



Teaching Case

Reframing health care through social media

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Abstract

This teaching case presents the story of the Hospital Campus (HC) project and its effort to reframe health-care services for the elderly through the adoption of social media. In a world of global ageing, in which an increased number of elderly patients will be cared for by a shrinking number of workers, a primary challenge is how to use technology to provide better and more efficient services for the elderly. The HC campus project focuses on how to involve information technology-illiterate elderly patients and their social networks in the design and use of social media services to improve their quality of life. In describing the development of the project, we focus on the elderly patients' needs and the activation of their social circles through the engagement of peers in the purposeful use of social media. The HC project illustrates how innovative services occur as a result of the participation of users and their social networks in the management and design of health-care services, the importance of the intermediary role as the 'evangelist' and the need to tailor the adoption of social media to address individual needs.

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From clinical to social health-care services

Imagine your own life. How do you meet friends? How do you communicate with them? How do you coordinate your daily activities? What sources give you the information you need and how do you share information with others? What are the roles of information technology (IT) and social media in your daily activities? How important is the use of digital tools for your quality of life? Imagine becoming dependent on health-care services, facing restricted mobility or being unable to speak. How would you meet friends and family members? What new role would social media play in relation to your quality of life?

Health-care services are traditionally designed to address clinical needs by, for instance, managing medical needs and keeping track of patients' health records, with a primary focus on health-care providers' informational requirements for providing accurate health services to patients. As such, health-care systems generally include computerized patient files, online medical information, online prescription services and services addressing hospitals' internal processes and their needs for reliable data quality. Less emphasis has been placed on patients' social needs. However, in recent years, social media has increasingly been used to influence the ways in which patients communicate with one another

(Eckler *et al.*, 2010). Adopting social media in the health-care domain promises many advantages in terms of the sociability, inclusion and empowerment of care receivers (Godfrey and Johnson, 2009). Social media offers solutions that can be used by both the general public (including people other than patients) and health professionals to communicate about health issues to potentially improve health outcomes (Moorhead *et al.*, 2013).

What is social media? A common definition is 'a group of Internet-based technologies that allows users to easily create, edit, evaluate and/or link to content or other creators of content' (Kaplan and Haenlein, 2010). To better understand the concept of social media, we may explore the nature of its technological, informational and social features (Lee *et al.*, 2015). The technology component relates to social media's tools and technologies (such as Facebook or Twitter), and the features provided to users, the information component focuses on the user-generated content that is visible and editable by users, and the social component concerns the nature of the relationships among individuals as enacted through the use of social media. Social media supports the interaction of large numbers of users to exchange information, collaborate and perform collective

actions. Such self-organizing, adaptive networks could become central to future health-care delivery (Griffiths *et al.*, 2012) by enabling stakeholders to communicate (Eckler *et al.*, 2010) and by facilitating community outreach free from geographical, time-based or professional limitations (Normann and Arvidsson, 2006).

The promises and expectations related to introducing social media to the health-care domain not only include more communication between care receivers and care producers, but are also seen as more effective for including care receivers' social circles (Griffiths *et al.*, 2012). Resources from both private and professional networks can be utilized to address care receivers' clinical and social needs. New participatory models for providing health-care assistance to care recipients, such as those in the elderly care domain, have been proposed and experimented (Godfrey and Johnson, 2009). In these solutions, the engagement of the care receiver's social circle may help to overcome issues related to a 'digital divide' resulting from a lack of IT skills, through the activation of IT-literate individuals from the personal network (Spagnoletti *et al.*, 2015).

The story of Hospital Campus (HC) illustrates the challenges of introducing social media in order to innovate health-care services in the elderly care domain. Through social media, health-care organizations develop new capabilities to sense the environment and leverage external resources. Such capabilities result from a set of tactics implemented by health-care professionals, who are asking such questions as:

- What do we need to know about the care receivers to provide them useful services?
- How do we identify and engage care receivers' social circles, and how do we include them as part of the solution?
- What is the role of IT-literate mediators and how do we engage them?
- How do we organize the process of developing personalized assistance for care receivers?
- What features are provided through social media, and how do we tailor their use to address real needs?
- What kinds of organizational challenges will be found on our way to developing health-care services through social media?

