

HUMAN RESOURCES IN SAP

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Abstract

Modern and advanced organizations in today's world are influenced by various changes. One of these changes is impact of information technology applications and programs. This phenomenon is becoming increasingly popular and today's big, medium and small companies have to deal with changes of the new era and modern technology.

One important reason is achieving competitive advantages, better control of information, and significant savings on operating costs. Institutions and companies that do not accept, or avoid the adoption and implementation of information technology in business, in most cases, are not ready for market race, or they must be expressed in differentiated and expensive service or product that is not dependent on information technologies.

Lately, many companies referred to the so-called ERP solutions, which is an acronym for Enterprise Resource Planning. The purpose of these solutions is to cover the entire business of the company through the offered modules. In this way, the company implements a unique business solution that shows insight into the entire business, achieves excellent control of operations, and uses the existing data, in order to make crucial decisions. ERP solution, called SAP, is a famous one among the top ten vendors of business software.

The demand for human resources that are capable of adjusting to modern trends and operating in SAP solution is huge. However, the purpose of this paper is to explain the importance of human capital in soft computing in general. In this paper, we are analyzing soft computing model: SAP and the role of human capital in it.

Keywords: information technology, organizations, Enterprise resources Planning (ERP), SAP, human resources.

Design/methodology

An objective investigation of this issue for this week is done by analyzing an ERP system, such as SAP. The research is conducted in companies from Bosnia and Herzegovina and Croatia on 100 employees. Structural analysis of the key users, using SAP is an additional category which was analyzed throughout this paper.

Value

The most valuable output of this research is not to identify the best soft computing model, but to see that for the enterprise improvement SAP represents extraordinary software, which was not present in business before.

Model

Soft computing includes the set of techniques that allow learning models using the knowledge in the data. In this study we adopted SAP approach for learning which is presented in this article, and from the aspect of people.

Introduction

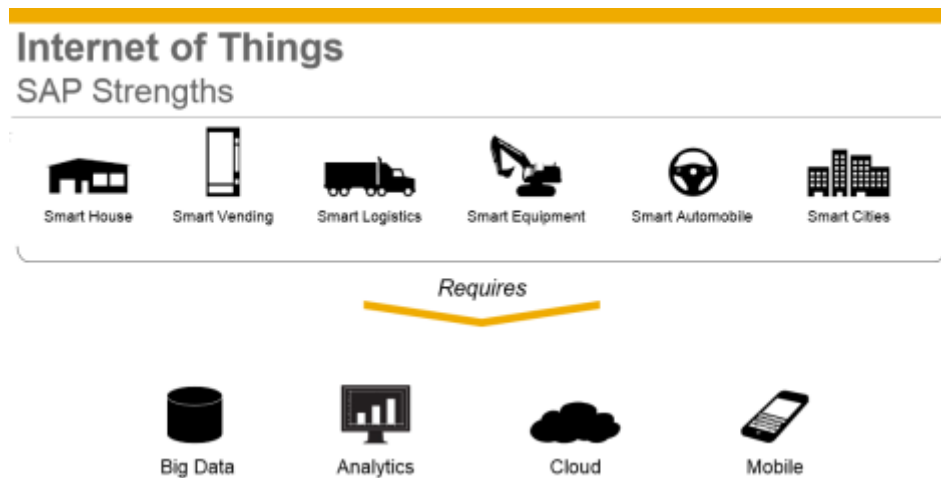
SAP or else known as systems, applications & products in data processing, is a well-known software solution that is used in huge, middle, and small enterprises all over the world. The first solution, launched by SAP, in 1973, offered a system for centralized data storage and a solution with multiple tasks. Nowadays, SAP offers software solution to organization of any size, to manage business operations in different sectors, as well as CRM/customer relation management.

The importance of integrating application into the business world is a key point for business development, and for effective and efficient data managing. Many models and solutions have been presented all over the world, but the nature of adaptation of people was diverse. The effectiveness of adaptation in industry, and other fields was shown in the enterprise resource planning, where SAP is the leading supplier.

The complexity of SAP software solution led them to differentiation of their solution: by line of business, by industry, and by product. For example, business solutions consist of the following: SAP Advanced Planner and Optimizer, Analytics, Business Intelligence, Catalog Content Management, SAP Enterprise learning, HRM, SAP knowledge warehouse, etc. On the other hand, Industry line has SAP for utilities, retail, banking, public sector, insurance, finance, etc. Other solutions vary, considering the type, the field, or business requirements, such as SAP solutions for the Internet of Things that provides businesses with generate data-driven intelligence from connected things, people and devices. (Figure presented below)¹

¹ <http://go.sap.com/solution/internet-of-things.html> (01.03.2015.)

