Strategy and practices

A qualitative study of a Brazilian public healthcare system of telemedicine

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Abstract

Purpose – In analyzing the field of strategic management in public organizations, scholars have noted a lack of studies that investigate how public organizations actually apply strategic management tools (Hansen, 2011) as well as studies that investigate how strategic knowledge is developed and used in practice in public organizations (Bryson *et al.*, 2010). Voicing similar concerns, the 2013 World Health Report pointed out the challenges facing many governments in providing universal health coverage and the importance of conducting new studies that focus on practical approaches using the existing knowledge rather than only investing in research related to new technologies. The purpose of this paper is to analyze how Telemedicine System of Santa Catarina (TSSC)'s strategy has resulted in significant improvements as seen through the lens of structuration theory (ST).

Design/methodology/approach – The authors support the analysis using the strategy as practice (SAP) framework of practice, praxis and practitioners and the ST of Giddens (1984), using Orlikowski's (2000) technology in practice framework. The authors have applied a qualitative methodology using a single case study which analyzes a healthcare system that has resulted from a successful cooperation agreement between two public organizations in Brazil. This research is based on the analysis and identification of the structural aspects (interpretative schemes, facilities, norms and stock of knowledge) that are enacted by the practitioners through their practices and praxis.

Findings – The authors have identified five strategic practitioners that perform six strategic practices and praxis, and have analyzed the structures they enact during their praxis. The authors have also identified the interpretative schemes, norms and facilities that motivate these social practices and how they influence the results of the TSSC.

Research limitations/implications – As limitations of this study, the authors highlight the focus given to the service provider practitioners, leaving aside the political practitioners and patients. The researcher perception and possible biases must be considered also as a limitation, despite of the efforts to minimize them with the rigor of the methodology and the use of mixed data collection techniques to enable data triangulation.

Practical implications – This research contributes to a better understanding of the benefits that the practice perspective offers and provides insights into the possible management cooperation between institutions. It also provides substantial evidence of the relationship between SAP and ST as it contributes to the reinforcement of empirical studies using ST. In addition to academic advances, this study contributes to the field by highlighting how the relationship between practices, praxis, practitioners and the existing structures has positively influenced the results of a public healthcare system and by presenting a successful initiative that has helped to improve the public healthcare system.

Originality/value – The authors believe that this paper will contribute to the field by highlighting how the relationship between practices, praxis, practitioners and existing structures has positively influenced the results of a public healthcare system and the roles played by the human agents involved.

Keywords Telemedicine, Qualitative research, Strategy as practice, Healthcare public cooperation, Structuration theory

Paper type Research paper

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1. Introduction

Ever since Whittington's (1996) seminal article "Strategy as practice," several studies have shared the understanding that strategy is a situated and socially acquired activity based on the interaction between different agents and micro-activities carried out by people within an organization (Jarzabkowski, 2005, 2010; Whittington, 2006; Johnson *et al.*, 2007; Lavarda *et al.*, 2011; Andersen, 2013). This practice perspective has also begun to influence other fields of study, such as information systems (Brown and Duguid, 2000; Orlikowski, 2000; Hayes and Walsham, 2001; Pozzebon and Pinsonneault, 2005; Von Krogh *et al.*, 2012; Whittington, 2014).

As organizations look for new modes of production and value creation to overcome problems and difficulties that old systems are facing, organizational researchers are increasingly observing new initiatives that might offer a step forward in the direction of a solution to the new challenges of this generation.

In analyzing the field of strategic management in public organizations, scholars have noted a lack of studies that investigate how public organizations actually apply strategic management tools (Hansen, 2011) as well as studies that investigate how strategic knowledge is developed and used in practice in public organizations (Bryson *et al.*, 2010). According to Bryson *et al.* (2009), most studies end up focusing on strategic planning and do not take the fundamental issue of linking processes with institutional contexts very seriously. Since performative aspects are what we observe: "real actions, by real people, in specific times and places" (Bryson *et al.*, 2009), or in other words, they involve behaviors and actions that are determined by both individual human agency and structural/institutional forces (Bryson *et al.*, 2010). In addition, strategic choices are made by individuals and groups who are embedded in social structures, which are reproduced and shaped by the actions of individuals and groups across time and space (Jarzabkowski, 2008). In some cases, middle managers play a crucial role in promoting user acceptance and team commitment during the process of change, which behaviors perceived to achieve success (George *et al.*, 2017).

One of the main messages from the 2013 World Health Report on universal health coverage was that many countries face challenges when trying to expand their health services with limited resources. Therefore, it also highlighted the importance of conducting new studies focused on practical approaches using the existing knowledge rather than only investing in research related to new technologies.

The Brazilian Government faces a daunting challenge in providing public health services for its entire population due to the country's continental dimensions and social inequalities, demographic complexity and political and financial situations (Paim *et al.*, 2011). A special issue of *The Lancet* journal was published in 2011 to highlight these challenges and discuss them. Entitled "Health in Brazil," this special issue contained the following six papers, which were intended to provide an overview of Brazilian health achievements and challenges: Paim *et al.* (2011), Victora, Aquino, do Carmo Leal, Monteiro, Barros and Szwarcwald (2011), Barreto *et al.*, 2011; Schmidt *et al.*, 2011; Reichenheim *et al.* (2011) and Victora, Barreto, do Carmo Leal, Monteiro, Schmidt, Paim and Reichenheim (2011).

Although it appears that the Brazilian healthcare system has been improving, recent reports have shown that the results have not been as encouraging as expected. There is evidence that long-standing problems in the Brazilian healthcare system have been exacerbated by economic and political crises, including a lack of infrastructure, medical supplies, basic medical accessories and equipment (Watts, 2016). New public health problems such as the Zika virus during the 2016 Olympic Games (Petersen *et al.*, 2016) have also made the health situation during economic and political crises more difficult, which has thus resulted in poor health services for the population, which in turn has sought to redress this situation through the courts (Alves *et al.*, 2016). This underlines the need to reopen a discussion of the government's role in guaranteeing every citizen's right to healthcare, as well as its operating and funding model (Oliveira Santos and Alves, 2016).

So we have decided to take a deeper look at a healthcare cooperation project between two Brazilian public institutions in the state of Santa Catarina called the Telemedicine System of Santa Catarina (TSSC) that have managed to achieve significant improvements for its customers. Since the public healthcare system in Brazil is a critical and complex organization (IBGE, 2015), we aim to analyze how the TSSC has managed to achieve significant improvements while facing the same national economic and political crises as other Brazilian states, using a practice-based approach focused on strategic aspects.

Because we are studying human action or human agency, we have decided to address this topic through a structuration perspective. We believe that Giddens' (1984) structuration theory (ST) is very appropriate for our purposes. Giddens' (1984) notion of the duality of structure through time and space, which interferes with or affects the reproduction of social practices, serves as an important mechanism in analyzing human agency, which according to a structuration perspective, shapes and is shaped by the structure in which it occurs.

The relevance of the structuration perspective to the study of human agency as seen through a practice lens and its effects on organizational strategy has been studied in depth in Orlikowski's (1992, 2000) work about the duality of technology and the use of a practice perspective for studying technology in organizations. Pozzebon (2004), Pozzebon and Pinsonneault (2005) has also reviewed the use of ST in strategic management studies.

Strategy as practice (SAP) studies have also made use of Giddens' theory to support their findings: Samra-Frederick's (2003) study of strategists' everyday efforts; Rouleau's (2005) study of sensemaking by middle managers; Balogun and Johnson's (2005) paper about the impact of change on recipient sensemaking; Whittington's (2006) discussion of the practice turn in strategy research; Jarzabkowski *et al.*'s (2007) proposal of an SAP framework and Johnson *et al.*'s (2007) book on the direction of SAP studies and resources.

This study aims to analyze how the strategy adopted by the TSSC has resulted in significant improvements as seen through the lens of ST. Therefore, we have used the SAP framework in order to understand how the relationship between practices, praxis, practitioners (Jarzabkowski *et al.*, 2007) and existing structures (Giddens, 1984) has positively influenced the results of this public healthcare cooperation project. Thus, we are asking the following research question:

RQ1. How has the relationship between practices, praxis, practitioners and existing structures positively influenced the results of this public healthcare system?

To attain our goal, we have applied a qualitative methodology to a case study using three data collection techniques: participant observation, semi-structured interviews and document analysis to permit data triangulation (Saunders *et al.*, 2009). To analyze the results, we have applied the pattern-matching technique (Trochim, 1989) and narrative analysis (Jovchelovitch and Bauer, 2002).

We have identified five strategic practitioners that perform six strategic practices and praxis, and have analyzed the structures they enact during their praxis. We have also identified the interpretative schemes, norms and facilities that motivate these social practices and how they influence the results of the TSSC.

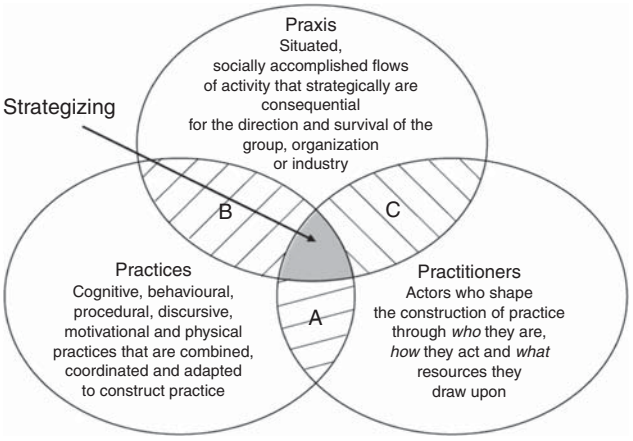
We believe that this paper will contribute to the field by highlighting how the relationship between practices, praxis, practitioners and existing structures has positively influenced the results of this public healthcare system.

