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The impact of management training on ERP consultancy services

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“Believe you can, and you are halfway there”

Theodore Roosevelt

Abstract

The increase of IT market competitiveness and volatility made real-time data control a critical success factor for any enterprise. ERP systems are software that enable a company's functions and business processes to be managed with facilitated, continuous, and instantaneous communication and flow of information and, thus, its adoption is rising. Regardless of the growing adoption of ERP systems, the number of unsuccessful ERP implementations has been a source of attention for researchers. Thus, numerous scholars have been drawn to explore critical determinants for such an ERP deployment failure rate as well as ERP implementation CSF. A big gap in this research area regards the solutions for the identified problems of ERP application. Hence, this paper seeks to investigate a solution to improve ERP consultancy service and enhance its implementation success rate. More specifically, it tries to evaluate the impact of a management training on ERP consultancy services.

This project was carried out using a case study methodology in a SAP solution provider with a qualitative research approach. Three SAP consultants were subject to management training designed by the company's manager and Porto Business School professors. Data were gathered during the 12 weeks of training through an unstructured non-participant observation as well through 3 semi-structured interviews after 2 months of the completion of the training. These data collection methods intended to understand the impact that the management training had on the consultants' value offer.

The case study results showed that Consteltech consultants saw an improvement in the quality of their service after receiving management training. Some of the main ERP implementation problems identified in the literature research were the ones pointed by the interviewees as primary issues mitigated by the management training. Thus, this report concluded that a management training can enhance the quality of ERP consultants' services.

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List of abbreviations

ERP – Enterprise Resource Planning

IT – Information Technology

IS – Information Systems

CSF – Critical Success Factors

SME – Small and Medium Enterprise

M&A – Merger and Acquisition

B2B – Business to Business

1 Introduction

1.1 Project Background

Enterprise resource planning (ERP) systems are defined by many as an integrated software package that enables a company to control all its functions and business processes with a facilitated flow of information (Gable et al., n.d.; Hanif et al., 2014; Klaus et al., 2000; Salmeron & Lopez, 2010; Sammon & Adam, 2010). Information Technology (IT) in general has suffered a big market growth and took with it both corporate globalization and competitiveness. In fact, due to today's continuous growth of the business environment and quality of ERP systems, its use by organizations has been increasing in recent years (Chou & Hong, 2013). With the demand of the market, ERPs have been evolving to a more sophisticated system. Due to this increase in ERPs implementation benefits, organizations have been adopting them more and more at a point where the global ERP software market was valued at 32 billion dollars in 2017 (Kok & Teo, 2017). In the ERP industry there are 4 major products, SAP, Oracle, Microsoft Dynamics 365, and Sage with SAP leading the way in size, quality, innovation, and market share (Soellner, 2021).

Despite the increasing use of ERP systems and its benefits, the percentage of failed ERP implementation has been a concern for several researchers (Ravasan & Mansouri, 2014). In 2015, in the Panorama Consulting Group's annual ERP report (York & Francisco, 2015), was found that approximately 41% of the organizations in that survey got 50% or less of the benefits expected in the beginning of the ERP implementation. Due to this, several researchers developed studies mainly through case studies using interviews and surveys that identified as key factors for ERP systems implementation failure the consultants in terms of having improper training, poor communication skills due to language differences, and lack of understanding of business processes and management practices (Botta-Genoulaz & Millet, 2006; Motwani et al., 2005). In parallel, the biggest topic around ERP services regards the key success factors for its implementation. Chou & Hong (2013), defend that the increase in the complexity of the business environment, has made necessary for ERP systems to "handle today's dynamic company environment". Thus, many researchers have been attracted to investigate the Critical Success Factors (CSF) of ERPs implementation.

1.2 Research Objective

A big gap in this area is the design of solutions that address the identified problems. Few articles conduct a concrete analysis on how to solve the studied main mistakes in the implementation of ERP solutions but only rare suggestions were made on where to act. This dissertation aims to evaluate the impact of a management training program on the quality of the ERP implementation service, thus, it seeks to answer the following research question:

- Can a management training on ERP consultants improve their value offered to clients?

1.3 Case Study at Consteltech

Consteltech, founded in 2020, provides SAP implementation, consulting, and maintenance services. It has a large and expanding workforce of professional SAP consultants that are committed to delivering a high-value SAP project service. Consteltech, as a SAP solutions supplier, has first-hand knowledge of the major ERP installation issues raised in the literature review. The possibility of delivering management training to SAP consultants was discussed in order to modify the way its SAP consultants give services to customers. The case study then comprises of delivering management training to Consteltech consultants and measuring the impact on the quality of services supplied by these consultants on the projects on which they are working. Thus, by employing this case study as a proof of concept for all ERPs, this dissertation tries to address the research issue stated.

