

2010

# Professional Associations, Power and the Building of Electronic Prescription Systems

Joan Rodon

*ESADE, Universitat Ramón Llull, joan.rodon@esade.edu*

Jordi Trullén

*ESADE, Universitat Ramón Llull, jordi.trullen@esade.edu*

Feliciano Sesé

*ESADE, Universitat Ramón Llull, feliciano.sese@esade.edu*

Follow this and additional works at: <http://aisel.aisnet.org/bled2010>

---

## Recommended Citation

Rodon, Joan; Trullén, Jordi; and Sesé, Feliciano, "Professional Associations, Power and the Building of Electronic Prescription Systems" (2010). *BLED 2010 Proceedings*. 15.

<http://aisel.aisnet.org/bled2010/15>

This material is brought to you by the BLED Proceedings at AIS Electronic Library (AISeL). It has been accepted for inclusion in BLED 2010 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact [elibrary@aisnet.org](mailto:elibrary@aisnet.org).

## **Professional Associations, Power and the Building of Electronic Prescription Systems**

**Joan Rodon, Jordi Trullén, Feliciano Sesé**

ESADE, Universitat Ramón Llull, Spain

joan.rodon@esade.edu, jordi.trullen@esade.edu, feliciano.sese@esade.edu

### **Abstract**

*In this paper we pull together an analysis of power with an analysis of the agency of a Professional Association of Pharmacists in the building of an electronic prescription (EP) system. We frame our analysis of the building process of an EP system in terms of power from the perspective of the pharmacists collective, and particularly, from the perspective of the Catalan Professional Association of Pharmacists (CPAP). What concerns us in this paper is the role of the CPAP in structuring the field of other's action –namely, community pharmacies which are members of the CPAP and the Catalan Health Service– during the building process. From this perspective, we study power not only in the CPAP's capacity to influence others through the control of resources that others need, but also in the field of relations that characterize a power arena and in the effect of the ordering work performed by the CPAP. By examining the case from the lens of the circuits of power we identify two kinds of interventions from the CPAP –conservative and transformative–, and distinguish them based on the circuit of power they active and the use of IT they make.*

**Keywords:** Electronic Prescription, Building, Power, Professional Association

### **1 Introduction**

The topic of this paper is the role of power and politics throughout the building of an electronic prescription (EP) system for the public health in Catalonia. We conduct this case from the perspective of one of the actors involved in the building of the system: the collective of community pharmacists. Particularly, we focus on how the field of relations and rules of practice in which the diverse stakeholders operate influence their ability to shape the building process, and on how the Catalan Professional Association of Pharmacists (CPAP) manoeuvres to align the diverse political and institutional interests and technologies around the EP system.

EP systems are deeply embedded in the politics of governments and professional associations, the battle of vendors, pre-existing systems, and the logics of state, market and profession. Thus the implementation of EP systems is bound up with the exercise of

power. Because actors from the outset have a diverse set of interests, some of which can also be vested in systems, the stability of the EP system rests crucially on the ability of focal actors to enrol those diverse interests to their own interests. To conduct this study, we draw upon the circuits of power framework (Clegg 1989).

We consider the object of study of this paper is relevant for several reasons. First, the analysis of the dynamics of power and politics behind the building of EP systems can enhance our understanding of the implementation process as well as of its outcomes (Dhillon 2004). Second, the approach presented in this paper helps us see how organizations and managers draw on technology and its associated discourses to achieve particular goals (Silva 2007), and identify empowered and disempowered actors who contribute to stabilize the EP system. Finally, this paper adds to the handful of IS studies that have analyzed the role of professional associations in IS implementation (Damsgaard et al. 2001; Swan et al. 1995). Whereas these studies focus on the diffusion of IT, we take into account early stages (design and development) of the process. We contend that the agency of professional associations –i.e. discourses, programs of actions inscribed into the system– in the early stages shape the subsequent diffusion of IT.

This paper is structured as follows. We first present and justify the suitability of theoretical framework for this paper. Next we introduce the research site and method. We then present the results from the case study. Finally, we discuss the results and end with some concluding remarks.