This paper is organized as follows. In the next section, we will present a theoretical review of SAP (Section 2) and ST (Section 3), followed by a description of the applied methodology (Section 4) and then a discussion of our analysis and the results of the empirical work (Section 5). Last of all, in our conclusion we will present this study's final considerations (Section 6).

2. SAP

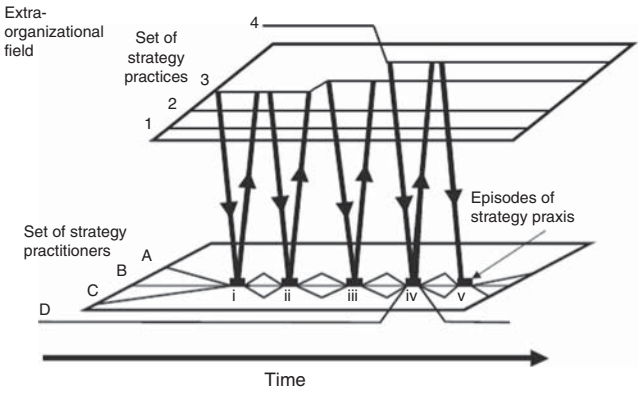
SAP studies have gained importance in the scientific community by shedding light on the interaction between actors and the micro-activities carried out within organizations. By looking at organizations using this new approach, studies began to comprehend how strategy is created, and considered it to be a social practice in which all stakeholders are involved and contribute to its performance (Whittington, 1996, 2006). This is the reason why this line of research is called SAP, because it believes that strategy is something that people do (Whittington, 2006; Johnson *et al.*, 2007; Jarzabkowski and Whittington, 2008; Jarzabkowski and Paul Spee, 2009). As a result, the more that strategy approaches practice, the more evident it is that strategy is not an organizational attribute, but rather a reflection of the activity of individuals and thus a social phenomenon.

As illustrated in Figure 1, there are three main elements that are constantly present in the SAP perspective: praxis, practices and practitioners, which are also defined in Figure 1. But in order to offer a better understanding of how strategizing occurs, we present an integrated SAP framework in Figure 2 as developed by Whittington (2006). It exemplifies the



Source: Jarzabkowski *et al*. (2007, p. 11)

Figure 1.
A conceptual framework for analyzing strategy as practice



Source: Whittington (2006)

Figure 2.
Integrative framework of SAP

interaction between strategists (A-D) from inside and outside the organization, with a set of legitimate organizational practices (1-4) created or incorporated by the organization over time, due to episodes of praxis (i-v).

One important aspect represented in this framework is that praxis, practices and practitioners are all mutable over time. As exemplified by Whittington (2006), Practice 3 is changed after Episode ii, and the incorporation of Practice 4 implies the need for the presence of Practitioner D during one of the praxis episodes.

Whittington (2006, 2014) also notes that the private activities of practitioners cannot be detached from the society, rules and resources in which they are found and therefore we need to understand them to be able to understand their actions. This interrelationship between activities and society is a central aspect of SAP.

Furthermore, the integrative strategy formation process (Andersen, 2004, 2013; Lavarda *et al.*, 2011) exemplifies how an organization needs a planned and deliberative strategy (George *et al.*, 2016; George *et al.*, 2017; Johnsen, 2016, 2017), as well as a decentralized and emergent strategic process (Mirabeau and Maguire, 2014). The interaction among the strategic practitioners, from all structure levels (top, middle and bottom) can bring together deliberative and emergent strategies to optimize results.

We believe that it becomes easier to comprehend SAP once we understand that the practice approach draws on many of the insights of the process school, but does so returning to the managerial level, being concerned with how strategists "strategize" (Whittington, 1996). Therefore, we believe that SAP studies are rooted in sociological studies such as the one conducted by Giddens (1981) because of their focus on continuous processes that happen within a social and cultural context, involving the observation of the activities and practices enacted by actors, which have been very appropriate for use with the practice approach.

3. ST

Giddens (1984) introduces ST by presenting its differences from interpretative sociology in which action and meaning receive a certain priority to explain human conduct. ST on the other hand focuses on structure and its constraining qualities, proposing an imperialism of the social object over the imperialism of the subject or, in other words, the interpretative sociology approach.

ST understands the basic domain of the study of the social sciences as neither the experience of an individual actor nor the existence of any form of society as a whole, but rather as social practices ordered across time and space (Giddens, 1984). To ST, human social activities are recursive, and by saying that, we mean that they are not something static but rather recreated by the same social actors via the very means whereby they express themselves as actors:

> Structuration theory is based on the premise that this dualism [structure/human agency] has to be reconceptualized as a duality – the duality of structure. […]The structural properties of social systems exist only in so far as forms of social conduct are reproduced chronically across time and space. The structuration of institutions can be understood in terms of how it comes about that social activities become "stretched" across wide spans of time-space (Giddens, 1984, p. xxi).

Furthermore, Giddens (1984) presents the concept of human "knowledgeability" and affirms that it is in its specific reflexive form that the ordering of recursive social practices is based. But at the same time, "knowledgeability" is only possible due to the continuous use of practices that make them distinctive across the same space and time. It presupposes that to be a human being is to be a purposive agent, who has reasons for his or her activities and is able to elaborate discursively upon those reasons (including lying about them) (Giddens, 1984).

When discussing human agency, Giddens (1984) explains what he called "the stratification model of the agent," (Figure 3) as a representation of an embedded set of processes that helps analyze an action. He believes that "actors not only monitor continuously the flow of their activities and expect others to do the same for their own; they also routinely monitor aspects, social and physical, of the contexts in which they move, by rationalization of action" (Giddens, 1984).

The motivation of action is analyzed and is distinguished from the monitoring and rationalization of action, because the understanding that "motivation" is related to the potential for an action and not how the action is carried out in time and space. It means that motivation occurs occasionally rather than being recurrent and most of our conduct is not directly motivated, or even unconsciously motivated. Therefore, Giddens (1984) discusses the differences between practical and discursive consciousness (Figure 4), which provide great instruments of analysis for empirical research when studying the practice approach.

Giddens (1984, p. 26) affirms that human agents are always aware of their actions on the level of discursive consciousness, but might be completely unclear about the unintended consequences of their actions. Thus, "human history is created by intentional activities but is not an intended project; it persistently eludes efforts to bring it under conscious direction" (Giddens, 1984, p. 27).

Finally, in ST the duality of structure is the basis of social reproduction across time and space. The reproduction of social practices occurs due to the ability of human actors to draw upon interpretative schemes that are incorporated within their stock of (tacit and explicit) knowledge that enables the creation of meaning to an action, as well as the communication of this meaning. To Giddens (1984), agents routinely incorporate temporal and spatial features of encounters within processes of meaning creation; therefore structures of signification must always be studied in connection with domination and legitimation (Figure 5).

Because all structures are virtual and continually enacted through an actor's recurrent practices, structures overlap each other in the structurational analysis (Giddens, 1979;

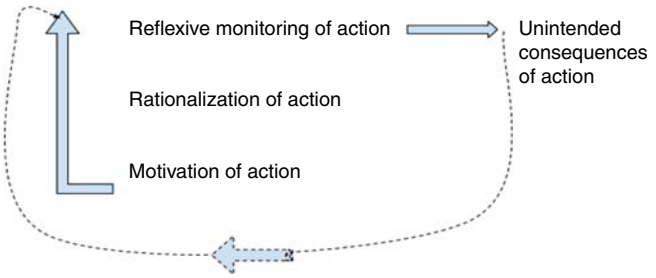


Figure 3.
The stratification model of the agent

Source: Adapted from Giddens (1984)

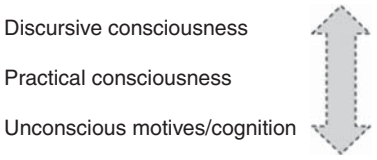
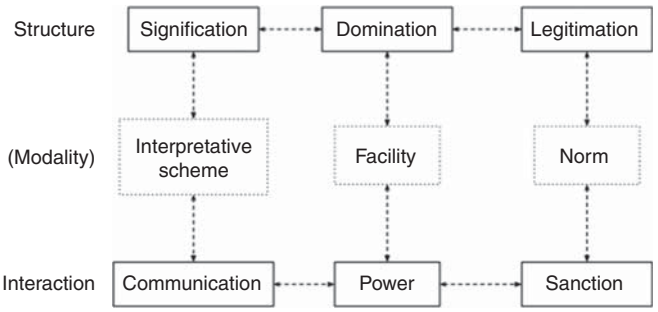


Figure 4.
Different notions of consciousness

Source: Adapted from Giddens (1984)



Source: Adapted from Giddens (1984)

Figure 5.
The dimensions of the duality of structure

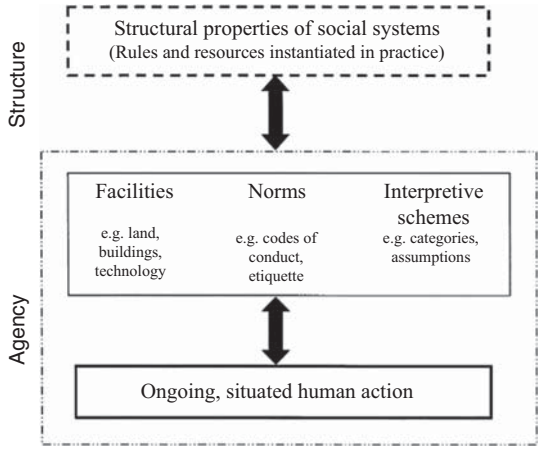
Orlikowski, 2000). Based on this idea, Orlikowski (2000) adapted Giddens' (1984) framework to represent the enactment of structures in practice (Figure 6) and used it to explain the structures enacted by actors on different levels. We use Orlikowski's (2000) framework as an important tool for analyzing this study's data as will be seen below.

