



MANAGING
DIGITAL
TRANSFORMATION

Per Andersson, Staffan Movin,
Magnus Mähring, Robin Teigland,
and Karl Wennberg (eds.)

Managing Digital Transformation

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Karyn McGettigan, Language Editor



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STIFTELSEN MARKNADSTEKNISKT CENTRUM

In his central role at the Wallenberg Foundations, Peter Wallenberg Jr has furthered a broad range of important research and research-led education initiatives at the Stockholm School of Economics (SSE) and its Institute for Research (SIR). This indispensable work has also helped create a fertile ground for research on digital innovation and transformation: a phenomenon currently experienced, shaped, and managed in and between organisations and throughout society.

This is the topic of this book, which we dedicate to him.

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Acknowledgements

Every year since 1992, the Stockholm School of Economics Institute for Research (SIR) has published an Annual Research Anthology, and this year SIR is publishing the book in cooperation with MTC (Stiftelsen Marknadstekniskt Centrum). The purpose of the SIR Annual Research publication is to enable managers and practitioners better understand and address strategically important challenges by showcasing SSE research on a selected topic of importance for both business and society.

This year's book, *Managing Digital Transformation*, features authors from academic areas across SSE together with representatives outside the institution. The book's eighteen chapters show the strength and breadth of SSE's research within the area of digitalization and reflect the importance that SSE places upon closely linking research to practice and on investigating the leadership challenges and their implications in order to support value creation in society.

Participating in the many ongoing research projects at SSE and the multitude of aspects of digital transformation addressed in the various chapters has been very rewarding for the editors. We would like to thank all the authors for their hard work and cooperation throughout the project. In finalising this book, we have relied upon the expert work of Karyn McGettigan for language editing, Petra Lundin for layout and graphic design, and Marie Wahlström for digital access to the book. We are, indeed, most grateful for their excellent and diligent work.

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Stockholm, January 2018

Per Andersson, Staffan Movin, Magnus Mähring, Robin Teigland, Karl Wennberg

Introduction

One of the hottest research topics lately is digitalization. Many research projects are focusing upon different perspectives. Gone are the days when digitalization or business implications of ICT were just about increasing efficiency. Instead, the ripple effect of digital development can now be felt wider and deeper than ever before. The way in which business is conducted and how it creates value, as well as how corporations can become more efficient and sustainable, are all implications of digitalization. Adapting to new demands and taking advantage of the plethora of possibilities, however, is not always easy.

Managing digitalization and the transformation of business always involves new challenges. The novelty and complexity of the digital age has led to an increased academic interest in the area of digital transformation and a call from companies that seek support in this process.

We take a look at digitalization from the perspective of business research. This creates a better understanding of the challenges that today's businesses are facing. We believe this anthology will serve as a tool to help businesses better understand the force that is digitalization and support these corporations in their digital transformation.

The idea behind this anthology grew as Marknadstekniskt Centrum was taking part in several interesting research projects. Companies were asking MTC to facilitate contact with scholars and supply them with academic insight. Vinnova came on board, by supporting the project *Progressiv digital utveckling förutsättningar för framgång* (*Progressive Digital Development: Pre-Requisites for Success*) of which this book is a part: its aim to stimulate business to become more progressive in digital change. At last, this book and the website www.digitalchange.com have become a reality.

This joint venture between Marknadstekniskt Centrum and The Stockholm School of Economics Institute for Research follows the SIR tradition of publishing an annual yearbook to showcase its vital research contributions. The book begins with an overview of digitalization, then moves to understanding the new digital customer, and ends by exploring re-organisational effects, business models, and ecosystems. We hope this year's anthology will be useful for managers by facilitating their digitalization processes.

PART 1: DIGITALIZATION – DIFFERENT PERSPECTIVES

The role of digital technology in business and society is rapidly shifting from being a driver of marginal efficiency to an enabler of fundamental innovation and disruption in many industrial sectors, such as media, information and communication industries, and many more. The economic, societal, and business implications of digitalization are contested and raise serious questions about the wider impact of digital transformation. Digitalization affects all private and public operations, as well as the internal and external workings of any operation. Digitalization is the major driving force behind sweeping large-scale transformations in a multitude of industries. Part 1 includes various perspectives on digitalization and digital transformation.