Figure 1 SAP-Internet of things



SAP aims to offer a complete solution designed for international operation support, so that companies can operate and compete efficiently and successfully on a global level. It also provides management support processes such as user administration, configuration management, and centralized management. SAP enables integration with other systems in order to speed up the implementation of business strategies, and a Croatian company King ICT highlights the following advantages:

-Faster decision making - access to information in real time enables timely confrontation with challenges and proactively takes advantages of all business opportunities.

-Increased productivity, efficiency and understanding - increased range of business processes allows including more people in real time, from workers of the company to external experts.

-Shorter deadlines & greater flexibility - using additional business functionalities in accordance to the needs and requirements of the company. SAP ERP is based on SAP NetWeaver technology platform, which enables the integration of SAP applications with other supplier applications, thus maximally protecting and utilizing the previous IT investments.

-Adaptability to business changes - unlimited integration of overall processes and utilization of the latest web technologies.

-Reduced risk - implementation of SAP ERP solutions with minimal disruption of ongoing business processes, and utilization of SAP as a strategic partner for long-term growth and development.

-Better financial and corporate management - increased organization transparency and compliance with global and local legal requirements, such as international accounting standards and local pay slips.

-Optimized IT expense - eliminates high integration expenses and the need to purchase additional IT solutions and upgrade solutions depending on the needs and requirements of the company.

-Increased employee productivity - SAP ERP solution provides self-service applications, which increases the productivity of employees.

Except for all these benefits, we need to mention that all solutions provided by SAP are driven and administrated by people. This will be a topic for presentation in the following section.

APPLICATIONS VIA PEOPLE

The topical issue related to employees and organizations today is the notion that the organizations need new employees adjustable to the modern trends of information technologies and their products. The complexity of business software leads people to be able to solve problems in any situation. The limitations are related to technical difficulties and computing, were people need to use a mix of techniques in order to solve sophisticated tasks. Flexibility and timely response are key components for business continuation. On one side, we have key users that need to adapt to turbulent situations, and on the other, we have SAP consultants who need to solve computing problems. That will be notion of their productivity. There are several types of SAP consultants:

1) Business Sales consultants who are trying to win projects at the user level, without much knowledge of the SAP system.

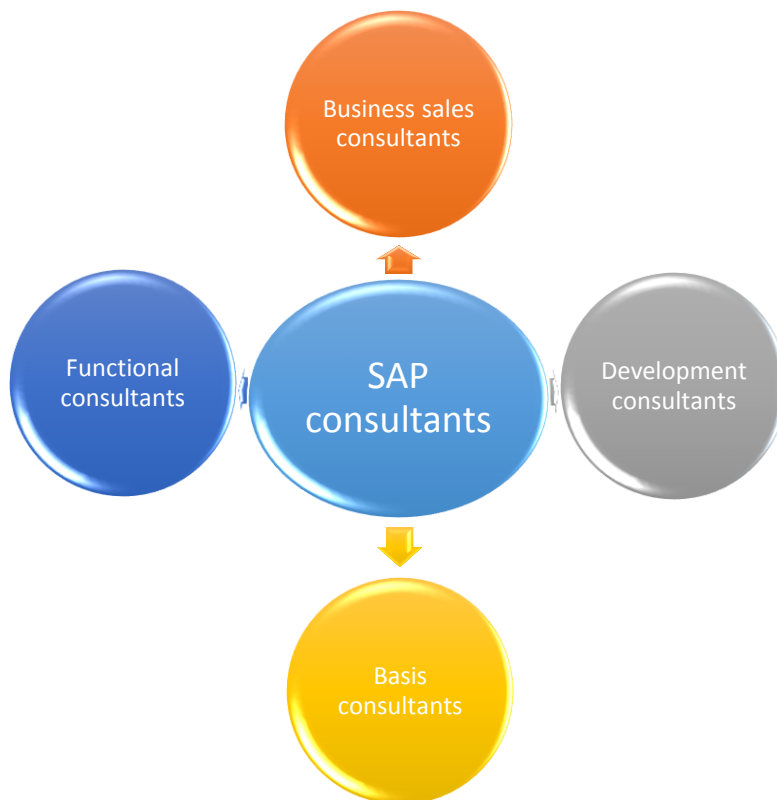
2) SAP functional consultants who are responsible for processing of the SAP

system to individual requests, who also create custom ABAP programs at client's request, with developers.