## **2 Theoretical background**

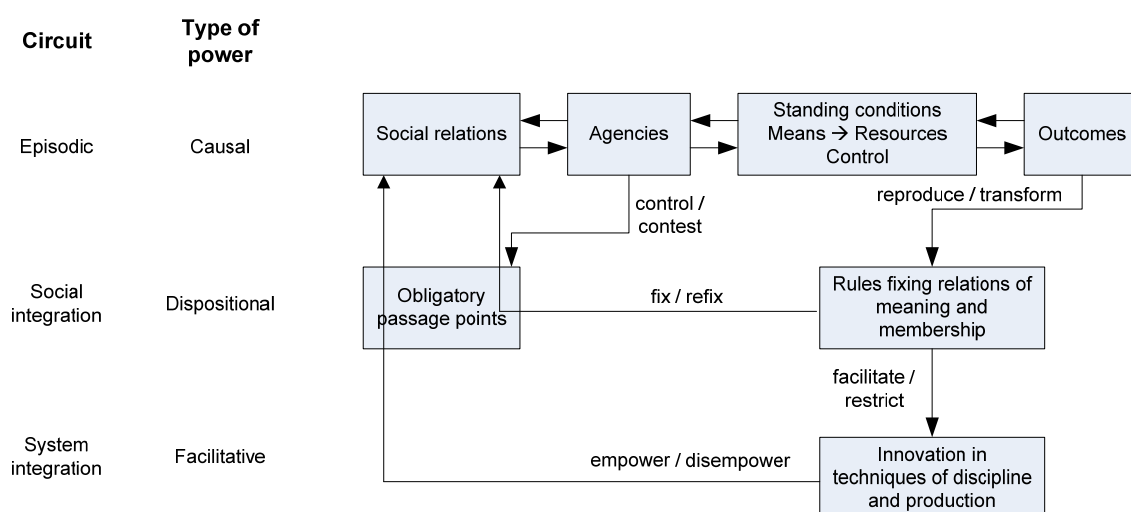
Clegg (1989) conceives all social relations as inevitably power relationships and proposes a framework –called circuits of power (see Figure 1) – that focuses on how power is manifested in the micro-processes by integrating different conceptualizations of power. In this framework, power is “understood analytically as moving through three distinct circuits, carried always by the organization of agencies” (Clegg 1989, p.239). These three circuits –episodic, social integration and system integration– are interdependent and represent three types of power –causal, dispositional and facilitative.

The episodic power is concerned with causal power, which refers to the exercise of power that is linked to the day-to-day actions in which “an agency seeks to get another to do what they would not do otherwise” (Clegg et al. 2006, p.241). “Episodic power is seen to derive from the capacities of agents grounded in resource control.” (Clegg 1989, p.217). “Existing social relations constitute the identities of agencies ... [, whose] causal powers will be realized through the organization of standing conditions. These require that agencies ... are capable of utilizing means in order to control resources which have consequential outcomes for the scope of these agents.” (Clegg 1989, p.215). For instance, at this level we can observe how an EP system that promotes a National Health Service, which funds the drugs, is adopted by the pharmacists even though the latter perceive that the EP system adds little value to their practice. In the exercise of causal power an agency creates an obligatory passage point –“a conduit through which traffic must necessarily pass” (Clegg 1989, p.205)– for others. Power consists in part in the achievement of this obligatory passage point (Clegg 1989).

The second circuit of power is concerned with dispositional power, which refers to the inherent capacities that an agent has, irrespective of whether or not she exercises those

capacities. Whereas episodic power is initiated by an agency, dispositional power structures the agency's capacity to act. Dispositional power exists at a deeper level than episodic level; particularly, those agency's capacities exist in the rules of meaning and membership underlying the social relations. For instance, the professional association has the capacity to order and surveil the practice of pharmacists. The dispositional power is embedded in the rules of meaning and membership that bind the exercise of the profession and the role of the professional association as stipulated in legislation and other regulations. "[E]pisodic outcomes serve to either more or less transform or reproduce the rules fixing extant relations of meaning and membership in organizational fields; as these are reproduced or transformed they fix or refix those obligatory passage points, effecting the stability of the extant social relations that had sought to stabilize their powers in the previous episodes of power" (Clegg et al. 2006, p.241). As dispositional rules and meanings are reproduced, membership to the system is re-created, thus establishing social integration.

The circuit of system integration concerns "the empowerment and disempowerment of agencies' capacities, as these become more or less strategic as transformations occur which are incumbent upon changes in the techniques of production and discipline" (Clegg 1989, p.224). The transformation of the rules of meaning and membership occurring at the social integration circuit can facilitate or restrict innovations in the techniques of disciplinary and productive power thus having the potential to empower or disempower extant social relations, and in turn reconfiguring the relational field which constitutes agencies, means of control, and resources (Clegg 1989, p.220). At this circuit, power is facilitative as it empowers or disempowers certain forms of agency through the recreation or creation of new obligatory passage points. For instance, an EP system tightly integrates the processes of prescribing and dispensing, and accordingly, pharmacists are expected to have more control over the processes and thereby they will be able to improve the attention to patients. On the other hand, such closer integration of the prescribing and dispensing processes can also discipline the practice of pharmacists as control measures can be easily deployed to ensure that the dispensing process complies with rules and regulations. Elmes et al. (2005) describe this simultaneous increase in empowerment and control of agents that occurs through the integration of data and processes as 'panoptic empowerment'. The circuits of social and system integration can "be conceptualized as the pathways through which fields of force are fixed and stabilized on 'obligatory passage points'." (Clegg 1989, p.224).



