Customer participation in services: a framework for process design

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Abstract: In any service delivery process its customers participate in a certain way and how this takes place will affect the efficiency and the quality of the service delivery process substantially. In this paper we develop a design-oriented modelling framework that aims to guide managers on the question of how the participation of customers can be designed best. Building on a systematic literature review on customer participation models in the disciplines of services, marketing and operations management, the paper develops an integrative framework that helps with the assessment of alternatives design options for customer participation. The framework offers guidance on the design across the different phases of a service process and provides a specific set of dimensions to be evaluated in the design. This supports managers in the examination of the implications of their design for customer value, as well as for different operational efficiency attributes.

Keywords: SERVQUAL; customer participation; customer value; service quality; design framework; service process; service design.


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1 Introduction

Customer participation has been identified as a key characteristic of services (Sampson and Froehle, 2006; Sampson, 2000; Vargo and Lusch, 2004a). Service delivery always requires some type of interaction with the customer. For example, customers provide information and feedback and their physical presence is often required. With the advent of information and self-service technologies – for example, web-based applications, mobile phones, or ATMs – the number of alternatives that firms can use to interact with their customers has expanded enormously. Many firms across different service industries have invested in new technological interfaces to transfer part of the operations to the customers in order to improve their productivity and service quality (Lee et al., 2009; Chih-Hung Wang, 2012).

Choosing the appropriate level of customer participation in a service process, however, can be a challenging decision, which will affect the efficiency of the process and the quality of the service substantially. Often, transferring some service operations to the customer reduces costs for the service provider (Mills and Morris, 1986; Bowen, 1986). In service contexts where personalisation is valued positively by the customers, they may increase customer satisfaction from participating actively in the process, as they will perceive a higher degree of control over the results (see for the banking sector, Laukkanen, 2006). Higher levels of customer participation may also bear risks, however. If customers are asked to perform operations where they are more prone to failure than employees, for example, this can affect negatively both the operational efficiency and the service results (Kelley and Davis, 1994).

For managers, the ample range of design alternatives for customer participation consequently creates very specific challenges. At the more strategic level, it is important to define business models that favour customer participation where it generates mutual benefits for both the firm and the customer. At the operational level, it is important to consider carefully the touch points (i.e., the points of interaction between server and customer) and choose the appropriate interface technology and mechanisms for managing customers within the process (Sampson, 2000; Fitzsimmons and Fitzsimmons, 2004).

The service literature describes extensively multiple ways in which customers can participate in service processes (Lovlock and Young, 1979; Mills and Morris, 1986; Lengnick-Hall, 1996; Bettencourt, 1997; Lengnick-Hall et al., 2000; Prahalad and Ramaswamy, 2000; Bettencourt et al., 2002; Sampson and Froehle, 2006). Several works have also characterised qualitatively the impact of customer participation on the efficiency and the quality of the service delivery (Chase, 1981; Chase and Tansik, 1983;
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Morris and Johnston, 1986; Gummesson, 1994; Mohr and Bitner, 1995; Shostack, 1982; Grönroos, 1990, 1998; Grönroos and Ojasalo, 2004). There exists also relevant research on methodologies and tools for mapping and designing process. In traditional operations management, process mapping – i.e., the careful distinction of activities, inputs, resources and outcomes – has proven to be very useful for the design and improvement of manufacturing processes. This process-mapping logic has been progressively incorporated to the analysis of services processes as well, using concepts such as the customer corridor (Meyer and Schwager, 2007) or service blueprinting, for example (e.g., Shostack, 1987; Bitner et al., 2008; Milton and Johnson, 2012). Bitran and Lojo (1993) distinguished further some generic high level phases of a service delivery process (e.g., access or execution). Specifically for the analysis of customer co-production from a marketing angle, Etgar (2008) presents a descriptive model of the consumer co-production process (e.g., from developing antecedents and motivation for co-production until generation of outputs and evaluation of process results). Darley et al. (2010) presents a review of empirical studies dealing with the analysis of online consumer behaviour and decision-making process.

However, to our knowledge, there is a lack of methodologies and tools that combine this two areas of customer contribution and process analysis, i.e., that help managers to systematically analyse and design the customer participation in a given service process.

