings of their trauma helicopter.

Interaction with Patients

Zooming in on a particular group of interest in this research, namely patients, it can be concluded that three out of five hospitals use Twitter to interact with their patients. For all three hospital applies that the majority of sent tweets are replies to patients, however the sentiment of the contact differs. Table 7 provides an overview of the categorisation of the sentiment of customer contact.

	JBZ @JBZDenBosch	MCL @MCLeeuwarden	Rijnstate @Rijnstate
Analyzed Sent Tweets	96	316	284
Patient Contact (number of tweets)	22	129	126
Service Recovery (% of patient contact)	18 (81.9 %)	8 (6.2%)	7 (5.6%)
Compliments (% of patient contact)	5 (22.7 %)	4 (3.1%)	6 (4.8 %)
Other (% of patient contact)	0 (0%)	122 (94,6%)	113 (89,7%)

Table 7) Categorisation of the sentiment of customer contact per hospital

The large majority of tweets sent to patients by the JBZ is related to handling complaints, or in other words service recovery. In case patients tweet to express their discontent, the hospital replies repetitive by referring the patient to a complaint officer: '*@erikgalle when things are not going well please let us know, you can contact the Complaints Officer, tel: (073) 553 2639'.* In comparison, for the other two hospitals applies that merely 6% of tweets fall into the category of service recovery. Additionally the percentage of explicitly mentioning compliments of patients is relatively high for the JBZ (22.7%) compared to 3.1% (MCL) and 4.8% (Rijnstate). An important side note is that the number of tweets sent during the defined period by JBZ (96) is considerably lower than the tweets sent by MCL (316) and Rijnstate (284).

Whereas customer contact of the JBZ is limited to either service recovery or compliments, the great majority of tweets addressed to patients by MCL and Rijnstate are concerned with answering patient questions, but above all with showing the hospitals' compassion with patients. Both the MCL and Rijnstate reply on social media postings of tweeters with expressions of support in severe times, get well wishes and also congratulations in case of good news. The following conversation between a patient and @Rijnstate provides a good impression of the sentiment of customer contact (https://Twitter.com/statuses/user_timeline/groncken, 2012):

Figure 5) Example of Twitter conversation

Groncken: Arnhem, NL, Rijnstate hospital, there is a first time for everything, but precisely in this weather… (accompanied with a photo of the sun drenched hospital building).
Rijnstate: @Groncken Hopefully nothing serious? It is a nice picture;-)
Groncken:@Rijnstate nothing serious, standard procedure, but never been hospitalised in the past 44 years.
Rijnstate: @Groncken Hopefully you are now freed from us for a while ;) We wish you a good recovery!

Comparable to Rijnstate, also MCL replies with a lot of empathy to patients. Monitoring what is being said about them on Twitter, they respond to tweets in which they are mentioned. The hospital gets in touch with the patients prior to appointments to courage them: '*@tinverbeek Wish you strength! #Injection #hip'*, furthermore they inform how the patient is doing afterwards: *'@wilcowielenga Undergoing a MRI scan is always something special. Hopefully everything went well?'.* According to the communication staff of the MCL Twitter can be used to build a relationship with patients who visit the hospital repeatedly. An example provided by the communication professional of the MCL was about a man who got injured by a drill and had to come to the hospital several times for surgery and check-ups. Using the hash tag '#Drill looking for finger' in his tweets the man and the communication department of the hospital had regularly contact via Twitter about his recovery and revalidation process.

Conclusion Analysis of participating hospitals

To conclude, based on the quantitative analyses of the participating hospitals and their Twitter accounts, the communication strategy of two hospitals (MCL and Rijnstate) were classified as two-way communication. The other hospitals (JBZ, EMC, and UMCU) fall into the group of one-way communication. Additionally the activity, the topic of the tweets and the interaction with patients were analyzed. Based on the percentage of tweets

sent to patients, it could be deduced that MCL, Rijnstate and to a lesser extent also JBZ, actively engage in a dialogue with patients. As a final point, the Twitter accounts of all participating hospitals have their own character due to the use of language, the way of responding, appearance and to end with the covered topics.

9.2.B. Dataset and Demographics

As earlier mentioned, the survey was distributed via the Twitter channels of five participating hospitals. In total 319 respondents participated in this research. Several surveys appeared to be unusable due to essential missing values. After deletion, the total number of surveys used for data analysis was 268 (84%). Given that the survey was spread via Twitter, it is impossible to define the exact response rate.

	EMC @ErasmusNieuws	**JBZ @JBZDenBosch**	**UMCU @UMC_Utrecht**	**MCL @MCLeeuwarden**	**Rijnstate @Rijnstate**
Number of Respondents	36	16	95	74	47

Table 8) Number of Respondents per hospital

Table 8 provides an overview of the number of respondents for each participating hospital. A high number of replies intuitively indicates an active channel with highly involved followers. This is confirmed given that the hospitals who are considered most (inter)active based on the number of tweets sent itself as well as the percentage of replies, that is UMCU and MCL, have gathered the most respondents.

Table 9 on the next page provides an overview of the respondents' characteristics for the complete sample, as well as for the participating hospitals separately. The numbers of respondents are very different for the participating hospitals, whereas UMCU has 95 respondents, JBZ merely has 16 respondents. This possibly influences the reliability of the results.

The majority of surveys were completed by females (69.8%). This male/female distribution is reflected across all participating hospitals.

Analyzing respondents' relationship to the hospitals for the complete sample, it was found that 26.11% indicated they are currently patient of the hospital. The lowest percentage of patients was found for JBZ (18.%), whereas the highest percentage of patients is shown for MCL (31.1%). Another substantial part of the respondents is formed by employees of the hospital (32.5%). Considering all respondents, the percentage of employees (32.5%) is higher than the percentage of patients (26.11%). This tendency is reflected across all hospitals, except for MCL who has slightly more patient respondents. The remaining 40% of the respondents indicated that they are living close to the hospital, are family members of patients or employees, are working in the health care sector (other healthcare institutions), are suppliers of the hospital or are working in the marketing or communication sector.