**Figure 1:** Circuits of power framework (Clegg 1989)

### 3 Research Site: The Community Pharmacy Model

In Spain, the central government is the one that does the geographical and demographical planning of community pharmacies aiming to assure the evenly distribution of pharmacies and guarantee a model with high capillarity (99% of the Spaniards have a community pharmacy in their municipality). Drugs are publicly funded; 100% funded in the case of retired citizens. In 2008 the national health system funded 74.9% of all the drugs sold in Spain (CGCOF 2009). The pricing of drugs is fixed by the government and it is the same for all the autonomous regions in Spain. Pharmacy ownership is limited to pharmacists; a community pharmacy can be owned by one or more pharmacists who can only own one pharmacy.

Membership to a College of Pharmacists is compulsory for practice. In Catalonia, there are four Colleges of Pharmacists, each representing the four Catalan provinces: Barcelona, Girona, Lleida and Tarragona. Those four Colleges constitute the Catalan Professional Association of Pharmacists (CPAP). The CPAP was constituted in 1985 to carry out the following tasks: (1) Collaborate with the authorities in the regulation of the terms and conditions for the professional practice (collaborative); (2) Order and surveil, within the legal framework, the professional practice (normative and control); (3) Represent the general interest of the profession in Catalonia; particularly, regarding to the relationship with the public administration (representative); and (4) Ensure that professional practice of pharmacists fits in with the interests and welfare of citizens, and therefore, contribute to the best resolution of the public health issues (control).

Since 1995, there is a pharmaceutical agreement (called concertation) between the CPAP and the Catalan Health Service (CHS). This concertation regulates the conditions under which those citizens assisted by the National Health Service, will receive pharmaceutical assistance by the community pharmacies that are authorized in Catalonia.

## **4 Research Method: Data Collection and Analysis**

We collected data through semi-structured interviews, informal conversations, press documents, field site visits, meeting minutes, and mailing lists. We conducted ten formal interviews with people involved in the building process (managers at CHS, CPAP, health providers, and IT providers). We identified and analyzed 114 documents from the pharmaceutical press that talked about the project from the point of view of pharmacists. These documents included meeting minutes, status reports of the project, and interviews with the ministry of health of Catalonia, managers of CHS, and members of CPAP.

We use the circuits of power as ‘sensitising devices’ (Klein et al. 1999) in our analysis as well as a vocabulary in structuring and presenting the results. The data analysis and presentation of results is done from the perspective of the collective of community pharmacies, which is represented by the CPAP. Although CPAP is not the actor that promoted and headed the EP project (called *rec@t*), it is the central actor in our study.

## **5 Case Results and Analysis**

We organize the presentation of the case into two chronological stages: ‘genesis of EP’, and ‘defining the model for *rec@t*’, which are chosen in accordance to researchers’ interpretation of the data gathered. At the end of each stage we structure an analysis, in the form of a table, of the stage around the three circuits of power –episodic, social integration, and system integration.

### **5.1 Stage 1: Genesis of EP (2001-2004)**

The first attempt to implement electronic prescription (EP) in Spain can be traced back to 2000 when the Ministry of Science and Technology launched and led a project, called PISTA1, which also involved the participation of four autonomous regions –Catalonia, Madrid, Canary Islands and Basque Country– and the Spanish Professional Association of Pharmacists. They worked for two years on the design of an information and technological architecture of a common and unique Spanish EP system for the public health system. In 2002, the first draft of the design of the PISTA project generated some tensions between the Administration and the Pharmacists collective. The Administration framed the project as a modernisation of the health care sector that would improve the service to citizens and the practice of health professionals. The pharmacists, however, perceived and argued that the main goal of the Administration was a way to control their practice and to reduce public expenditure on drugs, rather than the use of IT to develop their professional practice (Cordobés 2002).

At the same time, two autonomous regions that did not participate in the PISTA project, Andalusia and Valencia, developed their own EP projects for the public health. On the other hand, in Catalonia the College of Pharmacists of Barcelona led in 2001 a first pilot of EP, which had no relation with the PISTA project, involving a hundred private physicians and 25 community pharmacies. After some unsuccessful attempts from the College to extend that pilot to public health, the project was finally abandoned. However, the community pharmacists collective got some return from that EP initiative. First, in order to solve some security problems with the electronic signature that

---

<sup>1</sup> Promoción e Identificación de Servicios Emergentes de Comunicaciones Avanzadas

pharmacists and physicians required, both Colleges of Pharmacists and Physicians of Barcelona created a company, FirmaProfesional, that provided digital certificates. Despite the EP system was abandoned, the pharmacists started using those certificates to send electronically their data for invoices, files or check online the patients' health card data (Cordobés 2002). Second, that initiative gave the College of Pharmacists of Barcelona, and in turn the CPAP, self-confidence as it showed that they could lead some initiatives in the future and not only lag behind the public administration. A manager of the College of Pharmacists of Barcelona refer to that project in the following terms,