In this paper, a design-oriented modelling framework is developed to analyse and design customer participation using a process analysis approach. Within this framework, we first propose a comprehensive classification of the various types of customer contributions in service production, according to their purpose in the service process (they may be inputs or resources of the process). Next, the different types of results of a service process (the outputs of the process) are analysed. Finally, we evaluate the impact of customer contributions on different dimensions of process performance. Both the impacts on service results (customer view) as well as process efficiency (company view) are considered. The objective is to develop a framework that integrates the existing qualitative knowledge on the field, for providing a tool that supports systematic analysis of different design options.

The paper is accordingly organised in three main sections. In Section 2, we review the extant literature. In Section 3, building on this review, we develop a design-oriented modelling framework customer participation in service processes. Finally, in Section 4, we conclude discussing possible future applications of the framework and avenues of research.

2 Customer participation and services’ performance: a review

The literature about customer participation in service processes is extensive. According to our focus, we frame the main findings considering the three key aspects of customer participation that can affect a service process:

1. how can customers contribute to the process, i.e., what are the specific inputs that customers can provide to a service process

2. how does customer participation impact the customer experience, i.e., how to evaluate the service performance in terms of customer perceived value
how does customer participation impact the process efficiency, i.e., how to evaluate service performance in terms of the costs a firm incurs to serve the customers.

To structure the literature review like this (Subsections 2.1, 2.2 and 2.3) allows reviewing stepwise each of the elements that are relevant for the development of the framework we envision (Section 3). The review started by searching for articles on the topic of ‘customer participation’ within a selection of highest impact journals from the three disciplines of marketing, services and operations management. This analysis was complemented by keyword searches using the online resources ISI Web of Science® and Google Scholar®. No limit on the year of publications was set, but the searches were focused to identify journal articles only from the above disciplines. Moreover, only papers specifically concerned with definitions, antecedents, consequences and the design of customer participation in the service delivery context were considered for detailed investigation.

2.1 Customer participation in service production: passive and active customer roles

Services have been defined as activities which perform a transformation on some input provided by the customer (Hill, 1977; Lovelock, 1983; Eiglier and Langeard, 1987; Gadrey, 2000; Zarifian and Gadrey, 2002). These inputs can be very diverse: service operations can require:

a the presence of the customer himself – as in the case of healthcare or personal services

b some material or immaterial customer possessions – personal objects to be transported, cleaned, repaired

c just information (Lovelock and Gummesson, 2004; Sampson and Froehle, 2006).

Consequently, service processes tend to involve a great deal of interaction between the customers and the service employees. Typically, customers commit some personal time and effort to reach the providers’ facilities and engage in the service delivery (Lovelock and Young, 1979; Mills and Margulies, 1980; Chase, 1981; Mills et al., 1983).

During the last decades, customers have been progressively encouraged to perform more active roles in service production (e.g., supermarkets, gas stations, or more recently online purchasing). Already long ago some authors have suggested that companies could use customers to replace the employees in some operations as a source of productivity gains (Mills and Morris, 1986; Lovelock and Young, 1979). Lengnick-Hall (1996) established a formal distinction between up – and downstream participation. She identified three downstream roles: customers acting as buyers, users or incorporating themselves in the end product; and also coined two upstream roles: when customers act as resources (they provide contributions which will be integrated into service outputs) or as co-producers (when customers perform some operations in the service process). Note that while in the former, customer may contribute only with ‘non-productive’ time (e.g., waiting), in the later, customers contribute with elements such as productive time, labour, or knowledge to facilitate the process (Bettencourt, 1997; Bettencourt et al., 2002; Lengnick-Hall et al., 2000).
In their seminal paper introducing the service-dominant logic (SDL), Vargo and Lusch (2004a) criticised the conceptualisation of customers as resources in the traditional sense (see also Vargo and Lusch 2004b, 2008). They rather proposed that “the customer is a co-producer of service” (p.7). Primarily customers are to be considered an operant resource (i.e., resources that produce an effect by acting on other resources, for example, know-how), only functioning occasionally as an operand resource (resources on which an operation is performed to produce an effect, for example, raw materials).