PART 2: THE NEW DIGITAL CUSTOMER

Digitalization has resulted in more user-centric business and user-centric systems. The changing behaviour of the digital consumer/customer is discussed here as it connects to new forms of customer involvement and engagement, as well as analysis models of what creates customer value in this digital context.

PART 3: THE RE-ORGANISATION IN ORDER TO CONNECT WITH THE DIGITAL CUSTOMER

How can companies connect with digitalized consumers and non-digitalized customers? This is a central issue in managing digital transformation, as it draws attention to the emerging intra-organisational, marketing, and customer interaction challenges associated with digitalization: for both the consumer and the supplier. Another aspect of this is the internal handling of new forms of organizational ambidexterity; that is to say, companies and organizations engaged in digitalization processes often require an internal re-organisation in order to handle the demands that digitalization brings, and to explore new digital opportunities while promoting their existing business and operations.

PART 4: BUSINESS MODELS AND ECOSYSTEMS

How do companies change, adapt, and innovate their business models? Given that digitalization leads to a convergence of previously unconnected or loosely connected markets, the digitalizing company and organisation is analysed in its systemic and dynamic context. This part draws attention to business models

and business model innovation. Incumbent firms need to adapt and change business models while competing with digital start-ups based upon new scalable business models, accessible ventures, and rapid processes of intermediating. These chapters discuss completely new co-operative business models: processes that need to be developed as companies shift from products to digitally based services.

The Ecosystem places digitalizing organisations and companies into their broader and systemic context. This includes discussions on digital disruption, industrial convergence processes, and shifting patterns of competition and cooperation. Digital technologies cause markets to converge in many new and sometimes unexpected ways. The result is the emergence of new roles and market positions of technical platforms.

Staffan Movin, Stiftelsen Marknadstekniskt Centrum

Digitalization, Collective Intelligence, and Entrepreneurship in the Care Sector

ERIK LAKOMAA

Abstract: Parallel to the formal private or public (health) care organisations in Europe, a number of community-driven care projects have emerged. They may supplement the formal organisations by reducing costs or provide care to groups that, for some reason, do not have access to the formal sector. Drawing upon the Ostromian theory of commons and on previous theory and research on open software development (which share some of the characteristics of “open care”), I use historical cases of community-driven care to examine the prospects for such projects to help remedy the cost crisis in the care sector. I explore under which institutional settings “open care” is likely to emerge and when open care projects have potential to scale. It is found that open care is more likely to emerge and prosper when it builds upon existing organisational structures: where the participants do not need to create new hierarchies or governance structures, and where they share common values.

Introduction

Research in health economics shows that the health sector is characterised by high costs, a high degree of regulation, and a lack of entrepreneurship. There is also a limited dissemination of process innovations in the care sector (Cutler, 2011)¹.

Despite the fact that digitalization has fundamentally affected industries and, in many cases, led to dramatically reduced costs, it has primarily led to better technical equipment in the field of care: not to reduced costs or to new forms of organisation.

1 In this context, care should be viewed in the broad sense of the term, and include child care, elder care, health care, assistance to persons with disabilities (mental and physical), and the treatment of addiction.

Cutler discusses why innovation has not reduced inefficiency and waste in healthcare as in other sectors. Examples include the slowness to adopt efficiency savings and the fact that doctors waste time on routine administrative tasks that could be provided by less-trained personnel or by information technology.