“The electronic prescription is another initiative which, though still in its early stages, means that the collective, working with the doctors of Barcelona, are pioneers in a project of their own. Although other projects promoted by the Ministry of Science and Technology and the Catalan government are in preparation, it is still a good idea for us to be able to head a project like this one, where we are not always tagging along behind the government” (01/04/2001)

For two years the PISTA project evolved in order to adapt and extend it to the particular features of the diverse autonomous regions. However, it did not end in a total consensus among the diverse regions and stakeholders, and the diverse regions started their own EP projects not always adopting the design guidelines proposed at PISTA. It was on mid-2004 when the Catalan government through the Catalan Health Service (CHS) set the foundations for the development of an EP project, called rec@t, in Catalonia. Rec@t was to be used by 20,000 physicians working in 750 health centres to issue more than 140 million prescriptions a year that are dispensed by more than 3,000 community pharmacies for more than 7 million inhabitants.

The CHS invited the CPAP and the Colleges of Physicians, both the natural spokespersons for pharmacists and general practitioners respectively, to participate in the project. The CHS persuaded and mobilized the pharmacist collective by framing rec@t to the pharmacist collective as (1) an opportunity to integrate them in the health continuum,

“one project we will be working on is the computerisation of prescriptions, the next stage of which will be the electronic prescription. We want health information to get back to the chemist, as long as it's confidential” (Catalan Minister of Health)

and (2) a means to sustain the constant increase of pharmaceutical expenditure (which was mainly caused by two factors: the aging of population, and the growth of population that required assistance). Rec@t would enable a more efficient use of resources, which in turn, was expected to reduce the need to constantly cut the margins that pharmacies have over public-funded drugs.

“The current policy on the provision of pharmaceutical services [which is the Ministry's responsibility] still does not go far enough to contain pharmaceutical expenditure around the nominal GDP. For this reason we suggest a raft of new measures; among them, we would like to see the implementation of an electronic prescription model.” (Catalan Minister of Health)

The CPAP accepted the invitation, and in order to interest their members, used several discourses (legitimizing accounts) towards the project, their participation and their role.

The first discourse was a political one. They acknowledged that they had no choice but to collaborate with the Administration. For instance, at the Ordinary General Meeting of the College of Pharmacists of Barcelona that took place on December 2004, the President justified their acceptance and involvement of CPAP in the project with the following terms,

“Another project that CHS would like to get started for the end of next year is the electronic prescription. Tomorrow we are attending the first joint work meeting, because we believe that if this project is to be carried out it is much better for us to collaborate from the beginning, than for it to be developed without our input.”

The second discourse was a strategic one. The CPAP had emphasized that the promotion and diffusion of IT among the collective and the change of the society's perception about the profession would be a priority for their term. Rec@t fitted in that priority. For instance, at the inauguration of the CPAP, on July 2004, the President noted that

“The most immediate challenges are the negotiation of the new concert, the promotion of the technological and professional changes and the coordination of many of the activities of the four Colleges so that society perceives a quality Catalan pharmacy”

The third discourse was operational and aimed to show the members that the pharmacist collective was capable of leading the project. This discourse involved framing rec@t as a continuation from past experiences (i.e. the pilot of EP for private health and the computerization of pharmacies to implement individual public healthcare card that took place in 2001). Given that in those prior experiences the collective had succeeded, the CPAP emphasized that the collective was ready to face the rec@t from a dominant and winning position.

“we have already implemented the elements enabling the introduction of the electronic prescription, and this has involved a personal effort on the part of every chemist. It has given us significant strategic strength as the collegiate pharmaceutical organisation of Catalonia. So if the electronic prescription is inevitable, we are in a privileged position. Theoretically it does us neither good nor harm, so we are in no hurry to make any short-term choices, nor does it make any sense to impose it on us in a make-do, ill-prepared way with no benefits. In any case, the collective work of the past few years gives us an extraordinarily strong position in an open society, which is constantly changing and increasingly demanding. Everybody today knows that we are stronger and that now is the time to make this effort pay off, and to continue moving forward.” (President of CPAP)

The fourth discourse was a professional one. Rec@t was framed as a project that would make a difference on the health sector and in turn, on the pharmacists. Accordingly, they tried to create awareness of the impact and relevance of the project for their profession,

“Another project which, due to its importance and size, will affect our daily work and pharmacies in general is the 'electronic prescription'. This Catalan



project will play a strategic role for the public health sector - and therefore for us too. So we have to look for new opportunities in the areas of dispensing, communication with doctors, relationship with patients and communication between Catalan pharmacies.”