The concept of co-production has been extended to consider customer contributions in more general instances as well. In the strategic management literature, this is often referred to as ‘value co-creation’ (Prahalad and Ramaswamy, 2000, 2004). Bettencourt (1997) introduced a classification that divided customers into promoters of the firm, co-producers of the service and consultants to the organisation. Building on previous work, Sampson (2007) defined seven possible types of generic roles a customer can perform in services: supplier, labour, design engineer, product, inventory, quality assurance and competitor. While this latter list is quite comprehensive, emphasis has been placed on analysing the roles where customer can strategically add value, but not so much on explicitly characterising how these customer roles affect the service delivery process from an operational point of view.

As a summary, we conclude that customers take increasingly more active roles in service processes and that the amount and variety of their contributions have expanded significantly in industrial practice. But customers cannot be just considered operand resources (in the SDL notation), on which the firm performs actions through the service process, but rather should be faced as operant resources that want and will have an effect on their own. We think this already calls for new frameworks in terms of designing properly customer contributions in a service process. Our paper focuses primarily on customer contributions during the delivery or execution of service processes, while contributions regarding the process design or development of new service offerings were not a primary area of focus.

2.2 Service outputs and customer perceived value

The outputs of a service process are considerably more difficult to specify and evaluate than those of pure manufacturing processes (Goldstein et al., 2002). First, unlike in manufacturing processes where the result is a physical product whose quality can be measured quite objectively, the results obtained in many services can involve intangible components, which are more difficult to specify and assess (Morris and Johnston, 1986; Grönroos and Ojasalo, 2004). Second, customers participate in the service process and consequently, they do not only evaluate the final ‘result’ of the process, but also how the service was delivered and how good their personal experience was (Morris and Johnston, 1986; Gummesson, 1994; Mohr and Bitner, 1995; Shostack, 1982; Grönroos, 1990; Grönroos, 1998, Grönroos and Ojasalo, 2004; Heskett et al., 2003; Svensson, 2003). We will call this dimension ‘process experience’.

The cumulative customer value perception of different service delivery choices in a process is influenced by the different individual process stages (interactions), as well as the logical sequence of these (de Ruyter et al., 1997; Danaher and Mattsson, 1994). Process experiences can be positive when customers enjoy some of the process participation itself, for example, because of fun elements and socialisation aspects related to the interaction with other customer or employees (Burke, 2002; Jones, 1999; Holbrook
and Hirschman, 1982). But it may also be perceived negatively because it will involve some personal time and effort to reach or contact the service facilities and for completing the service delivery. Customers may subjectively perceive these personal costs as inconveniences. In many cases, the process experience can dominate the overall value perception of the customer and be even more important for the customer than the service direct results (Grönroos, 1998).

Heskett et al. (1997, 2003) modelled these ideas conceptually with a customer service value equation, which includes four main aspects. On one side are the two elements adding value from the customer perspective: service results (the direct outcomes sought by the customer when purchasing the services) and the process experience (all aspects related with how the customer experienced the process of delivery). On the other side are those two elements that detract value from the customer perspective: personal costs (which include personal expenses, time and effort spend by the customer during the delivery) and the price paid for the services.

The definition of specific performance measures to evaluate the quality of the service delivery in each of these value dimensions is complex, however. In addition to the mentioned intangibility of the outputs, the final customer evaluation will be subjective and quite heterogeneous, since it will depend on the individual customer preferences and expectations about the service (Grönroos, 1998; Parasuraman et al., 1985; Zeithaml et al., 1996). The expectancy-confirmation paradigm (cf., Churchill and Surprenant, 1982) postulated long ago that a customer’s satisfaction results from the difference between his initial expectations versus his post-purchase assessment.

The SERVQUAL model by Parasuraman et al. (1985) is probably one of the most widely accepted models to develop adequate measures of service quality. In line with the expectancy-confirmation paradigm, SERVQUAL considers service quality a function of the gap between customer initial expectations and the perceptions derived from the service delivery experience. The model defines five main dimensions to measure: tangible elements, reliability (performing the service accurately and consistently), responsiveness (providing the service fast), assurance (delivering the service in a competent and credible manner) and empathy (offering care, courtesy and individualized attention). Several other dimensions have been added later under different labels: adaptation to customer needs, accessibility (make the access to the service less costly of the customer) and customer uncertainty.

All these constructs can be combined within the conceptual value model of Heskett et al. (2003) to develop – as we show in Section 3 – an integrative array of service output measures that should be helpful to assess the impacts of customer participation in a service process.