1.4 Dissertation Outline

The remainder of the paper is structured as follows. Firstly, a literature review and contextualization of several concepts related to the research topic, ERPs. Then, it follows a characterization of the problem in hand, describing the company where the case study was undertaken and, explaining the main motivation for this project as well its contribution for the research area. Followed by the literature-based justification and description of the used methodology in the development of the dissertation. Then, the presentation of results obtained, its analysis, and finally the conclusion and directions for future research.

2 Literature Review

In this section, you can find the contextualization of the paper in hand. It approaches and explains topics in a drill-down method. Starting with some definitions of broad concepts like IT and ERP, moving on to the findings of the problems and CSF for ERPs implementation, which serve as the basis and inspiration for this thesis, and lastly outlining more about ERP consultancy services and SAP software to further contextualize the development of the project.

2.1 ERP Concept Definition and Contextualization

Enterprise Resource Planning (ERP) is a system embedded in Information Technology (IT) to serve business needs regarding management. As many researchers refer to them, they are software packages that integrate a complete information flow through all the processes in a business in a single interface (Salmeron & Lopez, 2010). These systems are composed of various modules corresponding to management areas inside an organization. An ERP system is a standard management software waiting to be customized for each company. The customization and support required for the implementation of these systems in the company are what are called ERP consultancy services (Botta-Genoulaz & Millet, 2006; Klaus et al., 2000).

With the never-stopping business environment, companies urged to integrate all business functions into one system (Vandaie, 2008). At the same time as organizations are under pressure to outsource operations that are not part of their value chain, ERP systems arose to investigate the demands of integrated systems (Alexandre De Souza & Zwicker, n.d.). ERP systems are seen as very helpful solutions and as an instrument for managers in the sense that they can, with a single application, easily find and manage information across all business functions like production, sales, finance, human resources, logistics and serve all the different departments' needs by helping these departments to share data and to communicate with each other (Klaus et al., 2000; Salmeron & Lopez, 2010; Vandaie, 2008). ERP advantages, according to Weli (2019), begin with IT infrastructure and progress to operational, organizational, and lastly managerial benefits. This contradicts the argument made by Spathis & Ananiadis (2005) that managerial benefits come first, followed by organizational and IT infrastructure.

The adoption of an ERP by a company represents big investment not only capital-wise but also structural-wise. Thus, the importance of a good implementation rises as does the importance of the alignment of these technologies with business objectives and culture (Napier et al., 2009).

With time, technology has seen its importance grow exponentially. Many innovations led to the improvement of various systems. Since the '90s, IT and particularly ERPs have been a target of great evolution and change (Chou & Hong, 2013). ERP programs' increased popularity can be supported by the ongoing trend of globalization, Mergers and Acquisitions (M&A), and short product life cycles (Bingi et al., 1999). With this continuous innovation and quality improvement, the demand for this type of technology has rapidly increased, and many organizations are implementing ERP systems (Kok & Teo, 2017). A critical success factor for any global enterprise, especially with the increase in the market's competitiveness and instability, is the control and management of real-time data. ERP systems allow companies to integrate all resources, which enables continuous and instantaneous communication and flow of information (Bingi et al., 1999).

In 2017, the global ERP market worth was of 32 billion dollars. Also, a recent analysis on this industry showed an expected overall revenue for 2021 of 95 billion dollars (Shanhong Liu,

2021). With the parallel increase of the complexity of ERP systems it is defended that the evaluation of the capabilities of those involved are crucial for success. In the ERP industry there are 4 major products, SAP, Oracle, Microsoft Dynamics 365, and Sage. SAP is leading the way in size, quality, innovation, and market share (Soellner, 2021).

2.2 ERP implementation problems and factors

Despite the increasing use of ERP systems and its benefits, the percentage of failed ERP implementation has been a concern for several researchers (Zare Ravasan & Mansouri, 2014), as high rates of failure in the implementation have been reported: “three quarters of the ERP projects are considered failures and many ERP projects ended catastrophically” (Bingi et al., 1999). It is important to establish that a failed implementation is considered by researchers in the referenced articles as projects in which objectives weren't fully fulfilled, or budget was surpassed, or time spectrum wasn't realized, or a blend of these situations.