Moreover, they emphasized that their efforts would be directed toward strengthening the logic of the profession rather than the market logic (i.e. increase margin over drugs or increase sales),

“the implementation of the electronic prescription can be seen as a threat or as an opportunity. The process must be run so as to minimise the former and maximise the latter, with particular emphasis on consolidating the role of the pharmacy both in occasional pharmaceutical attention and in the monitoring of treatment of chronic patients, as the electronic prescription will mean that the relationship between the doctor and this kind of patient will be less frequent.”

Accordingly, the role of CPAP in the project would be the surveillance of the Administration in order to protect the interests of the community pharmacies and minimize any potential negative impact to the collective:

“With our [the CPAP’s] participation, the possibility of designing a project which suits the day-to-day reality of our pharmacies is far more likely. We must remember that for this to continue, the government must demonstrate a firm commitment to working together.”

“From now on, through the CPAP and with the collaboration of the four Catalan Colleges, we will be represented on all the committees and working teams working with the Health Department. We would like to be present at the design phase so as to be able to participate in and shape our future. We will participate unhurriedly but consistently in this new health model. The race has begun, and we have also started to run.”

Next table analyses the first stage from the perspective of the three circuits of power (Clegg 1989). We note that in the circuit of episodic power “an ‘A’ exercises power over ‘B’ when ‘A’ makes ‘B’ to do something ‘B’ would not otherwise do (A and B constitute different agencies)” (Silva 2007, p.177).

	<b>Episodic</b>	<b>Social Integration</b>	<b>System Integration</b>
Catalan EP pilot for private health (2001-02)	<p>1) A: College of Pharmacists of Barcelona + College of Physicians of Barcelona; B: 100 Physicians and 25 Pharmacists. Outcome: the pilot is a success.</p> <p>2) A: College of Pharmacists of Barcelona; B: CHS. The College of Pharmacists of Barcelona wants to extend the pilot to public health, but the CHS does not accept. Given that any extension to public health depends on the enrolment of CHS the project is abandoned.</p>	<p>Despite the inability to extend the pilot to public health, this project alters the dispositional circuit by showing that the CPAP can lead this type of initiatives in the future and not only lag behind the public administration. Hence, CPAP strengthens their leadership and position toward future initiatives and in their relation with the CHS.</p>	<p>The pilot empowers the community pharmacists' collective as they have to set up a firm (FirmaProfessional) to provide digital certificates which pharmacies initially use in the electronic prescription pilot but later extend its use to send electronically data for invoices or check online the patients' health card data.</p>
The Catalan EP project for public health, called rec@t (mid 2004)	<p>1) A: CHS, B: CPAP. The CHS framed rec@t to CPAP as a way to integrate them in the health continuum, and as an alternative measure of cost containment to the common policy of cutting the margin that pharmacies have over public-funded drugs (rationalization of public health).</p> <p>2) A: CPAP, B: community pharmacists. The CPAP frames rec@t to the collective as a way to strengthen the profession and secures its protective role in the implementation process.</p>	<p>1) The CHS was in a position of authority in the project: the CPAP is expected to comply and collaborate with the Administration in the regulation of the professional practice.</p> <p>2) Community pharmacists are expected to support the CPAP in the project. In any case, the CPAP adopts political, strategic, operational and professional discourses to give meaning to the project.</p>	<p>1) CHS has resources to fund and control the implementation of the system, and to impose the system over pharmacists.</p> <p>2) Although the CPAP is a representative body of the pharmaceutical profession it was created to order and surveil the professional practice so it has authoritative resources over community pharmacists; but it does not have allocative resources, in the sense that members fund the CPAP, not vice versa.</p>

**Table 1:** Circuits of power for Stage 1

## 5.2 Stage 2: Defining the model for rec@t (2004-2006)

By the end of 2004, the CPAP joined the first working meeting of rec@t with CHS. Those meetings aimed to discuss, negotiate and jointly design a model for rec@t. The CPAP set up a technical office for the project, and contracted a consulting firm in order to manage that technical office and support them in defining the technological architecture for the model.

The CHS set a central requirement for the project, which was that the processes of prescribing, dispensing and invoicing should be integrated and run in real-time. That meant that there would be a unique database for all the data (i.e. prescriptions, drugs, health providers, general practitioners, pharmacies, pharmacists) and that any drug could be dispensed at any community pharmacy in Catalonia immediately after it was prescribed and regardless the location of the general practitioner that prescribed it. To fulfil this requirement the CHS proposed a model that consisted of a central system (called SIRE) owned and managed by CHS that contained an integrated database with

all the prescriptions. Health providers on one hand, and community pharmacies on the other hand, were expected to connect directly to the SIRE either to read, insert, update or delete data from prescriptions.