Cutler (2011) further argues that improved production processes of the type that has been observed in such sectors as retail, logistics, and manufacturing are far slower in spreading to healthcare due to the lack of organisational innovation:

“Medical care is complex, and it is natural that there will be inefficiencies in complex settings. Indeed, in any industry where human action is important, there are bound to be mistakes. The failure of medical care is not so much that mistakes are made, but rather that the system has not evolved mechanisms to minimize those mistakes. For many years, Toyota was famous for its attention to error reduction; Wal-Mart is equally known for its supply-chain management.”²

The explanations can be found in the current organisation and financing model. Healthcare is almost always, and other forms of care often, funded by third parties. This means that the business must be controlled and audited. A public entity will rarely be able to spend money on something that is beyond its control. The same holds true for a listed company.

A privately held company or foundation can act more freely. However, these are bound by regulations that cover the healthcare sector in most countries. This binding provides a low level of experimentation and, in principle, new solutions must be approved before they can be used. Meanwhile, there are limited incentives for innovation, as the financing models imply that the businesses receive compensation for actual costs.

Different rules within different jurisdictions also make it less possible to scale. Although people are very similar between different countries, the organisation of care is often nationally regulated. This organisation is due to compliance and documentation, among other things, that constitute a significant part of the business. This fact may explain why we do not find globally integrated care companies. Those that do exist are often conglomerates with separate national parts.

² Cutler (2011 p 2).

On the other hand, new solutions have arisen outside the realm of organised care. I call these “open care”.³

Open care has similarities with open software development, as it is bottom-up and (generally) not for profit. One type of open care projects is where people are organised to offer care, yet do not do so within the framework of the public or private formal institutions. This often occurs on a voluntary basis. Another type involves projects where patients themselves participate in care, exchange experiences, and pool their knowledge. A good example is Alcoholics Anonymous in drug addiction. One can summarise open care as “community and/or collective intelligence-based care projects”.

Although it is easy to observe the connection to open source (as in open source software), it should be noted that open care is not necessarily IT based. IT might play a significant role in some open care projects (for example, as a means of communication and to create critical mass); however, open care does not need to have any connection at all to IT. Open care projects might have existed hundreds or thousands of years before the invention of the first computer. That said, most “open” projects will probably be driven by digitalization.

This chapter will focus upon open care projects that, in some way, build upon the potential of digitalization. I will use cases collected as part of an ongoing European research project on open care. Approximately 30 cases from European countries currently exist.⁴ Cases include both ongoing and historically discontinued projects. My research will describe when open care arises and make an attempt to answer the question of when open care can help meet the challenges of care and the conditions under which open care emerges.

This chapter is organized as follows: first, I review the theoretical background on the concept of the commons and the connection to open care, followed by a discussion of the reasons for the increasing costs of care. Then, an empirical part will present some findings from existing open care projects. Finally, it will conclude with a discussion on when open care projects are likely to emerge.

3 As a concept, open care does not exist in previous research (other than as a synonym for “outpatient care”).

4 The cases collected include community-organised clinics in Greece, care for immigrants in France, parallel imports of pharmaceuticals in Romania, and various online forums where patients can discuss their (sometimes rare) illnesses and, in some cases, provide feedback to caregivers and researchers upon the side effects of medications, for example.

Theoretical Background

The theoretical foundation for developing this concept draws inspiration from research on the commons (Hess & Ostrom, 2005; Ostrom, 2007; Ostrom, Burger, Field, Norgaard & Policansky, 1999; Poteete, Janssen & Ostrom, 2010) and open source software development. Institutional economics explains that community self-organisation is a third method for organising activities, apart from the traditional market and government division that, in many situations, works well (Ostrom, 2007). Collective intelligence and open care in general are classic examples of such commons. In many cases, self-organised communities work better than hierarchical systems; however, they do have their own challenges. This body of research also points to practical guides on how self-organised communities can better overcome collective action problems.

Self-organisation and basic economic models predict that conflicts of interest cause voluntary collective action to fail, even when such cooperation is to everyone's mutual benefit. Mancur Olson concluded:

“Unless the number of individuals in a group is quite small, or unless there is coercion or some other special device to make individuals act in their common interest, rational, self-interested individuals will not act to achieve their common or group interests” (Olson, 1971).

