

# SAP ByDesign Implementation: The Atlântida/WTA Travel Agency Case Study

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**Abstract** Nowadays, for reasons of effectiveness and efficiency, most organizations require a shift to process-based IT infrastructure. ERP systems provide a solution to competition issues, globalization, business process difficulties and long-term cost reduction. However, the implementation requires a plentiful of resources and commitment and not all firms have been successful in their implementation. This paper tries to understand the context of the challenges that come in ERP implementation, and establish a relationship with the ATL/WTA group case, in order to understand practises and measures to overcome the difficulties of the change process. The results indicate that an appropriate allocation of resources, effective communication, cultural readiness for change, training tailored for users and a strong commitment between the consulting firm and top management, are factors that have a positive impact on ERP implementations. Understanding the effects of the factors and keeping track of the change process is invaluable for managers to be prepared for implementation challenges. Implications and future research directions are also addressed.

**Index Terms**— Change; ERP; ERP Implementation; Success factors; Organization Value

## I. INTRODUCTION

*Change management* through software implementations gains more and more attention, due to the growing importance that it brings to companies, in terms of competitiveness and an opportunity to address new and more effective business processes. While implementing the new IT/IS infrastructure companies have the possibility to rethink the whole business process organization and by doing so they improve and become more competitive and sustainable. Globalization, intense competition and market demands are factors that increase the necessity for excellence and smooth business integration. Enterprises took a turn towards solutions that enables flexibility and effectiveness, both internally and externally. In particular, many firms have implemented systems called Enterprise Resource Planning (ERP) systems, which are designed to integrate and optimize various business processes.

Atlântida/World Travel Agency group plays an important role in travel management between Angola, Portugal and

the United States, thus requiring integration and clean information exchange between its different hubs. The present work arises in this context, as Atlântida/WTA understand that SAP will present answers for the challenges faced in a diverse market, bringing resolution to complexity and up-to-date tools for optimizing business processes. Given the financial commitment it requires and the benefits it can offer if implemented successfully, it is imperative to understand the requirements for a successful implementation. On the other hand, ERP implementations have a reputation for providing faulty results, mainly due to the users expectations and the fact they do not possess the necessary know-how to understand what it stands for and how it works. The main objective of the present work is to follow the implementation steps and analyze how it will change the business processes, and most of all understand the challenges it may face, and the actions to implement, in order to obtain a successful employment. The ATL/WTA group contracted an IT consulting firm to assist and work in partnership to implement the software. This relation will be addressed in order to understand how this dynamic affects

the project itself. A survey methodology was used to retrieve relevant information on the users, as an interview was performed on the IT consulting firm to understand the different points of view. Later on, the results of the methodology will be presented in order to understand how the solution will impact the business processes and how effective change management practices can facilitate the implementation process and thus arrive to the final conclusions. The recommendations and limitations of the present dissertation work will be taken into account.

The current work refers to the implementation of SAP *ByDesign* solution, which is a recent cloud-based solution, ideal for international information exchange. SAP is a world leader in enterprise applications for software integration modules, which extend through most of the companies dimensions, such as Finance, Human Resources, Project Management, Supplier Relationship, Sales, Customer Relationship, Services and Sustainability. It provides solutions adapted to the companies necessities through applications, implementing know-how and best practices to processes.

The main reason that lead to the internal ERP change in the group was the poor information exchange between two ERP that were used simultaneously and therefore lead to little internal software integration and unclear information like double billings. The implementation arises as a solution that would clear the existing problems, review others, create some and provide an IT/IS infrastructure for many years to come. The research of this work tries to understand the actions to take, in order to obtain a successful implementation and also the best way to manage a partnership with a consulting firm.

