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Organizational Change and Business Model Innovation: An Exploratory Study of an Energy Utility

Abstract: This manuscript aims at studying the intricate relationship between business model innovation (BMI) and the organizational changes it engenders, trying to shed light on how organizational change and BMI are intertwined, and how proper organizational changes can facilitate the renewal of a traditional BM. To do so, the manuscript builds on an inductive, longitudinal single case study of an energy utility, describing the mechanisms through which the business model of the utility has been innovated over time and the organizational changes that enabled and fostered such innovation. The innovation itself was dictated by the need to cope with the current wave of digital transformation that is forcing incumbent energy utilities to renew traditional business models to offer a new commercial value proposition to their customers. This study, therefore, contributes to the ongoing academic debate on business model innovation and its practical application, adding to the broad discussion on organizational ambidexterity and to the analysis of the most relevant organizational change actions adopted by the company for implementing an effective BMI.

Keywords: business model; business model innovation; digital transformation; organizational changes; energy utility

1. Introduction

The profitability of established companies in the current competitive scenario is undermined by the diffusion of digital technologies, which enable innovations that typically require deep changes in established business models and organizational architectures (Schallmo et al., 2017; Greenstein, 2017; Nambisan, et al. 2017). Digital technologies represent an antecedent to business model innovation (BMI) (Christensen, 2006; Pateli and Giaglis, 2005), since they bring in managers' agenda a wide spectrum of business opportunities together with serious organizational challenges (Fichman et al., 2014; Berman et al., 2012), pushing companies to continuously innovate the way they create, deliver and capture value (Teece, 2010). This phenomenon is seriously triggering the extant BM of incumbent companies and is pervading almost all industries, is customer-demand driven and is perceived by companies as sharpening their competitive edges (Autio et al., 2018). Firms are hence called to continuously transform many aspects of their business model (BM) to proactively address new opportunities and threats as they arise (Teece, 2018) and to adapt to a fast-changing environment (Saebi et al.,

2017). Although scholars have been extensively researching BMI in the last 15 years, several issues remain open (Foss and Saebi, 2017; Spieth et al., 2014), e.g. those related to studying and conceptualizing BMI as an organizational change process (e.g., Achtenhagen et al., 2013; Deshler and Smith, 2011). Researching BMI as an organizational change process means identifying the key organizational structures enabling and supporting the execution of a (Tsoukas and Chia, 2002). With this regard, building on the theories of Van de Ven and Poole (2005) we consider change as the frame around which other phenomena, (i.e., BMI) occur. Despite the practical importance of the phenomenon, existing research has shed relatively poor light on how organizational change and BMI are intertwined, and how proper organizational changes can facilitate the renewal of a company's BM (Foss and Saebi, 2017; Kim and Chung, 2017; Foss et al., 2013). Academic research on BMI, indeed, has almost completely neglected the role of organizational change in influencing BMI, and relatively limited attention has been paid to understand BMI as a phenomenon that requires organizational changes (Foss and Saebi, 2017). Nevertheless, the investigation of this phenomenon is of high relevance today, since novel technologies open new opportunities for organizing business activities (Osiyevskyy and Dewald, 2015), and the innovation process requires collaboration across disciplines and organizational boundaries (Sebastian et al., 2017; Austin et al., 2012; Tushman et al., 2010; Westerman et al. 2006), playing a crucial part in enabling new organizational architectures (Frankenberger et al, 2014).

In this context, this study analyses the organizational changes that accompany the BMI of an energy utility, investigating how the utility has reorganized its departments and internal processes across multiple organizational levels to enable a reconfiguration of its traditional BM (Chung and Choi, 2016; Vila et al., 2014)

In the last years, utilities have indeed been navigating several disruptive factors to their consolidated BM (e.g., rapid technological innovation, falling cost of distributed energy generation, slowing trends in energy demand and increase in energy efficiency) (Newcomb et al., 2013; Kind, 2013). In combination, these factors are dramatically changing the traditional BM adopted by utilities (i.e., conventional electricity generation and sale) (Richter, 2013, 2012), forcing them to come up with new solutions to allow the integration of service components into their market offer (Baines et al., 2009), as well as to enable new uses of electricity, such as for e-mobility (Abdelkafi et al., 2013). Innovation and change become, therefore, a necessary response to the shift in the bases of competition (Doz and Kosonen, 2010) and require the reconfiguration of consolidated BM (Berends et al., 2016; Kim and Min, 2015; Elmquist et al., 2009), as well as a deep rethinking of the way through which utilities produce and sell energy (Helms, 2016). An example of a utility which has recently innovate its

BM implementing several organizational changes is the Italian ENEL (Chesbrough, 2016). ENEL, indeed, first spinned-off its global renewable energy activities into one single entity (i.e., Enel Green Power); second, to stimulate creative thinking, it gathered together in a central Innovation Hub the governance function for all the innovation activities previously managed inside the different business units; third, it adopted a matrix organizational structure, based on business lines and geographical areas; finally, it established a completely new organizational division (i.e., ENEL X) to harvest business opportunities coming from the new "energy-as-a-service" business model, i.e. "e-home", "e-city", "e-industry" and "e-mobility".