2.3 Impacts of customer contributions on service efficiency

The third aspect of service performance which can be significantly impacted by customer participation is process efficiency – here broadly defined as all the costs a firm incurs to serve a given demand of customers with sufficient service quality. On the one hand service providers may save significant costs by transferring activities to their customers. On the other hand, however, providers have to invest into building the appropriate customer interfaces (e.g., technology), or may observe significant reductions in their service efficiency levels due to a lower productivity of customers comparatively to employees.
Chase’s seminal work (1978, 1981) already emphasised the labour intensity of service processes and suggested that efficiency gains could be achieved by decoupling service production into two distinct areas: a back-office, grouping all the operations which do not require a direct presence or interaction with the customer; and a front-office, where all the processes with customer interaction take place. This decoupling would serve service processes’ efficiency by enabling the application of process standardisation and labour substitution principles to the back office operations (Chase, 1981; Metters and Vargas, 2000).

As the focus of service management evolved towards considering customer as co-producer of the service, it became necessary to address more in detail the implications of such a strategy. The savings in labour costs that can be achieved by having customers performing as operant resources (or in traditional view as quasi employees; see Mills and Morris, 1986; Bowen, 1986) need to be balanced with the costs of effectively integrating and managing their participation in the production process (managing them occasionally as operand resources at the same time). Firms have to provide customers with the adequate means to enable them to execute the required service operations. This can involve specific technology investments – for example, the investment in self-check-in technology in airports or retail settings – but also specific process design adjustments, namely the development of scripts, targeted to support customer tasks in the process (Bateson, 2002; Cook et al., 2002).

Some authors have further suggested that the design of service processes would benefit from the application of manufacturing process analysis, monitoring and control tools (Bitner et al., 2008). Probably best known to these respect are service blueprinting and business process modelling. Service blueprinting essentially is a representation of the crucial aspects of a repeatable service process involving many actors (Shostack, 1982, 1987). Blueprinting takes the viewpoint of the customer. Its key features are the customer actions and the physical evidence that is seen by the customer during the various stages of service delivery. Actors can be people or other acting resources (e.g., technology). Business process modelling is a graphical standard to represent the information flow, decision points and the structure of business processes in a diagrammatic way (Ko et al., 2009).

In line with such manufacturing inspired modelling approaches, some authors have studied the impact of customer-induced process variability (Frei, 2006; Xue and Harker, 2002; Larsson and Bowen, 1989). Customer participation can lead to two main types of variability. First, customers have very heterogeneous capabilities for executing the service operations (Frei, 2006). Research results have shown, for example, that customers exhibit important differences in their ability to deal with technology (Venkatesh and Morris, 2003; Parasuraman, 2000). These differences in customer technology readiness were found to explain to a great extent the variability in service outputs and value perceptions across customers. Hence, service providers should address this heterogeneity with reinforced investments in adequate design and usability of the technology interfaces (Zeithaml, 2002).

Second, customers can also be very heterogeneous in their motivation for participating in the service and for assuming more active roles in production (Frei, 2006). Consequently, providers also face the challenge of properly stimulating customers to perform some effort to obtain the service. As Mills and Morris observed (Mills and Morris, 1986), customers do not behave spontaneously as partial employees. On this regard, Mills et al. (1983) suggested that productivity gains could be realised in services
by expanding conventional motivation concepts from employees to customers. Their core argument was that firms should design the interfaces in a way which enables and encourages customers to perform tasks that were previously done by employees. Similar arguments were advanced by Kelley et al. (1990) who suggested the use of organisational socialisation processes as a way for customers to get familiarised with the roles they have to perform in the service encounter. Socialisation methods that firms can use include formal socialisation programs, environmental cues and reinforcement and observation of other customers. Their research results supported that these practices improve customer expectations accuracy but also create the organisational climate for motivation, commitment and satisfaction. Similarly, Frei (2006) emphasised the benefits of using normative approaches, based on customer pride and peer pressure, to motivate the desired customer behaviour in service operations contexts. The need for managing the customer variability is crucial, because the mismatch between customer capabilities or motivation and the chosen customer participation model can have very negative impacts on both the customer perception of service quality (Kelley et al., 1990), as well as on the process efficiency.