Taking into considering all 268 respondents, the youngest respondent was 12 while the oldest participant had the age of 72. The average age of all participants was 40, taking into account only the patients the average was 41. Of note is that the demographics in this sample are consistent with earlier research on the users of Twitter that show the majority of tweeters is female and the average age is 39. (www.frankwatching.com, 2012b; www.twittermania.nl, 2010)

	EMC	JBZ	UMCU	MCL	Rijnstate	*All Hospitals*
Respondents	36	16	95	74	47	*268*
% Male / Female	33,3 / 66,6	25 / 75	32,6 / 67,4	31,1 / 68,9	23,3 / 76,6	*30,2 / 69,8*
% Patient	30,6	18,8	21,1	31,1	27,7	*26,11*
% Employee	33,3	37,5	34,7	28,3	31,9	*32,5*
Age						
% < 29	30.6	18.8	14.7	23.0	12.8	*19.0*
% 30 – 39	27.8	25.0	31.6	31.1	27.7	*29.9*
% 40 – 49	25.0	31.3	23.2	31.1	36.2	*28.4*
% > 50	16.7	25.0	30.5	14.9	23.4	*22.8*
Education						
% Lower sec. education	2.8	0	3.2	6.8	4.3	*4.1*
% Higher sec. education	11.1	6.3	6.3	5.4	10.6	*7.5*
% Interm. higher education	16.7	18.8	11.6	32.4	19.1	*19.8*
% Bachelor Degree	47.2	56.3	45.3	44.6	48.9	*46.6*
% Master Degree	22.2	18.8	33.7	10.8	17.0	*22.0*

Table 9) Demographics of respondents

With regard to the level of education completed, most respondents completed a bachelor degree. The distribution of patients over the different education categories of the individual hospitals is roughly similar to the averages considering all respondents. Notable is that the group of respondents that completed a Master degree is larger for the university medical centers, especially the UMCU stands out (33,7%).

Reliability

A reliability analysis was performed to test the internal consistency of the two multiple item scales. The Cronbach alpha was determined for 'Attitude towards Twitter' and 'Hospital Image'.
The results show that the Cronbach alpha's are both higher than 0.8 (Attitude towards Twitter: 0.917 and Hospital Image: 0.867) indicating a high internal consistency (Field, 2005). Additionally the Cronbach alpha's were calculated if one item of the scale was deleted. These coefficients showed that the Cronbach alpha of the scale 'Attitude towards Twitter' would not increase after deletion of one of the three items. For the multi item scale 'Hospital image' holds that deletion of the question about connectedness to the hospital results in a small improvement of the Cronbach alpha (0. 893), for this reason none of the variables were left out, as this would not (substantially) increase reliability.

9.2.C. Testing Hypotheses

This section presents the results related to the formulated hypotheses.

H1.A) A higher attitude towards Twitter, results in a higher hospital image ***among followers****.*
H1.B) A higher attitude towards Twitter, results in a higher hospital image ***among patients (followers)****.*

The aim of the first hypothesis was to research the correlation between the variables attitude towards Twitter and hospital image. Pearson's correlation was used to determine whether a significant relation exists between the two variables.

Both the hypotheses 1A and 1B were *accepted*. The results show that there exists a weak positive correlation between attitude towards Twitter and hospital image (R=0.399, P=0.01) taking into consideration all respondents. Considering only patients, a comparable significant correlation is found, namely R=0.385 (P <

0.01). In conclusion, the results imply coherence between the attitude towards Twitter and hospital image, however the coherence is very small.

Based on the literature and insights gathered during the qualitative part of this research it was expected that followers in general and patients in particular, favour interaction over merely receiving information. Hence the following hypotheses are formulated and tested:

*H2. A) A two-way communication strategy of a hospitals' Twitter account will result in a higher **hospital image among followers** compared to a one-way communication strategy.*
*H2. B) A two-way communication strategy of a hospitals' Twitter account will result in a higher **hospital image among patients (followers)** compared to a one-way communication strategy.*

In order to test the above mentioned hypotheses, the differences in average hospital image are assessed for the respondents of the two groups of hospitals (one-way communication mode versus two-way communication mode). The table below provides an overview of average hospital image for the two communication strategies, both depicted for all respondents as well as for patient respondents only.

	All Respondents (n=268) **Hospital Image**	*Patients (n=70)* **Hospital Image**
All hospitals	5.6	5.7
One-way Communication	5.7	5.8
Two-way Communication	5.6	5.7

Table 10) Hospital Image

From the table it can be read that there are only small differences comparing the outcomes for the two groups. Independent sample T-tests are used to determine whether the means of hospital image are significantly different for the two groups of hospitals, thereby also highlighting a particular group of interest, namely patients.

Hypothesis 2A and 2B are *rejected.* Both for patients (t=0.602, P=0.549) as well as for all respondents (t= 0.688, P=0.492) holds that there is no significant difference in hospital image between hospitals executing a one-way communication strategy and hospitals executing a two-way communication for their Twitter account. Although the difference is minimal, the hospital image was lower for the two-way communication group (5.7) compared to one-way group (5.6), this is contrary to what was expected. The same patron was found for the patients.

The above formulated hypotheses reflected the research question in terms to what extent the communication mode influences the *hospital image*. Additionally also the relationship between the communication mode and the *overall attitude towards the Twitter account* is assessed. This relationship can be seen as an intermediate step: When a two-way communication mode is preferred over a one-way communication mode, this will result in a higher attitude towards the Twitter account, hence expectantly positively influencing the hospital image.

Although the coherence between communication mode and hospital image was not confirmed (H2.A & H2.B were rejected) the following tests on the relationship between communication mode and the overall attitude towards Twitter contribute to the foundation of the effect that communication strategy has on the attitude towards a Twitter account. Possibly extraneous factors influenced the hospital image so that the effect of the communication via Twitter cannot be proved, however a two-way communication strategy can still be preferred over a one-way strategy by followers and patients.

Summarizing, in line with the earlier formulated hypotheses, it is expected that a two-way communication strategy results in higher overall attitude towards the Twitter account, applying both for patients as well as for followers in general.