This occurs when rational, self-interested individuals have a stronger incentive to free ride than to contribute to collective benefits. The collective action problem can be theoretically shown in n-player prisoner dilemma games, where cooperation fails despite mutual gains

The “zero contribution thesis” in public good production, however, is not the full story. While cooperation is challenging, I also empirically observe that many examples of successful voluntary organisation are common. The work of Ostrom and her team showed that self-organised communities could solve collective action problems using cooperative norms. They examined real-life common pool resources, such as fisheries and grazing land. They found that, over time, communities organically developed collaborative institutions to overcome collective action problems. The rules for managing common pool resources could be monitored, and the community could impose sanctions. The studies found that, in a setting with repeated interaction and communication, social norms can replace an externally imposed set of rules: sometimes even outperforming them (Ostrom, 2014).

Ostrom focused upon the commons, which is any resource to which members of some group share access. Individuals can extract resources from the common pool for private use, but at the risk of degrading the commons through excess use: the “tragedy of the commons” (Hardin, 1968). One way to solve this collective action problem is privatising the resource into parcels of private property, while another is assigning management to a central authority. Ostrom showed that groups could also cooperate and act as their own stewards: in practice, transforming the resource into common property.

Successful cooperation is far from guaranteed and often fails. The potential for successful self-organisation, however, is wider than the simple self-interested theory would predict. Individuals often follow norms of reciprocity and are willing to restrict their own use of the common resource as long as most others do the same.

In addition to trust and reciprocity, successful commons governance requires an active community and evolving rules that are well understood (Ostrom, Stern, & Dietz, 2003). The longer-term survival of these institutions also requires so-called design principles. These include boundary rules, restrictions on the use of resources, monitoring, graduated sanctions on offences, conflict resolution, and the ability of the participants to elect leaders and modify rules. Cooperation works because the participants monitor each other and can sanction or exclude cheaters. Over time, social norms, internalising the preference to follow the rules, often evolve. This phenomenon allows for high levels of cooperation, without the need for close monitoring or costly sanctioning.

Organisational cooperation requires individuals to keep their promises to each other. Simple theoretical models often predict that credible commitment in negotiations is impossible without the coercive power of an external authority, such as the state. Ostrom et al. (Ostrom, Walker, & Gardner, 1992) argued that other mechanisms could also effectively enable credible commitments:

“Empirical evidence suggests, however, that individuals facing social dilemmas in many cases develop credible ex ante commitments without relying on external authorities”.

This was possible through repeated interaction, communication, and the ability to sanction those who acted opportunistically and broke their promises. In this setting, the threat of sanctions could create sufficient incentive to cooper-

ate and often outperform other arrangements. The authors concluded that self-governance is possible and that

“[When] individuals are given an opportunity to restructure their own situation, they frequently – but not always – use this opportunity to make credible commitments and achieve higher joint outcomes without an external enforcer.”

Defining healthcare as a commons would stretch the definition too broadly, making it useless. There are, however, specific elements of healthcare provision that can be viewed as common pool resources. One important example is the provision of complex healthcare requiring the collaboration of different actors.

The Increasing Cost in Healthcare

Over the past few decades, health expenditure has outgrown the overall economy in developed countries driven by factors such as ageing, higher incomes, and the adoption of new technologies.

Relative to the rest of the economy, health spending was historically fairly stable, yet began to grow rapidly around the 1950s in both the United States and in Western Europe (Getzen, 2014). Between 1960 and 2010, health spending as a share of GDP grew from approximately 5 to 17 per cent in the United States and from 3 to 10 per cent of GDP in Western Europe (Rebba, 2014). Interestingly, the rate of growth of healthcare expenditure is similar in the United States and Western Europe, albeit it remains at a lower level in Europe (Getzen, 2014). The increase in expenditure slowed sharply in recent years, though this is likely to be a temporary effect of the economic crisis.

