

# EXPLORING SERVICE INNOVATION: AN ORGANIZATIONAL ROUTINE-BASED PERSPECTIVE<sup>1</sup>

## ABSTRACT

*How does service innovation emerge through changes in delivery routines? Drawing on theories of service innovation and organizational routines, we theoretically frame service innovation as a form of “organizational routines change”. Then, through a longitudinal, explorative and inductive case study, we trace the co-evolutionary changes that relate traditional service innovation dimensions with intra-firm and cross-firm delivery routines. We submit that representing service innovation as a change in organizational routines is consistent with its multi-dimensional nature since it simultaneously addresses changes in the service delivery system, the service process, and performance outcomes. Additionally, organizational routines provide a useful lens to assess - faithful to a Schumpeterian tradition - the discontinuous nature, the replicability and the economic impact of service innovation. Finally, and more generally, the paper shows the advantage of adopting a practice lens and an organizational routine-based framework to cast light on how the service innovation process develops according to an interactive model in which planning and emergence are highly intertwined.*

## Keywords:

service innovation, organizational routines, practice

## INTRODUCTION

The organization of innovation processes in service firms has been receiving a growing attention from scholars in the service management and operations traditions (den Hertog et al., 2010; Froehle & Roth; 2007; Sundbo, 1997). In this respect, there is a growing acknowledgment that innovation in services should be addressed by simultaneously investigating its technological and non-technological components (Gallouj & Weinstein, 1997; Van der Aa & Elfring, 2002).

Yet, in all these studies the conceptualization of organizational change needed for attaining service innovation still remains understudied and, in many respects, controversial. When viewed as an outcome, the term *organizational innovation* is largely referred to one of the classical Schumpeterian forms of innovation (Damanpour & Gopalakrishnan, 2001; Windrum & Garçia-Goñi, 2008); as such, it includes one or more of the multiple non-technological components of a complex service innovation system (DenHertog, 2000; Gallouj & Weinstein, 1997). Moreover, the emphasis is on the difference between organizational innovation and organizational change (Sundbo, 1997; Weinstein & Gallouj, 1997). Surprisingly, when the focus should subsequently shift on the underlying innovation processes, organization as a specific form of innovation remains largely obscure and the attention is mainly directed towards other forms of innovation, mainly new service products<sup>2</sup>. Indeed, in order to be a value-added novelty for an organization, new service offerings (including new organizational components) should correspond to a discontinuous change in traditional ways of doing things (i.e. an organizational change) as well as to a new

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<sup>2</sup> Previous literature on organizing the innovation process in service firms addressed organizational change issues according to a structuralist perspective of innovation (Slappendel, 1996) along with a variance-based approach (Mohr, 1982).

reproducible delivery solution (i.e. a new service). Accordingly, when focusing on organizational change processes that result in innovation outcomes, organizational innovation can actually be treated as a synonym of organizational change. Furthermore, and more important, the combination of these two new elements would result in improved economic performance only if service innovation actually reconciles two seemingly opposing goals, that are *discontinuity* and *replicability* (Drejer, 2004; Schumpeter, 1934). In order to achieve these goals service firms have to manage complex interdependences existing between organizational innovation and other service dimensions (especially technology).

In this paper we analyse such interdependences through an in-depth longitudinal case study of a service firm that in order to introduce new service offerings had to change its organizational processes accordingly, including its technological infrastructure and operations. Through this analysis, we aim at building a theory of service innovation that is able to reconcile the goals of discontinuity and replicability.

To this end, we build on a recent turn in service innovation studies that documents the adoption of interactive, improvisational or contingency models for service innovation (Djellah & Gallouj, 2001; Edvardsson & Haglund, 1995; Storey & Hull, 2010), along with the existence of a *practice-driven model* (Toivonen & Tuominen, 2009), where innovation is not formalized or strategically planned but, conversely, emerges as part of everyday work operations and practices (Crevani et al., 2011; Dolfsma, 2004; Kelly & Storey, 2000; Toivonen & Tuominen, 2009). In these studies, however, organizational change processes, as they occur in daily routines and practices leading to emergent outcomes, remained still largely unexplored, so setting the stage for a future research agenda.

In this study, we expand current literature in two fundamental ways. First, we conceptualize service innovation as a form of “organizational routine change”. According to this view, routines are actions, acts, performances and processes actually carried out in organizations and as such they own some key attributes of services. We also claim that organizational routines provide a powerful lens to understand organizational change both as an innovation outcome and as a process and that the proposed definition of service innovation contributes to building a neo-Schumpeterian theory of service innovation (Drejer, 2004; Windrum & Garçia-Goñi, 2008) by enabling to explore how service innovation emerges as a result of an interactive process through *stabilized* changes in delivery routines. Secondly, embracing an “interactive perspective” on innovation (Slappendel, 1996) and a “practice lens” focused on daily practices and routines (Orlikowski, 2000), we bridge service innovation studies with an approach that frames innovation in service organizations as a complex structuration process (Giddens, 1984) characterized by interactions between changes in inter-firm and cross-firm delivery routines (action) and in other components of the whole service innovation system (structures).