Starting from these premises, this paper through an inductive, longitudinal single case study of an Italian energy utility, aims at illuminating the mechanisms through which the BM of an energy utility has been innovated over time and the organizational changes that enabled and fostered such innovation, with the intent of covering a gap in the existing research, which on one side ignores organizational antecedents for BMI (Spieth et al., 2014), on the other side offers very few empirical studies specifically addressing the adoption of a new BM and the required organizational changes (Foss and Saebi, 2017; 2015; Di Stefano et al., 2014; Massa and Tucci, 2013; Foss et al., 2011).

A qualitative approach has been chosen since it facilitates the understanding of complex phenomena such as the one under investigation (Yin, 2009; Fleming, 2001; Levinthal, 1997) and helps enriching existing theory with new insights from real-world cases to make theoretical and analytical generalization to the existing body of academic research. From the analysis, several arguments of scholarly discussion have been derived, which will be presented in section 5 below. The present study contributes to the broad discussion on organizational ambidexterity (Birkinshaw and Ansari, 2015; Gibson and Birkinshaw, 2004), since the practical realization of BMI in the Company we studied required the structural separation of the traditional BUs from the innovation *loci* where the new energy services and solutions are developed (O'Reilly and Tushman, 2013; Chang et al., 2009). The other relevant contribution of this study is in the analysis of the most relevant change actions adopted by the company for implementing an effective BMI, since they prove how decentralization of authority, the creation of weak management hierarchies, the extension of firms' boundaries through collaboration with third parties and the establishment of an appropriate organizational culture are at the cornerstone on an effective BMI towards the deployment of ad hoc organizational changes.

The remainder of the paper is organized as follows: section 2 illustrates the theoretical background underlying this study; section 3 describes the methodology adopted to conduct

the case study; section 4 presents the case study whose findings are then summarized and discussed in section 5; finally, section 6 concludes and outlines future research avenues.

2. Theoretical background

2.1 Business Model

Business Model (BM) has become a relevant unit of analysis in management research since when Peter Drucker, back in 1985, defined a BM as "the way firms operate to deliver to a customer a product or service from which revenues are collected, and to capture customers' preference in a competitive market" (Drucker, 1985). In the nineties, research on BM has proliferated to the point that, analyzing publications during 1998-2002, Shafer et al. (2005) surveyed up to twelve different definitions of BM. More recently, Zott et al. (2011) have tried to synthetize previous research on BM, describing it as the firm's key business processes and how they are structured to create value. Lastly, Teece (2018) has tried to summarize three decades of research on BM describing it as the "design or architecture of the value creation, delivery, and capture mechanisms [a firm] employs", which helps identifying "unmet customer needs, specifying the technology and organization that will address them" (p. 2). In other words, a BM describes the design or architecture of the value creation, delivery, and capture mechanisms that firms employ (Teece, 2018, 2010, 2007) or, as noted by George and Bock (2011, p. 99) a BM is "the design of organizational structures to enact a commercial opportunity".

2.2 Business Model Innovation

Research has started to focus on business model innovation (BMI) since when innovation has been recognized as the main driver of firms' survival, enabling them to achieve a sustainable competitive advantage, ensure long-term growth and improve performance (Remane et al., 2017; Spieth et al., 2014; Schneider and Spieth, 2013; Massa and Tucci, 2013; Zott et al., 2011). Some authors (i.e., Zott et al., 2011; Zott and Amit, 2010) have proposed that a BM can be innovated in three ways: (i) by adding new activities, (ii) by linking activities in novel ways, (iii) by changing which parties perform an activity. More specifically, Massa et al. (2017) have recognized that BMI may refer to (i) the design of novel business models for newly formed organizations, or (ii) the reconfiguration of existing business models. The present study focuses on the second phenomenon, because it investigates how BMI in an established company is intertwined with changes in its organization. Reconfiguring an existing BM, indeed, involves facing internal organizational challenges, due to the presence of consolidated managerial

processes and established organizational structures that need to be changed and redesigned (Mitchell and Coles, 2003; Aldrich et al., 1986). This effort is not an easy one, as highlighted by Johnson et al. (2008) through the analysis of major innovations by existing corporations in the last decade: "only a precious few have been related to the reconfiguration of existing business model" (p. 60). The BMI process requires indeed creativity, insight and a good deal of customer, competitor and supplier information and intelligence (Teece, 2007) and shall draw on management ability to redesign the organizational processes and asset orchestration (Teece, 2018). Furthermore, additional complexity is added in established organizations by the existing repertoire of capabilities that constrain managers' ability to innovate (Agarwal and Helfat, 2009; Pisano, 2006; Lawson and Samson, 2001) and by the rather standardized internal procedures that are generally inadequate to allow a smooth integration of innovations, . This is particularly the case for traditional energy utilities, whose internal organization reflects the centralized system of electricity generation (Caldecott and McDaniels, 2014), in a context characterized by relatively low competition with limited incentives to pursue continuous innovation (Newcomb et al. 2013).