*H3. A) A two-way communication strategy of a hospitals' Twitter account will result in a higher **overall attitude towards the Twitter account among followers** compared to a one-way communication strategy.*
*H3. B) A two-way communication strategy of a hospitals' Twitter account will result in a higher **overall attitude towards the Twitter account among patients** compared to a one-way communication strategy.*

	All Respondents (n=268) **Overall Attitude towards Twitter**	*Patients (n=70)* **Overall Attitude towards Twitter**
All hospitals	5.1	5.5
One-way Communication	5.1	5.4
Two-way Communication	5.2	5.6

Table 11) Overall Attitude towards Twitter Account

Table 11 shows that the overall attitude towards Twitter is slightly higher for respondents in the two communication mode group (mean = 5.2) compared with respondents in the one-way communication mode (mean =5.1). The difference in attitude towards Twitter is slightly larger when taking only patients into account (5.4 and 5.6); however the difference is still minimal.
Again independent sample T-tests are used to determine whether the means of attitude towards Twitter are significantly different for the two groups of hospitals, thereby also highlighting a particular group of interest, namely patients.

Hypothesis 3A and 3B are *rejected*. Taking into considering the complete sample, there is no significant difference in overall attitude towards Twitter comparing the respondents of hospitals implementing a one-way versus a two-way communication strategy (t=0.580, P=0.562). Additionally there is no difference in overall attitude towards Twitter when only taking the patients into consideration (t=0.658, P=0.512).

Noteworthy is that in general, patients have a higher overall attitude towards Twitter compared with the overall attitude towards Twitter for all respondents. An independent sample T-test showed that there exists a significant difference in the attitude towards the Twitter account between patients and all other respondents (t=2.917, P=0.004). Important to mention is that there is no significant difference between patients and other respondents in hospital image (t=0.983, P=0.327).

9.2.D. Additional Findings

Comparison of the participating hospitals

From the analysis of the Twitter accounts was derived that participating hospitals maintain Twitter accounts with a distinctive character due to the use of language, the way of responding and lastly the covered topics. To explore whether these factors influence firstly followers' overall attitude towards the Twitter account and secondly their hospital image, a one-way anova test has been performed to test whether there exist significant differences evaluating the five participating hospitals. Table 12 provides an overview of the means on the key variables presented per hospital, both all respondents as well as for the patients in particular. A side note is that the group patient respondents of JBZ is very small, counting only three respondents. The amount of patient respondents for the other hospitals range between 11 and 23.

	All Respondents (n=268)		*Patients (n=70)*	
	Overall Attitude towards Twitter Account	**Hospital Image**	**Overall Attitude towards Twitter Account**	**Hospital Image**
EMC - @ErasmusNieuws	5.1	5.6	5.5	5.8
JBZ - @JBZDenBosch	5.2	5.5	5.7	5.6
UMCU - @UMC_Utrecht	5.1	5.8	5.3	5.9
MCL - @MCLeeuwarden	5.0	5.7	5.3	5.8
Rijnstate - @Rijnstate	5.4	5.4	5.9	5.5

Table 12) Overall Attitude towards Twitter Account & Hospital Image

Results show that there is no significant difference in the respondents' attitude towards Twitter evaluating the five hospitals (F=0.910, P=0.459). This result implies that followers from different hospital accounts have roughly the same attitude towards the Twitter account they follow. The same holds when taking only the patients into consideration; there is no significant difference in the overall attitude towards Twitter account among patients (F=0.834, P=0.508).

A one-way anova test is also used to determine whether there are considerable differences between the hospital image of followers and patients contrasting the five hospitals. Results show that there is no significant variation in hospital image among followers (F=1.058, P=0.378) as well as no significant difference in hospital image among patients (F= 0.401, P=0.807) comparing the five hospitals.

Given that the distinctive Twitter accounts are evaluated roughly similar, the results of this study imply that elements which determine the character of a Twitter account, such as the topics of tweets and the language used, do not influence the overall attitude towards Twitter of (patient) followers.

Noteworthy is that Rijnstate shows the highest overall attitude towards Twitter of all participating hospitals, namely 5.4 considering all patients and 5.9 considering only patients. Conversely they have the lowest score on hospital image, respectively 5.4 (all respondents) and 5.5 (patients). Although the differences are little, this finding is remarkably given that was expected that a higher overall attitude of Twitter would contribute to a higher hospital image.

Comparison of patients and employees

Subdividing the respondents, it was derived that the largest group of respondents was formed by employees of the hospitals. Considering all respondents, almost one third (32.5%) indicated they were an employee, whereas 26.11% designates themselves as patients of the hospital. These results imply that employees of the hospital form a substantive part of the followers of the hospitals Twitter accounts. Important to mention is that it cannot be confirmed with certainty that these percentages of respondents are representative for the actual distribution of groups among the followers. Possibly employees are more likely to fill in the questionnaire to help their hospital, consequently the employees could be overrepresented in this sample. Nevertheless these are just suppositions and given that hospitals do not have a clear overview of their followers the sample cannot be tested on representativeness. Nonetheless, it could also be the case that the found percentages reflect the true distribution of followers. This is supported by the finding that roughly the same distribution is found across the different hospitals. Assuming that employees form an important stakeholder group following the online social media of the hospital, it is valuable to take a closer look at this particular group.

	Overall Attitude towards Twitter Account	Hospital Image
Patient (n= 70	5.5	5.7
Employee (n=87)	5.1	6.1

Table 13) Overall Attitude towards Twitter Account & Hospital Image

As from table 13 can be derived is the overall attitude towards Twitter higher for patients (5.5) compared to employees (5.1). Results of an independent sample T-test show that patients significantly have a higher overall attitude towards Twitter (t=2.108, p=0.031) compared with employees. On the contrary, employees (6.1) significantly have higher hospital image compared with patients (5.7), (t=-2.468, p=0.015).

9.3. Intermediate Conclusion Study 2

The main goal of this second quantitative study was to examine the effect of Twitter on hospital image, taking into account different communication strategies. The results show that there is only a small correlation between the Attitude towards Twitter and Hospital Image.

Additionally it was found that a two-way communication mode is not preferred over a one-way communication mode by all respondents, patients not excluded. This was evidenced by the outcome that there was neither a significant difference in hospital image nor a significant difference in overall attitude towards Twitter, comparing the respondents of hospitals executing different communication strategies.