4. Methodology

We have used a qualitative methodology, applying it to a single case study strategy (Eisenhardt, 1989). Considering the goal of this study, it can be characterized as explanatory (Saunders *et al.*, 2009) as it aims to analyze how TSSC's strategy has resulted in significant improvements as seen through the lens of ST.

This study is designed to establish: the research objective; the theoretical research framework (SAP × ST); the unit and level of analysis; the selection of the case studied; and the protocol for the case study analysis according to Pérez-Aguiar (1999, p. 231).

The unit of analysis is the organization itself, the TSSC program and network, focusing on the analysis of the strategy as activities and practices within the organization. The level of analysis is micro-organizational considering the different operational units, here understood as the service providers where activities and routines provide healthcare



Source: Orlikowski (2000), adapted from Giddens (1984)

Figure 6.
Framework of enactment of structures in practice

services to the population. As mentioned below, we did not focus on the highest level where decisions are taken, here understood as the political units, and not on the patients.

Stake (1995) defines a case study as a research strategy characterized by studying a phenomenon as a dynamic process within its real context using multiples sources of evidence to explain an observed phenomenon taking into account all of its complexity. We selected this case intentionally (Eisenhardt, 1989) since it offers the opportunity to study the variables of strategizing and ST which we are seeking to analyze. Furthermore, it is of particular interest due to its being a program based on cooperation between two public institutions, with a low degree of formalized hierarchy and a large number of interactions between people from different backgrounds who need to cooperate with each other to achieve positive results. We understand that a wide variety of backgrounds can be associated with a large number of different structures, and therefore this creates an interesting scenario to be studied.

Looking forward to answering our research question, the protocol for the case study seeks to establish sources of evidence using data collection procedures and analysis procedures. Thus, we have employed three data collection techniques: participant observation, semi-structured interviews and document analysis (Saunders *et al.*, 2009). Data were collected and analyzed over 12 months of constant interaction with the everyday routine of the TSSC management team, as well as meetings with physicians, nurses, technicians, public health sector agents and scholars involved with the TSSC. During the routines and meetings, we took notes and afterwards conducted semi-structured interviews with the relevant TSSC agents. This group of relevant agents consisted of two help desk assistants, one analyst, one operations manager, two specialist physicians (SPs), three primary healthcare physicians (PHCPs) and eight nurses.

We conducted the semi-structured interviews separately with each group. Our aim was to understand the perspective and perception of these respective agents in regard to practices, praxis and practitioners involved in the everyday micro-activities of the TSSC and how they are related to the set of enacted rules and resources that mediate their social action based on Giddens' (1984) three dimensions: interpretative schemes, facilities and norms.

The result was approximately seven hours of recorded interviews. The documents analyzed were developed by the Federal University of Santa Catarina (UFSC) and the State Department of Health of Santa Catarina (SDH/SC). Both institutions are responsible for the development of the TSSC due to a cooperation agreement. During our research, we analyzed the project development documents, progress reports since 2005, clinical protocols, manuals and training materials provided by the operations team. They served to confirm some data collected in our interviews and observations from this research field.

The use of three different sources of evidence facilitated the triangulation of data used in the analysis results (Eisenhardt, 1989; Stake, 2003).

Analysis procedures consisted of applying the pattern-matching technique (Trochim, 1989) to analysis categories by comparing a theoretical pattern with the findings in the research field. We also performed narrative analysis by using our interview data (Jovchelovitch and Bauer, 2002).

Although, Jarzabkowski *et al.* (2007) propose using their framework for analyzing SAP by beginning with an analysis of practices, followed by praxis and concluding with practitioners, we began our analysis with the practitioners, followed by the practices they develop and concluding with an analysis of praxis. We decided to proceed in this manner because the practitioners were the predetermined part of the set that we had when the program was developed. Most of the practices and praxis emerged from the practitioner's stocks of knowledge.

To facilitate our analysis, we have divided into four categories: practitioner, practices, praxis and their relationship with ST, as can be seen in Table I.

Category of analysis	Category description	Concept of category (formal)
C1	Practitioners: to identify who are the strategic practitioners and their main activities and responsibilities	"Practitioners are actors; those individuals who draw upon their practices to act" (Jarzabkowski *et al.*, 2007, p. 10)
C2	Practices: to identify the strategic practices that influence the success or failure of TSSC	"A 'practice' (Praktik) is a routinized type of behavior which consists of several elements, interconnected to one other" (Reckwitz, 2002, p. 249)
C3	Praxis: to identify how the practitioners do the strategic practices and how it interferes with the success or failure of TSSC	"Praxis comprises the interconnection between the action of different, dispersed individuals and groups and those socially, politically and economically embedded institutions within which individuals act and to which they contribute" (Jarzabkowski *et al.*, 2007, p. 9)
C4	Relation to ST: which structures are enacted by the practitioners on their praxis and how they are related with the duality of the structure (modality axis)	"Giddens (1979, 1984) proposed the notion of structure (or structural properties of social systems) as the set of enacted rules and resources that mediate social action through three dimension or modalities: facilities, norms and interpretative schemes" (Orlikowski, 2000, p. 409)

Table I.
Categories of analysis

5. Analysis and discussion of the results

We begin our analysis by describing the TSSC, its creation, design and hierarchical structure, followed by a description of its practitioners and an analysis of practices and praxis and their relationship to ST.

5.1 TSSC and its context

The TSSC is the result of a cooperation agreement, established in 2005, between the SDH/SC and the UFSC to provide better public healthcare services for the local population.

Santa Catarina is a state located in southern Brazil with a population of 6,819,190, consisting of 295 cities with a population density of 65.29 inhabitants/km^2 (IBGE, 2015). Because of the great concentration of medical staff and facilities along the state's coastal area and a few of the larger interior cities, patients from small interior cities frequently have had to travel long distances to seek medical treatment. This has increased logistics costs for the SDH/SC and has generated a dramatic growth in the waiting lists for those seeking medical attention in the bigger cities, due to the fact that the infrastructure cannot support all the demand.

Since the TSSC's creation, more than 4.4 million examinations have been performed. In October 2015 alone there were 17,697 electrocardiograms, 564 dermatological exams, 25,778 clinical analyses and 18,278 imaging exams. We were not able to estimate the cost reductions in the state budget due to the TSSC, but the improvements to the public healthcare system have been significant. These improvements have included: a 69 percent reduction in the wait list for dermatologists recorded in the city of Blumenau just four months after the full implementation of the TSSC and the adoption of a teledermatology protocol (Piccoli *et al.*, 2015); an increased agility in diagnosis which has helped save lives and change the way emergency cases are handled; and a reduction in mistaken diagnoses through second opinions enabled by teleconsultations.

Despite the fact that the TSSC uses internet-based software, as is explained in detail in the article "Building a national telemedicine network" by Wallauer *et al.* (2008), the interviews we conducted were marked by the perception that the most important feature of

the process is not the software, but the creation of the protocols and roles for each professional prescribed by the TSSC. In the words of the operations manager:

> […] actually most of the doctors already do telemedicine, they just don't know it. Whenever they have a doubt or an interesting case they want to share, they take a picture of the exam or the patient with their smartphones and send it to another colleague through apps such as "whatsapp"; this is a kind of telemedicine. The worst kind, because none of that information is saved on the patient's record and it's not available to others medical professionals who will eventually attend that patient in the future.

In addition, we identified a few arguments that helped give us greater insight into the context of the TSSC, such as this excerpt of an analyst's response when asked about the implementation process for telemedicine in Santa Catarina:

> There is only one public health system in Brazil, which is the Unique Health System (SUS), but it has a decentralized administration, and federal, state and city administrations are placed on the same hierarchical level and given a certain degree of autonomy in decision-making. That makes our job more difficult, because we need to be constantly convincing city health secretaries, doctors and nurses that telemedicine is not just one more work for them, but instead a cost free way to optimize their work that the state level is providing. Usually it's not clear to them how it can help them, and why it won't overload them with more daily activities. That is why we insist on training these people and providing help desk support.

When the TSSC was created, the main medical procedures covered by it were electrocardiograms and the diagnostic imaging exams. Later in 2015, dermatological exams were added using dermatoscopes and digital cameras. But as reported by one of the dermatologists, who issues clinical reports of exams remotely, the main problem was not the equipment, but rather its use:

> To report a dermatology exam, the image must be really clear so that there'll be no mistake in the diagnosis. I know it sounds simple, but we frequently had to invalidate exams, because the technicians weren´t paying enough attention to the procedure. In addition to this, we need to have a panoramic view of the patient, to ensure the right diagnosis. So we developed a simple protocol for the main clinical pathology investigations, which the primary healthcare team has to follow to ensure that we will be able to analyze the exam. [The analyst] and [the operations manager] trained them, and it has helped reduce the numbers of invalidated exams and rework.

5.2 C1 – practitioners

In this section, we identify who are the strategic practitioners and their main activities and responsibilities. In analyzing the data, we realized that the TSSC practitioners could be divided in two main groups: political administrators and service providers.

The political group represents all the stakeholders related with the administration of the state, public health and the development of knowledge and technology, such as the governor, the secretary of the health department (state and city), as well as the dean of the university and related scholars. These stakeholders perform an important role within the TSSC and must not be forgotten, but they are not directly related to the everyday activities and practices of the TSSC, which is the focus of this study. That is why they were not considered as practitioners in this study.