The social and technological landscape: social media in the health-care domain

Governments face a need for higher efficiency and cost reduction in the health-care domain, while simultaneously facing societal ageing in years to come. Citizens are better informed and have better IT skills than ever before. Given these realities, combined with technological advancements related to the development of health-care services, the traditional view of the patient as a passive receiver of health services provided by public health care has been challenged. Future services may address both social and clinical needs to improve quality of life among care receivers, considering that the IT breakthrough implies the elimination of a number of restrictions on factors like place (where things can be done), time (when things can be done), actors (who does what) and cooperation (who are involved). As a result, care receivers may become active care co-producers through the introduction of digital tools like social media and through the reconfiguration

of service provisions. Social media mediates opportunities to bring people together and encourage social networking and dialogue.

Our social support networks are significantly associated to our health and well-being. Specifically, while people with family-dependent or private-restricted networks tend to have high risks of social isolation, loneliness, depression and other forms of mental illness, those positioned in locally integrated networks have far lower risks. In recent years, researchers have begun to examine social support and health issues in online contexts, arguing that participation in online support groups is a valuable alternative to participation in face-to-face groups because of advantages like 24-h access, an anonymity and diversity of viewpoints, ethnicity, geography and social status. Online support groups have the potential to foster empowerment, which can encourage patients to take more active roles in their health and care journeys. Social networks also influence health through such channels as social support, social influence, social engagement, close personal contact and access to information.

Social media could become central to future health-care delivery through the ways in which actors engage in online interaction. Via these engagements, social media is inherently capable of the continuous self-creation, self-reaction and self-organization of processes to assemble health-related information valuable to improving health. A current review of research identifies six key benefits related to the use of social media in the health-care domain (Moorhead *et al.*, 2013): (1) increased interactions with others; (2) more available, shared and tailored information; (3) increased accessibility and expanded access to health information; (4) peer, social and emotional support; (5) public health surveillance; and (6) the potential to influence health policy.

Whereas IT-literate care receivers may use social media knowledgeably, digital divide issues related to the elderly include problems with technical access, the ability to use social media and the understanding of the potential impact of such use on patients' social and medical situations. Intermediaries, such as trusted IT-literate persons from elderly patients' social circles, could be engaged to facilitate access that fits personal needs better. Social media provides opportunities to improve social interactions between older adults and their family members or friends, who can potentially support them in the use of e-health applications and health-promoting behaviours. Such digital tools allow personal networks to both compete with and complement traditional professional networks. On one hand, patient groups are engaged in interactions among themselves and within their social and professional circles, with greater access to medical knowledge and advice outside the doctor-patient relationship. On the other hand, professional networks have better access to the health-related information, datasets and skills needed to analyse the patients.

Despite the wide array of research on the effects of social support on individuals' health conditions, our knowledge on how to utilize technologies to support such support is scattered. The HC project helps to explore the trends of patient empowerment and potential health-care service improvement through the introduction of social media. It also shows how social circle structures and dynamics influence the design, implementation, management and allocation of resources within health-care systems.

The HC project

The HC project is part of a larger project portfolio that aims to enhance the socialization, quality of life and autonomy of elderly persons by preventing isolation and loneliness and generating positive social experiences and behaviours. The HC project led to the development and implementation of a social media toolbox, which was later deployed in the HC Geriatric Unit. The geriatric unit is one of more than 30 clinical units in the hospital. The members of the geriatric unit – and, specifically, the geriatrician and social assistant – constituted the domain experts of the project team. The rest of the team comprised information systems researchers, for a total of six members. This team led the implementation of the HC project, which involved nine elderly care receivers.

Through a focus on social interactions within the network of actors (e.g., professional caregivers, family members and friends) surrounding the elderly in their daily lives, a set of sub-communities and possible information flows was inferred. Figure 1 depicts these sub-communities and possible information flows. The senior is at the centre of this network, and health-care professionals represent only one sub-community with which the senior interacts. The graph on the right provides a possible representation of the personal network, with members represented as nodes and the lines between nodes denoting the presence of a tie between the members.

The project structure: roles and responsibilities

The project team was responsible for managing the pilot, defining roles and responsibilities, coordinating activities, defining interventions and orchestrating the flows of resources and information. The project team played a monitoring and supportive role, while the so-called ‘evangelists’ were more directly involved in the interventions made. Evangelists served as the link between the team and an elderly patient’s social circle, and they were selected by the project team from the circle. As trusted members in the elderly patient’s personal network, evangelists played a dual role as both collectors of data and information related to the elderly social circle and

supporters of the project team in terms of implementing interventions. Evangelists soon became the primary protagonists of the project, establishing close collaborations with the geriatric unit while, at the same time, maintaining the trust of the elderly. Their levels of IT literacy were decisive in enabling the adoption of digital tools in social circles. Finally, the elderly social circles were also directly involved in the project outcome. A description of the roles and responsibilities assigned to the participants is reported in the Table 1.

