Management and Access Control in Enterprise Resource Planning in an Organizational Context

José Véstia1  Leonilde Reis2

Keywords:
IT project; ERP; SAP; Agile; SCRUM; Authorizations

Abstract: Organizations are currently dependent on Information and Communication Technologies. In this sense, Enterprise Resource Planning and Systems, Applications and Products in Data Processing have had great organizational relevance over time, given the ability to aggregate and manage the information underlying the business. The underlying objectives of the paper focus on presenting the importance of ticket management within the scope of a service inserted and supported by the Agile methodology, more specifically in the management of access for ERP SAP users within the scope of an IT project. The methodology adopted is based on Agile SCRUM and the practice established in the organization under study. The main results emphasize that, given the complexity of Enterprise Resource Planning and Systems, Applications and Products in Data Processing, organizations are confronted with the dynamics inherent in the management of Information and Communication Technologies projects.

1. INTRODUCTION

Currently, most organizations are dependent on Information Systems (IS) and Information and Communication Technologies (ICT), as a support to the business and thus creating conditions to delineate competitive strategies.

The Enterprise Resource Planning (ERP) can be constituted as value-added solutions in the sense of aggregating information to support the business, contemplating parameterizations given the specificity of each business and the stakeholders involved. Thus, it is considered that the optimization of ticket management activities, arising from requests from users of Enterprise Resource Planning and Systems, Applications and Products in Data Processing within the scope of the IT project, namely the creation of users, assignment of roles and/or transactions, is of particular interest since it is considered that they should be able to carry out their activities in the context of different projects.

The advantage underlying the use of ERP solutions in an organizational context is of particular relevance given that it allows the optimization of simplified business processes, providing standardizations, making them more simplified and improved (Véstia, 2022).

2. ENTERPRISE RESOURCE PLANNING

The ERP can be considered a set of integrated software, which can be used and when successfully implemented, it can manage and integrate business functions within an organization, contributing to greater agility of processes. Generally, ERP is used strategically, which brings a competitive advantage to the organization. This advantage translates into the integration of pro-

1 Polytechnic Institute of Setúbal, Portugal
2 Polytechnic Institute of Setúbal, Portugal
cesses that facilitates the control and evaluation of efficiency in order to increase productivity, reduce errors, and facilitate decision-making and reduce costs. (Anzilago et al., 2017).

Systems, Applications and Products in Data Processing (SAP) was founded in Germany in 1972 and today remains prominent among business management software manufacturers. The first SAP system was dedicated to the financial component and was called Realtime Financials (RF) and later saw its name was changed to SAP R/1. This was the basis for the software launched by SAP since then, today called modules (Ribeiros, 2018). Over the next decade, SAP created new versions of R/3 to improve it and to integrate new features (Valentim et al., 2014). Later, SAP ERP is launched, which still brings some R/3 system applications, but with more functional solutions and where support for non-implemented processes is contemplated (Costa, 2017). In 2015, SAP S/4 Hana was launched, which brings several innovations such as user experience (Fiori) for mobile devices and combines solutions for local storage as well as in the cloud, intending to run its services online for better communication and facilitating processes. The S/4 also brought advantages such as the optimization of processes so requested by companies (Bradford, 2015).

3. AGILE METHODOLOGY AND TICKETS MANAGEMENT

It is considered that the agile methodology is able to respond to changes in markets and technology, without this it is possible that when projects are developed they are already out of date (Waldock, 2015). According to Massari (2016), being agile is all about simple and direct thinking to achieve a goal with maximum efficiency and minimum waste, being agile is to generate continuous, incremental and valuable deliveries. In this sense, it is essential to understand the real needs of the customer, the value of the product and the solution to the problem. For this, it is necessary to define the needs (preliminary phase of understanding), search for solutions (deconstruct already known answers and explore new options) and generate ideas (Vidal, 2017).

Scrum is an Agile methodology, probably the most used in the field of technology, and that came to answer the problems found in the traditional methodology called Cascade. This was sequential and time-consuming that often resulted in a product not wanted by the customer (Sutherland, 2014; Lei et al. 2015). Thus, Scrum is a project management methodology that makes use of iteration and increment in order to quickly manage changes in requirements and also optimize communication between the various stakeholders (Lei et al, 2015).

The practical application in an organizational context is of particular interest in order to systematize processes. The project is based on the Agile Way of Work (WoW), specifically on the Scrum methodology. As a project naturally has a start and end date, its structure is presented in phases with the objective of building a release. This captures and aggregates all relevant information to build and deliver the solution to the customer. The release is fragmented into sprints in which work items are completed and functionality is built and tested.

