

Change and innovation: an observable relationship in services?☆

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Abstract

The connection between change and innovation is not always linear and there are not many studies on the subject in the area of services. This study aims to explain the link between willingness to change and innovation in services. The constructs Willingness to Change in Services and Innovation in Services have been analyzed. Two scales were applied in order to measure these constructs in a sample of 351 companies developing software services in Brazil. Two indices were generated: the Willingness to Change Coefficient – derived from the perception of technical staff and managers in relation to the variables of each factor on the Willingness to Change in Services scale – and the Innovation in Services Coefficient – derived from measures concerning the introduction of new or substantially improved software by companies and their impact. Linear regression analysis showed no significant correlation between Willingness to Change in Services and Innovation in Services. These findings can be explained by factors such as the dissonance between the constitutive logic of the Willingness to Change in Services and IS scales, since the former applies fully to the analysis of services while the latter derives from industrial indicators; the omission of phenomena that may act as mediators in the relationship; the nature of Change in Services, which could be related to other processes than those directly related to customer and provider, so that the agents of change are not considered in innovation measures and, therefore, not measurable on the Innovation in Services scale.

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Introduction

In the area of innovation, a number of studies aiming to identify innovation vectors stand out, such as Becker and Dietz (2004), exploring Research and Development (R&D) as an innovation vector, Gu, Zhang, and Kang (2006), testing the impact of R&D on innovation generation and patent registration in China, and Simioni, Hoff, and Binotto (2015), exploring factors that drive innovation in the wood sector in Brazil. One of the drivers traditionally associated with innovation is change. The assumption is that change is a necessary condition for innovation to

take place. Change is thus characterized as a stage prior to innovation. The two phenomena have become widely recognized theoretically as partners (Poole & Van de Ven, 2004) and have been explored in studies that test the limits of their relationship. Two camps have emerged: those who explore the relationship between technical change and innovation, such as Mowery and Rosenberg (2000), Jamison and Hård (2003) and Hekkert, Suurs, Negro, Kuhlmann, and Smits (2007), and those who investigate the construct of innovation-related organizational change, such as Edwards (2000) and Dooley (2004).

The wide application of these studies to different sectors, activities and business segments indicates that the relationship between change and innovation is not limited to specific sectors. This reasoning leads us to propose a central research hypothesis: in services, as well as in industrial activities, change behaves as a predictor of innovation. In order to test this hypothesis, some questions need to be answered: how should the phenomena of change and innovation be addressed in order to develop measurement scales that are valid for services? How should the predictive link between these phenomena be tested?

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To answer these questions, the first task is to study the two phenomena (accepted here as constructs) of change and innovation in the context of service activities. While much has been published on innovation in services since 2010, a period of time accounting for 70% of the studies on the subject (Moreira, Guimarães, & Philippe, 2013), little has been said on the phenomenon of change in services over recent decades. This is not a matter of chance, but a characteristic inherent to the services themselves, for which change is essential to their operation (Delaunay & Gadrey, 1987; Hill, 1977). If every service entails a change, how can one identify change in services? Answering this dilemma seems to stem from neo-Schumpeterian theory (Nelson & Winter, 2005) for investigating the nature of the innovation process.

Among the approaches historically used in innovation studies, the demand-pull approach has been particularly prominent in the context of services. This is explained by its assumption that the customer – in the context of the consumer market – is a source of innovation. The application of this approach to services explains why the customer plays a direct role in generating innovation. Knowing that the provision of a service depends on the coexistence of and interaction between provider and customer (Gadrey, 2000; Gallouj, 2002; Kon, 2004; Miles, 2005; Rubalcaba, 2007), two agents emerge who can intervene in the innovation process and, before that, in the process of change in a service.

Moreira et al. (2013) understand that the service provider plays an active role in accepting or imposing barriers to the assimilation of inputs for change in service that customers suggest. They argue that change in services corresponds to requests for changes in the features previously agreed for a service during its delivery. Customers make dynamic requests during service delivery – requests for alterations, scope changes, project reviews, and so on – and it is up to the providers to accept, revise or reject such requests. The authors outline the conditions for a provider to accept suggested changes to the original project of a service. This is Willingness to Change in Services (WiCS), understood here as representing change in services.

With the measurement of change in services established, the next task is to adopt criteria to measure innovation in services. We choose, in this study, to adopt a measurement scale applied in the Technological Innovation Survey – PINTEC (IBGE, 2010) – that, in turn, is derived from international measurements suggested by the Oslo Manual (OECD & Eurostat, 2005). We attempt to address the second question that emerges from this study: how should the relationship between change and innovation in services be tested? In order to answer this question, this paper aims to explain the relationship between willingness to change and innovation in services.

Change and innovation: closeness and boundaries between the two concepts

Change can be broadly understood as alteration over time. The recognition of this alteration of reality – and therefore change – is linked to individual perception (Lau & Woodman,

1995). The concept of innovation can be understood in the present techno-economic paradigm (Perez, 2002) in the light of the neo-Schumpeterian or evolutionary school (Nelson & Winter, 2005). Schumpeter's (1982, p. 93) concept of innovation as “the carrying out of new combinations of resources” capable of generating new goods, production methods, markets, raw materials and forms of organization is a starting point for the advances proposed by evolutionary authors. The neo-Schumpeterian school aims to develop the original Schumpeterian concept – proposed at the height of the Fordist economic period – into a concept of the innovation phenomenon capable of encompassing new forms in an economy in transition to a service economy (Rubalcaba, 2007). Neo-Schumpeterian authors emphasize innovation as a means to obtain competitive advantage from the appropriation of cost and quality advantages (Kon, 2004). Thus, innovation is defined as a phenomenon that can impact the competitiveness of organizations.

Change and innovation are close, which is why they can be considered “partners” (Poole & Van de Ven, 2004). The joint analysis of some of the concepts attributed to change and innovation – assuming there are no universally accepted and definitive concepts for either of them – makes it possible to establish boundaries between the phenomena. The concepts of change, when referring to alteration of a current situation, direct attention to the act of change rather than to its effects.

The innovation phenomenon, in addition to organizational change, enables alteration of the current situation through the introduction of a new combination of resources. Innovation also entails the assumption that improved results will be obtained and will generate value – originally described as economic value in the Schumpeterian analysis, although later theoretical developments accept innovations capable of generating social value, providing the bases for theories of social entrepreneurship. This approach makes it possible to establish two key dimensions for innovation analysis and diagnosis: the dimension of action (implying the introduction of a new combination of resources), and the dimension of qualitatively improved results (implying that innovation necessarily generates qualitative improvement in relation to the prior situation) (IBGE, 2010).

The breakdown of the two phenomena reveals that change and innovation share the dimension of action, given that both refer to a greater or lesser extent to alterations in the current situation. Just as change refers to a situation of alteration of a previous reality, innovation can also be associated with this understanding. Changes would thus generate alterations in organizations, products or services, and also for innovations, which would link the two phenomena. While for change the defining focus is on the parameters altered by the change (Poole & Van de Ven, 2004), for innovation, the focus shifts to the qualitative results obtained (Nelson & Winter, 2005), without any judgment about the altered parameters – which creates a space for the emergence of multiple models, categories and typologies aimed at understanding the different manifestations of innovation. Therefore, interpreting innovation in services requires an understanding of the willingness to change, which is addressed below.

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