In the Panorama Consulting's annual ERP report of 2015, it was stated, based on a survey, that “that approximately 41% of the participating organizations have received 50% or less of the expected benefits and process improvements from their ERP implementations” (York & Francisco, 2015). More surveys, from IT Cortex and Robbins Giooa's consulting company, reported severe problems in the implementation of the ERPs, where 50% of the implementations failed to accomplish their business objectives, and costs turned out to be 20% higher than expected. Also, it was stated that 90% of ERP implementations surpass both deadlines and budget, 67% don't achieve defined corporate goals, and 40% are considered total failures (Huang et al., 2004). ERP projects' budget, exceeds, on average 178% and surpasses deadlines by 230% (Soltani et al., 2013). These failed implementations, not only make companies lose the invested money but also a big part of their business in the sense that the changes that an ERP implementation forces organisations to make are very complicated to undo (Bingi et al., 1999).

Due to this, several researchers developed studies to investigate and determine the main problems causing this impressive failure rate in ERP implementations.

Across papers, human related problems were identified as one of the major factors. Furthermore, communication through the use of a different language between company receiving the ERP and the consultancy enterprise was also recognized as a crucial cause for failure (Botta-Genoulaz & Millet, 2006).

In deeper analysis of these factors, it was concluded that the genesis of the problem resides in the management, business processes, and organizational knowledge from the consultant's behalf, more concretely, the lack of it (Botta-Genoulaz & Millet, 2006; Voss et al., 2002). There has been such a deep lack of competent ERP consultants that it won't be easy to fill it so soon (Bingi et al., 1999). Being an ERP system a management instrument to be used by managers in their daily job, it is clear that the consultants providing support in the implementation and use of those systems must, in some proportion, understand the manager work. However, ERP consultants come from a big variety of areas, and most don't possess the enough knowledge in the management field, demonstrating difficulty on understanding organizational, and business terms and processes (Voss et al., 2002). Some researchers blame this factor on the improper training provided by ERP companies where the only focus is the technical side of the system (Motwani et al., 2005).

2.3 Critical Success Factors of ERP implementation

In parallel to the research of the main problems of ERP implementation services, authors conducted many studies to understand what are, in fact, the factors that most impact and contribute for a successful ERP implementation. This high focus on exploring CSF of ERP implementation is due to the high investment required in these projects as well as its high failure rate. Also, the potential gains a company can receive with an ERP, makes the understanding of the factors that lead to a successful implementation relevant (Soltani et al., 2013). Many similarities between the problems identified and the CSF were found and considered the reason for such high failure rate in ERP implementation.

Studies revealed the importance and influence of the consultancy team on the ERP implementation success and satisfaction (Abu-Shanab et al., 2015). One aspect found to considerably affect an ERP implementation is the client and consultant relationship (Basu & Lederer, n.d.). Others also concluded the critical role of consultants in shaping the effectiveness of communication between the two parts (Jaeger et al., 2020). In order to achieve the best system configuration that best fulfils client's requirements, an effective communication between clients and consultants is believed to be of the most importance (Soltani et al., 2013).

Communication is identified by most as one of the CSF, Huang et al. (2004) got to the conclusion that cooperation in the project, as well as effective communication, are requirements for a successful ERP implementation in the sense that it reduces dealignment and misunderstanding. Paradoxically, in order to implement software that enables the flow of information and eases communication, both ERP vendors and clients must have effective internal communication and knowledge sharing (Vandaie, 2008). When configuring and adapting the ERP system to the client's needs and characteristics, in order to ensure a fulfillment of those requirements, communication is considered crucial in that role (al Rabeay & Sherif, 2019). As, again, communication skills are considered essential in ERP implementation, Mahdavian & Mostajeran (2013) better describe this skill by splitting it into the ability to communicate effectively, constructive communication, and management communication. To facilitate communication, it is defended the importance of acquiring external expertise and generating a "common language" (Shaul & Tauber, 2013).

This "common language" can be achieved by instilling management, business processes, and organizational knowledge in consultants. The competence and domain knowledge of consultants are characteristics identified as critical in order to guarantee success in the implementation of ERP systems (Abu-Shanab et al., 2015). Comparably, it is defended that ERP consultants need to acquire knowledge in different business areas, so they are capable of better customizing the system to the client's requirements and configure it optimally (Vandaie, 2008). Business planning skills, more specifically, to better understand the business and the employment of IT solutions to business problems, participating in business strategy, applying the IT instruments, and enhancing the value offered, are considered critical (Wei, 2008). Thus, the development of such needed and vital skills by organizations was considered a must to perform IT projects efficaciously (Amalnik & Ravasan, 2018). Moreover, other must-have skills considered by other authors are in the fields of business processes, business functions, business environment, business problems, accounting management, and management control (Mahdavian & Mostajeran, 2013). The importance of the comprehension of the management

field is understood through the genesis of this ERP systems in the way that IT systems are made to serve the management world (Mohammadi et al., 2015).