3) Development consultants who are responsible for coding of the ABAP or Java programming language.

4) SAP Basis consultants - helps through the installation, maintenance and basic setup of SAP servers and databases (Figure 2 - Type of SAP consultants is presented below).

Figure 2 Type of SAP consultants



SAP Functional Consultant evaluates requests in an interview with end users and converts the contents of the issues in the abstract and algorithmic business model. Therefore, the consultant identifies cases and transforms them into logical and technical perspectives.

The main task begins with adjusting the related business sphere and ensuring that the system responds in accordance with limits of the required cases.

A consultant documents sets and prepares appropriate guidelines that allow other consultants to perform further modifications, or repairs significant errors.

The SAP Consultant ensures that the appropriate training provided to users is adequate, and that the system is usable for business flow. During the final commissioning, consultant assists the technical staff in order to test the behavior of the system. After commissioning, the consultant ensures that procedures remain usable and consistent in real-life situations.

The main task of the consultant is to transfer external know-how to the client. What is crucial is not labor strength, but intelligence, understanding of business processes, “the sense” for defects and general common sense.

THE ROLE OF THE SAP CONSULTANTS IN IMPLEMENTATION OF SAP ERP SYSTEMS

When we speak about functional SAP consultants through the *end to end* implementation, it is hard to define every aspect of it. However, it is possible to summarize it as follows:

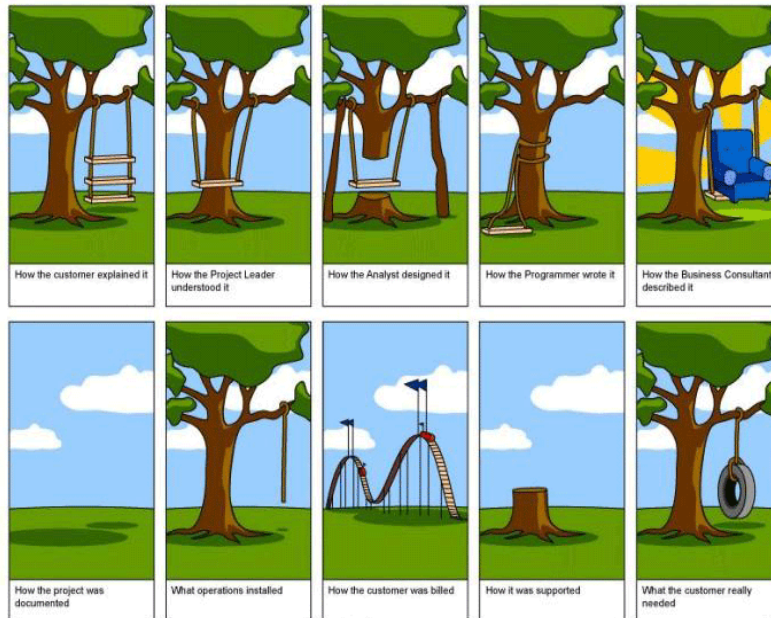
- A functional consultant is expected to generate knowledge of current business processes, design instant business trends, and study the current business processes and complexity. Flow charts and data flow chart are ready, most of the time in the Vision format. Everything configured must be documented by categories in the form of preconfigured templates that must be approved by the team leader, or somebody else to whom the consultant sends reports. Third mapping and gap analysis are performed for each module. The case shown in practice is that after mapping a consultant defines integration, gap analysis and configuration, but it would actually be a simultaneous process. Before starting the configuration of future business processes in the SAP system, when the DFD / ERD is ready, the documentation is referred to simple title *TO BE*, which can also be the result of mapping and gap analysis. Sometimes functional consultant is also expected to prepare test scripts for testing configured scenarios.

Functional consultant is also expected to provide user instructions and training.

The project usually begins with an initial meeting which defines the size of the group, its members, reporting system, responsibilities, obligations, methodology, dates and

schedules. Different perspectives, problems and simple solutions of the project and communication with customers can be seen in the following figure.

Figure 3 Different perspectives of simple problematic and solutions²



On the other hand, a very important thing takes up the role of end-users who provide key information on business processes and the specific characteristics of the business. This information can be of great importance for the success of the implementation of the system.