2.3 Business Model Innovation and Organizational Change

Foss and Saebi (2017) have defined BMI as the "designed, novel, non-trivial changes to the key elements of a firm's business model and/or the architecture linking these elements" (p. 201). In this sense, established companies that aim at innovating their BMs need to re-design multiple aspects of their internal organization to move towards a renewed (or reconfigured) BM (Leih et al., 2014; Massa and Tucci, 2013; Foss et al, 2013). The BM, indeed, shall be aligned with the internal structure and overall management model of a firm (Birkinshaw and Ansari, 2015). With this regard, BMI can be interpreted as an organizational change process in itself (Damanpour, 1996), which requires to "adapt the architecture of *[a firm]* BM in response to change in external environment" (Foss and Saebi, 2017, p. 217). This implies that firms need to change the way they are organized, for example creating new business units, internal functions and departments. Organizational change and BMI, therefore, are strongly correlated, since a successful implementation of BMI requires correspondent changes in many aspects of a company's organizational structure.

Acknowledging the role of organizational change in BMI research is even more important today in light of the growing proliferation of digital technologies (Gambardella and McGahan, 2010). In this regard, a key success factor for firms trying to exploit digital technologies is to consider if the extant BM is suited to support the application of new technologies or if an

innovative BM is required (Svahn et al., 2017). This because digital technologies have opened up new opportunities for organizing business activities, playing a crucial part in enabling new organizational architectures, which radically differ from those observed in traditional organizations (Amit and Zott, 2001; Bonaccorsi et al., 2006). The proliferation of digital technologies has brought to an increase of interest in the topic of organizational change, specifically with regards to design for agility (Doz and Kosonen, 2008) and design for balancing innovation and efficiency (Gulati and Puranam, 2009; O'Reilly and Tushman, 2013, 1997; Brown and Eisenhardt, 1997). Furthermore, also the theory of organizational ambidexterity has highlighted the critical role of organizational design in successfully realizing a proper balance between exploitation and exploration oriented business activities (Simsek, 2009; Gibson and Birkinshaw, 2004), specifically when actors outside the traditional boundaries of an organization possess unique knowledge that may be applicable within the organization (Jeppesen and Lakhani, 2010; Vanhaverbeke, 2006; von Hippel, 2005; Chesbrough, 2003).
The huge proliferation of digital technologies has also enabled important changes at the organizational level, as companies are now called to reconfigure traditional activities with digitally-enabled ones, shifting from an existing BM to a new one (Massa et al., 2017). This is particularly the case when innovations introduced to leverage digital technologies require organizational change based on structural separation between traditional business units and new ones (O'Reilly and Tushman, 2013). This somehow matches Foss's definition of BM adaptation (Foss and Saebi, 2017), which requires a firm to adapt the architecture of its BM in response to change in the external environment. BM adaptation through organizational changes, therefore, can be for established energy utilities the key to survive in an era of major technological change, where traditional BMs are not anymore guarantee of future success. To this extent, the present study contributes to the literature at the nexus between BMI and organizational change, trying to explain how these two phenomena are intertwined.

2.4: Organizational change as a process study theory

Several studies on organizational change and innovation treat change as a variable able to impact the rate of innovation of an organization (Rogers, 2010). The goal of these studies is to explain and/or predict the occurrence and magnitude of change or the effects of change on other variables, such as BMI. With this regard, the process view in the study of change in organizations, as summarized by Van de Ven and Poole (2005), helps understand how change unfolds in organizational entities. The process study perspective, indeed, conceptualizes change as a succession of events, stages, cycles, or states in the development or growth of an organization (Van De Ven and Poole, 2005; Chia and Langley, 2004). Van de Ven (1992),

Langley (1999) and Poole et al. (2000) identify different types of changes that unfold at organizational level. Comparing the studies of Van de Ven, Langley and Poole with other studies on organizational changes, we have been able to summarize in a table (Table 1) the most recurring organizational changes that a firm undertakes when innovating its BM.