The CPAP, however, completely opposed that model. The CPAP's standpoint was that the model proposed by CHS excluded the involvement of the Colleges of Pharmacists and replaced them with a direct relationship between the Administration and individual community pharmacies. From the point of view of the CPAP, that model weakened the position of community pharmacies as the Administration could easily impose conditions on their practice in the future. They illustrated their disagreement with two examples.

First, they already had a previous experience with an application for orthopaedics which required the community pharmacies to directly connect, through web browsers, to a central system of the CHS. In that project, pharmacies had had several technical problems (i.e. response times, reliability, etc) which were not solved satisfactorily. Moreover, that project showed that the relationship between CHS and community pharmacies had gone in the favour of the former. Second, the model for community pharmacies proposed by CHS resembled the one already implemented and running in Andalusia. In that model, the Health Service of Andalusia also led the project but there was very little involvement of the community pharmacy collective. From a technical perspective all the data was centralized on a single server owned by the Health Service of Andalusia and pharmacies were forced to log on to that system when they had to dispense drugs.

Therefore, from the outset, the CPAP refused any model that threatened their intermediary role in the processes of dispensing and invoicing. Accordingly, they wanted to be more involved in electronic prescription and be treated as the other health providers (general practitioners). As the project manager of the pharmaceutical technical office noted, "the first they [the CPAP] told us was that from the pharmaceutical point of view, the technological model of Andalusia could not be a referent. They did not like that model; it did not fit with the Catalan structure".

The CPAP defended that community pharmacies should not connect directly to the system of the CHS. Accordingly, they took a strong position about the need to first build a telecommunications network that would connect all the community pharmacies, and second build their own system that would contain all the data (replicated from SIRE) required by community pharmacies. Community pharmacies would not connect to the CHS's system (SIRE) but to the CPAP's system, and the latter would synchronize in real-time with the former. For instance, during the Infarma<sup>2</sup> Congress 2005, a member of CPAP argued for "the need to create a communications platform which, following the criteria of a banking network of high availability, reliability, security and scalability, will allow greater interaction between pharmacies, pharmaceutical colleges and the government".

The resistance exerted by CPAP against the initial model proposed by CHS succeeded. After several trials of strength, the CHS catered to the interests of CPAP and by mid 2005 accepted the model proposed by the CPAP. A manager at CHS and project

---

<sup>2</sup> Infarma is the European Congress of Community Pharmacy

manager of rec@t, retrospectively used the argument set out initially by the CPAP to justify their decision to accept the model from CPAP,

“I believe it is not feasible to do it directly [a direct connection between CHS and community pharmacies]. Well, it is feasible but then we could also ask pharmacies to invoice us without going through the CPAP. But why do pharmacies invoice us through the CPAP? Well I think it is something that is good for both of us. It is not the same having 3,000 interlocutors or one as with the CPAP. Of course it is not the same for the good and for the bad. On the other hand, for the College [of Pharmacists] this means empowering the collective or her role as representative of a collective. I imagine that even the members of the College are interested in somebody that brings them together and defends them in the negotiations. Moreover, this relationship structure is not new, it has some history.”

Accordingly, the whole collective of community pharmacies would be treated as another health provider, and the CPAP would be their interlocutor in the project. This model became more stable (institutionalized) with the preparation and signature of an appendix to the pharmaceutical concertation, on September 2005 (ANNEX 2005). This appendix established the clauses for the development of the pilot for rec@t, and made explicit the role of the CPAP. The CPAP had to: (1) develop a server (finally called SIFARE) that would allow the community pharmacies access the data of the prescriptions stored at SIRE, and (2) establish a private communications network between the CHS, the CPAP, and the community pharmacies. Finally, the two actants – the pharmaceutical network and the server from the CPAP– became more irreversible when the Catalan parliament passed an act for the deployment of electronic prescription which explicitly mentioned both actants (ORDRE 2008).

Meanwhile, the CPAP also had been persuading the pharmacist collective about the convenience of their model. They do so by justifying their model against the one in Andalusia, which was perceived by a great deal of pharmacists as one that had weakened the position of community pharmacies and threatened their business. Hence, the CPAP’s model was regarded as one that protected the pharmacists. At the Ordinary General Meeting of the College of Pharmacists of Barcelona that took place on December 2005, the model was described as follows,

“Unlike the project run in Andalusia, where dispensing is done through the Andalusian Health Service (SAS) server, the prescriptions inserted to the CHS server are copied into a server of the CPAP. In order to dispense, pharmacies will connect to the CPAP server with an authorisation issued by the CPAP.”

Moreover, in the discourse from the CPAP they also emphasized the idea that the future of community pharmacies should pass through the development of a network that connected all community pharmacies. During the Infarma Congress 2007, a member of the CPAP raised the following question to the collective: “Is a pharmacy based on individuality and smallholdings viable, or will the future need a proper network of pharmacies with shared values, strategies and services?”. With this question pharmacists may probably believe that their practice in the future would be intimately linked to the existence of a network. The network and rec@t, however, were just a first step toward a new relationship between the CPAP and pharmacists. Dispensing and invoicing were

only two of the services that could run in the network of the CPAP. The network would enable the CPAP to provide additional services to community pharmacies.