The service providers, who make up the second group of practitioners, are the people who develop the TSSC's everyday activities with citizens and therefore they interact directly with the practices and procedures we are studying. For our data collection analysis, the relevant agents were grouped by their occupation and divided into five groups: the help desk team (HDT), operations team, SP team, PHCPs and nurses. Table II relates them with their formal activities and responsibilities, according to project document 15.007.P.01 issued in October 2015.

Practitioner	Formal activities and responsibilities
Help desk team	(1) Assisting TSSC users by answering questions, doubts or any difficulties with the use of system tools (2) Generating reports based on the information collected with users during support assistance (3) Monitoring the volume of exams and diagnostics produced by the primary healthcare teams, as well as contacting them, in order to identify any difficulties or needs for new user training
Operations team (manager and analyst)	(1) Organizing TSSC strategic activities with the political group (2) Negotiating city approval of the TSSC with the health secretary (3) Providing training for the primary healthcare teams (4) Resolving problems, difficulties and needs identified by the help desk assistant (5) Elaborating the TSSC's strategic planning and budget (6) Managing software development and improvement (7) Elaborating new or improving existing TSSC protocols and processes together with the medical staff (8) Creating TSSC promotional and informational material (9) Handling internal formalities
Specialist physicians (SP) Team	(1) Diagnosing and reporting exams remotely (2) Invalidating exams which have not been executed properly (3) Providing second opinions and assisting the primary healthcare teams when consulted
Primary healthcare physician (PHCP)	(1) Attending patients and requesting TSSC exams for pathological investigations (2) Following the diagnosis and clinical treatment suggested by the specialist physician after the exam is reported. If there is a disagreement, the PHCP may ask for a second opinion or choose not to follow the diagnosis and clinical treatment suggested. In this case the PHCP assumes the responsibility
Nurses (nurses and nursing technicians)	(1) Assisting the PHCP (2) Attending patients (3) Performing TSSC exams requested by the PHCP (4) Organizing the medical equipment, internal formalities, and patient documentation (5) Contacting patients when necessary (6) Handling issues related to training and others administrative aspects, such as medical referrals

Table II.
List of practitioners

5.3 C2 – practices (resulting from the practitioners)

To identify the strategic practices that influence the success or failure of the TSSC, we have separated them according to each group of practitioners and presented the main activities performed, as well as the reason why we identify this as a strategic activity.

HDT. The constant monitoring of TSSC usage and the identifying of potential problems or the need for training or process improvements represents one of the most important strategic practices performed by the HDT. This practice positively affects the entire TSSC by dissuading its users from abandoning it due to simple issues, such as a lack of resources or training, as reported by one help desk assistant:

> I was checking the statistics of exams performed in the primary healthcare unit of [name of the city] when I realized that the last dermatology exam was sent more than two weeks ago. So I contacted them to see if they were having any problem, because it is not common to have such a long time without a single exam. When I called, I spoke with the nurse and she told me that she was new and that her colleague who had been responsible for the exam had been transferred to another unit and they didn't know how to use the equipment. So I scheduled a new training session for that unit as soon as possible.

This report shows how a very simple issue can negatively affect the providing of the TSSC's services. These situations are not very uncommon due to the fact that some of the primary health units spread all over the state of Santa Catarina are really small units which are sometimes supported by teams of less than ten professionals located far away from other units.

Another interesting narrative that we obtained from the HDT shows the strategic importance of the monitoring and report generating activities that they perform:

> Because we are always in contact with the users and doctors, [name of the SP] once called us to inform us that he had just invalidated another exam performed by the [name of the city] unit and it was the second time that week that this had occurred with an exam from this unit. The images weren't clear enough and he indicated that they might be having some trouble. So we contacted the unit and the nurse informed us that she was taking the pictures with the digital camera and the dermatoscope exactly as she had been taught to in training and it wasn't her fault. After we spent some time asking her questions trying to understand step by step what she was doing, we realized that the camera used a two-step click and that she was doing it too fast resulting in the images being blurry. We went over the process with her step by step on the phone and then she understood.

We realized that most of the problems are related to the simple issues that do not require much effort to be solved; they just require closer monitoring and contact with the users to clear up many of their doubts and avoid service stoppages. Under the supervision of the operations team, the HDT also organizes training material and operations team requests.

Operations team (manager and analyst). Since the analyst supports most of the activities performed by the manager, we analyzed their strategic practices together.

Based on the narrative of both professionals, we identified a great alignment between them regarding the constant need to convince the political and medical stakeholders involved, as reported by the operations manager:

> First, we can't forget that we're navigating through political waters and that there may be disagreements between the mayor and the governor, so we must always be careful about what we say and how we present the TSSC. The city administration has autonomy to accept or reject the TSSC program if they want to. Fortunately we have not had such an experience so far. We usually present the city health secretary with the benefits that the TSSC can provide to citizens and inform them that the program will not require any money from the city budget. That usually motivates them and helps us expand the TSSC's reach.

The approval of city government is mandatory and this issue is handled by the operations manager and analyst through persuasion and negotiation. The city government, however, has very little influence over whether the medical staff uses or does not use the TSSC resources, so the operations team provides continuous reasons for the medical staff to use the system and win them over in the process, as we can see from the operations analyst's narrative:

> […] if the medical staff doesn't feel that they're benefitting from the process, they won't use the TSSC and will offer a few arguments to justify their lack of interest. Most of these are due to the fact that they're not familiar with technology. Once while I was visiting the primary healthcare unit in [name of the city], I saw that they were using old electrocardiogram equipment instead of the new equipment that they had received from the TSSC, because they thought the new one couldn't be configured with their printer. In fact, their printer was really old, but if the unit had had an IT guy they would have been able to fix that problem as we were able to do later. But what I want to say is that if we don't emphasize how the TSSC can optimize their work or even design a few internal processes with them, they won't feel motivated to use it, because they already have a large workload and nobody wants to do more work.

Based on our narrative analyses and observations of the routines, we have been able to identify two activities assigned to the operations team that have had a large impact on the TSSC. They are: "negotiating city government approval of the TSSC with the health secretary" and "providing training for the primary healthcare teams (PHCTs)."

Because both activities are related to persuading users and administrators of the importance and benefits of the TSSC, which are essential to the survival of the TSSC, we've

identified the persuading and integrating of the stakeholders involved as the strategic practices performed by the operations team.

SP team. The SP team is a well-equipped group of physicians divided into two specialties: cardiology and dermatology. They are responsible for assisting the PHCPs with specialized knowledge in pathology investigations, difficult cases or when there is any need for a specialized second opinion/consultation. These inquiries are made through the TSSC software and the SP team has a deadline of 72 hours to respond.

The practice performed by this group is the core of the entire TSSC program and that is why we understand that the issuing of specialized reports and second opinions/consultations for the exams is the strategic practice performed by the SP team.

These are the reasons why the program has become so relevant and they justify the investment that has been made. This team is made up of approximately 26 SPs, divided into dermatology and cardiology, and it supports the entire group of PHCPs within the state of Santa Catarina. One SP summarized the importance of their practice as follows:

> Telemedicine is here to promote accessibility. The patient has access to his or her medical exam and doctors can access their patients' exam histories from anywhere. Thus, the SP has access to all the exams that are needed for these reports. This results in a shortening of the distance and a decrease in the time needed for critical decision making. And as you know, it is all about timing when it comes to healthcare.

PHCP. The PHCPs are the front line for the entire public healthcare system. They are the ones who, supported by nurses, are responsible for attending the health needs of the population. Unfortunately most of the units where the PHCPs perform their activities are poorly equipped, short of staff and located in small regions far away from large metropolitan centers. These conditions made it necessary, in the past, for most of the patients to travel at least 50 km to get an exam. As reported by the PHCP:

> […] despite the fact that an electrocardiogram is very simple, it forced people to travel long distances. Today this facility allows people to take the exam in a few minutes. I request the exam and the nurses perform it and send it to the TSSC. When it seems serious, we can call the help desk to ask them to prioritize the exam, so the reports will be back in at most 15 minutes. This allows us to work with more precision and do our jobs more efficiently.

With the inclusion of protocols like the teledermatology protocols created by Piccoli *et al.* (2015), the state medical administration has established that medical referrals for dermatology are only allowed after the first teledermatology report confirms that it is necessary. This has resulted in a distribution of power which is no longer centralized in the PHCP but is also shared with the SP Team and regulatory offices.

Even with the sharing of power for medical referrals, the main responsibility for what happens to the patient still lies with the PHCP and that is why this professional has the autonomy to follow or discard the report issued by the SP. Based on that, we understand that attending patients and providing clinical treatment is the strategic practice of the PHCP.

Nurses. Nurses and nursing technicians, here treated together as nurses, perform an important role within the TSSC, as they are the ones responsible for performing examinations and sending them to the TSSC. But beyond this, nurses are responsible for other tasks as well. They are responsible for supporting the PHCP and many administrative tasks related to internal formalities, such as organizing patient agendas, patient check-ins and preparation routines for PHCP attendance, and filling out forms, among other things. Many of them also have administrative occupations and have to handle other duties that the health department demands from them, like training and lecture programs provided by the SUS, as well as inventory control and purchasing management.

For most of them, the TSSC appears to be an interesting idea, but they usually get concerned about the possibility that it will mean more work for them, overloading their daily routines with more tasks. This was verified by the narrative of a nurse during a first training session:

> I was worried in the beginning [of the training session] that this was another idea from them [SDH/SC] that would make us work even more, because they never understand how busy we already are […]. I was more relaxed after the [Operations analyst] said that we should sit down with our team and discuss how we would design the process in our unit.