The paper is structured as follows. In next section we will expose our organizational-routine based conceptualization of service innovation and discuss some analytical and operational advantages inherent in adopting such an analytical lens. We then introduce our methodology, describing the research setting and the data collection and analysis method. The subsequent sections are respectively devoted to the case analysis, discussion and conclusion

## **THEORY**

In our argument we frame service innovation as a “change in intra-firm and cross-firm delivery routines that have stabilized in a new configuration corresponding to superior performance outcomes”. Although more definitions of organizational routines are available in the literature (see Becker, 2004), we explicitly consider them as “recurrent interaction patterns” for accomplishing tasks (Cohen et al., 1996; Pentland & Rueter, 1994). According to this view routines are actions, acts, performances and processes actually carried out in

organizations and as such they own some key attributes that a well-established service marketing and management research tradition has attached to services (Grönroos, 1990; Lovelock, 1983). As recently pointed out by Pentland et. al., (2011:2-3), *“...for any service to be rendered, some pattern of action must have taken place. Thus, at the level of action, services share a common ontological foundation with processes and routines. Like processes or routines, services are composed of recognizable, repetitive patterns of interdependent actions”*.

Choosing organizational delivery routines as the unambiguous unit of analysis to assess service innovation is consistent with its multi-dimensional nature. In fact, although any change in one or more dimensions of a complex service innovation system could potentially represent a true innovation, this actually happens only when such a recombination of service components results in a new way of accomplishing tasks, i.e. a new set of delivery routines. This leads us to claim that the new definition of service innovation is able to capture and incorporate the interdependencies existing between changes in different technological and not technological, tangible and intangible components of a complex innovation service system, with organizational routines actually working as a valuable unifying lens.

An organization routine-based conceptualization of service innovation is also faithful to a Schumpeterian perspective, since it simultaneously fulfils the apparently opposing requirements of replicability and discontinuity and along with keeping the economic meaning of innovation. Indeed, as repetitive interaction patterns organizational routines constitute stable entities and it is just stability that ensures that service innovation does not consist of specific, non-reproducible solution to a specific problem, but, conversely, result in a new stable and replicable delivery configuration (in terms of processes, systems and performances). At the same time, referring to routines for assessing the intensity of the realized change, we can more precisely establish if it corresponds to a significant shift and interruption of an old routine system, resulting in a radical or incrementally new configuration, so distinguishing it from learning and competence development (Gallouj & Weinstein, 1997; Sundbo, 1997). Furthermore, in management studies the close link existing between routines and performance has been recently made explicit (Becker, 2005; Becker & Zirpoli, 2008). This leads us to show how a routine-based perspective can be profitably used to establish if service innovation represents a new business opportunity through assessing its real economic impact.

Finally, studying service innovation through the lens of organizational routines leads the way for understanding how the service innovation process develops according to an interactive model in which planning and emergence are highly intertwined. The concept of organizational routines has been employed in the empirical research as a lens to understand organizational change processes as they occur in daily routines and operations (Becker et. al., 2005), by exploring the complex interactions between deliberate managerial influence and endogenously induced change, mainly due to human actors involved in carry out routines (Feldman, 2000; Feldman & Pentland, 2003). In this respect, notwithstanding the attempts of distinguishing organizational innovation from organizational change by depicting the first as the result of strategic managerial decisions, we believe that a separate investigation of deliberate and emergent aspects of change is not fruitful for a process theory of service innovation. This is especially true in light of the increasing importance attached in the academic community and among practitioners to a practice-driven model of innovation (Crevani et. al. 2011; Toivonen e Tuominen, 2009). Embracing a “practice lens” focused on daily practices and routines (Orlikowski, 2000) innovation in service organizations is investigated as a complex structuration process (Giddens, 1984) characterized by interactions between deliberate and emergent changes in inter-firm and cross-firm delivery routines and in other components of the whole service innovation system. In addressing a key research

gap, we aim at building a process theory of service innovation through understanding the underlying mechanisms that shape interaction between changes in traditional service dimensions leading to innovation outcomes i.e. how changes in structural technological and not-technological components of the service innovation system influence changes in inter-firm and cross-firm delivery routines as well as such routine changes mediate interactions between service innovation components. In a nutshell, framing service innovation through the concept of organizational routine seems to provide a powerful analytical lens to answer the following research question: “How does service innovation emerge through changes in delivery routines?”.

## **METHODS**

The study aims at building a process theory (Mohr, 1982) of neo-Shumpeterian service innovation that is grounded on an organizational routine-based perspective. Starting from a novel conceptualization of service innovation we explore how it emerges through an interactive process in the form of new intra-firm and cross-firm delivery routines. Accordingly, we chose to conduct longitudinal case study research (Eisenhardt, 1989; Pettigrew, 1990) in Drive Service (DS), an Italian middle-sized service firm holding a leading position in the *fleet* management sector in Italy, and we based our analysis on qualitative process data (Langley, 1999; Miles & Huberman, 1994).

The firm has been selected according to a theoretical sampling criterion (Eisenhardt & Graebner 2007). Boasting over twenty years of industry experience, DS works in partnership with a number of actors (e.g. car rental companies, machine and body repair shops, tyre-dealers) to delivery tailored fleet service packages covering a number of services (e.g. full maintenance, vehicle management, fleet administration). The firm’s market includes private large firms, big car manufacturers, long-term car rental companies, public central and local organizations, with self-owned or rented fleets. In 2004, the firm undertook a deliberate strategy of rapid growth, pursued through acquisitions, the entrance in new markets and the development of new services. Starting from 2006, in partnership with a national company in the vehicle leasing market, DS won competitive tenders for long-term contracts with some big customers in the Public Administration (PA) market, mainly the law enforcement agency and the security force. Such deliberate strategic decision settled the beginning of a complex growth-driven innovation process that simultaneously affected many technological and not-technological components of a complex service system as well as the intra-firm and cross-firm delivery routines of a core business process (see below for details). Consistently, the research context seems particularly suitable to explore our unit of analysis, i.e. the co-evolutionary changes in the above components and delivery routines, since these changes become “transparently observable” (Pettigrew, 1990) through an analytical focus on daily practices and routines as they were carried out by people.