“the first application of this platform would be the implementation of the electronic prescription, although there are many other services which can be offered such as online checking of prescriptions, a constantly updated dispensing guide, or remote backup copies to comply with current legislation on data protection”.

	<b>Episodic</b>	<b>Social Integration</b>	<b>System Integration</b>
initial model (a central server controlled by CHS) (end-2004 -	A: CHS, B: CPAP. The CPAP resists the initial model as their desired role is threatened. The CPAP wants to keep its position in the dispensing and invoicing process.	The first technical model proposed by the CHS disrupts the social integration because the pharmacist's collective previous experience with a similar model for orthopaedics had been unsatisfactory.	The model disrupts the system integration as it is expected to change the rules of practice (as had happened with the orthopaedics project or in Andalusia) and this is expected to disempower the CPAP and pharmacists, and empower the CHS. Hence, the model generates tensions between CHS and the pharmacists' collective.
final model (a pharmaceutical network and a CPAP server that replicated CHS's one) (mid 2005)	1) A: CPAP, B: CHS. The CPAP persuades CHS by showing that CPAP will make life easier to CHS. The CPAP convinces CHS that CHS' direct control of the relation with pharmacies will have a cost that will probably offset those control benefits. The CHS finally accepts the model proposed by CPAP, which consists of a VPN and a central server (called SIFARE), both controlled by the CPAP. 2) A: CPAP, B: community pharmacists. CPAP justifies the model to members and generates interest	1) The final model maintains and reinforces existing rules of practice of the profession, and legitimates the intermediary role of CPAP. The CHS delegates responsibility to the CPAP. CPAP will organize the collective in the project and intermediate their interactions with CHS in the dispensing and invoicing process 2) The model legitimates the CPAP as an information service provider for the pharmacist collective.	1) The final model empowers the role of CPAP as it becomes indispensable in the dispensing and invoicing process. The pharmaceutical VPN becomes a source of power. Hence, given that CPAP controls the VPN, the CPAP and the community pharmacists' collective are empowered. They are better prepared in case there is a change in the environment (i.e. liberalization of retail pharmacy sector and the subsequent proliferation of new forms of competition). This model becomes more stable (irreversible) once the Catalan parliament passes an act and the CPAP and CHS signed an appendix to the pharmaceutical concertation for the development of the pilot for rec@t. 2) The professional practice is intimately linked to the VPN and SIFARE.

**Table 2:** Circuits of power for Stage 2

## 6 Discussion and Conclusions

The purpose of this case has been to examine the building of an EP system (rec@t) in terms of power from the perspective of the Catalan Board of Colleges of Pharmacists (CPAP), the natural spokesperson for the community pharmacy collective. Although the building of Rec@t was promoted and led by the CHS, the CPAP intervened to influence the design and the trajectory of the building process and to mobilize and enrol the pharmacists collective.

Our analysis through the lens of the circuits of power (Clegg 1989) allows us to identify two kinds of interventions from the CPAP: conservative and transformative. We observe the first kind of intervention in the first stage. The CPAP adopts a conservative role by protecting the status quo of pharmacists but leaving unquestioned the terms

under which CHS exercises power; that is, the rules of meaning, membership, and domination remained the same or reinforced. When the CHS established rec@t as an obligatory passage point, the CPAP's first reaction may be regarded as pragmatic acceptance. First, the CPAP accepted to participate in the project because they did not have a choice; the CPAP's duty is to collaborate with the Administration. Second, rec@t was an alternative measure of cost rationalization that would not go against the economic survival of the community pharmacies; rather it could help in the sustainability of their businesses. This was relevant because until then most of the measures for cost containment designed by the administration were mainly based on the reduction of the margin for pharmacies. Third, rec@t represented modernity, in the sense that it involved the use of technology in order to enhance a patient-oriented service and make the public health sustainable. Accordingly, the CPAP accepted rec@t as an obligatory passage point and intervened to interest and mobilize the collective by adopting political, strategic, operational and professional discourses but without challenging existing rules. The CPAP framed rec@t as an occasion for safeguarding the economic and professional development of the community pharmacists collective. By using the EP system, pharmacists gain visibility over the prescription process and the patients' information, thus being able to improve their professional practice. But at the same time, community pharmacists will have to conform to standardized rules and procedures that are embedded in the EP system; hence pharmacists will self-discipline in relation to their practices. Moreover, the use of the system makes pharmacists more accountable to the CHS, as the latter has more real-time information about the activity of the former. CPAP's members, however, perceived CHS's increase of control as inevitable but not disempowering the practice of pharmacists.