The identification of user needs and the implementation of social media in elderly social circles was managed according to five main phases.

Phase 1: care receivers social circle analysis

In the first phase, a questionnaire on the care receivers’ social circles was formulated and distributed to the evangelists, who were in charge of the survey. The aim was to enlist those persons with whom elderly care receivers were in contact. From family members to ex-schoolmates, information on the occurrence of contact, the level of trust, the modality of interaction (e.g., face-to-face or mediated), the relationship role (e.g., wife, son, friend etc.), the IT literacy and content of interaction (e.g., chat, travel, shopping etc.) were collected. The collected data were used to draw a sociogram for each personal network and to explore their characteristics.

Sociograms are graphs that represent networks as sets of nodes and ties with certain properties (e.g., size, colour and labels). As social network visualization tools automatically arrange the layout of the network, sociograms provide an easy-to-use support tool to analyse both the compositional and structural characteristics of a social network.

In the HC project, an open source software tool¹ for social network visualization was developed and used by the project team to build sociograms of the data collected by the evangelists. Fewer than 50 nodes composed each elderly personal network. The node in yellow represents the senior and is labelled with his/her name, whereas the remaining nodes (including the one representing the evangelist, Node number

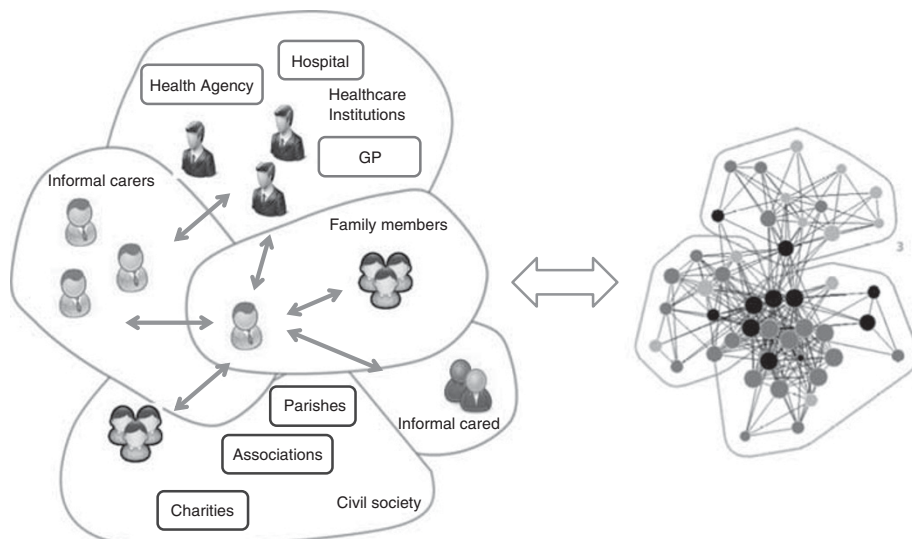


Figure 1 Social interaction model.

Table 1 Roles and responsibilities in the HC project

<i>Roles</i>	<i>Responsibilities</i>
Investigators and domain experts	<ul style="list-style-type: none"> ● Define methods and coordinate the process ● Identify and invite evangelists to join the monthly meeting
Evangelists	<ul style="list-style-type: none"> ● Collect, analyse and report empirical data ● Identify and engage the elderly and their social entourages ● Provide data on the personal networks of the elderly (primary informants)
Care receivers and their social entourages	<ul style="list-style-type: none"> ● Participate in monthly meetings and provide feedbacks on methods and outcomes ● Provide information requested ● Engage members of elderly personal networks to implement interventions

2) are labelled with numbers. The colour of each node indicates whether the person is IT literate (red) or not (blue).

The analysis of the social circles shows that some are made up mostly of family members. In others, it is possible to recognize different groups, such as friends, neighbours and ex-co-workers. Two examples of participators' social circle graphs are presented below (Figure 2).

The first phase of the project focused on mapping the elderlies' social circles through the use of social networking analysis, as well as on defining roles and responsibilities within the project. This phase allowed us to reflect on such issues as: What was achieved by mapping the social circles? Should this step also be taken in the future? Can any other roles and/or capabilities be identified to further improve our ability to develop successful health-care services?