Noteworthy was the significant difference measured for overall attitude towards Twitter and hospital image when comparing patients and employees. Whereas the patients evaluate the hospital Twitter account higher compared to employees, it is the other way around taking into view the hospital image. Employees have a better hospital image of their employee compared to the hospital image in the mind of the patients.

10. Discussion & Conclusions

10.1 Discussion of the results findings

Against the background of the changing market conditions in the healthcare environment, it is essential for a hospital's long term survival to develop effective (marketing) strategies to differentiate themselves from their competitors. Important hospital choice factors are constituted by hospital image and hospital reputation. According to Javalgi (1991) a positive image could even overcome other important attributes that influence consumers' choice for a given hospital, such as the location. Effective marketing and communication strategies are determinant factors in the creation of the hospital image in the public's mind.(Gray and Balmer, 1998; Akinci et al, 2004)

Recently, considerable attention has been devoted in the media and at conferences to the implementation of social media by hospitals. More and more hospitals are being present in online social media, however thus far the effects of the implementation of social media in general, and in healthcare in particular, are not confirmed in scientific literature. We conducted this study to provide empirical results on the different goals and applications of social media in a healthcare environment (Bennett, 2009). Furthermore it was conducted to reveal insights on the extent to which Twitter can be used to build and retain a positive hospital image and reputation, hereby taking into account different Twitter strategies. The first, qualitative part of our study consisted out of interviews carried out with several industry experts in order to research the various goals and applications of social media in a healthcare environment. The interviews were carried out with both marketing and communication consultants and professionals employed by a hospital, consequently all different views from the working field were included. Secondly, we conducted a quantitative study to provide a bigger picture of hospital's activities on Twitter and to incorporate the Twitter users themselves.

It has been stated that social media can be implemented to accomplish a variety of goals in a healthcare environment. (Bennett, 2009; Keckley & Hoffman, 2010) The results of this study confirm almost all of the in the literature identified social media applications, namely: *customer service, service recovery, patient education, public relations, crisis communication, recruitment tool* and *brand monitoring*. Additionally, based on the interviews with experts from the field, three novel applications could be identified. During the interview with Joost Schrage and Renate Wijma, owners of the 'Twitterkliniek' which is a consultancy company providing advice to health care institutions on the topic of social media, they highlighted the function of *generating traffic* to the website of a hospital. Secondly according to them social media could also be used as a *research tool* to gather data about diseases or patients' daily practices on dealing with their illness. Finally, the interview with Ruud Kessels (Kessels Communicatie en Media) revealed a third novel application; social media could be used for '*internal purposes*' such as the dissemination of information to working staff, mutual employee contact, knowledge sharing and finally to praise or motivate employees. Currently only a few hospitals actively contact their staff to wish them for example good luck or to thank them for their efforts. All the aforementioned ways of contact with employees could contribute to an increase in job satisfaction, which is evidently a positive outcome for the hospital.

Although not all of the social media applications and goals are related to patients (for example the use of social media as a recruitment tool targets future employees) the emphasis both in the resources as well as during the interviews lays on the use of social media to engage with (future) patients. Social media is perceived as a low threshold opportunity to profile a hospital online and to engage in a dialogue with patients. Nearly all industry experts consider the two-way communication mode as better strategy compared to merely sending information. Carrying out a two-way communication strategy, social media can facilitate collaboration and relationships between the hospital and patients, yet the communication mode is depending on the adoption of

the medium by hospitals. (MixtMedia, 2008) Additionally, the interview with Mayke Breeuwer (Head of Communication at hospital SJG Weert), revealed that fear for negative consequences and a lack of both knowledge and time are explanations for not implementing social media in general and a two-way communication strategy in particular.

The quantitative part of our study was carried out to research whether social media contributes to a better hospital image and reputation among followers, hereby taking into account different social media strategies. The communication mode (one-way versus two-way) was by the industry experts perceived as the most important factor of a social media's strategy. Additional factors were the structuring of several Twitter accounts, including the option of segmentation, and at last the decision to maintain corporate versus personalised Twitter accounts. The findings, based on a survey spread amongst the followers of five hospital Twitter accounts**,** confirm that people who evaluate the Twitter account better also have a better hospital image. However, given that the correlation between the two concepts is low, it is important to mention that the influence of Twitter on people's hospital image is limited.

Considering the effect of different communication modes, which was confirmed by professionals from the working field as the fundamental element of a social media strategy, **the results demonstrate that patients and other followers of the Twitter account do not prefer engaging in a dialogue over a one-way communication mode**. Given that there is neither a difference in hospital image, nor a difference in overall attitude towards to the Twitter account when comparing hospitals with a different communication mode, the outcomes of our study contradict with the widely adopted view among industry experts and literature that a two-way communication is more effective in comparison with a one-sided communication strategy. (MixtMedia, 2008) However, our findings are in line with the outcomes of a master thesis by Dijkhof which is carried out parallel to our research. Whereas our research focused on social media in a health care environment, the thesis by Dijkhof focused on the reputation of both existing and fictive companies. (www.Twittermania.com, 2012). Based on a survey spread amongst 180 Twitter users, Dijkhof found that an organisation's reputation benefits from the use of Twitter, however according to the researcher it is not necessary to engage in a dialogue. On the contrary, another research by Smit (2011) carried out amongst 271 tweeters confirms that Twitter users which follow companies do have the need to receive personal replies or to engage in a dialogue. In sum, initial exploratory research on the effect of using different communication strategies have led to diverging outcomes, however the overall believe of social media professionals, supported by gut feeling, still nourishes the theory that engaging in a dialogue is more effective than merely sending messages. Following on the aforementioned exploratory studies, still much research has to be done to understand the effects of different communication strategies in online social media.

Noteworthy is the finding that a majority of respondents of the survey was formed by the own employees of the respective hospital. **Whereas in the literature and during the interviews predominantly is spoken about Twitter as a communication tool to first and foremost reach (future) patients, the audience of own employees is largely neglected**. During the interviews, only communication professional Ruud Kessels highlighted the internal purposes of social media. The finding that the function of Twitter as a communication tool to employees is largely neglected forms a reasonable explanation for the result of our quantitative study which show that **Twitter accounts are evaluated lower by own employees in comparison with patients**. This result indicates that hospital Twitter accounts better meet the wishes of the patients, compared to the expectations that employees have of the Twitter account. It is important to note that the lower valuation of the Twitter account by employees does not seem to affect their overall hospital image, given that employees have a higher hospital image compared to patients.