The high cost increase in healthcare also affects equality by making healthcare unaffordable for low-income individuals. Even in Europe, healthcare tends to have a significant component of private out-of-pocket spending. Lower-income groups are, therefore, more likely to perceive a lack of access to health services even in countries that have universal healthcare. High expenditures have placed great pressure on public finances and created an impetus for reform aimed at increasing productivity in healthcare in order to maintain the long-term viability of the welfare state. The costs of healthcare delivery vary significantly by provider and region beyond what can be explained by quality and input costs. This suggests that many providers produce at sub-optimal levels of productivity

The causes of the high cost and low effectiveness in healthcare have been intensely debated in recent years, with no definitive answer. While this issue is not fully understood, it is often argued that the particular characteristics of healthcare cause unique organisation, which reduces the incentives for process innovation, thus, creating a bias toward high cost increases (Weisbrod, 1991).

Weisbrod (1991) writes:

“To understand the markets in which healthcare is provided and financed, it is useful to consider ways in which healthcare differs from most other commodities. First, it sometimes involves the preservation of life or, at least, major effects on the quality of life. Second, it is a technically complex commodity that abounds with informational asymmetries, adverse to consumers.”

One important explanation appears to be that the ethics of healthcare tend to incentivise technological change that is focused upon increasing health quality and saving the patient regardless of the cost, rather than on lowering costs (Weisbrod 1991). Technological improvement can either focus upon improving the quality for a given cost or decrease the cost for a given quality. There is a strong bias in healthcare toward the former: not for technological, but rather for institutional reasons.

Firms that invest in innovations know that providers, regardless of the cost, would almost never deny a new treatment or drug that improves the chances of survival. Focusing upon drugs or treatments that lower costs may not be as profitable. Technology often decreases costs, but has had a tendency to make health costs increase instead.

Open Care and Digitalization

In this section, I will use cases collected as part of the European Open Care research project to outline what can be considered open care. The cases in this study are limited to those using information technology.⁵

The first identified category of open care is online communities for patient interaction.

Patient information sharing sites can play a key role as knowledge brokers in the healthcare sector. This fact is particularly true if patient organisations can be encouraged to participate in the platforms. As collectives with varied members and activities, patient organisations have a unique capability of

5 For a thorough discussion on the project and the concept of open care, see (Sanandaji & Lakomaa, 2016).

easing the flow of information across networks (Nicholas & Broadbent, 2015). One such online platform is PatientsLikeMe, which was founded in the United States in 2004.⁶ The social media platform, which has a global outreach, also engages many European patients and patient organisations. The health information-sharing site encourages users to input data about their symptoms, environmental triggers, medication, and so on over time. The result is the creation of ongoing medical records. Users are encouraged to communicate with others who have similar health statuses and exchange knowledge. PatientsLikeMe also process aggregated and de-identified data, which forms the basis of future health advancements. In addition to providing useful information to those who experience health issues, the mass data gathered at PatientsLikeMe is also useful to increase the understanding of diseases. Numerous scientific publications rely upon the data gathered by the patient communication platform.⁷ In the long run, the mass data obtained from this and similar platforms can play an important role in fostering collective intelligence in healthcare (Tempini, 2015).

The second category is multi-function health communication platforms of which several may be considered open care. The Hungarian PraxisPlatform is a platform that, in addition to facilitating communication between patients, serves as a way for healthcare professionals to communicate with patients.⁸ The latter role is achieved through sending therapy-related information to patients in order to increase their adherence to and compliance with medicinal therapy and medical device use. Through the online platform, pharmacy care services to large patient populations can also be conducted. PraxisPlatform is an example of how a single platform can fill two different roles: first, e-healthcare, through which the traditional healthcare system can efficiently reach out to patients at typically low costs and, second, as a social patient communication platform.

The combination of facilitating patient-to-patient communication and healthcare sector-to-patient communication (as well as patient-to-healthcare sector feedback) might create synergistic effects for patients in addition to

6 There are similar sites in other countries, e.g., Carecity, which is now established in several European countries (Castejón, Chekroun, García, Gay, & Rebollo, 2013).

7 An example is the paper by Naujoks et al. (Naujoks et al., 2016), in which patient-reported data from the PatientsLikeMe community are used to explore how migraines impact the day-to-day life of patients.