Phase 2: care receivers' psycho-social profiling and evangelist profiling

Whereas the social network analysis in Phase 1 provided overviews of the elderlies' social circles, Phase 2 focused on acquiring information about their lives. That is, Phase 2 identified the elderlies' psycho-social conditions and quality of life expectancies. The project assessed each senior's degree of social integration, considering the mood of the senior and his/her level of interaction with other members of the social circle. Moreover, Phase 2 resulted in the creation of the evangelists' profiles and the identification of ways in which the evangelists could mediate between the elderlies' needs and the opportunities provided by the HC project. The following brief profiles of the care receivers and their related evangelists resulted from this phase.

Ada has severe functional limitations with regard to daily living activities, and she requires the assistance of a caregiver who lives with her at all times. Her mood is severely depressed, and she has no interest in anything but watching television and reading from time to time. *Ada* has no projects as far as her future is concerned, and she does not seem concerned with exploring tools that could improve her quality of life. However, she seems willing to accept that members of her social circle take advantage of such tools in order to improve their interactions with each other and, consequently, to grow closer as a group. The group evangelist, *Ada's* daughter, is IT literate, and the two share a strong relationship of trust and respect. The relationship is based primarily on face-to-face meetings, during which *Ada* is updated on family events. The evangelist

provides support for complex tasks, such as everyday shopping and large purchases, and mediates interactions with other caretakers.

Alessandra is partially self-sufficient with regard to daily living activities, and – thanks to the support of her daughter – she has a good quality of life. Considering the limits enforced by old age, such as difficulty in movement, *Alessandra* is fairly well integrated within society. She is aware of her personal conditions and of her surrounding social environment, and she shows interest in increased interaction and communication with other people. The group evangelist is *Alessandra's* granddaughter. The two share a good relationship that is based on mutual respect and trust. The evangelist succeeds in being sufficiently present in the life of the *Alessandra*, even though she is busy at work. The evangelist is IT literate and is willing to leverage technology in order to improve *Alessandra's* social life.

Maria Carmela is dependent on assistance from a caretaker to perform even simple daily activities. She is quite integrated in society, even though she is not fully aware of her personal situation, with which she appears calm and content. She wants to improve her social life through tools provided through the HC project, but she does not seem willing to meet new people or change her habits. *Maria's* daughter, *Giovanna*, is the group evangelist, and the two share a good relationship of respect and trust. Face-to-face relations characterize the interactions between *Maria* and *Giovanna*.

Concetta is frail but partially autonomous, and she is capable of managing simple activities related to daily living. A recent surgery operation aggravated her condition, but she continues to maintain a good mood. As a widow, *Concetta* lives with her son. She cultivates domestic interests and is open to the use of technologies to communicate with her children in other cities. She has a strong relationship with her son: the evangelist. He is IT literate and is willing, and pleased to participate in the HC project in order to improve his mother's quality of social life.

Colomba is partially dependent on others to meet her simple daily living needs. She is helped by her children and neighbours, who sometimes keep her company. Her main interest is cooking. *Colomba* is not very integrated into society, but she appears to be aware of her personal and the social surrounding environment. A good relationship with the evangelist (the daughter) has been established. In fact, the daughter is the person with whom *Colomba* performs many of the complex tasks of her daily life. The evangelist is willing to

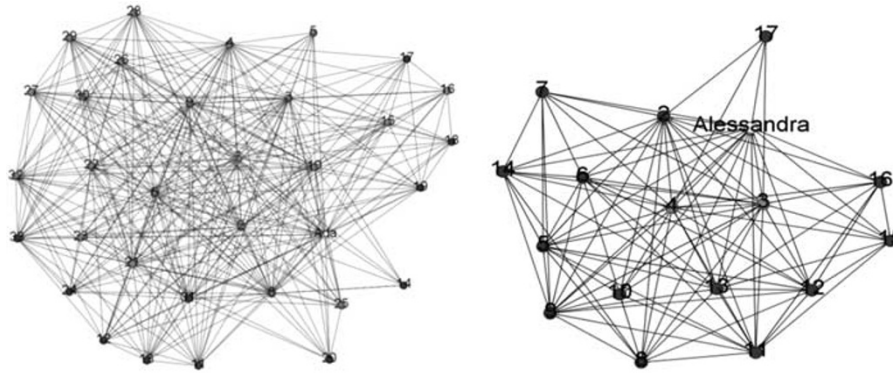


Figure 2 Ada's and Alessandra's social networks.

participate in the project in an attempt to improve Colomba's quality of life.