In addition to the narrative above, here is another argument from the operations team in relation to the importance of the role performed by the nurses:

> Most of the time, the nurses are the only members of the team who appear at the training. We also notice that most of the questions related to internal procedures or cases related to the unit are usually answered by them, and not by the doctors or anyone else. Maybe this is because they are the ones who are responsible for the small activities involving the unit and the patients. […] But we do realize that if we want to promote something with a primary health unit, we need to motivate the nurses, otherwise it won't happen.

Not only during the interviews, but also during the observations we could verify that while the PHCPs focus on the patient situation, the nurses are the ones dealing with all of the rest. It creates a certain authority for them, positioning them not only as support staff but also as information recipients or sensemaking agents as well, promoting the implementation and usage of the TSSC within these units.

Therefore we have defined two main strategic practices performed by the nurses: performing TSSC exams and promoting the sensemaking of the TSSC procedures within these units.

Consolidating the strategic practices. We have structured Table III to consolidate all the strategic practices identified in this section and to prepare the basis for our analysis of praxis, Category 3.

5.4 C3 – praxis

In this section, we aim to identify how the practitioners do their strategic practices and how it affects the success or failure of the TSSC. Since each strategic practice is directly related to at least one praxis, we will proceed by detailing the praxis aspects that we identified for each strategic practice.

Constant monitoring of TSSC usage. The process of keeping in contact with the users and closely monitoring TSSC usage is not a simple task of just checking numbers and calling people to ask if they have had any difficulties. On repeated occasions, we observed that the help desk assistant had to insist or even persuade the user in the other side of the

Table III.
List of strategic practices identified for each practitioner

Practitioner	Strategic practices identified
Help desk team	Constant monitoring of TSSC usage
Operations team (manager and analyst)	Negotiating city approval of TSSC with the health secretary Providing training for the primary healthcare teams
Specialist physician (SP) Team	Issuing specialized reports and providing second opinions/consultations for exams requested by the PHCP
Primary healthcare physician (PHCP)	Attending patients and providing clinical treatment
Nurses (nurses and nursing technicians)	Performing TSSC exams and promoting sensemaking of TSSC procedures within the unit

line to understand the real situation, assuming an investigative profile. When questioned about these situations, the help desk assistant answered:

> It is so common [in healthcare services] to blame someone or to look for somebody to blame, that sometimes they think we are calling to issue a warning or alert someone that they end up not telling the full version of the story, being afraid that they'll be punished in some way. Actually, we just want to keep the services operating and help solve their problems; it's a win-win situation. Once we get their trust, it gets much easier. […]Nowadays some units even call us before they make any changes in their processes just to get our opinion.

Negotiating city government approval of the TSSC with the health secretary. Implementing the TSSC in cities always begins with negotiating city government approval with the health department. Up to this point, all of this is considered speculation, but even the speculation somehow influences this negotiation. We observed many times that the first contact between the operations team and the city health department was initiated by the city itself. This is mainly due the information that they receive about it from the SDH/SC, presentations made by the operations team in health related workshops, and their seeing it work in other cities.

The passive nature of this contact is due to the small size of the TSSC operations team, which needs to communicate with all these health departments, and if they do not communicate directly with the city health secretaries, then they communicate with medical professionals who are close to them. It is an alternative the operations team has found to achieve a more efficient approach, as the operations manager explains:

> What we need actually, is the [city health secretary's] signed approval, but we are talking about 295 cities and most of these secretaries have a busy agenda. So what's the best way to negotiate with them if not through their own team? We held several meetings inviting not only the secretaries but also the managers of medical units, because they understand the problems that their primary healthcare teams face and they usually have closer contact with the health secretary. If they understand the benefits that it [TSSC] can bring, our negotiation with the secretaries is already halfway home.

Basing their strategy on motivating not only the secretaries but also their assistants, the operations team has managed to implement teledermatology (the latest procedure included in the TSSC) in all 295 cities during a period of ten months.

Providing training for the PHCTs. The implementation of the TSSC is not enough, it needs to be used frequently and at a growing rate to guarantee the availability of this service for the population and thus justify the investments made by the state government. To make this possible, user training is essential and since it is responsible for this practice, the operations team focuses its training not on the software itself and its usability, but on the actions that the PHCT must take to feel comfortable with the new procedures and not view them as burdening the staff with even more tasks. During the training sessions, we observed that both the operations manager and the analyst used the artifice of jokes and informal conversation to lower the defensive postures of the nurses and the PHCP doing the training.

It was common to witness comments like: "At the help desk number we can't give you the winning lottery numbers, but we can help you with everything else!" or "The software itself is nothing without that important piece in front of the computer: you!"

The constant reinforcing of positive user attitudes and the need for them to design their processes so that they can best take advantage of the TSSC given the difficulties faced by their unit (e.g. a shortage of staff, peak patient hours and bad internet access) appears to be an evident characteristic of these training sessions.

Issuing specialized reports and second opinions/consultations for the exams requested by the PHCP. This strategic practice represents the core of the TSSC, and unlike the examples above, it is related to TSSC usage and not its implementation or consolidation. We were able to observe that the attitude of the SP can completely affect the success or failure of the

program, because as we have explained above, the PHCP is not obliged to follow the recommendations suggested by the SP.

Based on the records analyzed and the interviews conducted with the PHCP, they claim to follow the recommendations suggested by the SP, because they feel safer relying on their decisions. Only one case was found of a disagreement between the PHCP and the SP about a report issued, which was followed up with a debate and the solicitation of a second opinion from a different SP.

The SP team's making itself available and supporting the PHCP, respecting their deadlines in terms of issuing reports or providing second opinions in difficult cases has created a bond of trust between them that is reflected directly by the TSSC's results and also Praxis No. 5 which is analyzed below.

Attending patients and providing clinical treatment. As discussed above, the cooperation between the SP and the PHCP is the core activity of the TSSC, as the SP provides support to help the PHCP make a decision. However, more than that, the TSSC provides the PHCP with an entire history of the patient, with vital information that provides support for the PHCP even when the situation does not involve one of the procedures provided by the TSSC. This happens especially when the patients come from different cities, as reported by one PHCP:

> It's difficult to find patients who always keep their exams well filed and who bring them to consultations, even when the nurse reminds them when the appointments are scheduled. To have this information online has facilitated our work, especially when it is a new patient for our unit. Now I don't have to ask for all the procedures again, I only have to check the patient history and ask to repeat the exams that have expired. It's become part of my routine for new patients.

Performing TSSC exams and promoting the sensemaking of the TSSC procedures within the unit. Before the TSSC, many primary healthcare units did not provide exams such as electrocardiograms or dermatoscopies, and whenever they were needed the patient had to travel to bigger units that offered such exams. For the smaller units, the implementation of the TSSC has meant that they can offer a new procedure.

This challenge was overcome by Praxis No. 3, in which the operations team tried to create a relationship with the nurses during the training sessions, showing them how to use the equipment and motivating them to see that by using the TSSC they would not have more tasks to do, but instead would be bringing new solutions and benefits to people. Unlike the PHCP who does not necessarily live in the city where their unit is located, most of the nurses live there and constantly interact with the city's population.

Therefore after training they usually become the contact person for matters related to the TSSC, as reported by the help desk assistants:

> They [PHCPs] usually also work in other clinics and hospitals, and because they are constantly assisted by the nurses, they [PHCPs] get more involved before and after the TSSC procedures are carried out. The people who really know whether the equipment is working or how to use it are the nurses and that's why we end up contacting them more than the PHCPs or administrative staff. Also, some units are so small that the nurses also have administrative functions, which helps us when we need to update our records, create new accounts or even inform them of something. We maintain close contact with one of them [nurses] and this person shares the information with the rest of the team.

We have structured Table IV to consolidate all of the strategic praxis identified in this section and to prepare the basis for the analysis of their relationships to ST, the fourth category of analysis.

5.5 C4 – relationship to ST

In this section we aim to establish a relationship between the praxis identified in the previous section with ST, based on the framework which Orlikowski (2000) adapted from

Practitioner	Practices	Praxis
Help desk team	Constant monitoring of TSSC usage	(1) The assumption of an investigative profile
Operations team (manager and analyst)	Negotiating city approval of TSSC with the health secretary	(2) The motivation of not only the secretary but also the secretary's assistants
	Providing training for the primary healthcare teams	(3) The reinforcement of a positive user attitude and importance to TSSC results
Specialist physician (SP) team	Issuing specialized reports and providing second opinions/ consultations for exams requested by the PHCP	(4) Making themselves available and cooperating with the PHCP, seeking to create a bond of trust between them
Primary healthcare physician (PHCP)	Attending patients and providing clinical treatment	(5) The adoption of the TSSC in their basic routine to support their decision making
Nurses (nurses and nursing technicians)	Performing TSSC exams and to promoting sensemaking within the unit	(6) The assumption of responsibilities in matters related to the TSSC within the primary healthcare units

Table IV.
List of strategic *praxis* identified for each practice and practitioner

Giddens (1984). For each praxis identified, we report the structures enacted by the practitioners and the interpretative schemes, facilities and norms that motivated that ongoing, situated practice (agency).

Analysis of Praxis 1. The first praxis consists of the assumption of an investigative profile by the HDT in performing the practice of constantly monitoring the TSSC usage. We have identified that this recurrent praxis enacted by the HDT draws on its knowledge that nurses within the primary healthcare unit feel mistrust toward the team stemming from a culture in which people seek to blame someone when something goes wrong.