Although the hospital image of employee followers is higher in comparison to patient followers, it would be a missed opportunity for hospitals not to consider employees as an important group of followers of their social

media channels. Scientific research on the use of Twitter for internal communication shows that Twitter contributes to a better cooperation (building common ground)and knowledge sharing between colleagues, also from different departments (Zhao & Rosson, 2009). Given that hospitals are large institutions, employing thousands of people, Twitter is a suitable medium to keep up with internal news from all departments. More in line with our study, social media could also contribute to a good image of the hospital among employees. Social media could enhance feelings of connectedness with the hospital; moreover they could make employees feel proud to work for an employer. For example Rijnstate, the largest hospital in the region of Arhnem, had sent the following tweet on Friday the 13th of April 2012 to an employee named Mikel: '*@mikelehnkering Good work! Enjoy your weekend!'*. Another vivid example of how a hospital could share their respect and appreciation for employees appears from the following tweet, again sent by Rijnstate: '*@ingevanwolferen Congratulations on such a milestone! Hopefully we can welcome you as a colleague for a long time' (Tuesday 20th of March 15:18:21).*

The finding that Twitter accounts are evaluated differently by patients and employees emphasizes the complexity of serving different stakeholders with one Twitter account. One approach to cope with the different audiences is to organise separate Twitter accounts that target different stakeholders. Nonetheless, besides the advantage of the possibility to tailor messages, there are also several disadvantages associated with maintaining several accounts of which a fragmented picture of the hospital in the stakeholders' mind is one of the most important. Additionally there might be not enough relevant information or content available on the specific topic to sustain an interesting Twitter channel. Furthermore the maintaining of several Twitter channels is time-consuming. Once a hospital, after considering both the advantages as well as the disadvantages, decides to establish several Twitter accounts, it was found that market segmentation is preferred over the internal organisation (medical specialism's) as a foundation for structuring the Twitter accounts. However, all interviewees agree that hospitals should strive firstly for one, large corporate Twitter account.

Having analysed the corporate hospital accounts, the results of our study show that patients and employees represent the most important follower groups of the Twitter accounts, hence hospitals should look at the opportunities to send 'dual' messages that are both relevant for patients as well as for employees. For example a message to congratulate an employee with obtaining a training course, a prestigious award or another major performance firstly provides the employee with a good feeling. Additionally, a secondary effect is that the hospital's image could also increase among patients, given that they are informed about the good performances of employees working at a hospital. For this reason, taking into consideration the hospital's corporate Twitter account, which is followed mainly by patients and employees, hospitals should send or reply to messages targeting one audience, hereby also considering the other major audience. This 'spill-over' effect of communication overcomes the complexity of dealing with different stakeholders and makes segmentation between these two groups superfluous.

As already could be derived from the fact that the handbook 'Doctors and Social Media' (compiled by the Royal Dutch Society of Advanced Medicine) extensively discusses the issues related to privacy and confidential information, social media cannot be discussed without given a large place to risks and possible negative consequences. Additionally, as earlier mentioned, fear of negative consequences and risks is repeatedly mentioned as an explanation for not implementing social media. In fact the use of social media should be regarded as a trade-off between the advantages and opportunities on one side and the costs, efforts and also the potential negative outcomes on the other side. During the interviews with industry experts, several risks associated with the implementation of social media were discussed, of which reputational damage was the most important. Discontinuation of the Twitter account (especially during crises situations) and not living up to expectations of followers could result in loss of a hospital's reputation. Other risks include the spread of

negative (electronic) word of mouth by both patients as well as by own employees who are blackguarding the employer, moreover employees could leak private information hereby possibly harming patient's privacy.

With regard to the associated risks it is worth mentioning that many social media consultants state that the abovementioned risks could be overcome by training of both communication professionals as well as other working staff. Interviews with communication professionals employed by hospitals showed that some hospitals have set up guidelines, rules and also workshops to inform their employees on the use of social media. These kinds of measures aim to avoid crisis up front, however besides preventive measures it is also important to develop contingency plans in case a crisis does occur. The real life cases of Maasstad and VUmc showed that discontinuity of online social media communication further damages a hospital image and reputation. Both the consultants of the Twitterkliniek (Joost Schrage and Renate Wijma) as well as Maarten Elsinga (consultant at Redmax which provides advice on online projects to healthcare organisations), state that hospitals, especially during crisis situations, must be 'open' and 'transparent' in their online communications. Crisis communication could neutralize media attention, provide factual information and hence put an end to rumours. Ralph van Disseldorp, marketing manager at Maxima Medisch Centrum in Eindhoven, even perceives social media as an opportunity to turn a negative event into positive one, hereby strengthen the reputation. Continuity of the social media channels is found to be essential for the success of online communications, for this purpose guidelines and contingency plans could be developed by the marketing and communication department. These recommendations are discussed in more detail in the section 'practical recommendations'. In sum, when recognized and used properly, social media can help hospitals to build and retain a hospital image.

10.1 Limitations

To enable a correct interpretation the results of our study, it is important to recognize its limitations. For the quantitative part of our study, a survey was spread amongst the followers of five hospitals. Given that respondents are real followers of existing Twitter accounts, the reliability of the answers increases, however since there is already a kind of relationship or history between the hospital and the follower, prior feelings or earlier experiences could possibly interfere the answers.

Overall the number of respondents was high for the participating hospitals, however in one case the number of respondents was limited to only 16 respondents. For this reason more than two hospitals were included in our study, so that a limited number of respondents of one hospital could be overcome. Additionally, the results are subject to non-response bias, which implies that not all respondents have finished the survey and people with specific characteristics may have had a higher non-response.

Another limitation related to the survey was that the questions were not randomised, because the survey application did not allow for that. All respondents first answered questions about the Twitter account and thereafter answered questions related to the hospital in general, possibly influencing the results.

Our survey was spread via the corporate accounts of the participating hospitals. However, industry expert Renate Wijma (Twitterkliniek) emphasizes that besides maintaining a corporate account it is important that individual medical professionals are active online, given that people want to communicate with people. Since additional hospital Twitter accounts and also personal accounts of health care professionals are not included in this study, possibly not the total effect of Twitter on hospital's image and reputation is measured. This opens opportunities for further research to include also personal Twitter accounts of health care professionals, often referred to as social media ambassadors.