KEY COMPETENCES OF SUCCESSFUL SAP CONSULTANTS

Through the literature and various examples that we can find on the Internet, we have at least once heard about a failed ERP implementation project, or any other similar software solution. The causes may be different, but most often they refer to the success of SAP or other IT consultants. In an environment where top management of a company understands and realizes the importance of the implementation of the ERP system, where end-users are willing to provide key information, the task of SAP functional consultant is to adjust system settings, collect all information from the users, and then resolve the case or one part of the specification to the technical consultants. To make this process proceed successfully, the SAP consultant is essential, and in addition to good understanding of the process, quality education and theoretical approach, it is essential that he has good communication skills. (figure below)

² Figure is taken from the book of Great Software Debates wrote by Alan M. Davis

Figure 4 Competences of SAP consultants



The key competences that every successful SAP consultant should possess are the following:

Business experience refers to an earlier work experience in the economic and technical field. This experience involves work on various matters relating to the economic and business software. It includes a minimum of five years' experience. It is desirable that the SAP consultant has gained experience in the position of the end users of SAP system, which uses the SAP system for the daily job performance.

This element is important because it will be better for consultant to understand the ordinary end user.

In the technical field it is desirable to have the technical skills in software development or quality, as well as knowledge on functioning of the software. This will depend less on technical consultants, and will not get confusing to customers who have a certain combination of circumstances and technical knowledge.

Communication skills are very important factor for a SAP consultant because it is precisely these skills that bring added value to the consultant and facilitate his daily performance of tasks.

Users of SAP system or any other software solution are mainly focused on the operational performance of tasks. Sometimes it can happen that they do not have too many initiatives or are less interested in the solution of a certain problem. The reasons for this attitude are partly justified because most people look at software as a tool by which a task will quickly be finished, and on the other hand, they are usually overloaded with other work obligations.

In these situations it is very important to achieve conceptual approach and explain the importance of resolving the issues. Whether the user software will indirectly ignore or “carefully listen” with full attention and interest, it depends on the consultant. For example, if we want to solve certain problems in the SAP system, as well as the introduction of additional options, in addition to the standard, in particular module or transaction of SAP system, most users will be grudging, or will accept such a thing with very little incentive. The reason varies from use of the same things throughout the years, or lack of time, etc. However, if the user explains the needs of the new option in software solution, in order to enable performance of scheduled tasks in 20% less time than before, it is very likely that he will soon gain his favor and support.

If we have this kind of approach, which will explain the benefits gained by introducing new features, or certain alterations, the solution will always be close at hand.

Third X-competences represent key features that are visibly developed and specific in relation to the skills and abilities that most of the other consultants own.

X-competences are:

- Ability to work on three projects simultaneously
- Ability to find express solutions to the problem
- Extremely easy and immediate access to the end users
- Ability to solve cases with extremely high percentage of success.

These competences vary from consultant to consultant and precisely they can give some added value to a consultant. Competences of this type depend more on the genetics of the individual, but less on the results of persistence, education, and similar things.

Prior education is one of the unavoidable competences that is necessary and provides a very good foundation for any successful consultant. Education is primarily related to university diploma or higher level of education, certification of consultant for a particular module or more modules, and courses related to technical knowledge.

High quality SAP consultant needs to possess minimum of three years of university education. Although not critical, but of significant importance, is to have a minimal

number of completed courses for the SAP system and the field in which consultant specializes.