2.4 ERP consultancy services

ERPs, as shown before, are a high complexity system that integrates many areas, processes, and business functions across a company and, thus, ERP consultants perform a key role on the implementation of these software and its customization. A consultancy firm is designed to be a third party that provides expertise to assist with ERP implementation (Hou, 2014).

ERP consultants influence an ERP implementation process and outcome (Koh et al., 2009) by providing diverse services such as performing information requirements analysis, recommending suitable solutions to the clients, aligning organizational procedures with the system's modules, assisting in system configuration, offering specific knowledge of the software, mobilizing in-house resources and skills, and user training (Shaul & Tauber, 2013). Consultants are also required to give knowledge in system design, project planning, and managerial instructions on business reengineering during the ERP installation process (Hou, 2014). Consultants should be able to exhibit mastery of technical communication skills, strong language abilities, technological knowledge, and business analytical capabilities in addition to process awareness (AlBar & Hoque, 2019). Consultants will assist firms in examining their company culture and workers' reaction to transition, much as they did during the adoption of a change management plan (Hou, 2014).

Despite the fact that ERP provides organizations with faster business processes and an integrated enterprise-wide transaction framework, both parties must grasp the issues that arise from differing perspectives. ERP system implementation is more than simply hardware and software; it necessitates the consideration of several elements. It is critical to understand that the success of ERP deployment is dependent on the efforts of both parties (Hou, 2014).

2.5 SAP Software

Former IBM employees, Claus Wellenreuther, Dietman Hopp, Hans-Werner Hector, Hasso Plattner and Klaus Tschira, wanted to create an enterprise software capable of integrating all business processes of a company and processing data in real time and, thus, developed SAP, an ERP software. Through the years SAP took many developments and reshapes to get where it is today, a market leader in business software, with almost half a million customers mostly Small and Medium Enterprises (SMEs) in more than 180 countries (SAP, n.d.). SAP, with headquarters in Germany, has been operating for more than 40 years and maintained its market leadership position in 2013 (Columbus, 2014).

In 1973, SAP created its first financial accounting module, SAP R/ 1. SAP R/1 enabled the use of centralized data storage and improved data preservation. SAP R/2, which offered integrated material management and production planning, was released three years later. SAP created and published multiple versions of R/3 between 1992 and 1995. SAP R/3 (SAP ERP) is an integrated collection of modules that, in principle, support all parts of a business, such as sales, human resource management, accounting, finance, manufacturing, material management, and logistics, and allows users to apply a wide variety of integrated business processes (Antero et al., 2013; Johnson et al., n.d.). SAP S/4 HANA Cloud Platform is a software as a service (SaaS)

solution for businesses of all sizes. It is critical to create cloud-based apps since cloud ERP is expected to surpass traditional ERP in the near future (Chen et al., 2015).

3 Problem Characterization

The company where the case study is being undertaken is presented in the next section. The main motivation and starting point for this project, as well as the key objectives and the contribution of this dissertation, are drawn.

3.1 Consteltech

This project's development process is in-house case study at Consteltech – Innovation and Consulting Services.

Consteltech – Innovation and Consulting Services, was created by the APR Group, a 30 year old company, focused on the IT sector and in the Business to Business (B2B) market. APR, guided by its mission of fostering the diffusion and the correct use of new technologies, operates in the areas of Business Solutions, Systems, and Business Apps (APR, n.d.).

Founded in 2020, Consteltech provides implementation, consultancy, and support services on SAP solutions. It counts with a vast and growing team of experienced SAP consultants determined to deliver a high value offer of SAP projects highlighting the areas of SAP Implementation Consultancy Projects, SAP Maintenance Consultancy Projects, SAP Migration Strategy Advisory Projects, and SAP ABAP and Fiori Development Consultancy Projects (Consteltech, n.d.).

3.2 Problem

As found in the literature research, the ERP consultants' bad training, poor communication skills (due to language barriers), and misconceptions of business procedures and management techniques were all noted as major contributors to the failure of ERP system implementations (Botta-Genoulaz & Millet, 2006; Motwani et al., 2005). The creation of solutions that solve the noted issues is a significant area of need in the sense that only very few papers offer actual contributions to how to correct the major errors that have been identified in the implementation of ERP solutions.