## 2. LITERATURE REVIEW

Change management and its different approaches represent a field of study within organizations that requires attention and reflexing. Some studies show that in some organizations, two out of three change initiatives do not obtain the desired success. [1] Given the necessary financial investment required for an ERP transition, and the benefits which it brings, it is fundamental to assure a successful transition. [2] The strategies to ensure this objective are the main focus of Kotter (2012), in which he states that strong leadership is the main critical factor for successful transformations. The main phases of the transition process emphasized are the creation of a strong sense of urgency; align with a strategic vision and a coalition guide. Whilst the change being incorporated in the organizational culture, communicating the vision and creating favorable conditions to the change process. [3]

On the other hand, Sirkinn, Perry Keenan, & Jackson, (2005) propose a model that focuses on four factors: Duration; Integrity; Compromise and Effort (DICE). This

model focuses on the foundations for the change, throughout a continuous attendance of the four factors, in order to identify critical areas and apply corrective measures to assure a successful implementation. [1]

Grover (1999) was one important author to address and develop the *Process Change Management* (PCM) area of expertise, divided into five groups [4]:

- Change management
- Project management
- Continuous Process management
- Strategic Planning
- Technology management

Clark & Garside (1997) assisted in the breakdown of the change management process, which represents the different human interactions with the transition activities. The author emphasizes the necessity for compromise, attention to the people, effective communications, interactions and well-designed methodology and tools [5]. Bingi (1999), states that Project management consists in the development and constitution of a strong oriented team, with a clear definition of roles and responsibilities, scope definition, cost control and an effective relationship management with the external entities. [6] Continuous Process management is one of the most challenging factor in the transition, in which the processes and business model are reformulated in order to facilitate the integration. [7] Grover (1999) affirms that an adequate strategic planning must incorporate objectives, general principals, practices and scope. The technology management consists in the software selection, technical analysis and physical installation. [4] Motwani, Mirchandi, Madal, & Gunasekaran, (2002) expanded the studies initiated by Grover and developed the Business Process Management concept, defined as the organizational initiative to redesign processes in order to obtain relevant improvements in the critical company processes, having in mind the company's environment and organizational capacity to manage change. [8]

Enterprise Resource Planning solutions, achieved an exponential growth, being one of the most lucrative business in the software markets. The implementation can lead to an efficiency upgrade, as facilitated access to relevant information important for strategic decisions. However, it is an extensive and complex process, in which a great number of studies document failure cases, generated by a negative impact on business processes. [9] Botta-Genoulaz, Millet, & Grabot, (2005) performed a study that states that the ERP implementation projects should be tackled by two different fronts, one as a strategic concept in which encompasses all the business strands and on the other hand, a simple concept of implementation an information system, tracking its success and cost as key-factors. [10]

C.Ng et al, (2002) consider the ERP system, after a successful implementation, to be the business intelligence core of an organization. The author proposes five categories

in which are described the benefits of the implementation on the business processes:

- Competitive advantage;
- Globalization;
- Integration;
- Business practices;
- Cost reduction;

ERP products are considered to be strategic socio-technological products that coordinate the full extent of the internal operations. [11].

Hong & Kim state that 75% of ERP implementation projects do not obtain the expected success. Taking this into account, the authors developed a study that defines the concept the organizational adequacy and the impact of the implementation. Thus, concluding that the factors that most influence success are the adequacy and the contingencies of the implementation. [12] On the other hand, A.Al-Mashari, (2001) work focuses on the dimension of the organizational changes generated by the implementation, and underlines the risks of joining both technical and business processes in a single platform. [13] To this end, Jaideep Motwani R. S et al.,(2005) after analyzing the existing information, proposes an implementation guideline, in which are illustrated the three critical phases, as shown in figure 1. [2]



**Figure 1- Implementation framework [2]**

The model describes the first phase of the implementation as a clarification of the strategic objectives, laying the foundations, guidelines and calendar for all the implementation steps. After completion of the physical implementation and the concretization of the steps defined in the first phase, comes the third phase, which consist in the audit and documentation of the process, in order to retrieve important lessons and verify if the proposed objectives were accomplished.