### **Unit of analysis**

Within the complex fleet management offerings, maintenance services historically constitute a core business component. These are arranged according to a modular product architecture that comprises a number of both planned preventive and corrective maintenance services. Maintenance service offices are physically located in two different sites in Italy whereas services are delivered throughout the country relying on a widespread network of machine shops, body repair shops and tyre-dealers. These actors have an formal agreement with Drive Service so as to provide maintenance assistance and repair services to all vehicles covered by contract.

As to related activities, the firm’s core competence consists in guaranteeing satisfactory operating and safety conditions for managed vehicles. At the same time, high operational

efficiency is crucial to achieve this goal through minimizing overall service maintenance costs. DS is especially reliant on its personnel for competitive advantage through leveraging their expertise and technical competence.

Since we intend to observe how innovation emerges through changes in intra-firm and cross-firm routines, we carefully selected a process that was profoundly affected by the growth-driven market innovation process we reported above. After a preliminary round of interviews with top managers at DS, specifically designed to identify an appropriate object of investigation, we selected the so-called *maintenance authority process*. As the term suggests, *authority* is a complex process including a number of activities, mainly executed by staff in the Maintenance Office (MO), aiming at release an authorization to official repair shops to effectively repair the vehicle.

### **Data Collection & Analysis**

Data gathering covered the period 2007-2011. The main fieldwork phases lasted from November 2007 to March 2008 and from June to December 2010, with a focus on the last seven years of the firm, starting from 2005. Data was collected through 26 semi-structured interviews with current and former top and middle management, archival material and participant observation. In the second main research phase, one of the author spent two months in the MO as a research observer, focusing attention on daily practices and operations as they were carried out by workers. In this stage, the focus was on the selected bundle of maintenance authority delivery routines and inherent changes. Observation was also integrated by a number of office-specific documents (i.e. copies of contracts, written estimations, statistical reports, e-mail communications, manuals) as well as archival material in the form of firm-specific documents (i.e. top management meeting presentations, project reports, strategic development plans, minutes, organizational charts, BPR consultancy reports).

Through the use of multiple collecting methods we could triangulate data (Denzin & Lincoln, 1994), whereas the prolonged engagement in the field helped us to catch the complexity and richness of the research context (Dyer & Wilkins, 1991) as well as to immerse ourselves in a deep retrospective understanding of the innovation process evolution and organizational routines changes. Altogether, both procedures enabled to secure the validity of results (Creswell & Miller, 2000).

Gathering, coding and analyzing data was carried on according to an iterative process. Drawing on literature on service innovation, organizational routines along with interactive and practice-based models of organizational change and innovation, we gradually identify core concepts moving forth and back between data and the relevant theory (Eisenhardt & Graeber, 2007). The transit from first order to more abstract concepts (van Maanen, 1979) was based on a juxtaposition with those available in the relevant literature (Suddaby, 2006) and it enables us to trace the recursive relationship between changes in the whole service delivery system dimensions and micro-changes in intra-firm and cross-firm delivery routines as well as linkages existing between these changes and performance outcome. With regard to the service delivery system, we chose initial labels from the characteristic-based definition of products (Gallouj & Weinstein, 1997) along with subsequent extensions and operationalization (De Vries, 2008; Windrum & García-Goñi, 2008). As for service process and operational delivery routines, we respectively drew on Djellah & Gallouj (2005) and the distinction between performative and ostensive aspects of organizational routines (Feldman & Pentland, 2003). We first decomposed and then re-aggregated the initial categories, using both existing and emergent concepts. A brief description of the conceptual categories is given below:

- *Preferences*: used in this work as a label that simultaneously includes: i) the service provider's "expoused interpretive schema" (Rerup & Feldman, 2011) i.e. the top management's understanding about how the innovation process would be like to unfold. Such set of preferences is highly coupled with both vectors of competences and technical characteristics and shapes *strategic agency*; ii) the service assistance network and end user's needs and expectations (Parasuraman et. al, 1991) about the service delivery process and final service characteristics (e.g. technical functionalities, delivery times). They constitute key antecedents of daily interactions between these agents and the service provider's staff during the service delivery process, guiding what we called the *operative agency*. Overall, cognitive schema, needs and preferences of the various agents in the service delivery systems define the content of the "intended service concept" (Roth & Menor, 2003).
- *Competences*: we adopt this concept to indicate individual skills, knowledge and capabilities as well as collective competences and capabilities (Dosi et. al., 2000; Zollo & Winter, 2002) that altogether constitute the organizational memory, including both tacit and codified knowledge.
- *Technical characteristics*: this broad category includes organizational structural dimensions, and specifically : i) various technological options (den Hertog, 2000; Gallouj and Weinstein, 1997) along with other material artifacts (i.e. documents, manuals, equipments) used during the production and delivery of maintenance services; ii) plans, rules and procedures (Cyert & March, 1963; Simon, 1945), traditionally viewed as proxy of the ostensive aspects of organizational routines (e.g. Becker & Zirpoli, 2008); iii) roles, responsibilities and management systems that reflect authority and power distribution in the organizational hierarchy (e.g. Barley, 1986; Orlikowski, 1996).
- *Operations*: we revisited Djellah and Gallouj 's work (2005) to anchor the concept of different group of operations and inherent distinct development paths, i.e. material (M), relational (R), informational (I) and knowledge (K) to the concept of "operational routines" (Zollo & Winter, 2002). To us, delivery operational routines inherent the same process (i.e. the authority process) can be decomposed in these four dimensions and it is true for both ostensive and performative aspects of routines (Feldman & Pentland, 2003);
- *Service characteristics*: this category is used to refer to those key process performance indicators that indirectly affect tangible and intangible benefits expected by both end users (i.e. technical functionalities, customization) as well by the service provider (revenue increase, cost savings, competence development), contributing to create value for both agents and shaping the content of the so-called "enacted service concept" (Roth & Menor, 2003). To us, this dimension operationalizes service innovation performance outcomes.