3 An integrative framework for analysing customer contributions

In this section we present a framework intended to support the design of customer participation within a service processes. It is an integrative framework, as it is built to a significant extent upon the analysis of extant literature reviewed in Section 2. In a first step we specify the key constructs of the framework. Semantics are therefore crucial to provide a precise terminology and mental conception for these constructs.

Figure 1 An integrated framework for analysing customer participation in services

We define a process as a sequence of activities that perform transformations on some inputs. The activities are enabled by resources (Anupindi et al., 1999) and the transformations result in a series of outputs. Process performance must be measured by the quality of the process outputs on one hand and by the process efficiency on the other. Accordingly, our framework models customer participation design decisions through some generic process elements as depicted in Figure 1:

1. customer contributions: a list of possible customer contributions in each of the process phases distinguishing between inputs or resources to the process
2. service process activities: a mapping of activities required to perform the services, grouped in main service phases
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3 process performance attributes: a list of the different performance attributes related to service outputs and customer value; as well as a list of performance attributes related to service efficiency measures (i.e., cost of the firm).

3.1 Customer contributions

A distinction between customer contributions as process inputs or as process resources is suggested. Customer inputs refer to the objects that customers provide for being transformed in the service production process, for example, an object to transport or repair, information to archive or transfer, or the customer himself in medical service. Typically the inputs can be distinguished as follows (Sampson and Froehle, 2006):

- The customer himself, when he is required to be present to receive the service (in the same location or via some communication technology). This would be the cases were a customer has also an operand resource character in the process.
- Materials or objects, when the service requires some physical transformation of goods. Typical examples include transportation or maintenance services.
- Information, when service activities handle mainly customer requests about immaterial objects, such as in communication or banking services.

Customer resources are elements such as time, labour or knowledge, which the customer commits to the process in order to obtain the service. These resources can be operand or operant resources in SDL notation, depending on whether the process acts on them or they act on other resources. These assets can be limited to those required during the interactions with the provider to inform about the requests and to provide access to inputs, or be extended when customers assume more active roles in the process and supply assets to substitute or complement those of the firm. Specifically, we consider:

- labour, when customers play an active role by substituting employees and contributing with active process time
- technology, when customers commit physical assets to obtain the service; e.g., customer’s own car to access a retail store
- know-how, when customers provide intangible assets such as knowledge to recommend services, feedback for service process control, etc.

Distinguishing between the different forms of customer contribution is important to assess the impacts on the different dimensions of service performance, as explained later.

3.2 Service process activities

Service processes can be mapped in a set of activities required to deliver the service. Many different methodologies have been proposed on the literature, which in general suggest different ways to structure the process phases (Darley et al., 2010; van Dijk et al. 2007; Karmarkar and Apte, 1997; Bitran and Lojo, 1993). The activities required in a specific situation will be very diverse depending on the service analysed. Following the widely used approach of Bitran and Lojo (1993), we propose to distinguish some common ‘high-level’ phases of service delivery to structure the mapping, where specific activities can be grouped as follows (cf., Bitran and Lojo 1993):
1 access to the service
2 check-in and diagnostic of customer needs
3 execution of the main service delivery
4 customer exit and finally
5 customer follow-up and feedback, which may include a quality control.

Depending on the service, the logical sequence of these phases may change; some may occur simultaneously or, eventually, not take place at all.

This clustering of activities in 'high-level' phases is useful for several reasons. First, the degree of customer participation changes along a service process according to these phases. Furthermore, some service phases require a minimum level of customer participation. In particular, in the access and exit phase, some active participation of customers is always necessary to reach the service facility or the service interface channel (i.e., phone or web services). In the diagnosis phase, some customer information will always be necessary to identify customer needs. The company can have different alternatives to collect that information with more or less customer participation. During the delivery and quality control, however, companies have much more freedom to decide the type and degree of customer participation.

A second reason to differentiate these phases is that customer perception of value may be different in each of them, since the activities performed may affect different dimensions of perceived value. In particular, during the access phase, the activities performed (i.e., driving to the hospital or supermarket) increase substantially the perceived personal cost of the customer but not so much his valuation of the service quality. In the diagnostic phase, customer participation may not be seen as a burden by the customer and may also reduce his perception of quality errors in the results. Finally, during the delivery and follow-up, perceptions may depend on the degree of control by customers of the final results.