The SAP system landscape is characterized by a set of systems, a Development system (Dev), a Production system (Prod) and a Quality assurance system (Qas). In turn, each System is segmented into clients, which are basically portions of each system that are used to perform certain operations. Clients present themselves with a 3-digit numeric set. At the beginning of each project, each system comes by default with the client 000, where a copy is made to the number 100 where, for example, development activities are carried out, then another client is created where tests are carried out (the 200 per ex.) (Véstia, 2021).
The concept of Authorization provides a basis for guaranteeing data security, privacy and integrity. It allows SAP to authorize users to access it through assigned roles, thus ensuring the integrity of accesses, in order to avoid Segregation Of Duties (SOD) conflicts. The SAP Authorization concept protects transactions, programs and services in SAP systems from unauthorized access. Based on the concept of authorization, the administrator assigns authorizations to users, which determine what actions they can perform in the SAP system, after logging on to the system and authenticating themselves. In order to successfully implement the authorization strategy, you need a reliable authorization plan. To produce a plan, you must first decide which users can perform which tasks in the SAP system (ABAP, 2022).

Figure 1. SAP S/4 HANA architecture
Adapted: community.sap.com, 2015

Figure 1 allows us to observe the architecture of SAP S/4 Hana. We can verify that the foundation of the architecture is a database where information is stored in tables. The application layer allows access to information that is stored in the Database. The top layer concerns the visual presentation of information, the Presentation Layer, one of the examples being the SAP Graphical User Interface (SAP GUI). The left side of the figure still presents the same architectural logic, but from the perspective of Fiori and how it presents information. The reason is for the user to enjoy an interface that allows having a different “user experience”.

Thus the SAP S/4 Hana architecture configures a new package of business applications designed to run simply in a digital environment and a connected world. Built on the advanced in-memory platform, SAP Hana®, designed based on one of the most modern user experiences, SAP Fiori® (Wagner & Mathaess, 2015).

4. FUTURE RESEARCH DIRECTIONS

It is considered that in the current context of competitiveness of organizations, the use of ERP SAP can constitute an advantage over business strategies. It is also considered that the adoption of an agile methodology for carrying out ICT projects, as it, by its iterative and incremental
nature, creates conditions to quickly manage changes in requirements and facilitates communication between the various stakeholders. In this sense, it was possible to verify that the adoption of the Scrum methodology promotes the elimination of non-conformities, reducing costs associated with rework, which results in the reduction of additional costs for the projects.

From research perspectives, it is considered that there are conditions to delineate strategies in order to make improvements, and, as an example, one of them may involve the improvement of some processes, specifically in the process of requests to create users for SAP systems, or requests for role assignments and/or transactions. It is also considered that the process of requesting users, roles and transactions is too bureaucratic and complex (Véstia, 2022).

5. CONCLUSION

It is concluded that ICT, assumes a growing role of relevance, specifically in support of ERP SAP. Currently, companies depend on ICT, and in this sense, they define as a strategy to support part of their business on SAP by bringing a competitive advantage that translates into the integration of business processes, bringing efficiency and effectiveness converging in increased productivity, and, consequently, in cost reduction, bringing added value to stakeholders.

In this sense, it is advocated that supported by the Agile Scrum methodology, the Authorizations service is presented as a fundamental guarantee of data security, privacy and integrity of access, in order to avoid conflicts.

It is also considered that the optimized ticket management centered on access management within the scope of an IT project, which entails: Ensuring the integrity of accesses, in order to avoid Segregation of Duties conflicts; Creation of users in Systems, Applications and Products in Data Processing and the Hana Database, thus constituting added value given the specificity of the organization’s business.

It is concluded that the combination of the advantages that SAP ERP brings to organizations, with the adoption of Agile methodologies in the pursuit of IT projects, translates into a very positive balance, as they are able to meet the proposed objectives consistently, with minimal errors, reducing costs and offering your customers outputs that match their expectations, creating added value.

REFERENCES


Wagner, F., Mathaess, K. (2015). The Road to SAP S/4HANA Transition and deployment options for SAP S/4HANA. https://www.academia.edu/25032666/The_Road_to_SAP_S_4HANA_Transition_and_deployment_options_for_SAP_S_4HANA_Frank_Wagner_Kim_Mathaess