Being a SAP solutions provider, Consteltech can observe these issues first hand in the interactions between its clients and consultants. The company's manager, with several years of experience in SAP projects and a deep understanding of a SAP project's needs realized the importance of SAP consultants having a management knowhow. Wanting to change the way SAP consultants provide their services to clients, the opportunity of providing a management training to the consultants raised.

3.3 Practical Objectives and Contribution

The management training provided to Consteltech consultants (see Table 1) and its effect on the quality of services provided by these consultants on the projects they are working on are the focus of the analysis created for this thesis.

Thus, this dissertation aims to contribute for the evaluation of the impact of a management training program in the quality of the SAP consultancy service provided by the consultants as a proof of concept for all ERPs.

Table 1 - Management Training Themes

#	Themes
1.	Planning and Management Control
2.	Budgeting
3.	Operational and Strategic Control
4.	Management Control System Tools
5.	Information Systems for Management Control
6.	Accounting and Information Technologies
7.	Accounting Information Systems and Business Process
8.	Accounting Modelling and Financial Statements
9.	Business Processes Overview
10.	Sales Processes
11.	Accounting and Business Software
12.	Internal Control System

4 Methodology

This chapter provides with the justification for the technique chosen to conduct the analysis for this dissertation by analysing the used methodologies in related papers found in the literature research. Also, the case study methodology is explained according to a few papers found and finally it is described the specifics of the research method utilised in the project in hand.

4.1 Methodology contextualization

As it was mentioned in the literature research, most of the papers that regard ERP systems use a case research methodology. The IS area of research was proven as particularly compatible with a case study methodology in the sense that has been very useful in identifying correlations between factors and the success or failure of an information system (Benbasat et al., 1987). As shown, those articles aimed to find critical factors both for success and failure of the implementation of the ERP systems.

While this thesis' aim slightly diverges from those articles, the need to prove a correlation between the management knowhow to a better provided service from ERP consultants justify the use of this methodology. Also, by enabling the study of the subject in a real scenario and its natural setting, case study research contributes to the development of a relevant and meaningful theory. Additionally, qualitative research serves in the development of theories, has an evaluative characteristic to it, and helps to examine correlations (Voss et al., 2002).

A guideline broken down into stages by Rashid et al. (2019) attempted to summarize the case study research procedure. There are four phases to doing a case study, according to these authors, who based their research on earlier studies performed by eminent authors. These phases include the foundation phase, the pre-field phase, the field phase, and finally the reporting phase.

Foundation Phase

The definition of the inquiry approach that will be utilized is included in the foundation phase, and there are two popular methods: the quantitative and the qualitative. Typically, the paradigm will also influence this decision, as the positivist researcher is more likely to choose a quantitative research method and the interpretative researcher is more likely to choose a qualitative research approach to gain a deeper understanding of the many views (Rashid et al., 2019). In qualitative research, the data collection is based on the experiences, values, and behaviours of individuals who are interviewed, which allows for a greater relation with the participants and the study of social and cultural phenomena (Kilani & Kobziev, 2016).

Pre-field Phase

Keeping in mind that the case study approach is the best for the analysis of the B2B relationships and network, Rashid et al. (2019) stated that the second phase of a case study research, the pre-field phase, is the stage to deliberate if the case study is the best methodology to pursue. With the ability to flexibly switch between the participants' experiences and the literature, this strategy will enable the researcher to be a contributor through observation of the actuality lived

(Rashid et al., 2019). Similarly, to other qualitative methodologies, this approach has numerous benefits, including the ability to have a homogeneous exploration view, to raise more issues through a broad and open-ended inquiry, and to gain a better understanding of how values, beliefs, and assumptions play a role in behavior (Choy, 2014). When the application of this methodology is decided upon favourably, the case study procedure is also developed. The case study protocol is a document that outlines all the steps that will be taken during the gathering of empirical data (Rashid et al., 2019).

Field Phase

There are two crucial elements to think about during the field phase: contact and interaction. In order to be fully prepared and to produce more conclusive results, the researcher must conduct their search and be completely in tune with the reality of the participants in the study (Rashid et al., 2019). The interviews are conducted in accordance with a semi-structured guide during the interaction step, and this method can be connected to meeting observations and document gathering. A rigorous, wide, complex, rich, and in-depth study can be produced by gathering data from a variety of sources, triangulation, according to Rashid et al. (2019). In case study research, it was studied that the use of triangulation was very important since multiple sources of information increases the reliability of the results. These different methods of collecting information can be interviews, questionnaires, and direct observation (Voss et al., 2002). A triangulation approach provides wholeness of understanding of the phenomenon under analysis. Completeness may be addressed to the use of various dimensions from one or more ideas and, thus, an acknowledgment of completeness as a purpose for triangulation has tiled the way for the combined use of qualitative and quantitative methods. Not only that, but triangulation should mainly be seen as a basis behind any research that attempts to contribute with scientific advances. Triangulation is about confirmation of results and, in the process, identifying and removing methodological limitations or even investigator bias (Oppermann2, n.d.).