KEY USERS VIA SAP CONSULTANTS

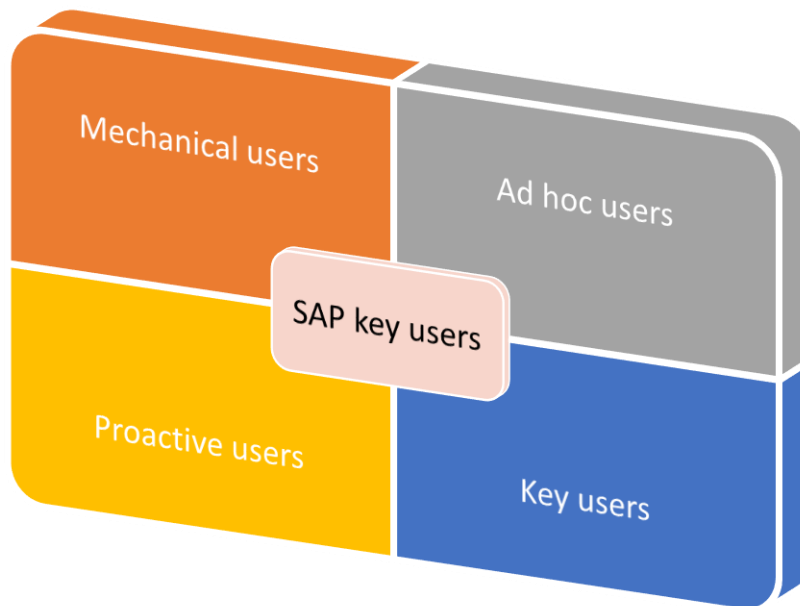


Figure 5 Key users via SAP consultants

The way that the end user understands the business process, the issues and the needs to improve the system, always vary from user to user. In business practice and communication with consultants, the most common software users are:

1. Mechanical users - software solutions used solely as just "another tool" in the series that allows them to quickly perform tasks. These types of users are rarely interested in innovation in the software, and are pleased with the offered solution. They do not see the need for process improvement.
2. Ad hoc users are the type of users that are similar to mechanical users. They regularly use some software solutions and software for them is one in a series of tools to perform regular tasks. In cases in which their superiors require additional report, they are ready to be engaged and actively involved in the whole process. They understand the business processes and operations of the software, and they are able to lean on some other elements in the job for which they claim to be easier or to have a higher benefit. Information gained from this type of users can be very useful, however, they always have to be taken with a grain of salt, because these types of users are not included in the overall process.

3. Proactive users - they exploit the maximum capacity of the software as much as they can, the occurrence of minor or major bugs, and always have new ideas for improvement. As most of them have advanced concept of view of software solutions, information from this type of users is very valuable, because with their help, information form a clear specification that serves as the basis for problem solving, in a very short time. Consultants quickly recognize these users among others because they represent strong support.

4. Key users have a lot of qualities of proactive users, and they are almost always ready for new changes and improvements, have new ideas and a very good understanding of business processes. These people like their own initiative to provide suggestions for improvements, and to predict the time to draw attention to critical deficiencies. This type of persons has developed conceptual way of thinking, many years of experience and quality business and prior education.

A significant number of successful SAP consultants, in fact, used to be the key users who took advantage of their capacity, acquired additional knowledge and experience in the SAP system, and based on these factors, began careers as SAP consultants. This type of users is an essential factor during the implementation of the SAP system and usually very closely cooperates with SAP consultants during and after implementation of the system.

Key users are of primary importance for the SAP consultants during the implementation or maintenance of the system, because in a short time they can provide all relevant information and thus speed up the business process.

PERFORMANCE INDICATORS OF SAP CONSULTANTS WORK

-THE KEY TO SUCCESS ARE PEOPLE-

The Croatian company S&T has implemented SAP modules at Croatia's largest wholesaler Medika. Croatia's largest drug wholesaler Medika is the first wholesaler in Europe after Hungaropharm, which was fully implemented and integrated in comprehensive system of specific logistic models. The contract between Medika and S & T (then under the name S&T Hermes Plus) was signed in 2005.

At first thought, the project is implemented by simultaneous running of all modules,

but subsequently it was decided that due to the complexity it is performed in two stages.

In the first phase, which was completed in May 2006, they implemented the financial module, controlling, and an interface to the existing logistics system.

The second phase was completed in November 2012 and included modules for procurement, sales, foreign trade, quality management and interface to the system Knapp Octopus warehouse management.

S&T Croatian Company represented the whole story about the system integrator business. They underlined that they insisted on making a deal with the company that will have complete support for all three segments of the project: SAP licenses, the consultants and the development of the project, as well for hardware. They wanted the partner to be a company that will be responsible for all, according to the turnkey system.

One of the longest and most challenging tasks in the project was writing interface system Knapp Octopus warehouse management. It was necessary to link two very solid and rigid systems. S T Tubing experts spent a lot of time on solving problems, but the system still works. It has specially adapted to the module for telephone sales, which must be fast and efficient, and added a special server that would not slow down the system due to other operations.