Angelica is fully autonomous in both simple and complex activities of daily living. As a widow, she is integrated in society and seems to be aware of both her personal situation and the surrounding social environment. Angelica is focused and emotionally involved in looking after her disabled nephew – an activity that causes her stress in relation to the future. She is reluctant to talk about the people who are close to her. The group evangelist is her cousin, Luisa, who lives close to Angelica and with whom she shares a deep relationship of respect and trust, is often involved in sharing the various moments of the day and chatting about things that are going on.

Ludovico is completely dependent on others to meet his daily living needs. A caregiver, who is also the evangelist, assists him continuously. Ludovico is rather integrated in the society, but he is not fully aware of his medical condition. He stays abreast of the social environment that surrounds him, and despite his sensory disturbances (sight and hearing problems), he wants to be informed about what is happening within his social circle. He is serene and brings serenity to the people close to him. Ludovico's caregiver is also his evangelist. Between the two exists a relationship built over the last 6–7 years, which involves deep esteem and confidence.

Gaetano is completely independent and lives with his wife. As a former phone technician, Gaetano has acquired a lot of expertise in executing small and large restorations on his own. As he is very well integrated in society, Gaetano feels perfectly aware of both his personal situation and the surrounding social environment. The relationship between Gaetano and the evangelist (his son) has been based on face-to-face meetings; however, now that the two live in different cities, they talk on the phone daily. Gaetano serves as a mentor to his son, passing on the experiences he has acquired to the next generation.

Liliana is partially autonomous in simple activities of daily living but requires supervision and help with more complex tasks. Liliana has no particular hobbies except for reading, and she usually prepares meals by herself. She is integrated within society and is aware both of her personal situation and the surrounding social environment. There is a good relationship between Liliana and the evangelist, her daughter. The evangelist is IT literate and is willing to participate in projects like the HC to improve the quality of social life of her mother.

The psycho-social profiling of the elderlies and the evangelists achieved in Phase 2 allow us to reflect on such issues as: What was achieved by the intermediary role of the evangelist? How should that role be defined in future projects?

Phase 3: care receivers quality of life recipe

Following the analysis of the evidence collected in both Phase 1 and Phase 2, the project focused on identifying the elderlies' descriptions of what were called their 'quality of life recipes'. The following personalized recipes are the results of analyses made based on previous phases.

Ada needs to be more involved within her social circle, which will give her the feeling of being active in the decisions being made. The aim was, therefore, to help her acquire a new status involving playing a more important role within the family in order to help her feel like the head of the family because of all her acquired experience. Ada would like to be advised on important family events, such as how to organize Christmas dinner (e.g., which courses should be prepared and whom should be invited). The intention is to consider Ada as a sort of consultant with regard to the organization of family events, with the goal of reconstructing her identity. Writing and storytelling are important for passing Ada's experiences related to family events to the next generation. It was considered useful to involve the members of her social circle to build a bridge between the outside world and Ada's world. Her network is involved in, for example, suggesting readings or presenting events that may be of interest.

Alessandra is interested in local events. Hence, a main task is to create connections between Alessandra and the others (including other project members) living in the same area that share her interests. The objective is to widen Alessandra's network of contacts, which is currently limited because of her disability. Actions considered included further developing Alessandra's relationship with the parish community, while considering the eventual use of ICT and better access to information about living conditions at home for the elderly.

Maria has a large family comprising four daughters, two sons and several nephews and nieces. The idea is to take advantage of this situation in order to improve Maria's family relationships. In this case, the HC project could actually become a tool to create more integration among family members, for example, through the sharing of Maria's reading interests with her sons, daughters and nephews.

Concetta is (or at least has been) a very influential person, with authority within her family. Hence, possible targets of social network intervention include re-establishing and improving *Concetta's* communication with family members, most of whom do not live physically close to her in Rome. *Concetta* still has interest in issues related to her past as a teacher, and she could, for instance, provide Italian lessons to her Indian nanny or be involved in the production of short video lessons to teach Italian. Moreover, the evangelist (or other IT literates) could provide her with online access to materials on other cultures in order to broaden her interests.

Colomba's main interest is cooking, which could be encouraged through the use of social media. The young age of her neighbours could create favourable conditions for establishing richer relationships, as they could be recruited for deeper involvement in activities to address *Colomba's* daily needs.