Reporting Phase

The most thorough work, which will serve as the foundation for any conclusions made after taking into account all factors indicated during the investigation, is done in the last stage of the case study technique, the reporting phase. To understand the context of the research and the goals of this study, a description of the case is necessary in this section. The participants in the study are then described, either in qualitative or quantitative studies (Rashid et al., 2019).

On qualitative analyses, it is possible to have a clearer idea of who will be contacted and comprehend their viewpoint in light of deeper features that may not be addressed using a quantitative method. Clarifying the relationships between persons who are interviewed is just as important as describing the participants. The protocol is also examined at this point in order to get a general understanding of the research questions, the study's scope, and its main purpose. This helps in the interpretation and analysis of the empirical data. This phase is where the outcomes' evaluation must occur, and conclusions will be drawn in light of the findings of the interviews, the case's setting, and the literature review relevant to the subjects under consideration (Rashid et al., 2019). This section must be completed with maximum detail in order to provide background information that will help readers understand the methods employed throughout the study and how the results were attained (Crowe et al., 2011).

4.2 Research structure used in the project

An in-house case study at Consteltech will serve as the project's development methodology. This company provides implementation, consultancy, and support of SAP solutions. Along the years, its managers realized the main flaws, also identified in the literature review, regarding the lack of management knowhow on their consultant's behalf. To pursue the aim of this paper, the used research methodology is as follows.

Regarding this case study, 3 experience consultants were selected. These 3 participants were subject to a management training program designed in collaboration between the company's manager and professors from Porto Business School (see Table 1). All the training was observed not only with the purpose of understanding the receptiveness of the training content and knowledge evolution by the trainees but also analysing their opinion regarding the training utility. After a few months of the end of the training, semi-structured interviews to the 3 experienced participants were conducted in order to investigate their perception of the value added by the training in their service offer as SAP consultants. In addition, a questionnaire was going to be conducted as an instrument to evaluate the client's perception of the improvement of the value offered and quality of service provided by the consultants after the management training program. Unfortunately, due to the complexity of the, still on-going, SAP project, it wasn't possible to conduct this survey.

5 Results and analysis

This section shows and interprets the data gathered from the observation during the management training and the 3 interviews with the Consteltech SAP consultants. The characteristics of the interviewees are shown in Table 2, however, their names cannot be disclosed for confidentiality reasons.

Table 2 - Interviewees' Characteristics

Interviewees	Academic Background	SAP Experience (years)
Interviewee “A”	Industrial Engineering	15
Interviewee “B”	Energy Engineering	5
Interviewee “C”	Management	5

5.1 Results

5.1.1 Observation

Location: Consteltech

Participants: 3 SAP Consultants

Scene: Professor from Porto Business School gave 3 hour trainings on each topic (see Table 1), with pre and post training assessments, for 12 weeks. Consultants regularly intervened to express opinions concerning the utility of the training sessions in their work.

It was noticed lack of knowledge in typically used terminology by business managers like:

- CAPEX
- OPEX
- EBITDA
- Payables
- Receivables
- Cost Centres

Consultants expressed remembering managers using these terms and acknowledged having difficulties understanding them. Also, stated that after the training they now can better understand what was said and asked.

In one conversation after a training session, a consultant said: “I’m conscious now that in several cases, if I knew this terminology, if I had this management knowhow, it would be much better and easier.”.

5.1.2 Interviews

Consultants' SAP Learning Starting Journey

All three interviews started by knowing the consultant being interviewed in terms of the academic background, SAP experience and the way they learned SAP. Despite having different backgrounds and diverse years of experience in SAP, the journey in this world started in a very similar way to all three consultants.

They all mentioned a “learn by doing” method, they were introduced to some SAP manuals and scripts and were slowly introduced to projects. They learned with other experienced consultants, firstly from a user perspective to aid in client support and slowly moving to a consultant point of view to start parametrizing and customizing the system. All three interviewees mentioned the absence of any management learnings, the specific technical language used and the focus on the system in all of their SAP learning journey. A few consequences of this were stated by an interviewee in the sense that at first there were a lot of management terms they didn't understand and that it limited the quality of service they were able to provide, problem approach and communication wise.