Through the analysis of this example we can see that the largest pharmaceutical wholesaler in Croatia successfully implemented SAP system, and Director of Informatics emphasizes the particular importance and value of human resources, SAP consultants in the implementation of the SAP system, and subsequent maintenance. From the beginning of cooperation between the two companies, S & T has assembled a team of consultants who have the key competences necessary for any successful SAP consultant. The ultimate outcome of this story is a win-win situation. This is supported by the fact that the implemented SAP system with Medika had strong fundamentals. On the other hand, S & T won a new client and gained a new experience that will be able to apply to other clients.

This is one of the successful examples of SAP implementation and adequate human resources.

ANALYSIS OF THE RESEARCH

The survey was conducted in two large companies. One company from Bosnia and Herzegovina, and the other from Croatia that use SAP solution. The setup hypothesis is: *Productivity of SAP ERP consultant is directly related to realization of key objectives of the company that has fully implemented the SAP system.* Total number of respondents was 100, 50 from Bosnia and Herzegovina, and 50 from Croatia. The research focuses on the core competences of successful SAP functional consultants. As previously stated in the paper, key competences are:

- Business experience
- Communication skills
- X-competence
- Prior education.

The first group of respondents included key beneficiaries who answered the questions on the key competences that SAP consultants must have to be successful. The questions referred to the communication skills and the X-competence, as well as the productivity of SAP consultants.

In addition to these questions, respondents answered with YES and NO, on issues related to SAP consultants and their productivity.

These questions are:

- To be productive, does SAP ERP consultant need to have x- own competence, communication skills, experience and education?
- Is productivity of SAP ERP consultants directly related to achievements of the company's goals?

On issues relating to business experience and education, and previous education, answers were given by human resources departments. It also gave an overview of the business documentation.

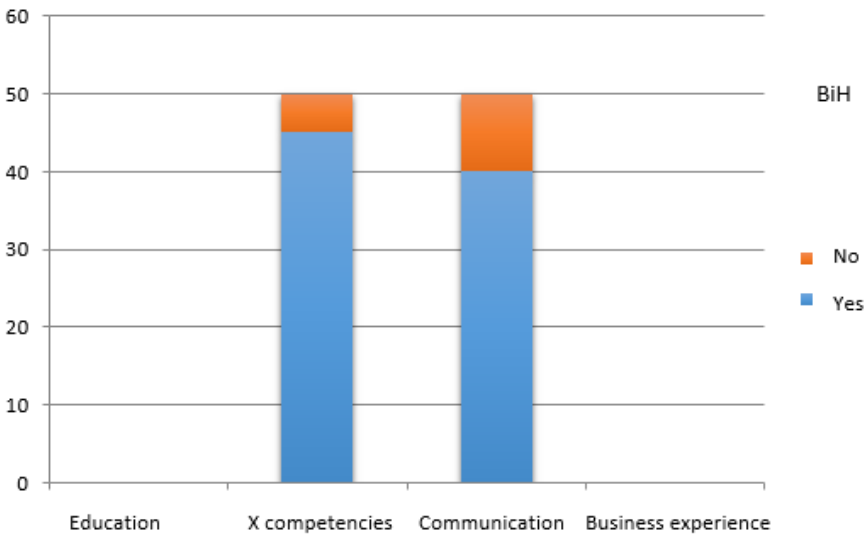
Results of the research in Bosnia and Herzegovina have shown that the question "Does SAP ERP consultant have X-competences?", 45 of 50 respondents answered affirmatively, with Yes, i.e. the successful SAP consultants should have X-competences, while 5 users responded negatively. Of total 50 respondents, 40 responded positively to the question 2. "Whether successful SAP ERP consultants should have good communication skills?", and 10 respondents gave negative answers. Results of research in Croatia showed that 40 of 50 key users believe that successful SAP consultants should possess X-competence, while 10 users think that they do not.

Of the total 50 respondents, 35 responded that a successful SAP consultant needs to have developed communication skills, and 15 respondents think that they do not. Another group of respondents were employees of the HR department who answered the questions about the other two competences of successful consultants, such as work experience and previous education. Since the key users could not give answers to these two questions about competences of SAP consultants, professional documentation was analyzed for these questions. So, on the basis of the documentation and a detailed analysis, it was concluded that the responsible SAP consultants need to have previous education and good business experience.