Insert Table 1: the most recurring organizational changes that a firm undertakes when innovating its BM

Such changes have been clustered in three groups: (i) changes in the organization of the firm; (ii) changes in the boundaries of the firm; (iii) changes in the profile of internal resources.
The changes within the first group are related to the establishment of new BUs, departments, internal processes, as well as recombination of existing routines. Additionally, they include the decentralization of authority, as well as actions aimed at establishing a new organizational culture, and, lastly, the adoption of new processes and practices. The changes within the second group highlight collaborations and partnerships with external firms (i.e., open innovation), together with the outsourcing of non-core capabilities. The changes within the third group regard the development of new capabilities, the external hiring of new employees and the training of the workforce to use new solutions and technologies.
Summarizing the main result of the literature analysis, it emerges how decentralization of authority, the creation of weak management hierarchies, the extension of firms' boundaries through collaboration with third parties and the establishment of an appropriate organizational culture are the most relevant change actions for implementing an effective BMI. From this, we have built the conceptual model proposed in figure 1 as a basis for the qualitative analysis developed in the following sections. Among the dimensions along which organizational change can take place, we have analyzed the ones that deploy their effects at organizational level, i.e. the structuring of the internal processes (i.e. delegation, departmentalization, and job description), the coordination of activities (liaison committees and lateral and vertical communication) and the role of functions, units and departments within an organization (Foss et al., 2013).

Insert Figure 1: the conceptual model

The proposed model served as a basis for answering to the research questions, i.e. *what organizational changes BMI require and why? how does organizational change influence BMI?* and to develop a final framework where to compare the conceptual model with the

organizational changes implemented by the Company on which our paper focuses and the innovations implemented at business model level (see below, Figure 8).

3. Methodology

The authors adopted an inductive, longitudinal single case research design (Eisenhardt and Graebner, 2007, p. 25) to identify the relevant organizational changes implemented by Company ALPHA (disguised name), (hereafter "Company ALPHA" or "the Company") and how such changes are intertwined with BMI. As discussed by Pettigrew (1988), due to the limited number of cases that can usually be studied, choosing a specific case allows to clearly isolate and recognize the phenomena under investigation, and this is particularly valuable for generating and building theory (Eisenhardt, 1989). With this regard, a single case study offers a useful methodological approach to answer the "how" and "why" questions (Yin, 2003), while a qualitative approach facilitates the understanding of complex phenomena (Massa & Tucci, 2013; Yin, 2009; Fleming, 2001; Levinthal, 1997).

"3.1 Case selection"

The identification of the Company has followed theoretical and convenience sampling criteria (Voss, et al., 2002). This single case has been selected because Company ALPHA has recently implemented relevant organizational changes and has innovated its traditional BM of energy utility. During the period in which the innovation of the business model occurred, organizational changes, the authors of the present study participated in a jointly project with the Company to analyze BMI opportunities and to identify the connected organizational changes. This has allowed a direct access to the Company information and dataset, as well a facilitated access to interview with the Company's key personnel.

3.2 Data collection and Analysis

Data collection and analysis followed a three-step process: first, the authors examined the relevant academic literature on BMI and organizational change; second, they prepared an interview protocol built around a set of semi-structured questions (as listed in Annex 1A), and complemented interviews with documentary information including secondary sources (e.g., websites, third party reports, market and industry analysis and scenario evaluation) as well as internal reports related to the Company strategies and innovation initiatives; third, they used the information gathered during the interviews to re-analyze existing theoretical knowledge and fit it to the practical organizational changes implemented by the Company.

Interviews were conducted with 9 top managers of Company ALPHA from March to July 2018, with a follow up during November 2018 – January 2019. The decision to interview only top managers was dictated by the fact that top managers are the primary agents for decision-making processes inside an organization (Kim and Chung, 2017), with a legitimate right to drive organizational decisions (Helfat and Martin, 2015; Augier and Teece, 2009), initiate innovation process (Collins and Clark, 2003) as well as respond to external pressure (Scott and Bruce, 1994).

A first round of interviews was followed by a second and, in some cases, a third round to consolidate information collected, cross check relevant data and clarify important issues. In some cases, interviews were also followed-up by emails with questions of clarification over the period of the study. On average, interviews lasted approximately one hour, depending on the round of interviews and the content provided. The interviewed managers and rounds of interviews are reported in Annex 1B.

Then, a traditional coding process and cross comparison analysis of interviews' answers was performed by each author to identify the recurrent patterns of useful information (Weber, 1990). At the end of the data collection phase, the authors wrote a case narrative on the BMI process and the organizational changes required to effectively implement BMI. The case narrative contained several identified plots (i.e., the digitalization of the innovation activity, BMI in the energy industry, organizational change required), which reflected the theoretical setting and the premises defined for conducting the study (Langley, 1999).

As the study progressed, relationships among the information collected started to emerge. This made possible to define keywords common to all the interviews and relevant to the domain of the investigation, which allowed to enrich the case narrative with abundant information on the Company organizational changes adopted and BMI.

The triangulation of information collected from primary and secondary sources rigorously followed the steps suggested by Tellis (1997): initially, each author independently reviewed all the information of the transcribed interviews and secondary documents to verify their validity and avoid potential ambiguous and equivocal data to be included in the database. Then, each author contrasted or corroborated his own analyses with the ones of other authors to reach a shared understanding and interpretation of the whole information under investigation. Finally, the authors triangulated all the accepted information.