Angelica is busy taking care of her nephew; thus, the intervention outlined considers the lack of available time. The intention of the intervention is to rekindle some of her interests, such as by suggesting that she share events taking place in her town with her cousin. A project like HC could be helpful in improving *Angelica's* interactions with her daughter, who lives abroad, and in encouraging her to participate in activities with others in the project who reside in the same geographic area. Moreover, *Angelica* may receive more information on activities and events taking place in her neighbourhood.

Ludovico would like to stay active in society and participate in social events. Hence, the intention is to provide services to increase his sense of participation in public life by providing him the opportunity to share his wisdom with the various members of his family, especially the younger ones. He is also to be given opportunities to share his background as a judge or to discuss certain topics of interest with his social circle or even in an open group.

Gaetano is very active in cultivating an interest for crafts, and he enjoys opportunities to pass on the knowledge he has accumulated. *Gaetano* could be a point of reference for HC participants as far as the resolution of domestic problems is concerned.

For *Liliana*, the intention is to further her interest in cooking by helping her participate in local area events with the support of members of her circle. *Liliana* had a rich social life, which has now become very limited. The interventions provided could be related to recapturing her identity as a knowledgeable person by providing content that addresses her skills, such as recipes involving traditional agricultural products. Interventions should also encourage contact with members of the local environment.

The main result of Phase 3 of the project is quality of life recipes for the elderly patients. The question to consider is: What is the use and usefulness of such recipes for tailoring the use of social media to address individual needs?

Phase 4: the implementation of social media to address elderlies' needs

A survey of the skills and equipment of IT literates present in the elderlies' social circles was conducted in order to understand how social media provided by the HC project could be integrated in order to improve the care receivers' quality of life. By mapping out IT skills, devices available and types of Internet connections, it was possible to envisage the most

effective combination of social media tools developed within the project and digital tools already available in the elderlies' social circles to achieve the objectives described in the seniors' personal recipes. The following sketches describe the implementation of these technologies on the basis of the earlier project phases.

The creation of a private online group provided *Ada* the ability to establish one-to-one communications with family members. In this way, *Ada* could share information with and be informed by her social circle. The private online group was also seen as a tool for sharing information acquired from other social network systems, which could improve *Ada's* awareness of the external world. In this account, systems like Google StreetView were considered useful to allow *Ada* to virtually 're-visit' physical places of interest. All of these initiatives aimed at allowing *Ada* to re-acquire her status within the family and her circle.

An open online group accessible to all users living in *Alessandra's* town was initiated to address her social needs. Further, in light of *Alessandra's* conditions, access to focus groups dedicated to the elderly was considered useful, even though the main objective of her intervention was the exchange of experiences and information related to public life in the town.

To address *Maria Carmela's* needs, an online public group on reading that involved family members was established. Moreover, in order to increase information available about reading, the intervention sought to suggest a series of links to Websites and social networks in which *Maria Carmela* could acquire further information about new book releases and book reviews. The main objective was to cultivate *Maria Carmela's* reading interest more deeply, thereby encouraging her to be more active within her circle.

To cultivate *Concetta's* expertise as an elementary school teacher, a YouTube channel was created to post recorded Italian lessons for immigrants. An online public group called 'We learn Italian' was opened as well, in order to allow *Concetta* to post links to the YouTube channel. The group was designed to assess lessons and promote discussions on the Italian language, and it was dedicated mainly to foreign caretakers. An online private group was also established to encourage the exchange of information with members of the family living in distant regions. Tools like Google StreetView were helpful for satisfying *Concetta's* interests, which favoured the monitoring of family members' travel experiences.

An online public group called 'Ricette della nonna' (Grandma's recipes) was established to address *Colomba's* needs. Through this channel, *Colomba* was able to share recipes, allowing her to express her interest for cooking. Moreover, the sharing of information with other social network systems is seen as important for attracting others with the same interest.

As *Angelica* lives in a small town, participation in an online public group dedicated to events and discussions related to this town was encouraged so that various experiences and information of public life could be accessed. The fact that *Angelica's* daughter lives in the United Kingdom also represented an opportunity to utilize digital solutions to improve interactions between the two.

Ludovico's interests were addressed through the creation of an online public group on the news of the day, as well as the use of Websites like Google News, which offer a wide range of information addressing *Ludovico's* various interests.



An online private group was also established, allowing Ludovico to engage in personal communications with his family members. This online group was considered helpful for preserving his role as a mentor within his family and his circle.