Hislop (2002) states that consultants are identified as reviewers of knowledge. To this extent, it is the consulting firm mission to compromise totally to the success of the implementation and the best way possible to make it viable. [14] Hung (2012) studies have indicated that both, the consulting group experience and its resources on the field have a positive effect, in terms of knowledge sharing. [15]

Due to complexity issues, it is imperative that organizations develop a risk assessment plan, in order to protect the organization from the outcome to be a failed implementation. Wong, Chaun, Scarbrough, & Davison, (2005) investigate the main reasons why implementations fail, highlighting the following:

- Excessive workload;
- Excessive customization;
- Poor sharing of know-how;

- Scope and nature of ERP implementation not clear;
- Unrealistic expectations and duration of implementation;
- Resistance to change;
- Operational and hardware costs;
- Lack of support from top management;

Nowadays, as effective business processes become more complex, the financial resources required and the management required to implement such practices become scarcer.

Kale (2000), states that *Business Process Reengineering* is the change and redesign of the business processes in order to achieve performance measures upgrades, such as cost, quality, service and speed. [14] A successful implementation requires a balance between technological know-how and local knowledge on the business areas of the organization. [15] To this extent, it can be considered that an implementation consists in the process of applying local specific knowledge to the technological know-how while adapting and adjusting in order to obtain success.

To this end, the SAP ByDesign solution chosen by ATL/WTA group offers a cloud-based application, in which the main advantages are the cost reduction, simpler implementation in comparison with other physical SAP solutions, and it has only one requirement to function, which is an operational internet connection.

### 3. SAP METHODOLOGY

The implementation process of SAP ByDesign consists in the steps described in the following figure:



**Figure 2 - SAP implementation steps**

During the main activities there are four critical group activities that must take place on a constant level, such as project management throughout the whole implementation; key-user capacitation through various initiatives to incite a change spirit, underlining the importance of the change process and its benefits; data migration through behavior and physical information transfer and input; change management and user training, to reduce the resistance to change levels.

The main activities consist in the preparation phase, which consists in the verification of the scope of the implementation, followed by an acceptance of the solution in the *realize* phase, followed by an integration of data and development of the application, always verifying the validity of the information and concluding with the *Launch* phase or *Go-live* when the implementation is terminated.

#### 4. CONSULTING FIRM RELATIONSHIP

Based in the SAP methodology, the ATL/WTA group in partnership with the consulting company created an organizational model described in figure 3.

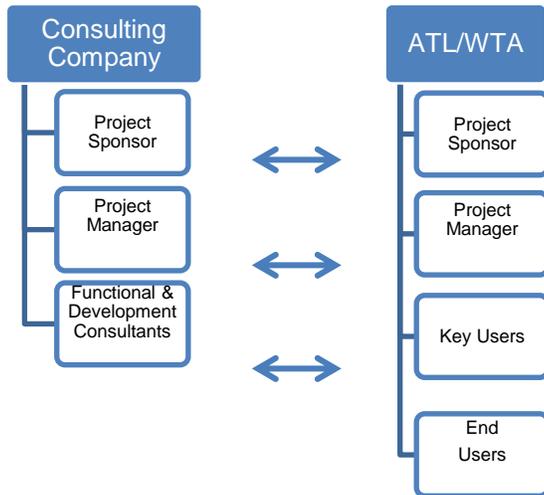


Figure 3 - Organizational model

The model consists in the clarification of relevant roles and underlines the importance of communication among the major players. The project sponsor has the responsibility of decision making and project leadership, as well as coordinating and motivating key users. The role of leading the project is given to the project managers, also having responsibilities regarding the key users. All the interactions and the ranking of the functional chain of communication and task delegation are according to figure 3.

Pozzebon (2012) proposes three types of client-consulting relationship, as described in Table 1. [17]

Table 1 – Client-consulting relationships [17]

Type	Roles (dimensions of knowledge)	Control (dimension of influence)
<b>Dependency</b>	Consultants are experts and customers are information providers	Project led by consultants
<b>Cooperation</b>	Customer and consultants are both experts and complement.	Project led by consultants and clients.
<b>Autonomy</b>	Customers have an active role and consultants have a role in supporting decisions.	Project directed by customers. Consultants are girded the contractual specifications.