As noted by Eisenhardt (1989) and Eisenhardt et al. (2007), there are clear limitations in terms of statistical generalizability from case study. Instead, the basis of generalization beyond the boundaries of a case study is analytical (Mitchell, 1983). Hence, our aim was to make analytical

or theoretical generalizations to the existing body of research concerned with organizational changes in the context of BMI. With this regard, the triangulation of information collected from primary and secondary sources and literature on BMI and organizational change helped shed more light on the phenomenon under investigation, i.e. the interconnection between BMI and organizational change. Therefore, our findings can be used to further develop current theoretical ideas regarding the subject matter, but not to make generalizability claims about populations of firms operating eventually in different markets or industries, or in the same industry but with different characteristics.

4. The case study

Company ALPHA is the third energy utility in Italy by revenues (Table 2). It employees approximately 5,000 people and is organized around four BUs which directly report to the Company's CEO (Figure 2). On one side, Company ALPHA operates industrial assets to produce and sell electricity; on the other side, it supplies power and gas together with energy efficiency services to business and residential customers (Table 3).

Insert Table 2: Financial highlights in 2016-2017

Insert Figure 2: Organization Chart: Operating BUs (year 2017)

Insert Table 3: Operational Data in 2016-2017

Until 2017, Company ALPHA was organized as a traditional energy utility, with the business driven by the operations and the innovation processes managed mainly inside each BU. As noted by the Company's HR Vice President, "*each BU was like a silo which tends to rely on its own individual knowledge*". These silos characterized not only the organization and culture of each BU, but also the activities of the staff functions (Figure 3), which were completely detached from the Company's operations. From the interviews, it emerged how innovation activities (mainly related to the definition of new commercial offers for selling electricity and gas) were scattered among different departments apart from the BUs, without a clear focus and Company guidance (Figure 4). Indeed, The Executive Vice-President of HR and ICT noted how "*the Company approach to innovation did not follow a structured process; a reference framework for innovation and a proper roadmap were missing, also due to the lack of an ad-hoc corporate/business strategy*".

Insert Figure 3: Organization Chart –staff functions (2017)

Insert Figure 4: Organization Chart (2017)

The “Research, Development & Innovation” (RD&I) Department comprised approximately 30 employees and was structured around two main divisions: (i) “Research & Laboratories”, dedicated to mid/long-term projects and organized with a set of laboratories used for research purposes and technology assessment activities: (ii) “Development & Innovation”, dedicated to projects closer to the business application and related to the promotion of innovative energy solutions.

As an example of the unstructured innovation process, the RD&I Department was responsible for the development of applications such as big data analytics and for keeping relationships with external partners (e.g., universities and research centres), while HR & ICT developed the software architecture and investigated new digital solutions for data analytics, thus in overlap with some of the activities performed by the RD&I. Another example of the non-effective organizational structure was represented by the role played by the M&A function inside the Finance department, which oversighted new business opportunities in which to invest, but with poor connection with the RD&I Department for what concern their technical evaluation and with poor fit with the strategic priorities of the BUs.

The Company approached innovation without following a structured path, giving no homogeneous structure to the rather scattered internal innovation initiatives. As noted by the Company Head of Communication and External Relations, “*we had the not-invented-here syndrome, with every department, unit and even team not willing to share ideas, lessons learned and best practices with others*”.

Nevertheless, the top management proved to be cognizant of the importance of innovation to sustain growth and support the Company’s strategic ambitions, but somehow the innovation effort was not paired by the necessary organizational changes required to facilitate the blossom of innovation initiatives. As noted indeed by the Head of External Relations and Communication, “*Exploring opportunities for business model innovation and finding a way to experiment with new business models and implement them should be a priority. Doing so within the existing organization for innovation is very complex*”. This, as emerged by the interviews, called for profound organizational changes to favour the innovation of a rather traditional business model.

With the intent of diffusing innovation throughout the whole organizational structure, Company ALPHA in 2015 had already issued its own “Innovation Policy”, a concise document which claimed that the Company shall “develop innovation initiatives as part of the routine processes of the various BUs and encourage a bottom-up approach to innovation, with the direct involvement of employees throughout the organizational levels”. The Innovation Policy led also to the establishment of the “Innovation Lab” for fostering bottom-up initiatives among

the employees. The Innovation Lab, as stated by the Marketing, Sales and Energy Services Director, *"would encourage risk taking, by endorsing a fail fast - fail smart approach, favouring the dissemination of a lively culture of innovation".* Nevertheless, mostly because of organizational inertia, only one Innovation Lab was launched over the period 2015-2017. Still convinced of the importance of innovating its BM, in 2016 the Company created the "Transformation Committee", or more precisely, a set of working groups composed by teams coming from each BU, with the intent to raise proposals for improving the Company performance on various topics. This initiative was then abandoned in 2017, when the Company decided to rethink its competitive positioning in the market, opting for a profound innovation of its traditional BM.