A YouTube channel on 'Fai da Te' (Do it Yourself Easily) was opened to enable video sharing, through which *Gaetano's* inclinations were cultivated. An online public group was devised to allow Gaetano to post links to the YouTube channel or to manage information from other Websites in order to share his expertise.

As in the case of *Colomba*, *Liliana's* interest for cooking was cultivated around the 'Ricette della nonna' (Grandma's recipes) public group. Accessing the group provided Liliana the opportunity to share recipes and experiences related to making food, while taking advantage of content presented through other social network systems.

While several social media services were included as part Phase 4 of the project, a primary question remained: Could other services or other approaches better serve the needs identified?

Phase 5: reflection and learning on the project outcomes

The final stage of the project consisted of reflection and learning related to the deployment of the social media toolbox – and, specifically, the six online public groups ('Grandma's recipes', 'Do it Yourself Easily', 'Reading Together', 'Let's learn Italian', 'Current Events' and 'the Town'), the four private groups, and the digital tools available to the nine elderly social circles – as far as the quality of life was concerned. Moreover, on the basis of the geriatrician's direct observations of the nine seniors during regular medical examinations, impressions reported by evangelists, and activities on social media and other digital tools, the HC project team also prepared accounts related to the implementation of each recipe.

Ada's involvement in the HC project was considered positive, since her life's horizon became, in some sense, wider than before. *Ada's* social network was characterized by a large number of IT literates, which favoured the exchange of information. *Ada* does not go out. This means that the HC project became her social window, giving her access to a dedicated world for the elderly distant from the worlds provided through TV and mass media. *Ada's* conversations were influenced by her presence in the 'Grandma's recipes' group, because of the ability to exchange recipes, discuss them, and compare expertise and competence.

Ada's quality of life seems to have been positively influenced by the HC project, even though it is hard to fully evaluate the extent to which she has acquired a more important role within her social circle. However, she has shown interest and curiosity in the project. Given her somewhat closed personality, *Ada's* presence in the HC projects seems to have helped her open up. She now demonstrates a slightly different attitude towards her daily life. The group evangelist, her daughter, played a crucial role in *Ada's* presence in the HC project. On the negative side, a difficult situation involving one of her family member also played a role. *Ada* and her circle had to manage a difficult situation that inevitably affected the implementation of the project, which moved to a position of secondary importance.

Alessandra involvement was not very successful. Her social circle did not use the tools provided, especially the

online public group dedicated to her town. The group evangelist, *Alessandra's* niece, was busy at work, impeding her from being sufficiently present and supportive during the implementation phase of the project. Another factor to be considered concerned the limited number of IT literates in *Alessandra's* social circle (only two persons, including the evangelist). Moreover, characteristics of the doctor–patient relationship, which include the evangelist, typically prove fundamental for improving elderly patients' quality of life. This relationship constitutes the basis upon which the involvement of elderly people in projects such as HC becomes possible. The trust and esteem that a patient gives to a doctor is decisive for his/her commitment. In the case of *Alessandra*, the triangle composed by patient, evangelist and geriatrist did not work perfectly in the mobilization of the senior's circle.

In the case of *Maria Carmela* more positive results were achieved. The public group 'Reading Together' has been sufficiently populated, even though only *Maria Carmela's* daughter and granddaughter have been active. As *Maria Carmela* has limited mobility and sight problems, the ability to spend time with family members recalling past readings, knowing that these discussions are shared on the 'Reading Together' group, has been helpful. Past interests have been revived. Further, mother–daughter and grandma–granddaughter relationships have been significantly improved. The project has been conceived as an opportunity to become involved in something different, as well as to see what is going on in fields that are distant from *Maria Carmela's* regular life. As *Maria Carmela* is part of a large family, including many IT literates, it was expected that other family members would contribute actively to the 'Reading Together' public group; however, they did not.

Concetta's evangelist created a dedicated YouTube channel for her to post-Italian lessons. Videos posted in the public group 'Let's Learn Italian' were also circulated in other social media. Thus, her old 'school boys' could 'attend' her classes again, despite decades of absence. *Concetta* was pleased to be recognized once more as an elementary school teacher, and she showed enthusiasm in being involved in a project like HC. While the results achieved with online public group were quite successful, the results of the established private groups were less so. Only her niece and her daughter participated actively in the private groups to improve the quality of *Concetta's* situation; the rest of her family living in different cities did not participate as expected.