8 PraxisPlatform website, <https://www.praxisplatform.hu/>.

healthcare professionals. For example, these might occur since patients can receive complementary information through the same platform and the burden upon health professionals to reach out with online information can be reduced if patients receive from other patients some of the information they are seeking. Through these forums, patients can also help each other better understand the information given to them by health professionals.

HealthUnlocked is another example of a social-patient communication platform developed in Europe; its aim is to become the social network for health. HealthUnlocked is a peer-to-peer support network through which individuals with health issues can communicate safely online, with guidance from credible institutions and organisations. Founded in 2009, the platform is multi-functional since it also encourages patient advocacy organisations to become engaged as well. Through HealthUnlocked, these organisations can communicate with their members about health-related matters, as well as allow members to foster patient-to-patient health sharing.

Communication platforms are also encouraging and simplifying open communication between care providers. Hospitals and health clinics tend to be organised in a hierarchical manner, in which communication between different units and even between different doctors in the same hospital is often limited. Information sharing to patients is even more limited within the traditional hierarchy of healthcare provision. Information-sharing applications during recent years have disrupted this system by encouraging more open communication. An example is Klara. This communication platform was launched in 2014 and simplifies information sharing from doctors to patients. The cloud-based web and mobile apps offered by Klara have since spread to hundreds of health systems across the United States, including solo providers and large medical groups. Klara has gradually moved toward simplifying communication between healthcare workers and healthcare systems. The company is currently attracting capital to finance future improvements. The aim is to allow patients to exercise greater influence over the healthcare that is provided to them, as well as allow operational efficiency in health provision by simplifying information sharing. The example of Klara shows that open information sharing among patients, between patients and health providers, and among health providers can occur through the same basic platforms.⁹

9 PR Newswire (2016). "Healthcare Messaging Platform Klara raises \$3 Million from Lerer Hippeau and Project A to become the Central Nervous System of Healthcare", 2016-09-14.]

A similar platform in Europe is ENJECT. ENJECT is a 4-year coordination project funded by COST: a European funding organisation for research and innovation networks.¹⁰ ENJECT focuses upon promoting new models of healthcare delivery, thus, incorporating wireless, digital, and mobile technologies. The stakeholders in the process of health delivery are connected in information-sharing networks. The aim is to promote the concept of “connected health”, in which the patient can gather, link to, and interpret information from different sources. Providers, patients and researchers can also use aggregate data in order to improve decision-making. This information sharing from providers to patients is relevant in the scope of open care, since the information can be fed into social patient communication platforms and peer-to-peer support networks.

A third category is that in which digitalization realises “long tail effects” (Anderson, 2006). RareConnect is an international platform for rare disease communities. The platform, which has been developed by Eurordis and NORD, acts in cooperation with patient organisations. The organisations contact the site managers to gain permission to set up community pages. These pages have learning resources in the form of moderated forums and spaces for patients to share their stories with one another. Individual patients can also connect with health professionals in the forums. Another platform is HealthTalk, developed in partnership between the charity DIPEX and the Health Experiences Research Group at Oxford University. The platform collects text and video narratives from patients who communicate their experience of having a certain disease. The experiences of individual patients are presented on a timeline through the early stages, diagnosis and treatment, hence, reflecting the entire patient experience. The patients included for each disease are chosen to represent a range of disease stages, ages, genders, socio-economic status, and so on. (Nicholas & Broadbent, 2015).

When Does Open Care Emerge?

Open care projects are unlikely to emerge where the traditional care institutions work well, but rather where they are inadequate. This phenomenon may apply either where care systems failed due to an economic crisis or in areas where no such systems have been established: for example, care for recent

¹⁰ ENJECT website, <http://enject.eu/about/>.

immigrants or for minorities or people in remote geographic areas. They may also emerge where scale effects exist but the number of patients in a specific jurisdiction is too small to cater to the demands of the users or patients. The ability of a patient with a rare disease to share knowledge with others might be of little value if the number of patients in a country is four and the knowledge exchange is organised within the national healthcare system. The value, however, could be enormous if the patient is able to interact globally with tens of thousands of other patients.