5. Results and Discussions

5.1 Business Model Innovation of Company ALPHA

In 2017, The Company CEO and top-management decided to rethink the Company competitive position to grow closer to customers, designing and experimenting new solutions and energy services (e.g., "digital-energy" solutions, energy communities and energy storage systems). He observed indeed that the Company could become a key player in the market by responding to the challenges of the Italian business and regulatory environment, which are rather unique due to several factors such as the relative high diffusion of distributed RES, the high price of electricity, the absence of relevant grid interconnection with the rest of Europe, the industrial context with a dramatic prevalence of small medium enterprises which require a tailored commercial approach, the longevity of the Italian public and private buildings and the related high potential for energy efficiency in this sector, the embryonic stage of development of e-mobility. Building on the above premises, the Company aimed at creating more value from the integration of service components into its range of activities, offering solutions based on new uses of electricity, as observed in literature by Richter (2013; 2012), Baines et al. (2009) and Abdelkafi et al. (2013) with regard to the innovation of the business model of traditional energy utilities. Hence, the Company decided to broaden its product portfolio offering heating and cooling solutions and a bundle of energy efficiency services integrated with home automation systems (smart home) to residential energy users, as well as exploring the array of possible services related to the e-mobility, from the installation of charging stations at end users premises to providing the electric vehicle as a service to end users (Figure 5).

Insert Figure 5: From a traditional BM to BMI

In parallel with the pursuit of the above-mentioned innovations in the business model, the Company continues to leverage on its consolidated business of selling electricity and gas

commodities, whilst rationalizing traditional activities and trying to give scale and scope to its internal innovation initiatives, which are now converging towards the innovation of its business model, generating more value from the integration of service components into its business portfolio.

5.2 Organizational Changes associated with Business Model Innovation

To enable the flourish of the BMIs described in the previous paragraph, a whole new department has been created with responsibility for Strategy, Innovation and Development ("SID"), whose head reports directly to the CEO. As it emerged indeed from the interviews with the Head of SID, "*to foster collaboration among the different functions involved, to accelerate and foster more radical innovation, the Company has centralized in one function the planning and management of innovation activities, hence having Strategy and Innovation at the same organizational level help explore long-term BMI opportunities related to the development of innovative energy services and solutions*".

The SID is hence responsible for defining the Company overall strategy, ensuring a proper balance and consistency between the pursuing of the traditional business model of selling electricity and gas commodities, along with the exploration of new opportunities related to the offer of new energy solutions and smart energy services. Four functions report to the Head of SID, i.e. Strategy, Innovation, M&A and R&D. Three units report to Innovation function, i.e. Digital Innovation, New Businesses and the Open Innovation Hub (Figure 6).

Insert Figure 6: The organizational chart of the Strategy, Innovation and Development ("SID") Department

Strategy ensures consistency between short-term priorities and long-term business goals, while Innovation drives the on-going technological changes, conducts technology intelligence studies and coordinates the different innovation projects to leverage synergies relevant to the Company everyday business.

M&A has the specific task of identifying opportunities for external equity investments, including start-ups and small innovative companies. With this regard, the M&A liaises with the New Business to scout for interesting companies where to invest, with the aim to bring inside valuable ready-to-market products or services, and ultimately explore new ideas to be added to the Company business.

The R&D has lost the "Innovation" dimension (it has indeed become "R&D" from the previous "RD&I", see Figure 4) and now is more involved in providing the technical capabilities to test technologies that may increase the profitability and internal efficiency of the traditional

business, while the digital-enabled innovation has been transferred to the Digital Innovation unit.

To favour the dialogue among the units involved in the innovation activities, a new role has been introduced, the one of the "innovation antenna". As noted by the Head of Strategy, "*Innovation projects should be developed by involving all the business units that may have an interest in the output of the project or can contribute to it. A greater level of coordination and communication between different business units is necessary, therefore «innovation antennas» have been identified to ensure such a coordination*". Antennas are employees particularly keen on innovation and able to communicate within Company's departments, functions and BUs to guarantee a high level of coordination and communication at all Company levels. They liaise both with the R&D and Innovation, reporting to them the innovation needs generated at BU level, and cascade to the BUs the technology and innovation opportunities generated at the SID level. Figure 7 highlights the whole organizational Innovation process, showing the role played by the innovation antennas as interfaces with the BUs.