10.2 Further research

As already touched upon before, further research has to be conducted on the effects of using either a one-way versus an interactive communication mode. Besides research on the communication mode, additional research

should be carried out on other elements of the social media strategy that were identified during the interviews with industry experts; the structuring of the Twitter accounts and the use of personal versus corporate Twitter accounts. As said before, it could be interesting to include both personal as well as corporate hospital Twitter accounts to measure the effect on patients' or other stakeholders' hospital image, moreover it could be of interest to compare the effectiveness of corporate and personal accounts.

Another suggestion for further research is to explore the content that hospital should share in online social media to increase their image and reputation. Although hospitals feel the urge to be present online, the topic of the information that should be disseminated via social media is underexposed. Further research could delve into question: What kind of information shared by hospitals in online social media would contribute to a positive hospital image and reputation among patients? From the literature study on hospital choice factors it was derived that *presence of specialist doctors* and *availability of new technologies and innovative equipment* are highly valued by patients (Javalgi et al, 1991; Moser, 2010), hence communication on the reputation and quality of specialists could be effective topics to communicate to (future) patients in order to realise a better hospital image. Other relevant information to be shared in online social media could be patients' testimonials. Our study suggested the opportunity for hospitals to send 'dual' messages, implying that messages are relevant for different stakeholder groups. Firstly, further research could focus on the effectiveness of the 'spill over effect' of dual messages targeting two stakeholder groups simultaneously, secondly further research could examine the content that is interesting for patients as well as for employees. Furthermore research could be carried out on the different formats that can be used to share information. Research among Twitter users that follow companies indicate that links to articles or links to the company's websites are most successful, followed by photos and regular tweets. (Smit, 2012) It could be interesting for further research to elaborate on the effectiveness of different formats used to share information in online social media in a healthcare environment.

Our research focused on the use of social media in a healthcare environment, however several elements of our study also apply to companies and other organisations implementing social media. Given that there is still only very limited scientific research on the use of social media, we hope our study encourages future researchers, also beyond the healthcare environment in other working fields, to do research on the use of the social media in general and the effectiveness of different social media strategy in particular.

10.3 Practical Implications

Social media is incorporated into the daily life's of many people and given that the number of users is still expected to grow, social media in a health care environment is developing from a 'nice to have' to a 'need to have' element in a hospital's marketing and communication mix. We recommend hospitals to implement social media, with the explicit mentioning of one crucial condition; the continuation of the social media channel, also during crisis situations. To ensure continuity, firstly a hospital should provide the pre-conditions, such as sufficient resources in terms of budget and marketing and communication staff. Additionally we stated that training of both communication professionals as well as other hospital staff is key to successful implementation of social media, hence we recommend hospitals to set up (official) training courses to learn all employees more about the opportunities and also the risks of social media. As said before, the continuation of social media is crucial, particularly during crisis situations when it could avoid further reputational damage or even turn a negative event into a positive one. Hence we recommend the marketing and communication department to set up contingency plans that prescribe the procedures to follow after an external or internal crisis has occurred. This crisis plan should include practical information such as who is allowed to tweet and who has to the approve the communiqué, additionally we advise communication professionals to upfront ask for the support of the board of directors. Marketing and communication professionals should convince the board of the directors of the importance to be open and transparent in online social media communications, at all times.

Our study on the goals and applications of social media showed that some purposes, such as the opportunities to use social media as a public relation tool (to spread news and highlight events) and a human resource tool (to recruit employees), are currently already put in practice by hospitals, however according to us other goals and applications deserve more attention. Marketing and communication professionals should also consider the opportunities to use social media as a tool to increase website traffic and to improve search engine ranking positions. Additionally social media could be used as a tool for brand monitoring, customers service and internal purposes.

All social media communications contribute to the online 'positioning' and 'profiling' of the hospital, which is becoming increasingly important in the light of a competitive health care environment. Although more research has to be done on which content hospitals should spread, our preliminary recommendation (based on the literature study on hospital choice factors) is to include communication about the reputation and quality of specialists/doctors as well as the availability of modern techniques and equipment. The selection of which specialists should receive extra attention follows logically on the medical specialisation(s) of the hospital. Additionally, hospitals could consider encouraging the individual specialists to tweet work-related, given that people want to communicate with people.

During the execution of social media, we recommend communication professionals to track who follows their account to ensure the hospitals have a good overview of their audience. Making a distinction between for example patients, employees and business suppliers, hospitals can monitor whether the anticipated audience corresponds with the actual audience and hence if the account can be used for the intended purpose. Currently the emphasis of hospitals' online social communication lies on the communication with patients, however in our sample only 26% of the respondents indicated they were patients. For this reason we recommend hospitals to create content that is both relevant for (future) patients as well as employees, which formed the largest group of followers in our sample (33%).

Our quantitative study did not confirm that a two-way communication strategy is more effective in comparison to one-way, however the unequivocal opinion of the industry experts is likely to remain that engaging in a dialogue is better than merely sending information. Before a hospital decides to implement a two communication strategy, we recommend setting up a kind of 'flow diagram' or 'guidelines' to ensure communiqué is uniform. Additionally marketing and communication professionals have to understand that starting two-way communication creates expectations among followers. For this reason a marketing department has to set up clear disclaimers for the social media channels, moreover the department has to set up a work schedule or shifts to ensure a timely responding. A two-way communication strategy allows hospital to answer questions, to execute service recovery and to build relationships. Whereas the current communication of hospitals implementing a two-way communication strategy is mainly reactive, hospitals could also actively ask for replies by posting questions or by using health-related quizzes or contests.

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Appendix

Appendix A. Interview Guidance

The interview guidance was used during the interviews with industry experts. It is important to mention that the guidance served merely as support; hence the actual topics discussed were dependent on the input of the interviewee. Moreover the interviewees had different backgrounds (hospital employees / communication and marketing professionals), hence the topics differed per interviewee. The interviews were conducted in Dutch.