Several projects that have been able to scale successfully are those in which the users themselves are the prime beneficiaries. The aforementioned Patient-LikeMe and other social media platforms are devoted to the acquisition of knowledge. This also applies to non-digital open care projects, such as Alcoholics Anonymous: where their own participation is both important for the alcoholic participant and for the other participants in the gathering. Therefore, projects based upon self-help and exploiting economies of scale and the lack of regulatory border obstacles may have greater potential than other projects.

Projects based upon the acquisition of big data may also be successful even if they are likely to rely upon external incentives for participation, insofar as data collection does not give immediate benefits to the participants. The interest in creating such incentives may be substantial, as alternative opportunities for obtaining these data are often missing within traditional health services.

To help solve the healthcare cost crisis, open care projects must be able to scale. The insights from Ostrom offer some help in hypothesising when this is likely. Most open care projects are organised as non-profits. As they do not have a bottom line and the efficiency of the projects is difficult to evaluate, thus, allowing room for opportunism. A strong common culture might be the remedy. Historically, many projects that can be defined as open care have been organised by religious organisations where a common set of values already exist – a person who is involved knows what is a good outcome. This phenomenon also increases the costs for opportunistic behaviour from outsiders. The cost for a person to follow religious rules and rituals is low if the person is a believer in the faith; however, it can be costly for an outsider. Religious organisations may also provide an organisational structure, thus, alleviating the need to create one for a new project.

A common understanding of what is considered a good outcome also exists in other communities. What constitutes superior performance in the open software culture is generally agreed upon: for example, the writing of structured and commented code. Different functions are also more or less likely to be developed in the absence of financial incentives (Von Krogh, Spaeth & Lakhani, 2003). Research on software development, therefore, could be used to also understand open care projects.

Conclusions

Open care is a novel concept that can be useful in understanding the formation of care projects outside formal (health) care institutions in a world where health care costs is increasing and, in some cases, limited access to care is a growing problem. In this chapter, I have given some examples of how IT-based open care projects – both in the collective intelligence and the community provision type – may help solve some healthcare challenges.

As historical examples show, digitalization often, yet not always, facilitates open care projects. Through the use of the cases and previous literature on the commons and institutional entrepreneurship, it is possible to hypothesise where open care projects may emerge: mainly where the traditional public or private healthcare system is inadequate or has failed. This phenomenon applies both to public and private systems.

That open care is easier to organise if the participants have shared values because they can more easily agree upon what is a good result (Capiluppi & Michlmayr, 2007) may also be assumed. For instance, this phenomenon has been identified in open source software development: where there is a consensus on what is considered to be good code and what the rewards are. The same can be observed within collective intelligence projects, such as Wikipedia: where the internal incentive and reward systems are based upon a common culture.

Open care may also foster innovation by means of lowering the cost of experimentation. Formal care institutions are often risk averse due to the high costs of failures; however, open projects – partly as a result of their smaller scale and the low stakes – might be more prone to experimentation. This means, a few successes that could scale could then outweigh the cost.

Thus, open care may relieve the pressure upon the formal healthcare system in two ways: first, by facilitating entrepreneurship and the dissemination

of process innovations. If some “open” solutions are able to scale, then they might lower the cost for specific treatments or types of care. This fact is especially true when similar projects – due to, for example, high monitoring costs if organised within formal care institutions – have a limited potential to scale. Through the structuring of incentives, many of the projects described in this chapter will avoid the problems described in the “commons” literature.

Secondly, even when they lack the potential to scale, open care projects can help by providing benefits to groups that have limited access to formal care institutions or where the participation of the patients is in itself therapeutic. In both cases, open solutions might increase access to care without incurring a cost to the formal care institutions. Open solutions might also increase the quality of care by creating incentives for experimentation and innovation, also without increasing the costs to the formal, private, and public care providers.

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