Consultants' Management Knowhow – Pre Vs Post Training

Regarding the topics lectured in the training, different answers were obtained when asked about the interviewee's know-how about those topics previous to the training. While 2 of them stated that they knew lightly a few topics since they were lectured in their academic path, for the others they were completely new.

As for after the training, and as shown in the assessments made after each training session, all interviewees acknowledged the rentability of the training regarding their management knowledge. Even the 2 consultants with already a light awareness of some topics, mentioned that revisiting them was crucial to better understand them and to better apply them in a more practical and real business scenario. The main aspect pointed out by all the interviewees was that independently of the amount of content they were able to retain, after de training they felt more mindful of the terms used by managers and also of the logic behind a manager's work.

Training's Impact on the Consultant's Work

The common point when asked several questions regarding the consultant's perceived effect of the management training in their work was that there was in fact a considerable positive influence.

When trying to understand in what way the interviewees felt those positive impacts, they firstly started by identifying the problems previous to the training. It was stated that they know that in every project they have to communicate many times with top management teams from the companies and that most of the time they feel a lack of flow in the way the conversations go. According to them, it's due to the type of language used by both sides, managers tend to use more management terms while SAP consultants have a tendency to use more of a technical language of SAP, like one interviewee said: “I feel like we used to talk in a very direct and technical way.”. They felt there were some misunderstandings on both parts quite a few times. One consultant mentioned these misinterpretations were noticed in the way they understood what the clients' requests were exactly and why were they asked for. It was also acknowledged

by two of the interviewees some difficulties matching their solutions to the managers' needs resulted from differences in the way of thinking. They noticed that even their way of thinking was very system-oriented and not business-oriented.

Acknowledging these problems, one consultant recognized that the training had the most impact on them in the way they think about the problems the clients present and the way they communicate with them. They also stated it led them to evaluate more carefully the issue in hand with a closer perspective of the management teams, business-oriented, and consequently presenting more accurate solutions to the clients. Similarly, another interviewee felt that this training made them better understand the managers' requests. According to this consultant, this helped not only providing better suited solutions but also enabled them to anticipate the managers' needs providing completed solutions, saving time/costs, and improving the provided service. Moreover, a consultant explained that sometimes, SAP customization demands some of the management strategies to adapt to the system. Stated by them, this training made them more capable to also provide this type of management consultancy in terms of the adaptation to the SAP software.

Additionally, to these soft skills mentioned, they were also questioned about putting to use specific hard skills and knowledge in their projects. Two interviewees acknowledged that despite not putting yet to use specific knowledge from the training, they were able to identify several moments, especially at the beginning of their SAP journey, where this training would be useful: "There were many moments during the training where I remembered those topics being mentioned in past projects and having difficulties understanding them, compromising my job at the time. If I had this training earlier in my SAP career, I am sure I would have approached several projects in a different and better way, using not only soft skills but also hard skills.". One consultant was, in fact, already able to use some hard skills taught in the training: "In my last project I was able to use some technicalities learned in the training regarding the balance sheet and the results report, it was very helpful in building an accounting tool in SAP for the client.".

5.2 Analysis

5.2.1 Observation

Has shown in the results of the observation section there is lack of management knowledge among the SAP consultants participating in the case study. As found in the literature review, the deficiency management, business processes, and organizational knowledge from ERP consultants consisted as a major factor of the ERP problems.

Despite not being possible to create a correlation between this and any unsuccess these consultants may have had in their past projects, it is recognized by all the participants the difficulties felt in communicating to clients due to the lack of knowhow in this area. Furthermore, it was admitted by them a valid and positive contribution of this management training to the quality of the service they provide, by communicating more effectively, better understanding the clients and having a closer perspective of the problems to the managers'.

5.2.2 Interviews

Consultants' SAP Learning Starting Journey

Many similarities can be identified between the discoveries of the literature review and the ones from the interviews on the subject of training provided by ERP companies to consultants. It was established by researchers the importance of consultants understanding organizational, processes, and business terminology since ERP systems are, in fact, providing support, and serve as a tool to companies' management teams. Knowing this and also recognizing the lack of this knowledge by ERP consultants, some academics attribute this problem to inadequate ERP training, which focuses solely on the technical aspects of the system. Interviews' results show consistency with this as in all of their SAP learning journeys, all three interviewees emphasized the absence of any management learnings, the specialized technical terminology utilized, and the emphasis on the SAP system. Consequences named by the interviewees, limitation of the quality of the service provided by them, problem approach, and communication, can be equated to the ERP problems researchers found and blamed these factors on.