Other tools like blueprinting or business process modelling could be used (see Milton and Johnson, 2012). Further, the mapping could be extended to other phases of the service life-cycle, where customers can also contribute substantially to service functions. For example in service design, customers may often act as consultants, contributing with labour and know-how. Similarly, in the marketing and sales services, customer may act as promoters. Finally, after the service delivery, customers may act as agents for service improvements, either by providing explicit suggestion, or acting as an indirect quality control for the behaviour of other customers. In each of these phases, the same process oriented view can be applied to classify customer contributions.

3.3 Process performance attributes

3.3.1 Service outputs and customer value

We shall here define a comprehensive list of service outputs following the analysis performed in Section 2.2 about the perceived value by customers. We consider the three main dimensions of Heskett’s et al. (1997) value equation (i.e., excl. price as it per se cannot be considered as an output, but rather as a decision of the firm) and define within each of them, specific attributes building significantly on the extended literature derived from the SERVQUAL model.
In particular, we consider in the framework:

- **Results quality** attributes: these attributes capture the evaluation of the service results by the customer. We consider here two basic aspects: degree of customisation of the result, which measures the variety of options offered in the service to fit specific customer request and the reliability of the results, which measures the capacity of the process to deliver the expected results by the customer time after time.

- **Process quality** attributes: we consider three aspects: simplicity (to which extent the customer finds no difficulties or uncertainty to navigate through the process; that is what some authors have coined as process control) and fun (or enjoyment; to which extend the customer perceives a positive value of undergoing the experience due to aspects related to pleasant personal experiences, need of socialisation, empathy with employees…).

- **Personal cost** attributes: we include any kind of inconveniences customers experience as a consequence of the resources they commit to obtain the service, such as personal time and effort devoted to the process, but without distinguishing further on.

3.3.2 **Operational efficiency attributes**

Building on our literature analysis in Section 2.3, we consider a separate set of performance attributes to assess the impacts of customer participation on the operational efficiency of the process. In particular,

- **labour costs**: these may include an increase or reduction in labour (or other variable expenses) the company may experience as a result of customer participation

- **asset intensity**: these may include an increase or reduction of the investments in technology or working assets (e.g., inventories) the company may need to accommodate customer participation.

4 **Discussion and contributions**

Design-oriented frameworks are intended to facilitate designers’ reasoning about possible solutions to particular design problems. In this paper we have presented such a framework for the design of customer participation in services processes using a process mapping approach. In this context the proposed framework aims to be:

1. a managerial tool for informing the decisions about alternative service process designs, with regards to customer participation

2. a building block for conducting systematic research on the performance impacts of customer participation models across different service industries and customer segments.
4.1 Managerial implications

The complexity of designing customer contributions in service processes, as well as the particularities of each individual design situation, have motivated us to develop a framework which is rather descriptive than normative. It will therefore lead managers not to a single straightforward design solution, but rather will support the analysis of different design options and reflection on design decisions. Moreover, we think that in general there is not something as a perfect design, but tradeoffs will exist and certain design options will be preferred for certain customer segments and service contexts.

The framework takes into consideration both the different types of possible customer contributions as well as different types of performance measures. In terms of customer contributions managers need to clearly differentiate between customers providing inputs or resources. Further, the application of the framework explicitly demonstrated how the nature of customer contributions can vary significantly across the different phases of a service process (e.g., access or execution) and how different levels of customer participation can impact differently on the various performance measures. The heterogeneity of these performance impacts is likely to be further reinforced across different customer segments and service industries, as well as by an increasing number of technological service interfaces.

4.2 Future research

We can think of two main avenues of future research. A first one would address the relation between alternative design strategies for customer participation and different service typologies. This could be done using a service classification as suggested by Schmenner (2004). The research could support the development of guidelines for designing service business models with adequate customer participation for each service business type. In order to make the framework more user-friendly to practitioners and researchers, the aim of a second stream of research should be to integrate the framework operationally into a design methodology (i.e., a toolbox). Such a methodology focused on the design of customer contributions, could be then integrated in to a more general service process design approach. To do that, further in-depth case studies should examine, among other things, the methodological principles to be made explicit in instructions for facilitating the use of the framework. It is a fact that our research was very exploratory and the primary information source has been extant literature. These additional practical validations should allow identifying opportunities for improving further the framework and its parameterisation.

References


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