Based on this stock of knowledge, the HDT assumes an investigative profile, not to blame someone, but to identify what the problem is and help them solve it as quickly as possible, so that the TSSC service can resume. The HDT monitors the TSSC usage through the system database and makes use of calls and online training material to instruct the PHCT. Figure 7 summarizes the relationship between Praxis 1 and ST.

Analysis of Praxes 2 and 3. Praxes 2 and 3 consist of motivating not only the secretary of health but also the secretary's assistants by explaining the benefits of the TSSC and reinforcing positive user attitudes as well as their importance to the results of the TSSC. The same practitioners conduct both praxes during the TSSC implementation process.

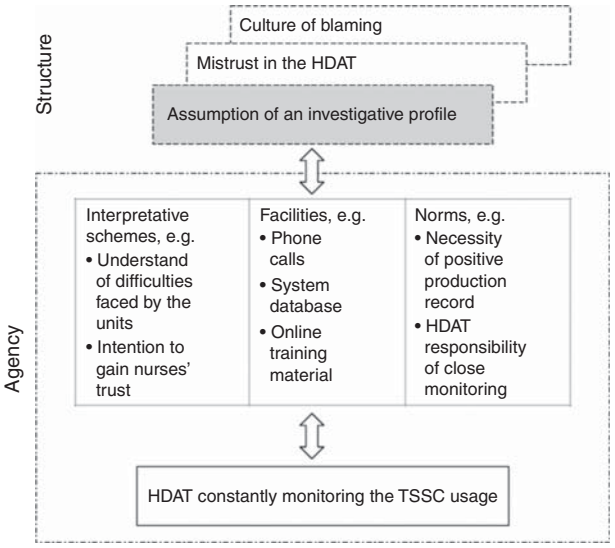
Because the city health department has no obligation to accept the TSSC program, the formal approval of the city health secretary (CHS) is required to begin the implementation process.

Based on the interpretative schemes of the operations team regarding the CHS's busy agenda and the understanding that their assistants can accelerate the negotiation process if they are motivated and support the program, the operations team enacts previous structures of knowledge about the understanding of the CHS assistants in relation to the primary healthcare unit's routine and the power of their influence on the CHS.

The operations team makes use of this knowledge to motivate CHS assistants to want to use the TSSC and thus accelerate the process and help negotiations, as presented in Figure 8.

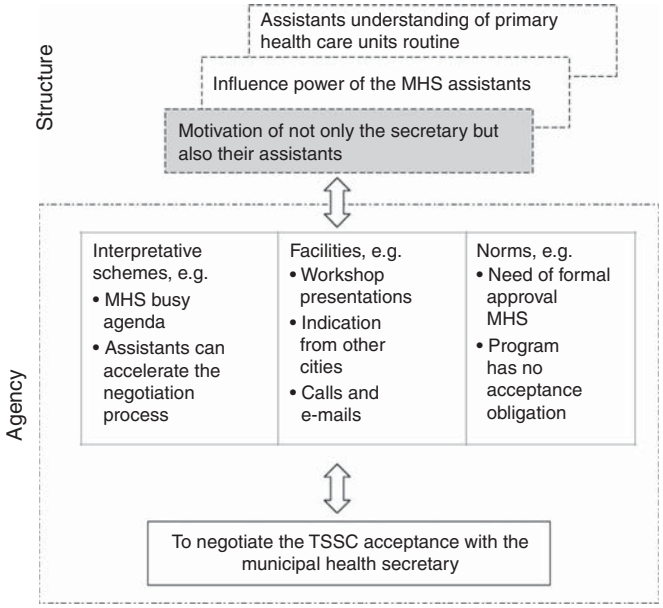
Praxis 3 differs from Praxis 2 in terms of the actor that needs to be motivated to support the program. In this case, the PHCT is the one that needs to be convinced, especially the nurses. They are the ones who generally embrace the responsibility of the TSSC procedures.

Because the operations team needs to show strong TSSC usage to justify the investment that has been made and because the program is voluntary, the operations team reinforces the importance of the work and a positive attitude on the part of the users during each training session. This is based on interpretative schemes that indicate that user attitude has a direct impact on TSSC results and the fact that the PHCT needs to see benefits



Source: Adapted from Orlikowski (2000)

Figure 7.
Relationship between Praxis 1 and ST

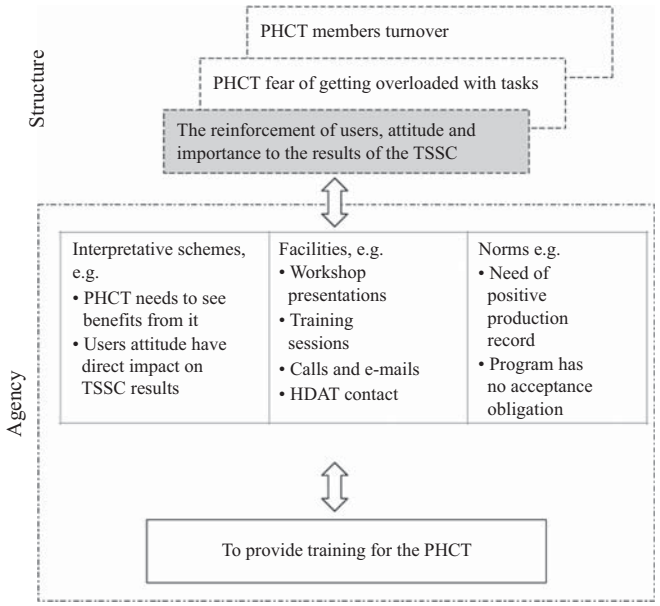


Source: Adapted from Orlikowski (2000)

Figure 8.
Relationship between Praxis 2 and ST

from using it, due to their fears of being overloaded with tasks, as well as a significant turnover in their team, as represented in Figure 9.

Analysis of Praxis 4. Praxis 4 is related to the attitude of the SP team in terms of making themselves available and cooperating with the PHCP in terms of report issuing as well as



Source: Adapted from Orlikowski (2000)

Figure 9.
Relationship between Praxis 3 and ST

consultations on difficult cases. This attitude has helped create a bond of trust between them, optimizing this relationship which represents the core activity of the TSSC.

Motivated by the interpretative schemes that the PHCP has a higher confidence in making a decision when supported by the SP team due to their deeper knowledge of the subject, the SP team members have drawn on their understanding of PHCP routine and their cooperative culture to create a structure that maintains their attitude of making themselves available and cooperating with the PHCP. This structure is enacted through the TSSC software where they interact with each other, healthcare workshops provided by the SP team, e-mails and also by the HDT, as summarized in Figure 10.

Analysis of Praxis 5. Praxis 5 consists of the routine of the PHCPs and the inclusion of new processes in their daily routines. The PHCP is the one responsible for attending patients and providing clinical treatment to the patients of a primary healthcare unit. As presented in Figure 11, they suffer great pressure and responsibility because they are dealing with human life.

Based on strict medical norms and policies, PHCPs draw upon previous structures, such as their general medical knowledge background, as well as their individual responsibility as a physician to incorporate the usage of the TSSC into their basic routines. Therefore, the TSSC has become a decision-making support mechanism.

This structure is motivated by the interpretative schemes they have, knowing that with better information provided by the SP reports they can make better decisions and receive support when facing difficult clinical cases.

Analysis of Praxis 6. Praxis 6 reflects the role performed by many nurses in the PHCT, assuming the responsibility of matters related to the TSSC within their units. Motivated by the fact that they are responsible for performing the examinations requested by the PHCP, they have constant contact with the TSSC, as well as the HDT, becoming the person with the greatest understanding of the TSSC in their unit and promoting its sensemaking.

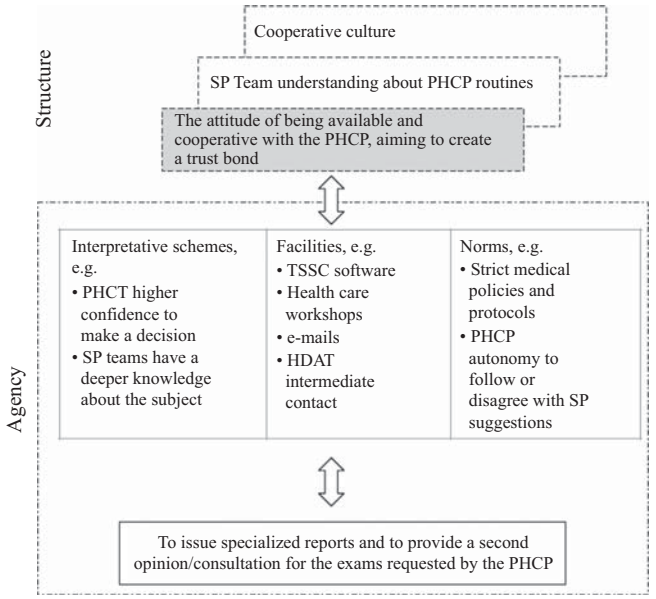


Figure 10.
Relationship between Praxis 4 and ST

Source: Adapted from Orlikowski (2000)