Introduction

Why are you interested in social media in healthcare/hospitals?
Question related to the background of the interviewee (hospital/consultancy company)

Questions

Why are hospitals using social media?
Do all hospitals use social media/Twitter in the same way? If not, what are the biggest differences?
What are your experiences with hospitals/with the implementation and outcomes of social?
What is according to you a model hospital when it comes to social media? Why?

When the subject comes to the table; go into:
trends
implementation
associated risks
future of Twitter

Closing

Explanation of my study; Thank the interviewee for participation.

Appendix B. Interviewees' quotations organised per social media goal & applications

Social Media Goals & Applications	Pieter-Frank van Boven (Praktijk Index)	Ruud Kessels (Kessels Communicatie)	Renate Wijma & Joost Schrage (Twitterkliniek)	Ralph van Disseldorp (Maxima Medisch Centrum)	Maarten Elsinga (Redmax)
1. Customer service		- You could organise accounts where you can discuss quality improvements with your patients one to one (..)			- You would like to give people a good feeling in your hospitals, and that starts with the reception (...) but there are more and more online contact points. (...) It are customer touch points where you would like to deal customer-oriented with your patients - (..) Maybe there arises a conversation, or the patient has a question or (...)
2. Service Recovery	- I have seen (... a hospital)... that directly contacts or directly calls: 'Okay, here we need to do something, this is not okay'. - (...) For example: 'I was at the hospital and had to wait for two hours...fucking shit'. I sent this to them with the comment: maybe wise to reply, but they didn't reply on that'. So they are clearly not there yet.				- (..) now there is Twitter, and you can speak to them. Or you can express your dissatisfaction with a hash tag (#fail). And then there is a web care team that pops up to deal with this. - ..) Maybe there arises a conversation (...) or the patient was not satisfied at all, then you open the door for a discussion, so you can improve your process, so you can do something with that complaint.
3. Community Outreach					
4. Patient Education	- There are examples of hospitals busy with organising Twitter consultation hours, although is not going very well.	- You could organise accounts where (...) or you could arrange online consultation hours. - If your hospital organises Twitter consultations hours, then you must closely look to the people twittering about that or about the treatment they have had.		- Every Tuesday we have a Twitter Consultation Hour. Then we have a medical professional behind the desk. But we actually use this as an information / education channel. And that works quite well, especially the interaction between Twitter and Facebook.	- (...) so E-health, interacting with your general practitioner remotely is a type of that, but also online education, that you're active behind your computer, watching video's about what exactly is going on with you, whether it is a somatic or a mental disorder... You can learn a lot about that before you talk to your doctor, finally this results is a more efficient conversation with your doctor.
5. Public Relations	- I see opportunities for Twitter especially for PR and relationships.	- Profiling, interaction with your target group and ...branding is a part of that as well.		- The press follows us. The moment that we have a power outage and we switch to back up power. We	- People are increasingly start to think like: What is a good hospital, so.. if you see a certain hospital

		- If you decide: We use Twitter for media and press relations, then you need to collect journalists.		communicate it via Twitter, and a minute later it is on the regional websites - (..) My long term goal is that I eventually do not have to advertise anymore. So the things I organize and the things I would like to communicate, that I own the communication channel.	where doctors work that are disseminating knowledge on a specific topic, then such a hospital can profile itself according to that specialisation. - So I think it's profiling to your target audience.. And yes, those target audience that may be many: jobseekers, clients, but also other stakeholders; care agencies, health insurers, government parties.
6. Crisis Communications		- (...) and then you have to take into account your goals: is it about knowledge enrichment, or about crisis communications, then are other rules apply. - Twitter.. it is used a lot by journalists and for crisis communications.	- For 99% of the cases this (.. engaging in a dialogue..) can be done non-committal, but in hospital there is also often bad news. Then there is such an outbreak of a bacterium. (...) in this moments it is crucial to use the social media channel.	- And with these channels, you have a fantastic tool to be open and transparent. - Two examples about issue management: Ladybird and father of psychiatric patient - (...) With this example I tried to explain that you can increase your reputation. I was hoping that you thought: 'That is properly adhered'. So my vision is that especially in the case something is wrong, you can use this (social media)	- (about Maasstad).. They didn't live up to those expectations, (..) That was of course the optimal chance, the excellent opportunity to provide openness and to be transparent; to tell the story there; to neutralize all media attention or to report the real facts about the bacteria.
7. Recruitment Tool		- For example the Haga Hospital, what they did with the labor market campaign.. How convincing can you be? When you use social media postings of your own employees in your campaign? Like a post '*working with my favourite doctor*' with a photo. - You could organise accounts where (...) that can be carried out on different levels, to actually people working: 'a day in the life of...' showing that kind of things via social media. - But I think they can definitely benefit from it (social media) because the hospital becomes approachable, with a very strong fan group, who are genuinely enthusiastic about their employer - Is it a corporate or recruitment	- You recruit nurses with nurses, doctors with doctors and you catch crooks with crooks - Joost have been the source of a new target group communication, labor market communication. The VU medical center saved 1,3 million euro on labor market communication, purely by effectively using social media. - So not by placing expensive advertisements in (...), but by tapping in to your linked in network... - For example for the Tergooiziekenhuis in Blaricum: They were looking for 40 specialist nurses, no budget. We have looked on Hyves, and there was a group of 34.000 nurses. We have give instructions to the employees		- One of the reasons is recruitment, searching for new employees, employments reasons. - Many healthcare institutions have a special Twitter account, working at(..)

		account, then you should have relevant people in your network who would potentially work for you in the future	how they should move on social media...		
8. Brand Monitoring	- Some hospitals become proficient in it (social media) very well, they are really scanning for their name and for people visiting their hospital, and are responding directly to that. - They (hospitals) have tools with which they can easily search for who is typing Maxima, or tweeting about Hospital Eindhoven. Those hospitals are explicitly searching for: Who is talking about me? - You can broadcast and you can reply. But you can also monitor what is said about your brand (if you consider a hospital or a doctor as a brand) (...) Insures are ahead of hospitals in that I think.	(...) Then you have to distinguish yourself, and then you also have to know what is going on / happening in your target market and reply directly to that (...)	- But there are hospitals, for example Deventer Hospitals, and they reply to everything what is said about heir hospital or doctor (Zorgkaartnederland.nl – platform).		
<<NEW GOALS>>		- (...) and then you have to take into account your goals: is it about knowledge enrichment, **internal purposes** or about crisis communications, then other rules apply.	- - In order to rank high in natural search results, for your doctor, for your hospital, for your specialism, it is important to be active on online social media (Search engine optimalisation – using social media to **create traffic** to your homepage) - They (.. university hospital..) are using Twitter to study Chrohn's disease. They are the first one in The Netherlands initiating this. → **Research tool**	.	