Consultants' Management Knowhow – Pre Vs Post Training

As proven by the words of the interviewees, the management training did, indeed, promote the increase in their management expertise. This, doesn't only solution the problems identified regarding the training in the beginning of the journey of a SAP consultant, both in the literature research and interviews and discussed in the previous topic but also it has evidenced clearly and positively the impact in the quality of the service provided by the consultants participating in the case study, as discussed in the next topic.

Training's Impact

In the interviews it was evident that the consultants participating were having the same problems identified by many researchers regarding the lack of comprehension of the management field. As stated by the interviewees this problem led to consequences in three main areas, also identified in the state of the art as CSF for a successful ERP implementation:

- Communication
- Business and Organizational Terms and Processes Understanding
- Management Consultancy

On the topic of communication, the consultants expressed the feeling of using a different language from the managers caused by the lack of management terminology possessed by them. While this showed to have costs regarding understanding the clients' requests and needs, the interviewees admitted that the management training provided them with the vocabulary needed to match the managers' thoughts and "language", mitigating the problem at hand.

Also, not understanding the problems from a management perspective was a problem referred to by the participants. By looking at the work to be done in a technical and system-oriented way they felt sometimes short to match the managers' requirements. According to the consultants, the management input sustained by the training gave them a management overview of business and organizational processes and logic that helped them create better-suited SAP solutions.

As explained by an interviewee, management consultancy is also a part of the SAP consultant functions in the sense that the SAP system has some restrictions and limitations that companies and their management strategies and processes have to adapt. Obviously, to accomplish these functions, management know-how is a requirement. As stated by this specific consultant, the management training in this case study improved their capability to provide this type of consultancy and therefore to improve their service of SAP consultancy overall.

6 Conclusion and future research

This dissertation has concluded that management training can improve the quality of the service provided by ERP consultants. The results of the case study demonstrated that Consteltech consultants felt, in fact, an improvement in the quality of their service after having the management training.

The problems and CSF of ERP implementation listed by many authors in the literature research correspond to the ones mentioned by the case study participants: ineffective communication between clients (management teams) and ERP consultants, lack of business and organizational understanding by ERP consultants, lack of capability to provide management consultancy. Results have shown that these same problems are also the main areas impacted and diminished by the management training the consultants had.

While this case study focuses on SAP, SAP is the biggest ERP in the market and the issues studied by researchers in the area are similar to all ERPs. Therefore, with this case study as proof of concept, it is possible to establish a correlation between management training given to ERP consultants and the quality of the service provided by them.

However, while this dissertation may prove this, it is just the beginning of the research of the solutions to the identified problems. This gap in the literature can now start to diminish. This case study presents the limitations of being in a relatively small SAP solutions provider, interviewing only 3 consultants and the impossibility to have evaluated the clients' judgement on the improvement of the consultants' performance after the management training.

Therefore, for future research, I recommend deeper analysis on the subject. Using the same case study methodology, with triangulation, a management training should be provided to ERP consultants and its impact should be measured. Bigger companies should be used, more consultants should be interviewed, and clients should be questioned to also have their evaluation of the impact of the management training as an input for the results. Researching on different ERPs would also enrich this analysis and help closing the gap in the literature regarding solutions for ERP implementation problems. An interesting analysis to make on this subject would be to also see the different impacts of the management training depending on the ERP module the consultant works with and understand if there is any need to adapt the training to the different modules.

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APPENDIX A: Observation Protocol

Type: Unstructured Non-Participant Observation

Site: Consteltech

Participants under observation: 3 SAP Consultants

Objectives: Understand the receptiveness of the training content, knowledge evolution by the trainees and, analyse their opinion regarding the training utility.

Scene: Professor from Porto Business School gave 3 hour trainings on each topic with pre and post training assessments, for 12 weeks. Consultants regularly intervened to express opinions concerning the utility of the training sessions in their work.

Procedure of data gathering: Writing of the comments made by the consultants.

APPENDIX B: Interviews Protocol and Script

Type: Semi-structured interview

Target: Consteltech consultants that attended the management training

Objective: Understand the impact of management training on the consultants and their offered value to clients

Script:

1. What is your academic background?
2. How many years have you been working in SAP?
3. In the beginning of your SAP journey did you have training?
 - a. If yes, how was it?
 - b. Did it have any management content?
4. Regarding the topics taught in the training, how do you evaluate your knowledge previous to the training?
 - a. And after the training?
5. How do you assess the impact this management training had on the service you offer to clients?
 - a. In what aspects did it have more influence on?
6. Were you able to apply anything you learned (soft skills and hard skills) on projects you had after the training?