This specific area is not commonly addressed in the majority of the ERP studies, which focus more on critical

success factors within the client-side. However, the relationship and the foundations in which are built are important to the outcome of the implementation.

#### 4. METHODOLOGY PROPOSAL AND APPLICATION

The case study of ATL/WTA group was chosen in order to identify the factors that facilitate and inhibit the success of the ERP implementation. Within the study of the company background was employed a survey as the main methodology for data collection supported by an interview with the consulting company. The surveys retrieved data regarding the level of satisfaction, agreement and other relevant information, in accordance with validation rules described in figure 4.



Figure 4 - Logical sequence for data collection [18]

After incorporating the theory and literature review, the design phase consisted in defining the focus of the questions, in order to extract the best information possible. The structure of the survey consisted in the following steps:

**Implementation status:** focused on obtained information on the actual status of the implementation, as expectations and satisfaction degree.

**Socio-professional description:** Assess information regarding demographics, adequacy of SAP modules and habilitations.

**Training in SAP ByDesign:** Evaluates and defines the training duration, assess the degree of importance and relevance given by the users to the training process and rates the communication skills of the consulting team.

**System transition process:** Targets potential flaws and difficulties that might arise during the implementation, as well as the support given in case of problems. Moreover, it addresses the communication of the reasons for the implementation and its feedback.

**Work performance fluctuations:** Retrieves information regarding the practical use of the system, relevance to the organization, acceptance degree and positive/negative aspects underlined by the users.

Together with the survey, an interview was conducted on the consulting firm side, in order to complement information retrieved in the previous methodology. The interview follows a logical sequence, with the following categories:

- Pre-implementation studies.
- The degree of customization to the implementation.

- Complexity in international projects
- Data Migration
- Scope Control
- Test Phase
- The perfect client for consultants
- Allocation of resources, change management and education as success factors.
- The value of the methodology.
- Mission of consultants in projects.

The research methods chosen have some limitations, in which the responses can be dislocated in time, and have the limitation of focusing solely on one travel-agency company.

## 5. RESULTS AND DISCUSSION

An overall implementation timetable was defined, to provide guidelines on tasks and milestones required, and its duration. The training process, the data migration, and the pre-implementation took longer than expected therefore. The results and its discussion will be grouped in similarity with the categories given in the survey. The findings from the interview will serve to enrich the data retrieve in each category.

### 5.1. IMPLEMENTATION STATUS

The majority of the inquiries disagreed with the premise that SAP implementation brings professional added value, but on the long run they believe in the importance it brings to the group as a whole.

The levels of satisfaction with the implementation process were fairly negative mainly due to training and communication reasons. The consulting firm has also stated that the main challenge in the implementation process is the contact with the final users. Taking both the input from the consulting firm and the users it can be stated that the degree of attention, communication and commitment between the users and the consulting firm is important for the success of the change process.

### 5.2. TRAINING IN SAP BYDESIGN

The training program and the tailoring process for the ERP implementation were analyzed and even taking into account that the greater majority of the users were having the first contact with SAP software, the results were widely negative. It was considered by inquires that the training did not suit neither the responsibilities nor the functions. Moreover, one of the most consensual responses was that the training was insufficient in duration.

The consulting firm, as stated in the interview recognizes the difficulty in allocating resources as one of the biggest challenges. Altogether, the importance of user tailored training solutions and the creation of a sense of urgency in the change process are some examples of solutions that can influence the outcome and the satisfaction of the implementation.

### 5.3. SYSTEM TRANSITION PROCESS

It is important first to look at the main technical difficulties encountered, which was the transfer of information between previous software and SAP, also the lack of relevant documentation and the lack of knowledge on business processes. Altogether, this cause can be associated to problems in the pre-implementation stage, whereas the consultant firm role is to provide the necessary documentation required and other resources. In parallel, the group must facilitate the widespread access to this information, creating ways for an effective internal communication.