Colomba was involved in the public group 'Grandma's recipes' because of her interest in cooking. However, the result was not very satisfactory. The support of *Colomba's* two young neighbours was important for sharing recipes and discussions about cooking on the basis of group establishment; however, their support never materialized online. Furthermore, the evangelist (*Colomba's* son) did not have sufficient IT literacy to manage the social media tools properly. *Colomba's* exploitation of the HC project was further challenged by severe health problems during the project life cycle, as well as by the low number of IT literates in *Colomba's* circle.

Angelica was involved in the online public group 'the Town'. As in the case of *Alessandra*, this public group did not become a point of reference for project members living in the town to share information about the city's public life and

ultimately join it. However, this situation was not completely negative. The idea of populating the group 'the Town' became an important objective for Angelica. This led to the emergence of a new interest, thereby reducing the stress of looking after the disabled nephew was. Through reflection on the reasons for the unsatisfactory use of the group 'the Town', it emerged that the evangelist, though she was very close to Angelica, was not close to her social circle. Further, the evangelist's IT literacy was not considered sufficient for managing social media tools. As Angelica's daughter lived abroad, there was an opportunity to take advantage of such tools. However, this opportunity was not taken, and Angelica's son was only superficially involved in the project.

Ludovico was involved in both a public group and a private group. The former can be considered rather successful, since Ludovico's family members had the opportunity to continuously monitor his conditions. However, there was a context in which the groups could have been more ambitious. Specifically, Ludovico's comments and thoughts regarding current news could have been reported in both the private group and the public group. In retrospect, Ludovico could have been perceived as a blogger, continuously providing commentary on the news of the day. To better succeed, the evangelist would need clearer ideas about the potentialities of the social media solutions provided. As far as the private group was concerned, it is worthwhile to mention the effect of the spread of the news of Ludovico's weight loss and how the geriatrician came to serve as the centre of the discussion among family members. However, the public group did not succeed in becoming a point of reference for HC users discussing and exchanging ideas on the news of the day.

Gaetano was involved in the online public group 'Do it Yourself Easily'. As the evangelist (Gaetano's son) was IT literate, videos were produced as tutorials for dealing with typical issues of daily life, such as home radiator maintenance and simple pruning. These videos were uploaded to a YouTube channel, and links were posted in the online public group. It was expected that a series of questions regarding solving common problems would be raised by users of the group; however, this did not happen, even though some comments were posted. It is likely that Gaetano's circle's insufficient IT literacy and the time constraints of the project limited the members' ability to take advantage of Gaetano's skills and expertise.

Liliana was part of the online public group 'Grandma's recipes'. The deep involvement of the evangelist (her daughter) was crucial for the results achieved by this public group. The number of recipes posted encouraged users who were members of other social circles to post recipes as well. Moreover, the group has been used to post not only recipes, but also links to pictures of final products, which are uploaded through Dropbox. The presence of IT literates among the persons closest to Liliana supported the growth of this online public group. The fact that Liliana continues to give paper-based food recipes to her geriatrician could be seen as another indication of the emerging positive effect of her involvement in the project. The project represented something new in her life, and the attention and worries usually dedicated to health conditions were diverted to the realization of the public group 'Grandma's recipes'.

What can be learned from the project, and how can similar projects proceed in the future?

The HC project represents an instance of a health-care organization developing new capabilities to provide innovative services. The fact that the provision of health-care calls for both the involvement of elderly social circles and the adoption of social media has led to the reframing of the services provided. At this point, the question is how the geriatric unit can adopt this new approach in order to provide health care, as well as the new work practices introduced as a result of the project. Is the expertise of HC geriatricians and social assistants sufficient to provide the services needed, or is there a need to hire new employees with different competences? A further question concerns how to harmonize the new work practices with organizational routines that integrate the geriatric unit with the rest of the organization. New capabilities may be necessary to interact with the environment in terms of promoting the new service to potential patients, considering the institutional context in which health care is provided.

On the basis of the HC project, the participants being involved in the teaching case should evaluate lessons learned in order to further improve health-care services in the future, by reflecting on such issues as:

- What are the strengths and weaknesses of the project approach, including the five main phases? What could have been conducted differently?
- What kinds of competences were present in the project team?
- Can any other roles and/or capabilities be identified to further improve the potential to develop successful health-care services?
- What was achieved by the intermediary role of the evangelist?
- What explains the success (or lack thereof) in the care receivers' use of the tools provided?
- Could other services or other approaches better serve the needs identified?
- What was really achieved by mapping the social circle? Should this step also be taken in the future?

Note

- 1 Gephi 0.8; Website: <https://gephi.org/>

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