Insert Figure 7: the reconfiguration of the Innovation process, parties involved and coordination activities between different functions and the BUs

With regards to the three units that report to Innovation (i.e., Digital Innovation, New Businesses and the Open Innovation Hub), Digital Innovation has the goal to develop the Company digital infrastructure for providing IoT services and innovative digital solutions to customers. This is a critical aspect that emerged during the interviews, since having a traditional ICT in charge of the development of digital services has been recognized as far from being effective, because ICT activities were typically focused on the Company day-by-day operations, without experimenting the application of digital technologies to new business solutions. As indeed observed by the Head of Innovation, "*The Company should continue developing technical digital skills (data analysts, data scientists, etcetera), at the same time enhancing its capability to understand and evaluate the business implications of digitalisation (new products/services, impacts on the value chain, new business models). To ensure a proper integration with innovation projects, as well as to exploit synergies and avoid the risk of an excessive focus on operational activities, "digital" competences are now kept separate from the IT function as well as from BUs. This represents a huge boost to innovation*". An evidence that emerged from the interviews, indeed, is that the Company has never been able to offer digital solutions based on software applications, web-apps or cloud services to its customers, because the previous traditional ICT unit was focused on performing the Company day-by-day operations, without developing technical digital skills.

The New Business oversees the development of commercial opportunities for realizing the BMI showed in Figure 5. This organizational change has gathered together the day-by-day management of innovation projects that do not fit within the traditional businesses of each BU (reported in Figure 2), thus reducing duplication of innovation projects while preventing the operating BUs from hampering innovation projects that fall outside their specific technological domain. Furthermore, the New Business is designed to collaborate with external stakeholders to help realize more exploratory activities outside the Company boundaries and test-and-trials new solutions. Lastly, the New Business collaborates, together with the M&A department, with venture capital funds to scout and value interesting companies (primarily start-ups) where to invest Company's resources to make BMI happens.

Finally, the Open Innovation Hub has broadened and rationalized the previous network of external collaborations (e.g., universities, research centres), managing directly innovation programs, supported by the adoption of an *ad-hoc* digital platform that allows innovations to be more widely spread throughout the Company.

Summarizing the results, the present study outlines the organizational changes introduced by Company ALPHA to innovate its traditional business model of energy utility, as reported in Table 4.

Insert Table 4: Main Organizational Changes implemented by the Company to enable BMI

The analysis of the most recurring organizational changes that a firm undertakes while innovating its BM (table 1), together with the definition of the conceptual model proposed in Figure 1, has enabled us to draw the final framework where confronting the change actions investigated by the literature with the real ones adopted by the Company (Figure 8).

Insert Figure 8: final framework

This proves how effectively the change actions have been in impacting the innovation of the Company traditional BM to align it with the opportunities offered by the new (digital) technologies and the concurrent offer of a novel value proposition to the market.

Analyzing the case study in light of the proposed framework, indeed, it can be shown how the Digital Innovation unit, and in general all the Innovation functions (see Figure 6) have become the place where to foster the development of digital solutions in the form of innovative energy services, this to effectively enable BMI, favoring scale and scope of the innovation projects and the definition of a new commercial value proposition. The "New Business" is the unit devoted

to conduct new BM intelligence studies, as well design and launch new business initiatives to explore new areas, providing to the overall Company the necessary "lateral thinking" and capabilities to operate outside its traditional business domain. It emerged indeed from the interviews, and specifically from one conversation with the executive assistant to the CEO, that before the organizational change here investigated "*the Company approach to business model innovation did not follow a structured process: a reference framework and a roadmap were missing, also due to the lack of a specific corporate innovation strategy"*. All this was happening in a business environment where digital technologies were challenging the traditional organizational design (Henfridsson et al., 2014) fundamentally reshaping it (Yoo et al., 2012, p. 1405). Nowadays, indeed, business model innovation has typically a digital dimension, which requires a specific organizational *locus* where it can be developed, to overcome the traditional bureaucracy and inertia of large incumbent companies. The Company, with this regard, has now recognized a pivotal role to its ICT, which serves as enabler for the development of innovation, becoming an essential part of the desired outcome (i.e., develop solutions for "digital energy" applications), whilst previously the importance of ICT in the innovation process was almost completely neglected. As noted indeed by the Executive Vice President HR & ICT, "*since the energy business is becoming increasingly "digitalized", the ICT becomes of primary importance for an energy utility to derive valuable insights and create new services and solutions, hence a structured approach to ICT can help the Company manage data collection and usage*". Furthermore, the establishment of innovation antennas guarantee the Company a continuous flow of inputs for innovation projects, since innovation antennas facilitate the dialogue among different departments disseminating innovative solutions throughout the Company, while collecting ideas and suggestions coming directly from the employees.

To be successful in today's complex and fast-changing world, indeed, companies must be highly agile, able to identify opportunities and make informed decisions quickly in order to exploit those opportunities (Iansiti and Lakhani, 2014). This requires redesigning multiple aspects of the internal organization, as noted for example by Foss and Saebi (2017) and Leih et al. (2015). The Company top management realized that one of the main reasons of the previous failed attempts to introduce BMI was linked with the large array of capabilities required to innovate the traditional BM of the Company, and that such capabilities laid mainly outside its business domain. Hence, the Company established an *ad hoc* organizational structure (i.e., the SID) to coordinate the innovation activities and oversee the overall value creation, delivery and capture phases of the innovated BM, as well as established an

Innovation Hub where to meet the external business ecosystem looking for ideas and solutions to bring inside, either through M&A deals or with specific partnerships.