### 5.4. WORK PERFORMANCE FLUCTUATIONS

The perception of the inquiries regarding increase in work performance and productivity were widely negative, on complexity issues and the short-term access to information. For a better understanding the survey aimed at the complexity issues commonly described in the reviewed literature. This issue is one of the most scrutinized challenges in the implementation, and being a technical issue, it requires an additional effort by the project team, in order to overcome.

Concerning the short-term information access the importance of the conclusions are relative, on the long run the vast majority of the inquiries agree that the SAP implementation is important to the ATL/WTA group.

### 5.5. CASE STUDY ANALYSIS

To complete the findings in this paper, a case study analysis was conducted, in which it was possible to retrieve relevant information for future investigations. On the Jon Beard (2004) [19] case study, the competitive advantage issue was addressed and its relation to ERP implementation. It concluded that one cannot be obtain through the other, without disregarding the importance and impact that the ERP has on any company.

The importance of business process reengineering is scrutinized on the case of Liang Zhang (2003) [20], regarding implementations in China, and the case of Yahaya Yusuf (2004) [20]. Their findings indicated that through adaptation of the business processes to the software capacities, the companies can achieve a higher success rate. Also, the issues of a stable cultural organization, top management support and change availability are referred as success factors. These findings are reinforced by Jaideep Motwani (2002) [8], which state that leadership and cultural acceptance are the most important success factors.

### 5.5. LESSONS LEARNED BY ERP IMPLEMENTATION

Based on the lessons learned from the literature and case studies, we created Table 2 to consider the factors to keep track on a regular basis, in order to achieve a successful implementation. The chart takes into account the ATL/WTA results and considerations, and proposes measures for future reference.

**Table 2- Recommendations**

Factors	Recommendations
Scope of implementation	Business process oriented (improvement)
Stimuli	Proactive
Adaptation	Complexity must be addressed accordingly; Timing and schedule should be strict;
Change agents	Top management and consulting firm
Communication	Critical factor for the success of the implementation; widespread and its principles well defined;
Training	Tailored to the users;
External agents relationship	Honest; straightforward and complementary;
Top management	Supportive and change enabling;
User's acceptance	Change spirit must be incited; Wider access to information required;
Change management	Structural methods and schedule determined at pre-implementation; Schedule must be strict and adaptable; Relies on communication;
Change support	Users feel the support from management in case of difficulties
Business process reengineering	Simplification of processes through the standardization of the business;

The ATL/WTA group encountered several challenges in the specific factors listed in table 2. While most were correctly addressed, the most relevant had some problems, such as the internal and external communication, the training process and the schedule. In order to achieve success in ERP implementation, a company as to be prepared to adapt to the challenges to come and improve its business processes for a smother transition.

## 6. CONCLUSION

This research attempted to answer the following two questions. First, "What are the implications of an ERP implementation?" Second, "What are the change management practices for a successful ERP implementation?" Through survey data, interview information and a case study analysis it was determined that the an appropriate allocation of resources, effective communication, cultural readiness for change, training tailored for users and a strong commitment between the consulting firm and top management, are the factors that could have led the group to a less troubled implementation. Since, the degree of success can only be measured several years after the implementation and its conclusion came in August, 2015, these are issues that should be addressed on the early stages but can still be addresses throughout the implementation process and when necessary.

Second, "How important is the relationship between the client management and consulting managers?" The interview was conducted to complement the survey, but also to understand the perspective of the consulting firm and their capacity to respond to the challenges, that in most cases, come during an implementation process. While having access to a great database of previous implementation and having a background guides to follow, this study depicts that an insufficient communication and lack of information sharing, as an incorrect allocation of resources can lead to a troublesome implementation.

The results of this study should assist academics and managers. The insights, along with the lessons learned should provide practitioners relevant information to better prepare implementations and to review implementation processes taking place as of this moment.

ERP implementations offer potential areas of research in theory building, due to required resources and level of commitment. However, it is necessary to diversify the case study analysis since single company case studies can lead to incoherent finding. It is also important, to generalize the findings on SAP implementations to other ERP systems, due to vast majority of the case studies being on SAP.

Lastly, we recommend more research on the relationships between the stakeholders, and how their roles affect ERP implementation success.

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