Finally, a further distinction is made between deliberate and emergent change (Balogun & Johnson, 2005; Orlikowski, 1996). In the first case we refer to planned changes in the vector of competences and technical characteristics, mostly as a result of strategic agency; emergent changes are instead those resulting from learning and adaptation processes that realize during the enactment process of each innovation cycle, usually as an intended reaction to novel or unexpected situations and directly linked to the operative agency.

## **THE CASE STUDY**

We present our results through a description of the innovation process triggered by the DS' strategic decision to enter new markets.

### **The Pre-existing Service Delivery Routines**

The delivery of operational routines inherent in the maintenance authority process and mainly executed by staff in the MO included four dimensions: i) *material*, enacted to transform the functioning state of vehicle so as to re-establish correct and safety conditions fell into material aspects, together with interactions between human agents and material artifacts (e.g. phone, information systems, fax); ii) *informational and knowledge-related*, covering all aspects regarding information processing and knowledge exploitation during authority execution; iii) *relational*, inherent in inter-personal interactions between authority staff and repair shops, whose content was highly dependent on inter-firm governance modes (i.e. nature of contracts), norms of interaction and protocols about information exchange (Schultze & Orlikowski, 2004).

Before entering the PA market, the ostensive aspects of the authority routines were created and recreated through a stable pattern of “repeated and justified as appropriate” (Rerup & Feldman, 2011: 601) interactions. The process was triggered by the telephonic submission to the MO of an authorization request made by a specific repair shop and directly assigned to a single technical operator. Once taken on a request, each worker carried out a bundle of “formal checks” on the information released by the repair shop regarding for example the repair shop itself, the vehicle in need of maintenance or the typologies of needed performances. This stage served the purpose of mainly verifying that the applicant repair center and the vehicle at issue were respectively covered by a not expired supply and delivery contract and that specific requested typologies were included in it. If there would have been no problems with this phase, the operator could proceed with “technical checks”, directed to establish the real functioning state of the vehicle and the coherence existing between this and the number and typologies of requested performance. At the end of this phase, the firm’s worker set only a forfeit amount of money due to the supplier for their maintenance services (“open authority” procedure) since the precise authorized amounts were only established after receiving a paper invoice from the supplier, containing all the information needed to verifying applied prices for spare parts and labor inherent in each repair performance. The subsequent phases of manual check and electronic invoice registration were also assigned to the MO, whose workers had to make all complementary formal checks and assessment, finalize the authorization at issue and finally electronically transfer the bill data. At this stage, the process enter the accounting phase, carried on in the Accounting Unit.

### **The Pre-existing Service Delivery System**

**Preferences.** As a component of fleet management packages, maintenance services were delivered to the firm’s traditional customers’ workers, mainly large companies with self-owned or rented fleets. Accordingly, vehicle was only a peripheral good for end users’ daily work and this resulted in a relative kept-down frequency of use and wear rate for vehicles and a lower need of corrective maintenance services. To the firm, this set of preferences helped to guarantee an acceptable level of operational efficiency along with a sustainable revenue model for maintenance services.

As for the maintenance assistance network, the set of expectations mediating recurrent interactions between the firm’s staff and the repair shops was basically of mutual interdependence, cooperation and reciprocity. Actually, agents in the assistance network were thought of trust and goodwill by the firm and recurrent interactions were basically shaped by strong linkages and a long-tenure with a narrow number of repair shops, who expected to interact indefinitely with the same agents (MO’s staff) and consequently tended to behave reliably, applying fair prices for their supply of maintenance services.

**Competences and Technical Characteristics.** For maintenance authority activities, the firm relied on a team of specialists, endowed with technical skills and practical expertise, developed through working as apprentices with repair (body) shops and tyre-dealers. Such know-how was particularly critical to carry on the bundle of technical checks constituting the core stage of the whole authority process, since it was just during this phase that technical staff had to draw on their deep knowledge about vehicles and relative functioning mechanisms to remotely establish the effective working conditions of the vehicle at issue and the pertinence of the relative estimate submitted by the repair shop. In accomplishing this task, personal skills had to be combined with the collective knowledge codified in a home-grown system database (named IDRA), where all the information about historical performance made on each contracted vehicle along with previous released/not released authorizations were inserted, stored, updated and could be accessed and consulted as needed. In this respect, the operator's capability to read and interpret in an integrate manner all the electronically available information to take decisions and assess the authorized amounts was seen as a key competence in carrying out the authority work.

Actually, HDA served the key need to register all information transferred verbally by phone and inherent in a specific authorization request (e.g. the assistance point, the contracted vehicle in need of maintenance) and automatically generate an authorization number through which the relative dossier could be subsequently identified, retrieved, re-worked and invoiced. Additionally, the system supported and simplified human work with regard to formal and technical checks through some automatisms and an instant alert system. Workers could rely on stored knowledge about technical and legal details of contracts also for accomplishing the stage of formal checks. However, in assessing forfeit amounts of authorization they preferred to exploit their tacit knowledge at least for time and costs of labor and spare parts, so as to speed up the process and ensuring lower lead times for users. In this respect, the specific adoption of the phone as the main communication channel with repair shops had led the way to a learning- by-listening practice in the MO as well as the building of a tacit knowledge and shared competences among all the authority team's members.