Appendix C. Survey

Beste volger van @(ZiekenhuisAccount),

Hartelijk dank voor het deelnemen aan dit onderzoek over het twitter-account van het <Naam Ziekenhuis>. Dit onderzoek is een vergelijkend twitteronderzoek van een aantal ziekenhuizen, waaraan het <Naam Ziekenhuis> zijn deelname verleent. Ik voer dit onderzoek uit ten behoeve van mijn afstudeerscriptie voor de studie Bedrijfskunde aan de Erasmus Universiteit te Rotterdam. Het geeft zowel het <Naam Ziekenhuis> als mij meer inzicht in het effect van het twittergebruik en helpt ons om dit middel in de toekomst nog beter in te zetten. Het invullen van deze vragenlijst kost u nog geen 5 minuten.

Uw antwoorden zijn volledig anoniem en worden alleen gebruikt voor mijn afstudeeronderzoek.

In dit onderzoek wordt gevraagd naar uw mening, dus er zijn geen goede of foute antwoorden.

Alvast heel erg bedankt voor uw medewerking!

Met vriendelijke groet,
Jorien Koning

De volgende vragen gaan over uw mening ten aanzien van het twitteraccount @ZiekenhuisAccount:

1. Het twitteraccount @ZIekenhuisAccount spreekt mij aan:
   Zeer oneens □ □ □ □ □ □ □ Zeer eens

2. Ik vind de tweets verstuurd door @ ZIekenhuisAccount nuttig
   Zeer oneens □ □ □ □ □ □ □ Zeer eens

3. Ik vind de tweets verstuurd door @ ZIekenhuisAccount interessant
   Zeer oneens □ □ □ □ □ □ □ Zeer eens

4. Heb u het <Naam Ziekenhuis> wel eens genoemd in een tweet?
   □ Ja □ Nee

5. Indien Ja:
   Was dit positief, negatief of neutraal?
   □ Positief
   □ Negatief
   □ Neutraal
   □ N.v.t.

6. Hoe vaak heeft u een bericht van @ ZIekenhuisAccount geretweet?
   Altijd Vaak Soms Zelden Nooit

Naast uw mening over het twitteraccount @ZIekenhuisAccount, zijn wij benieuwd naar uw mening over <Naam Ziekenhuis> *<u>in het algemeen</u>.*

7. Mijn algemene houding ten aanzien van <Naam Ziekenhuis> is:
   Zeer negatief □ □ □ □ □ □ □ Zeer positief

8. Ik zou <Naam Ziekenhuis> aanraden aan een vriend:
   Zeer oneens □ □ □ □ □ □ □ Zeer eens

9. Ik voel mij verbonden met <Naam Ziekenhuis> ?
   Zeer oneens □ □ □ □ □ □ □ Zeer eens

10. Op een schaal van 1 tot 10 geef ik <Naam Ziekenhuis> een:
    1 2 3 4 5 6 7 8 9 10

Algemene vragen:

11. Wat is uw geslacht?

□ man □ vrouw

12. Wat is uw leeftijd?
    (…)

13. Wat is uw hoogste afgeronde opleiding?
    □ geen / lager- of basisonderwijs
    □ VMBO / MAVO / LBO
    □ Middelbaar beroepsonderwijs (MBO)
    □ Voortgezet algemeen onderwijs (HAVO / VWO)
    □ Hoger beroepsonderwijs (HBO)
    □ Academisch onderwijs (WO)

14. Bent u op dit moment patiënt van <Naam Ziekenhuis>?

□ ja □ nee

14. Indien u geen patiënt bent, wat is uw relatie tot het ziekenhuis?
    □ Ik ben een voormalig patiënt
    □ Ik ben een werknemer
    □ Ik woon in de buurt van het <Naam Ziekenhuis>
    □ Anders, namelijk (…)

15. Hoe vaak heeft u het ziekenhuis bezocht in het afgelopen jaar?
(…)

Appendix D. Categorisation of the topics of tweets sent (per hospital)

Firstly the number of tweets sent per specific category (topic) are depicted, additionally also the corresponding percentages of the total sent tweets (%) are shown. The top three topics per hospital (based on the highest percentages) are depicted in green.

TOPIC OF TWEETS	@Erasmusmcnieuws	@JZBDenBosch	@MCLeeuwarden	@Rijnstate	@UMC_Utrecht
Category	**65**	**96**	**316**	**284**	**193**
Job / Employment	1		12	0	7
%	1,54	0,00	3,80	0,00	3,63
Information related to treatment	8	4	7	11	
%	12,31	4,17	2,22	3,87	0,00
Symposium / Event	**8**	**16**	32	**30**	**94**
%	**12,31**	**16,67**	10,13	**10,56**	**48,70**
News	**21**	**16**	**56**	23	10
%	**32,31**	**16,67**	**17,72**	8,10	5,18
Research	**22**	1			**22**
%	**33,85**	1,04	0,00	0,00	**11,40**
Charity / sponsorship	1	9	1	4	2
%	1,54	9,38	0,32	1,41	1,04
Accessibility	1	2		8	
%	1,54	2,08	0,00	2,82	0,00
Contact (not to indicate with whom)		9	**40**	**45**	**42**
%	0,00	9,38	**12,66**	**15,85**	**21,76**
Contact with Patients		**22**	**137**	**126**	11
%	0,00	**22,92**	**43,35**	**44,37**	5,70
Blog		7	7	2	
%	0,00	7,29	2,22	0,70	0,00
Twitter Consultation Hour		6		15	
%	0,00	6,25	0,00	5,28	0,00
Contact with employees			10	16	1
%	0,00	0,00	3,16	5,63	0,52
Others	3	4	14	4	4
%	4,62	4,17	4,43	1,41	2,07