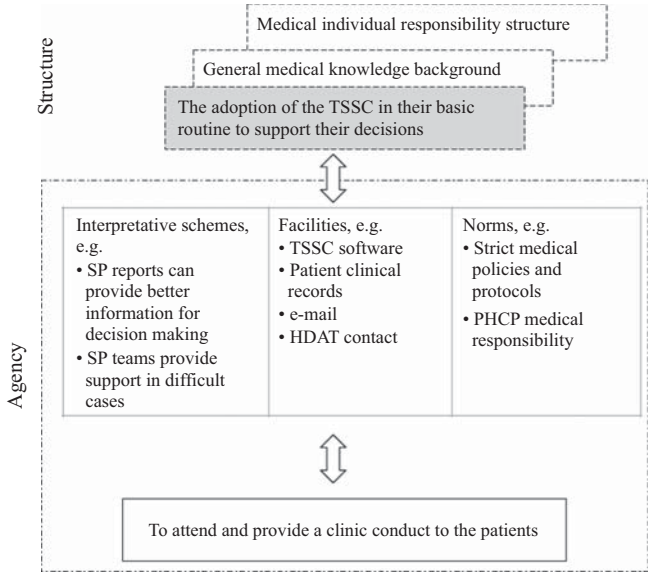
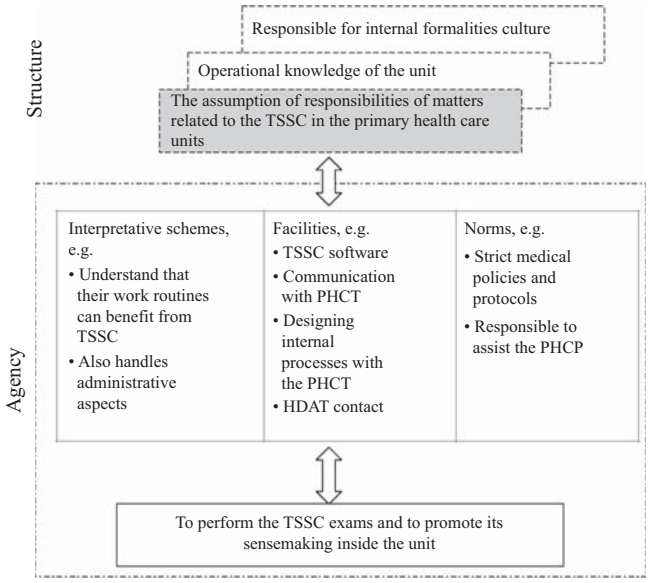


Figure 11.
Relationship between Praxis 5 and ST

Source: Adapted from Orlikowski (2000)

After they have designed the work process with their PHCT, they understand how the TSSC can optimize their work routines and how they can benefit from it. They are responsible not only for clinical examinations, but also for the paper work related to administrative issues. As presented in Figure 12, they enact the structure of assuming responsibilities of matters



Source: Adapted from Orlikowski (2000)

Figure 12.
Relationship between Praxis 6 and ST

related to the TSSC in their primary healthcare units, based on their previous knowledge about the operational routine of their unit and their culture of being responsible for internal formalities, in addition to the assistance they provide the PHCP.

5.6 Analysis and discussion

In considering *RQ1*, after analyzing the SAP and ST categories we understand that due to the high level of autonomy that each healthcare unit has and the different scenarios they face (varying size of staff, resources, volume of patients, infrastructure, etc.), practitioners are the predominant category. They are predetermined by the health policies and the practices and consequently the praxis are derived from them (as predicted by Jarzabkowski *et al.*, 2007).

Since practitioners are predetermined pieces of the program, defined from the outset and given that they are human agents, they are influenced by interpretative schemes, existing facilities and applicable norms (modality axis of the ST), which affect their routines and the establishment of social practices (Giddens, 1984). At the same time, the high level of autonomy that each healthcare unit has (Mirabeau and Maguire, 2014) and different scenarios that they face influences their praxis, according to the interpretative schemes of the people involved, the facilities available and applicable norms (Giddens, 1984). The data analyzed provide substantial evidence of a relationship between SAP and ST, and present how this SAP occurs and are influenced by the structuration dimensions or modalities, confirming the studies of Orlikowski (1992, 2000), Pozzebon (2004) and Pozzebon and Pinsonneault (2005).

The important role of leadership as a practice-based art, which requires knowledge of how to apply the practice in context to be successful (Bryson *et al.*, 2010), has also been confirmed. The data analyzed show the importance of many practitioners, but they are all interrelated and coordinated by the operations team (manager and analyst), whose members act as the central sensemaking agents. Their stocks of knowledge and their constant interactions with practitioners allow them to better understand the existing structures and

thus talk with each practitioner promoting the praxis needed for each identified practice, thus acting as central sensemaking strategists.

Yet, it is important to highlight the need of adoption of new public management practices by TSSC and SDH/SC. As far as we could observe, no formal strategic planning is applied on the micro level of these institutions, although recent studies indicate the relevance of strategic planning as an important tool to success in public service organizations (Andrews *et al.*, 2009; Elbanna *et al.*, 2016), leaving strategical actions to be created and conducted by individuals on bottom-up basis, absent of a formal strategic planning promoted by the top management team. The absence of a formal strategy supported by an engaged top management team can be detrimental to performance (Andrews *et al.*, 2009; Johnsen, 2017). On the opposite, as proven by George *et al.* (2016, 2017) and Johnsen (2016, 2017), the adoption of formal strategic planning including micro and macro-level analysis has a positive direct impact on performance of public organizations. Therefore, we believe it is an urgent matter for SDH/SC and TSSC, despite their ability to overcome difficulties by the action of sensemaking agents, the practitioners.

6. Final considerations

The objective of this study is to analyze "How has the relationship between practices, praxis, practitioners and existing structures positively influenced the results of this public healthcare system?" In this paper, we have presented five strategic practitioners, six practices and the praxis that they perform to influence the results of the TSSC. In addition to this, we have developed a framework adapted from Orlikowski (2000) for each category of analysis representing the interpretative schemes, facilities and norms that have motivated the social practices present in the TSSC. We have also presented the stocks of knowledge (or structures) enacted by those strategic practitioners during their praxis.

Starting from the predetermined pieces of the TSSC (practitioners), which have been present since the project's outset, we have been able to identify the social practices created and reproduced by these same practitioners. Since these actors are human, they are influenced by the structures in which they find themselves, such as their intrinsic interpretative schemes, their available facilities and applicable norms, and they employ their stocks of knowledge to determine their praxis. This entire process has a direct impact on the organization's results and therefore it is strategic.

The SAP framework combined with Orlikowski's (2000) enactment of structures in practice framework has proved to be a valuable instrument of analysis, which allows us to identify these strategic aspects and how they have influenced the organization's results.

In terms of the limitations of this study, we should highlight the focus we've given to the service provider practitioners, leaving aside the political practitioners and patients. Researcher perceptions and possible biases must also be considered a limitation, despite our efforts to minimize them through our rigorous methodology and the use of mixed data collection techniques that permit data triangulation.

We believe that future studies should focus on the political group of practitioners due to their importance in promoting and enabling the program not only financially, but also socially and politically. Future research on SAP as seen through the lens of ST would also be important to reinforce empirical applications of ST. As well as we have already pointed out the studies that shed light in the strategic planning and implementation in the success in public service organizations should be considered to be related to SAP perspective (Elbanna *et al.*, 2016; Johnsen, 2016, 2017).

We also believe that this case study contributes to a better understanding of the benefits that the practice perspective offers and provides insights into possible management cooperation between institutions. It also provides substantial evidence of the relationship between SAP and ST as it contributes to the reinforcement of empirical studies using ST.

In addition to academic advances, this study contributes to the field by highlighting how the relationship between practices, praxis, practitioners and the existing structures has positively influenced the results of a public healthcare system and by presenting a successful initiative of management cooperation between public institutions that has helped to improve the public healthcare system and has thereby provided better services to the population.

References

Alves, S.M.C., de Oliveira Santos, A., Bem, I.P., Gomes, T.R. and Delduque, M.C. (2016), "Constitutional guarantees generate negative externalities for the Brazilian health system", *Cadernos ibero-americanos de direito sanitário*, Vol. 5, pp. 143-151.

Andersen, T.J. (2004), "Integrating the strategy formation process: an international perspective", *European Management Journal*, Vol. 22 No. 3, pp. 263-272.

Andersen, T.J. (2013), *Strategic Management*, Cambridge University Press, Cambridge.

Andrews, R., Boyne, George, A., Law, J. and Walker, R. (2009), "Strategy formulation, strategy content and performance", *Public Management Review*, Vol. 11 No. 1, pp. 1-22.

Balogun, J. and Johnson, G. (2005), "From intended strategies to unintended outcomes: the impact of change recipient sensemaking", *Organization Studies*, Vol. 26 No. 11, pp. 1573-1601.

Barreto, M.L., Teixeira, M.G., Bastos, F.I., Ximenes, R.A., Barata, R.B. and Rodrigues, L.C. (2011), "Successes and failures in the control of infectious diseases in Brazil: social and environmental context, policies, interventions, and research needs", *The Lancet*, Vol. 377 No. 9780, pp. 1877-1889.

Brown, J.S. and Duguid, P. (2000), *The Social Life of Information*, Harvard Business School Press, Boston, MA.

Bryson, J.M., Berry, F.S. and Yang, K. (2010), "The state of public strategic management research: a selective literature review and set of future directions", *The American Review of Public Administration*, Vol. 40 No. 5, pp. 495-521.

Bryson, J.M., Crosby, B.C. and Bryson, J.K. (2009), "Understanding strategic planning and the formulation and implementation of strategic plans as a way of knowing: the contributions of actor-network theory", *International Public Management Journal*, Vol. 12 No. 2, pp. 172-207.

Eisenhardt, K.M. (1989), "Building theories from case study research", *Academy of Management Review*, Vol. 14 No. 4, pp. 532-550.

Elbanna, S., Andrews, R. and Pollanen, R. (2016), "Strategic planning and implementation success in public service organizations: evidence from Canada", *Public Management Review*, Vol. 18 No. 7, pp. 1017-1042.

George, B., Desmidt, S. and De Moyer, J. (2016), "Strategic decision quality in Flemish municipalities", *Public Money & Management*, Vol. 36 No. 5, pp. 317-324, doi: 10.1080/09540962.2016.1194073.