Administrative-accounting skills were also required to the MO's workers. Indeed, they were also partially assigned to the invoice processing, having to verify their formal correctness, ending the authorization process and registering invoices electronically before transferring them to the Accounting Department. Finally, top management attached high importance to negotiation skills in executing authority tasks and managing relationships with suppliers. By leveraging these competences, authority team's members were able, largely relying on verbal exchange, to easily bargain with assistance agents.

As for the organization of authority work internally to the MO, all workers were assigned to the same tasks. Calls were randomly allocated to them and usually the same operator started and ended the same call by communicating an authorization number.

All the authority team's members worked under the supervision of a senior technician, who hold also the informal role to control the regular office workflow. Moreover, given his long-tenure in the MO, he was viewed by younger technicians as the main reference figure for more complex technical and practical issues. Roles and responsibilities were not fully formalized in charts and documents and the level of formalization was very low, both with regard to the description of operative tasks and performance management systems.

**Service Characteristics.** As for benefits expected by end users and directly dependent on the firm's conduct, answer rate and time-to-authorization for repair shops represented the key service performance indicators. Before the market innovation, answer rate was hold up thanks to a call length ranging from 2 to 10 minutes, that in turn could be contained by



relying on the mentioned “open authorization” practice. The subsequent invoice processing stage lasted 15 minutes on average, although it did not negatively affect delivery times for end users. Furthermore, by processing requests by phone, no backlog data entry existed. The number of released authorization was used as the on proxy to measure the volume of activity, whereas associated authorization amounts (i.e. actually invoiced) were the main indicator to calculate overall authority costs. In this respect, the number of authorizations released was 4000 a month on average, whereas the average cost of each authorization amounted to about 200 euros in 2007. Finally, the overall accuracy in assessing the total authorized amounts was, in general, very high: human error rate (the difference between forfeit and final authorized amounts) never exceeded 10%.

### **Enacting The Market Innovation Process**

The innovation cycle triggered by the entry in new markets can be described according to four main stages, as following.

#### **I stage: the expoused schema interacts with new preferences**

In pursuing rapid growth, a higher market share and economies of scale, top management perceived the strategic option of exploring new markets more attractive than exploiting traditional ones. Such a preference was largely based on the belief that the firm would be able to replicate the same delivery system also for different typologies of customers (PA) and end users (the law enforcement agency and security force). This through leveraging well-established technical competences, practice know-how as well as negotiation skills, developed during twenty years of experience in the traditional segments of the fleet management market. To new customers, the firm would offer not only competitive price but also flexible, modular and highly customizable packages maintenance services, whose arrangement could be realized according to many options in terms of specific services and contractual details.

Having signed long-term contracts with new customers in the PA segment, DS had to enlarge its maintenance assistance network. However, not by attaching high importance to extending agreements, top management decided to outsource such activity, so that new repair shops were not selected according to objective performance criteria.

Both new users and new suppliers/distributors who became carriers of new preferences and operative agency. Actually, for employees in the law enforcement agency and security force the vehicle constituted an essential good for their daily activities, since a high mobility was constantly required by that kind of work. This did mean that maintenance services would be, in absolute terms, highly frequent for this category of users and, consequently, relatively much higher than for traditional ones.

New preferences went also into play with the enlargement of the maintenance assistance network. Indeed, the new contracted repair shops were chosen by the same end users on the basis of pre-existing service relationships, developed through repeated interactions with the same provider and consequently oriented towards reciprocal gain. To some extent, the nature of these relationships was also influenced by the official role hold by new users, arousing feelings of respect and submissiveness among repair shops’ owners.

#### **II stage: shift and internal tensions in inter-firm delivery routines.**

A number of primary changes in the work practices between authority team’s members and new shop repairs occurred as mediated by the strategic agency as well as the new operative agency led by new actors. However, our analysis showed that such changes originally

affected only material and relational dimensions, then leading to internal tensions and problems with informational and knowledge-related performative aspects.

The massive reliance on the car by new users led to a significant increase in service maintenance needs that was only partially predictable by the firm. Indeed, although it was expected that a higher frequency of use would inevitably correspond to more repair performances as a result of excessive structural and mechanical strain, it was difficult to anticipate a few systematic and onerous breakdowns in some vehicles as well as the abnormal zeal that the new users showed in keeping the car at the top of its performance. In the MO, the unexpected rise in the individual overall workload was mainly due to the over-average number of authorization requests submitted for new users' maintenance needs by new contracted distributors.

Material performative routines were also mediated by the set of assumptions and expectations implied in the nature of service relationships between new repair shops and end users as well as by norms of behavior and protocols of knowledge exchange between new repair shops and the firm. Indeed, repair shops interests tended not to be aligned with those of the service provider. Conversely, opportunism, self-interest and even dishonesty were spread among new users, who tended to submit authorization requests also when the functioning state of the vehicle was actually satisfactory. In the new relational context, inter-personal work interactions during authority tasks were viewed by both exchange parties as anonymous service encounters (Gutek, 1995; Schultze & Orlikowki, 2004), regulated by written contracts. In this regard, law and security agents sometimes performed a connivance behavior with repair shops to the detriment of the firm.