The second kind of intervention from the CPAP is transforming in its effects. We observe intervention in the second stage, when the CPAP rejected the model for EP proposed by CHS which minimized their role in the dispensing process. Then the CPAP tried to strengthen their role and the position of pharmacists within the health care sector. Unlike conservative interventions, transformative interventions altered existing rules of meaning, membership and domination, and relied much more on IT (network and SIFARE). The CPAP viewed rec@t as an occasion for reinforcing their intermediary role by delegating that role to the network and SIFARE. Accordingly, the CPAP, by aligning with IT, was able to strengthen existing links with the CHS and community pharmacists. CPAP altered the rules of membership and refixed the way in which relations with CHS and community pharmacists will occur in the future. The CPAP was able to portray their model (consisting of a pharmaceutical network and the SIFARE server) as an obligatory passage point in the future of the pharmacist collective and CHS. In that sense, CPAP's agency during the building of the EP system generated new systems of production and discipline; that is, the EP system is expected to not only manufacture discipline and control, but also produce new possibilities, new roles, and new relationships.

The community pharmacist collective has become increasingly locked into an ensemble consisting of ADSL, VPN, routines, etc., in a way that their professional practice in the future is expected to organize around that ensemble. The new practices of pharmacists will be closely linked to that ensemble. And this is expected to make the professional practice less disputable by the government and the society over a long period of time.

Moreover, the CPAP will play a new role for community pharmacies: that of 'information service provider', which passes through an electronic connection between pharmacies and the CPAP. On the other hand, the CPAP has reinforced its intermediary role play between CHS and pharmacists by bringing the pharmacists collective together. Whereas the initial model proposed by CHS could potentially fragment the collective in the future, the final model implemented strengthens the role of spokesperson of the CPAP. Any change that the CHS wants to make to the dispensing or invoicing practices of pharmacists has not only to be negotiated with CPAP but also implemented in the CPAP's systems.

CPAP's transformative role can also be seen with reference to the initial common Spanish EP system. As the case shows, despite the forces towards standardization of working practices and technological systems that were expected to end up with a common Spanish EP system promoted by the Spanish government for all the autonomous regions, the interests and agency of professional associations such as the CPAP led to the development of a system that diverged from the unified Spanish model. This entails that professional associations such as CPAP have become essential in future attempts to interconnect the diverse EP systems. Accordingly, the fragmentation of EP systems in Spain cannot be seen in isolation from the very diverse political interests of regional governments and professional associations that often become powerful heterogenizing forces.

Finally, we contend that the dealing with the political interests of the diverse parties and how they are negotiated and embedded in the EP system is relevant when studying the building process and its outcomes. This paper has studied those power dynamics and combined them with an analysis of the agency of professional associations.

## **References**

- ANNEX (2005). Annex al Concert d'Atenció Farmacèutica entre el Servei Català de la Salut i el Consell de Col·legis Farmacèutics de Catalunya, per establir les clàusules de desenvolupament de la prova pilot sobre la recepta electrònica en l'àmbit de determinades àreas bàsiques de salut., pp. 1-6.
- CGCOF (2009). Medicamentos y Farmacias en Cifras, CONSEJO GENERAL DE COLEGIOS FARMACÉUTICOS.
- Clegg, S. (1989). Frameworks of power, London: Sage.
- Clegg, S., Courpasson, D., and Phillips, N. (2006). Power and Organizations, London: Sage.
- Cordobés, A. (2002). La receta electrónica (II). Proyectos de las comunidades autónomas. *Offarm*. 21 (10), 148-156.
- Damsgaard, J., and Lyytinen, K. (2001). The Role of Intermediating Institutions in the Diffusion of Electronic Data Interchange (EDI): How Industry Associations Intervened in Denmark, Finland, and Hong Kong. *Information Society*. 17 (3), 195-210.
- Dhillon, G. (2004). Dimensions of power and IS implementation. *Information & Management*. 41 (5), 635-644.

- Elmes, M.B., Strong, D.M., and Volkoff, O. (2005). Panoptic empowerment and reflective conformity in enterprise systems-enabled organizations. *Information and Organization*. 15 1-37.
- Klein, H.K., and Myers, M.D. (1999). A set of principles for conducting and evaluating interpretive field studies in information systems. *MIS Quarterly*. 23 (1), 67-93.
- ORDRE (2008). ORDRE SLT/72/2008, in: *Diari Oficial de la Generalitat de Catalunya*, pp. 16454-16457.
- Silva, L. (2007). Epistemological and theoretical challenges for studying power and politics in information systems. *Information Systems Journal*. 17 (2), 165-183.
- Swan, J., and Newell, S. (1995). The Role of Professional Associations in Technology Diffusion. *Organization Studies*. 16 (5), 847-874.