George, B., Desmidt, S., Cools, E. and Prinzie, A. (2017), "Cognitive styles, user acceptance and commitment to strategic plans in public organizations: an empirical analysis", *Public Management Review*, Vol. 20 No. 3, pp. 340-359, doi: 10.1080/14719037.2017.1285112.

Giddens, A. (1979), *Central Problems in Social Theory: Action, Structure, and Contradiction in Social Analysis*, University of California Press, Berkeley, CA.

Giddens, A. (1981), *Contemporary Critique of Historical Materialism, Volume 1: Power, Property and the State*, Vol. 1, Macmillan, London.

Giddens, A. (1984), *The Constitution of Society: Outline of the Theory of Structuration*, University of California Press, Berkeley and Los Angeles, CA.

Hansen, J.R. (2011), "Application of strategic management tools after an NPM-inspired reform: strategy as practice in Danish schools", *Administration & Society*, Vol. 43 No. 7, pp. 770-806.

Hayes, N. and Walsham, G. (2001), "Participation in groupware-mediated communities of practice: a socio-political analysis of knowledge working", *Information and Organization*, Vol. 11 No. 4, pp. 263-288.

IBGE (2015), "Instituto Brasileiro de Geografia e Estatística", available at: www.ibge.gov.br/estadosat/perfil.php?lang=&sigla=sc (accessed December 26, 2015).

Jarzabkowski, P. (2005), *Strategy as Practice: An Activity-Based Approach*, Sage Publications, London.

Jarzabkowski, P. (2008), "Shaping strategy as a structuration process", *Academy of Management Journal*, Vol. 51 No. 4, pp. 621-650.

Jarzabkowski, P. (2010), *Activity Theory Approaches to Studying Strategy as Practice: Cambridge Handbook of Strategy as Practice*, Cambridge University Press, Cambridge, pp. 127-140.

Jarzabkowski, P. and Paul Spee, A. (2009), "Strategy-as-practice: a review and future directions for the field", *International Journal of Management Reviews*, Vol. 11 No. 1, pp. 69-95.

Jarzabkowski, P. and Whittington, R. (2008), "A strategy-as-practice approach to strategy research and education", *Journal of Management Inquiry*, Vol. 17 No. 4, pp. 282-286.

Jarzabkowski, P., Balogun, J. and Seidl, D. (2007), "Strategizing: the challenges of a practice perspective", *Human Relations*, Vol. 60 No. 1, pp. 5-27.

Johnsen, A. (2016), "Strategic planning and management in local government in Norway: status after three decades", *Scandinavian Political Studies*, Vol. 39 No. 4, pp. 333-365.

Johnsen, A. (2017), "Impacts of strategic planning and management in municipal government: an analysis of subjective survey and objective production and efficiency measures in Norway", *Public Management Review*, Vol. 20 No. 3, pp. 397-420, doi: 10.1080/14719037.2017.1285115.

Johnson, G., Langley, A., Melin, L. and Whittington, R. (2007), *Strategy as Practice: Research Directions and Resources*, Cambridge University Press, Cambridge.

Jovchelovitch, S. and Bauer, M.W. (2002), "Entrevista narrativa", in Bauer, M.W. and Gaskell, G. (Eds), *Pesquisa qualitativa com texto, imagem e som. Um manual prático, Vozes, Petrópolis*, pp. 90-113.

Lavarda, R.B., Canet-Giner, M.T. and Peris-Bonet, F.J. (2011), "Understanding how the strategy formation process interacts with the management of complex work", *European Business Review*, Vol. 23 No. 1, pp. 71-86.

Mirabeau, L. and Maguire, S. (2014), "From autonomous strategic behavior to emergent strategy", *Strategic Management Journal*, Vol. 35 No. 8, pp. 1202-1229, doi: 10.1002/smj.2149.

Oliveira Santos, A. and Alves, S.M.C. (2016), "Public health system in Brazil nowadays: challenges for its operation and funding", *Cadernos ibero-americanos de direito sanitário*, Vol. 5 No. 3, pp. 65-79.

Orlikowski, W.J. (1992), "The duality of technology: rethinking the concept of technology in organizations", *Organization Science*, Vol. 3 No. 3, pp. 398-427.

Orlikowski, W.J. (2000), "Using technology and constituting structures: a practice lens for studying technology in organizations", *Organization Science*, Vol. 11 No. 4, pp. 404-428.

Paim, J., Travassos, C., Almeida, C., Bahia, L. and Macinko, J. (2011), "The Brazilian health system: history, advances, and challenges", *The Lancet*, Vol. 377 No. 9779, pp. 1778-1797.

Pérez-Aguiar, W. (1999), "El estudio de casos", in Sarabia, F.J. (Ed.), *Metodología para la investigación en marketing y dirección de empresas*, Pirámide, Madrid, pp. 227-253.

Petersen, E., Wilson, M.E., Touch, S., McCloskey, B., Mwaba, P., Bates, M. and Azhar, E.I. (2016), "Rapid spread of Zika virus in the Americas – implications for public health preparedness for mass gatherings at the 2016 Brazil Olympic Games", *International Journal of Infectious Diseases*, Vol. 44, pp. 11-15.

Piccoli, M.F., Amorim, B.D.B., Wagner, H.M. and Nunes, D.H. (2015), "Teledermatology protocol for screening of skin cancer", *Anais brasileiros de dermatologia*, Vol. 90 No. 2, pp. 202-210.

Pozzebon, M. (2004), "The influence of a structurationist view on strategic management research", *Journal of Management Studies*, Vol. 41 No. 2, pp. 247-272.

Pozzebon, M. and Pinsonneault, A. (2005), "Challenges in conducting empirical work using structuration theory: learning from IT research", *Organization Studies*, Vol. 26 No. 9, pp. 1353-1376.

Reckwitz, A. (2002), "Toward a theory of social practices a development in culturalist theorizing", *European Journal of Social Theory*, Vol. 5 No. 2, pp. 243-263.

Reichenheim, M.E., De Souza, E.R., Moraes, C.L., de Mello Jorge, M.H.P., Da Silva, C.M.F.P. and de Souza Minayo, M.C. (2011), "Violence and injuries in Brazil: the effect, progress made, and challenges ahead", *The Lancet*, Vol. 377 No. 9781, pp. 1962-1975.

Rouleau, L. (2005), "Micro-practices of strategic sensemaking and sensegiving: how middle managers interpret and sell change every day", *Journal of Management Studies*, Vol. 42 No. 7, pp. 1413-1441.

Samra-Fredericks, D. (2003), "Strategizing as lived experience and strategists' everyday efforts to shape strategic direction", *Journal of Management Studies*, Vol. 40 No. 1, pp. 141-174.

Saunders, M., Lewis, P. and Thornhill, A. (2009), *Research Methods for Business Students*, 5th ed., Pearson Education Limited, Harlow.

Schmidt, M.I., Duncan, B.B., e Silva, G.A., Menezes, A.M., Monteiro, C.A., Barreto, S.M. and Menezes, P.R. (2011), "Chronic non-communicable diseases in Brazil: burden and current challenges", *The Lancet*, Vol. 377 No. 9781, pp. 1949-1961.

Stake, R.E. (1995), *The Art of Case Study Research*, Sage Publications, New Delhi.

Stake, R.E. (2003), "Case studies", in Denzin, N. and Lincoln, Y. (Eds), *Strategies of Qualitative Inquiry*, Vol. 2, Sage, London, pp. 134-164.

Trochim, W.M. (1989), "Outcome pattern matching and program theory", *Evaluation and Program Planning*, Vol. 12 No. 4, pp. 355-366.

Victora, C.G., Aquino, E.M., do Carmo Leal, M., Monteiro, C.A., Barros, F.C. and Szwarcwald, C.L. (2011), "Maternal and child health in Brazil: progress and challenges", *The Lancet*, Vol. 377 No. 9780, pp. 1863-1876.

Victora, C.G., Barreto, M.L., do Carmo Leal, M., Monteiro, C.A., Schmidt, M.I., Paim, J. and Reichenheim, M. (2011), "Health conditions and health-policy innovations in Brazil: the way forward", *The Lancet*, Vol. 377 No. 9782, pp. 2042-2053.

Von Krogh, G., Haefliger, S., Spaeth, S. and Wallin, M.W. (2012), "Carrots and rainbows: motivation and social practice in open source software development", *MIS Quarterly*, Vol. 36 No. 2, pp. 649-676.

Wallauer, J., Macedo, D., Andrade, R. and Von Wangenheim, A. (2008), "Building a national telemedicine network", *IT Professional*, Vol. 10 No. 2, pp. 12-17.

Watts, J. (2016), "Brazil's health system woes worsen in economic crisis", *The Lancet*, Vol. 387 No. 10028, p. 1603.

Whittington, R. (1996), "Strategy as practice", *Long Range Planning*, Vol. 29 No. 5, pp. 731-735.

Whittington, R. (2006), "Completing the practice turn in strategy research", *Organization Studies*, Vol. 27 No. 5, pp. 613-634.

Whittington, R. (2014), "Information systems strategy and strategy-as-practice: a joint agenda", *The Journal of Strategic Information Systems*, Vol. 23 No. 1, pp. 87-91.

Further reading

World Health Organization (WHO) (2010), "Global Observatory for eHealth series", Vol. 1, Geneva, p. 9.

World Health Organization (WHO) (2013), "Main messages from World Health Report 2013: research for universal health coverage", Geneva, available at: www.who.int/whr/2013/main_messages/en/ (accessed January 7, 2016).

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