Significant changes in relational aspects of performative cross-firm routines also occurred as a result of new contract clauses with end users. The high level of personalization and modularization of maintenance services led to flexible package solutions resulting in a large number of technical and legal details and options for the contracts. This variety led to an increase in the average complexity in the content of the authorization estimates submitted as well as to a noticeable increase in the average amounts of each submitted request.

The new operative conditions and performative aspects of inter-firm delivery routines triggered some internal tensions within other constituting dimensions that did not visibly change as a result of the new service delivery structure, i.e. informational and knowledge-related dimensions. In light of the adverse behavioral attitude of repair shops, authority team had to cope with an abnormal occurrence of maintenance authority requests by augmenting the stage of technical checks, so as to more accurately verify in advance the physical and functioning state of the vehicle and then establish forfeit authorized amounts by phone. Indeed, longer times involved in this kind of knowledge-based activity did not well fit with the use of phone as the exclusive informational exchange channel with repair shops.

Further difficulties arose when the authority process entered in the subsequent stages, i.e. when actual amounts to authorize had to be adjusted on the basis of more accurate formal checks and data entry in IDRA had to be made. To the authority team, it became harder and time-consuming to carrying out formal authority checks, since they could not simply rely on their practical experience and tacit knowledge to evaluate times or prices of labor and spare parts as well as applied discount rates, since these were largely variable according to the specific supplier's contractual conditions. Furthermore, the longer times spent for accomplishing formal check authority work, together with traditional administrative-accounting duties, induced workers in the MO to witness a significant worsening in the level of attention focus on technical issues.

The changes occurred in delivery routines revealed the limitations and inappropriateness of traditional competences and technical characteristics, that actually did not fit with the new enacted service concept. Good technical and negotiation skills were not longer sufficient for

accomplishing authority tasks, and, indeed, the new service concept required as well as create a new context where developing new knowledge and capabilities and in particular: customer relationship management capabilities, to effectively cope with specific characteristics and needs of old and new markets and customers; focus, monitoring and management of contracts costs and margins, to hold down overall authority costs and face toward opportunistic supplier's behavior; procedure and documentation knowledge and general contract overview, with the aim to easily manage complexity of customer operational procedures and contract prescriptions, recognize and appropriately manage authorization requests for special vehicles, ensure the fulfillment of very strict service requirements for fleets.

With regard to technical characteristics, the home-grown system IDRA, it revealed itself technologically obsolete since its relational architecture was not suitable to easily manage the increasing complexity and variety of contract clauses. In order to workaround the technical drawbacks of the system, authority technicians started to create an electronic archive whose data were shared by all workers in the MO. That above described is an unexpected (so emergent) change resulting from the adaptation process of the authority team and enacted as a reaction to problems with existing technological constraints.

### **III stage: New shift in the service delivery system**

In order to improve operational efficiency and the overall service level, both at risk of disruption with the realized shift in work practices and routines, top management introduced, starting from the year 2008, some technological and organizational changes in the Call Center and MO. Such deliberate innovations mainly would serve the function to modify rules and procedures that had until then guided information exchange with customers and suppliers as well as knowledge exploitation practices within the firm.

By relying on the integrated functions of scripting and ticketing of a new Customer Relationship Management System introduced in the Call Center, it was possible to automatically and randomly dispatch authority-related calls to MO's workers and track them, in order to register waiting-times and overall lengths as well as to precisely identify operators who processed them. Accordingly, the overall service level was expected to significantly improve.

As for the authority work in the MO, top management believed that, by relying on fax both for submission and reception of written authorization requests, operational efficiency would have noticeable increased. More specifically, instead of verbally transferring needed information by phone, more complex authority requests could more effectively be managed by the authority team through carrying on all formal and technical checks offline and both parties would significantly benefit from this innovation: on the one hand, the repair shop would avoid waiting on the phone; on the other hand, the authority operator would focus, monitor and more accurately verify contracts costs and margins.

The adoption of the fax implied a novel internal organization of work both within the MO and between internal units. Internally the MO, the senior technician was assigned the formal role to randomly and manually equally distribute all written requests centrally received by fax to authority operators. Now, each worker had to carry on all formal and technical checks upstream of accurately assessing the overall authorized amounts and subsequently releasing the authorization. At the same time, in order to promote more technical focus, employees in the MO were totally relieved of accomplishing invoice processing tasks that, in turn, were partially allocated to another office before moving to the back-office. Accordingly, some constraints were introduced in IDRA to foster the new authority procedure ("closed authorization") and new automatism and instant suggestions were integrated in it to facilitate problem-solving stages.

Finally, the successful introduction of the fax as an authority tool would highly depend on the attitude of suppliers towards the new technology. In this respect, for more onerous and complex repair performance, suppliers would be constrained to precisely fill a written estimate with a number of information that they were used to transfer verbally and send it to the MO by fax along with subsequently using the same artifact to receive an answer. As to appropriately channel authorization submissions, an economic threshold value was established to separate requests to submit by phone or by fax.

#### **IV stage: Solving internal tensions through shifting routines**

The implementation of the described structural changes developed according to an innovation model of “rapid application” (Toivonen & Tuominen, 2009). The experimental phase lasted all the year 2008 and the use of fax was consequently extended to all repair shops.

A number of changes in inter-firm and intra-firm performance aspects of routines occurred as expected by top management and so perfectly aligned with their ostensive view. Greater and immediate changes were visible in informational and knowledge-related aspects of delivery performance since deliberate changes in organizational structures mainly aimed at solve tensions and problems aroused in such dimensions. Indeed, by relying on a written estimate for more complex requests, the authority staff’s members could work with reduced time-pressure and lower human error rate. Moreover, they could attach more time and focus attention on technical matters, by saving time in unsought accounting tasks. Next to positive organizational outcomes (especially work specialization and new capabilities), the innovation process led to pursue the planned goals in terms of productivity and operational efficiency.