As noted by the Head of SID, indeed ‘‘*once the organizational changes passed from idea to implementation, we encountered difficulties. At the beginning it was not clear to me what was the bottleneck in the change process, then we realized that the organization and especially the people were not ready for the changes we decided following a top-down approach. This revealed the need for rethinking our organizational structures favoring changes*’’.
This finding pairs with what noted by Hannan & Freeman (1984) according to whom the characteristics that guarantee an organization’s stability (i.e., institutionalization, standardization and routine) are those that create barriers to change, and so are determinants of inertia. In our empirical analysis, the centralization of the innovation activities within a unique department helped overcome the typical inertia of the day-by-day operations and the “business-as-usual” trap of a large utility, creating momentum around the innovation topic and its urgency. This is particularly complex for incumbent firms, where their portfolio of existing competences often prevents managers from seeing novel opportunities to innovate or acting upon those opportunities when they see them (Pisano, 2006).
At the end of this large organizational change process, the Company is now able to propose to the market a completely new offer of digital services and solutions, broadening its market presence and its customer base, while diversifying its business portfolio. The Company, indeed, has enriched its commercial offer with new services for e-mobility solutions, for the installation of renewable energy sources at end user level, paired with the deployment of digital technologies for demand response, as well as it has partnered with home appliances’ providers for distributing to its clients efficient devices with remote control applications. This shows how the organizational changes listed in the second column of the final framework (Figure 8), which demanded for breaking down traditional organizational silos, adding new skills, making data and information available in a horizontal way, reaching a higher level of coordination and communication among different units, have been necessary to properly enable a renewed value creation, delivery and capture process (Cortimiglia et. al, 2016), in line also with other relevant literature (i.e., Teece, 2018), who underlines how the introduction of new business models into an existing organization requires relevant organizational changes. Such findings prove how the adequacy of a company’s strategy is defined in terms of its congruence with organizational contingencies facing the firm (Zajac et al., 2000): our study hence confirms that effectively implementing BMI requires adequate organizational changes to properly enable the realization of a renewed BM.

6. Conclusion

The intent of this study is to illuminate the mechanisms through which the BM of an energy utility was innovated and the organizational changes that enabled and fostered such innovation. Firms, indeed, shall choose the organizational design that best fits their strategic context and capabilities (Westerman et al., 2006) and be able to develop BMI as an organizational capability within their corporate innovation framework (Spieth et al., 2014). With this regard, the present study was motivated by several elements that embrace both theoretical perspective and a practical evidence: as for the theory, extant studies (from Damanpour, 1996 to more recently Foss and Saebi (2017) contend that innovating or renewing a BM may require changing the organizational design process, hence investigating the organizational impacts of BMI calls for further theoretical effort to deepen the understanding of key organizational changes enabling BMI (Achtenhagen et al., 2013; Deshler and Smith, 2011). It has been noted in the study, indeed, that organizational changes may require the creation of new units, as well the definition of new internal functions and departments, as noted in the literature by Foss et al. (2013). The findings contribute also to the broad discussion on organizational ambidexterity (Birkinshaw and Ansari, 2015; Gibson and Birkinshaw, 2004), since the practical realization of BMI required the structural separation of the traditional BUs from the innovation *loci* where the new energy services and solutions are developed, thus reducing the risks of conflicts between the "business-as-usual" and the new business areas of exploration (O'Reilly and Tushman, 2013; Chang et al., 2009).

For what concern practical implication, the study addresses the energy industry, since energy producers are nowadays called to come up with new solutions and new (decentralized) models of production (Baines et al., 2009), as well as to develop new electricity uses (Abdelkafi et al., 2013). In this case, energy utilities that aim at innovating their BMs find possible exemplifications and insights that may be helpful to prioritize the aspects needed to re-design multiple facets of their internal organizations to practically realize a reconfigured BM (Massa and Tucci, 2013; Foss et al., 2013; Leih et al., 2015).

Notwithstanding the attempt to provide contributions both to scholars and practitioners, the study presents some limitations that may however open the doors to future research streams. The research focus on a specific industry, and industry-specific effects have been acknowledged to shape the determinants, processes and outcomes of the innovation phenomena (Messeni Petruzzelli et al., 2018). Then, single case does not allow generalization of findings to any population of energy utilities, hence the findings of this study should be

tested empirically in large scale studies in the hope to shed lights on the relevant although under researched management issue of BMI as organizational change process in a context of digital transformation of the utilities' business. Finally, a more in depth investigation into the cultural dimension as a critical dimension of the organizational change process (Stock et al., 2013) may help shed more light on the analysis of a complex phenomenon as the interconnection between organizational change and BMI, but would require a specific methodological approach that may be addressed in a further contribution on the subject topic (Kotlar et all., 2018).

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