Integrated framework to guide service reengineering: An approach based on Service Design and Business Process Reengineering

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ABSTRACT
The paper discusses an integrated framework for service reengineering, combining Service Design (SD) and Business Process Reengineering (BPR) methodologies to improve the efficiency and quality of service processes. It highlights the importance of having well-structured organizational processes in a competitive business environment, where process reengineering can contribute to the optimization of organizations by reducing costs, improving efficiency, adapting to changes and fostering innovation. The proposed theoretical framework is based on the integration of both methodologies to achieve well-structured organizational processes. A three-phase approach is presented: diagnosis, innovation and implementation. The first phase to analyze the starting situation, the second phase to apply techniques from SD and BPR methodologies to improve the process and the third phase to implement the proposed changes and evaluate their execution. The proposal has been applied in the Paediatrics service of the Rey Juan Carlos Hospital, observing a significant improvement in its organization after the application of the methodological proposal.

KEYWORDS

1. Introduction
In an increasingly disruptive and competitive business world it is necessary to have stable and well-defined business processes. The lack of a proper implementation methodology has been identified as one of the main reasons for the high failure rate of Business Process Reengineering (BPR) projects. [1]. And, although companies are aware of the importance of service management, they still make little use of any service management model [2]. To realize such models unite BPR and SD could provide a holistic view of the enterprise processes and, in addition, create value with respect to customer experience [3]. The hypothesis proposed in this paper is that meticulous application of SD methodology combined with BPR can lead to significant improvements in service processes. This paper provides both theoretical and practical content as it focuses on combining SD and BPR methodologies, and tests it with a real case study.

The article presents a proposal for the application of SD to BPR through its application to a case study. This research is carried out in the Paediatric service of the Rey Juan Carlos Hospital. There is a problem in their schedule management that makes it feasible to develop our hypothesis while providing them with the possibility of improving their management.

2. Methodological proposal
The proposal is based on presenting a link between BPR and SD methodologies. The proposed techniques cover the data necessary for the changes in organizational processes to be achieved in a smooth manner [4,5,6] As the infographic in Figure 1 shows, the methodology would be based on three main phases: Diagnosis, Innovation and Implementation. Each of them contains both SD and BPR techniques and parameters. Qualitative and quantitative techniques or heuristic evaluations, among others, are combined giving rise to data that focus on the organization's friction points and provide the tools to solve them. [7]. Techniques such as user persona, empathy maps or design thinking workshops address the user's perspective, sometimes neglected by organizational change.

Figure 1: Diagram of the proposal.
In the Diagnosis phase, the organization is analyzed from the outside and from the inside, front office analysis and back office analysis, respectively. From the outside we see how it is perceived by users and from the inside we can focus on the organizational process itself. If the user experience shows us the critical points of a process, BPR techniques also bring to light the flaws of the model used.

The Innovation phase applies the tools offered by both SD and BPR, such as empathy exercises, like the user journey or the empathy map, and also quantitative analysis, like surveys, or qualitative analysis, like interviews. All tools are focused on creating a solution to solve the organizational process problems. The solutions have to be tested and evaluated by the organization's staff before they can be considered valid. Measurement and evaluation of redesigns is an integrated, goal-oriented, but context-sensitive strategy [8].

3. Case study

The Paediatric department of the Rey Juan Carlos Hospital (HRJC) is not involved in the organizational management of shifts, as they lack experience and/or knowledge in administrative fields. These tasks are supported by the use of specific applications for the organization of shifts, which are managed by the head of the service. Even so, with this method of shift management, interaction is based on informal communications. It is therefore proposed to improve their shift management by redesigning their organizational system.

Figure 2: Mockup of the new application

3.1 Diagnostics

The initial evaluation was carried out when the staff and the design team first made contact. An analysis was performed starting with an analysis of the back office: We collected data on different parameters (application performance, knowledge times of their schedules, etc.) by means of a heuristic evaluation of the application. We also conducted an interview with the head of the service since he is the one who manages the application for the creation of shifts. The conclusions were that the application does not allow requests and/or changes to be made; that its usability is low and that users do not feel comfortable with it. In addition to the frustration of the head of the service to know that they should change the system, the stress of communicating informally; and finally, the lack of integration with the application of the hospital administration makes it difficult to manage schedules.

This was followed by an analysis of the front office. Data was collected through a staff survey and techniques such as a user persona, an empathy map and a user journey to continue measuring the perception of the organizational system. The main critical points are the result of the poor relationship that the staff has with the application and with communications.

3.2 Innovation

A discussion workshop was held between the staff and the design team with the focus on the fact that the problem stems from the poor usability of the management application and the aim is to redesign it. A new prototype of a shift management application with new functionalities that include the demands of the staff was produced, as shown in Figure 2. The application design program (FIGMA) allows the new approach to be tried and tested with the users.

3.3 Implementation

Before implementing the new application in the organization, a training session was held for the staff. Subsequently, to evaluate the implementation, a survey was used to measure staff satisfaction with the new solution. Requests for changes and, in general, communication through the application was smoother than with the previous one. It was verified through the surveys that there was an improvement in the organization of the service.

REFERENCES