However, a number of unexpected changes emerge during work practice as a result of the fax adoption, along with more complex operative rules and procedures as well as information and knowledge management protocols. First of all, using fax contributed to creating some bottlenecks in the regular flow of the authority process. A low cultural and educational level of most shop repairs, jointed with a low familiarity with technological artifacts and word processor tools, could lead to submit incomplete, crabbed or sketchy written estimate. Workers in the authority team adjusted to such events and solved the trouble by shifting to the phone channel and directly calling shop repairs. However, such a practice contributed to lengthening overall service delivery time. Difficulties also arose from the simultaneous allocation of each worker to both verbal and written tasks. Indeed, the overall increased complexity in accomplishing the authority task made it difficult for an operator to interrupt her ongoing offline work to assign and process a call. The rise of lead times between the submission and allocation of written authorization requests set the stage for an increasing number of reminders both from shop repairs and end users and sometimes to repeated submissions. Such work conditions led to re-working, reduced concentration and increased psychological tension, beyond physical bulk and higher paper costs.

Indeed, material and relational aspects of performative routines were clearly affected by such changes in informational and knowledge-related dimensions. More specifically, all tensions deriving from backlog workload triggered a vicious circle, leading to longer repair times for vehicles and dissatisfaction with end users, in turn, causing more reminders and solicited requests. Within the MO, the massive reduction of verbal authority tasks resulted in lower chances of learning by listening whereas the increased time pressure left little space to knowledge sharing and mutual help; on the contrary workers tended to carry on authority tasks autonomously, facing problems through contingent solutions rather than identify precise causes and acting directly on them.

## **DISCUSSION AND CONCLUSION**

The idea that organizational change has a crucial role in service innovation has been widely accepted (den Hertog. et al., 2010; Sundbo, 1996). Through adopting a novel conceptualization of service innovation, the case study explored how it emerges through an interactive process in the form of new intra-firm and cross-firm delivery routines. In this way, organizational change can be understood simultaneously as an innovative result and its underlying process.

Our point of departure was the traditional conceptualization of service innovation. By tracking changes in specific authority service delivery routines and the maintenance service delivery system, our findings are consistent with relevant literature on service innovation. However, although confirming the descriptive value of existing frameworks, our findings showed the additional analytical advantages of framing service innovation as a form of “organizational routines change” as well as the explanatory power of a “practice lens” in exploring how changes in traditional service dimensions influenced changes in service delivery routines and how, in turn, such changes, through stabilizing in a new configuration, affected the resulting new service delivery structure and performance outcomes. Indeed, such a definition is not only consistent with the multi-dimensional nature of service innovation, but it is simultaneously able to incorporate changes in the service delivery system (preferences, competencies and technical characteristics), the service process (the service delivery routines), and performance outcomes (the final service characteristics), i.e. changes in all traditional service innovation dimensions (den Hertog et al., 2010; Weinstein & Gallouj, 1997; Windrum & Garçia-Goñi, 2008).

Furthermore, an organizational routine based framework is also able to trace the co-evolutionary changes and mutual influence between traditional service innovation dimensions. In this respect, we reported that, in an initial stage, the managerial preference of exploring new markets was enacted through competing for long-term contracts with the PA segment and outsourcing the extending agreements activity. These actions put in play well-defined and pre-existing set of preferences for both new users and suppliers/distributors that, together, went to shape interaction patterns during the service delivery process, causing cross-firm delivery routines changes. In turn, some unexpected problems in accomplishing new performances triggered a learning-by-doing process and the development of new competencies for the authority team but also emergent changes. Subsequently, the new resulting operative conditions induced top management to introduce some changes in the technical characteristics of the service delivery system ( i.e. the introduction of fax, a new work organization and new operative procedures) in order to adjust the management of informational and knowledge flows as well as to enable the further development of the mentioned capabilities. Then, through enacting new routines, adaptation and further learning-by-doing and learning-by-interacting influenced the resulting structure of the process (i.e. the ostensive aspect) as well that of other second-order structures, i.e. the resulting vectors of technical characteristics and competencies.

Overall, although the final service characteristics (i.e. overall productivity and delivery time) were influenced by the changes in the vectors of competencies and technical characteristics, their actual values were directly caused by the organizational routine performances enacted during the service delivery process. This did mean that this process mediated the influence of second-order organizational structures on final performances. Specifically, the case revealed that the combination of changes in service delivery routines and the delivery system led to some positive organizational outcomes, i.e. increased work specialization and new competences and at the same time enabled to pursue the planned goals of productivity and operational efficiency. However, our findings also shed light on some unexpected changes that emerged during daily routines and that negatively affected resulting performance.

Relying on an organizational routine based conceptualization of service innovation, our work aims at building a theory of service innovation that reconciles, faithful to a Schumpeterian tradition, *discontinuity* and *replicability*, both essential for its economic value (Drejer, 2004; Gallouj & Weinstein, 1997). Indeed, to achieve these goals, service firms have to manage complex interrelations existing between organizational innovation and other dimensions of service innovation.

The relevant literature has discussed both concepts especially with regard to two forms of innovation, the so-called *ad hoc innovation* and *formalization innovation* (Gallouj & Weinstein, 1997). With regard to discontinuity, the idea that service innovation should correspond to a significant shift, i.e. a long-run change and that is different from continuous adaptation to small changes seems largely shared in the relevant literature (Sundbo, 1997; Weinstein & Gallouj, 1997).

However, these studies have not identified which components affected by change in the overall service innovation process have to be univocally considered in assessing replicability and discontinuity. We proposed to choose organizational routines as the unit of analysis to assess both. Indeed, as “repetitive interaction patterns” organizational routines constitute stable entities and stability ensures that service innovation does not consist of specific, non-reproducible solution to a specific problem, but, conversely, results in a new stable and replicable delivery configuration (in terms of processes, systems and performance). At the same time, referring to routines for assessing the intensity of the realized change, we can precisely establish if it corresponds to a significant shift and interruption of an old routine system, resulting in a radical or incrementally new configuration, so distinguishing it from learning and competence development (Gallouj & Weinstein, 1997; Sundbo, 1997).

In this respect, the case study analysis showed that observing the authority process, although a number of dimensions in the service delivery system and process changed, innovation could be appropriately assessed by taking into account how all these changes had a true effect by changing the structure of organizational routines, i.e. the old routine system of the firm, resulting in a configuration that is inherently stable (then replicable). That configuration, corresponding to the ostensive structure of the service delivery routines, incorporates all changes in other dimensions (i.e. competences and technologies), viewed as second-order structures. Shifting to a new configuration, the actual change was the result of many interactional changes and reciprocal adjustment between and among a number of components that finally reached a relative stability. After the entry in the new market, performance routines started to change because of a new service delivery system, i.e. new actors, new set of preferences, a new service concept and contractual formulas. Initially, replicability was difficult to obtain since a number of internal tensions arose regarding informational and knowledge aspects of routines and local problems led to a contingent, improvisational approach (Moorman & Miner, 1998). In the meanwhile, the ostensive dimension of routines started to modify, although stability could not be reached since internal tensions within various performance routines components had to be solved. After new deliberate changes in the technical characteristics by top management, a new enactment cycle led to a different and more stable structure (ostensive) of delivery routines. Learning and adaptation were experienced during all the innovation process: when tensions were solved, full understanding of the process was possible and greater stability was reached. In this way, the new set of relatively stable organizational routines was able to directly produce higher performances in terms of overall productivity as well as competence development, i.e. producing value for the firm. In this respect, the strong link between organizational routines as interaction patterns and their economic impact is consistent with the recent findings in literature on organizational routines and performance (Becker, 2005; Becker & Zirpoli, 2008).

The analysis of micro-change in the selected bundle of routines revealed that this kind of innovation did not simply stem from planned managerial action, but rather from the interaction between deliberate and emergent changes enacted in daily practices and routines and influenced by the operative agency of the firm's workers, repair shops and end users. This findings are aligned with the recent turn in service innovation studies describing it as emerging from everyday work (Crevani et. al., 2011; Toivonen & Tuominen, 2009). In our case study we build on this literature and contributing to fill an important gap i.e. the need to gain a deeper understanding of the "micro-dynamics of service innovation through studying and observing service workers in their everyday operations and interactions with external and internal actors" (Crevani et. al., 2011:190). We showed the advantages of a "practice lens" (Orlikowski, 2000) and of analyzing innovation in service organizations as a complex structuration process (Giddens, 1984). Drawing on previous longitudinal work on organizational change embracing such a lens (Barley, 1986; Rerup & Feldman, 2011) we distinguished between a "realm of action" and a "realm of structure" to re-organize and analyze traditional service innovation dimensions. Indeed, we assumed that a dual ontology exists not only for organizational routine, but also for competences, technical characteristics and service characteristics vectors. When viewed as structures, they guide, constraint and enable actions, constituting: a stock of given and mainly codified knowledge, skills and competences; a set of formal rules and procedures, also inscribed in material artifacts, such as technology; formal assignments of power and authority; an intended service concept. In the last case, they are "enacted" (Weick, 2001) in daily practices and routines, constituting: mainly tacit knowledge, competences and capabilities in development; technologies as they are effectively understood and used; formal rules and roles as they are actually observed and respected in practice; the realized service concept.

In the new framework, preferences acted as a medium between structure and action, being at the basis of both strategic and operative agency. Actually, during the enactment process of new performative routines, changes were initially evident only in material and relational components, whereas the others showed a substantial inertia to change, influenced by previous structures. This led to some internal tensions into the structure of routines and some problems with informational and knowledge-related dimensions. The subsequent cycle of deliberate changes would be initiated just to solve these tensions, although other tensions and problems would inevitably arise in the subsequent enactment phase.

Our general goal has been to create a fruitful dialogue between scholars in service innovation literature and scholars in organizational change and innovation who explicitly draw on a practice lens (Orlikowski, 2000) and an organizational-routine-based framework (Becker & Zirpoli, 2008; Feldman & Pentland, 2003) to depict and analyze such a change. Curiously, in a number of studies of organizational change that embrace practice theory, conclusions are based on longitudinal, explorative and inductive case studies that have been conducted, as here, in various service contexts (Barley, 1986; Feldman, 2000; Orlikowski, 1996; Rerup & Feldman, 2011). However, these studies do not aim at building a theory of service innovation and, consequently, the discussion is not anchored to the specific nature of services, as is our case. On the other hand, in traditional descriptive models of service innovation, the conceptualization of organizational change needed for attaining service innovation still remains understudied and in many respects controversial. We claim that such a literature can largely benefit from drawing on organization theory, by taking into account the precious insights that concepts such as organizational routines, structuration, enactment and a practice lens can provide to a clearer and more exhaustive conceptualization of service innovation.

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