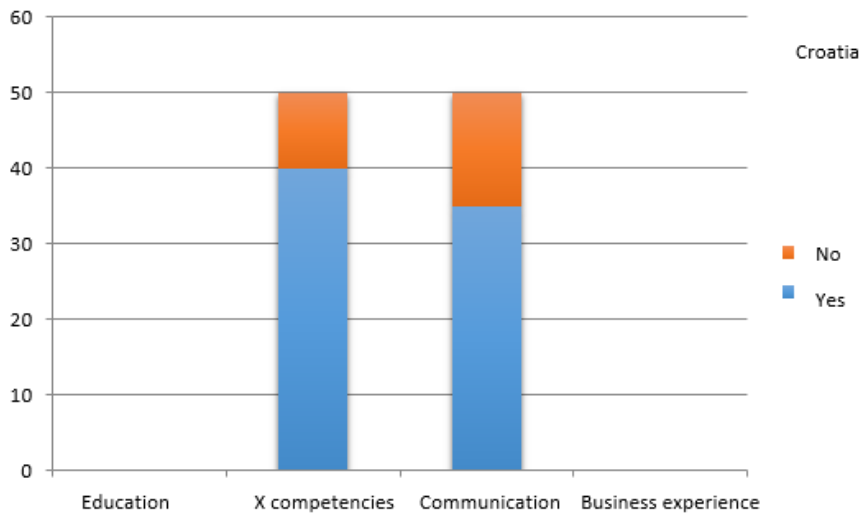
On the other hand, according to the business documentation, it needs to be pointed out that business experience is an important element, and that a serious and professional SAP functional consultant should possess a minimum of five years' experience in the SAP system, and activities related to the economy or the technical field.

When it comes to pre-education, analysis of personal records of SAP consultants showed that SAP functional consultants should possess minimum of three years of university education and possibly a certificate for one of the SAP modules. An interesting fact is that the survey showed that respondents in Bosnia and Herzegovina and Croatia share the same opinions. That can be seen in graph 1 and graph 2.

Graph 1

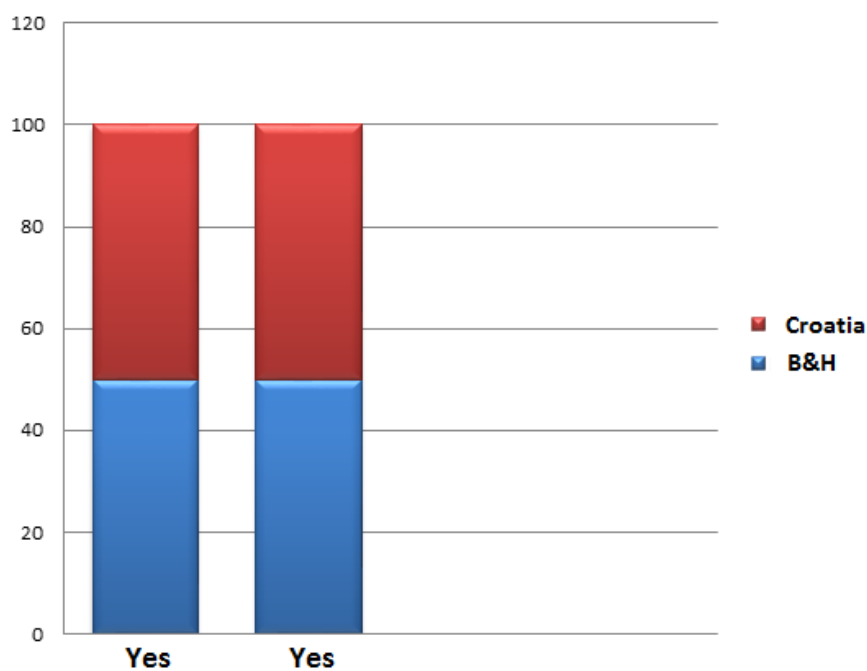


Graph 2



On issues related to labor productivity of SAP consultants, all 100 respondents gave positive answers, which means that the productivity of SAP ERP consultants depends on the key competences they possess. All users in both companies have responded positively, i.e. the productivity of SAP ERP consultants is directly related to realization of the goals of the company. (Graph 3)

Graph 3



Based on survey results, we confirmed the following hypothesis: "Productivity of SAP ERP consultant is directly related to realization of key objectives of the company that has fully implemented the SAP system." One of the conclusions explained in the paper is that a successful SAP functional consultant must have a key combination of technical and communication skills that will serve to achieve the company's goals.

At the end of the study we formed clear answers to the research questions.

Q 1: What does make a SAP ERP consultant productive?

Throughout the paper we described four types of competences that every successful SAP consultant must have. Most respondents said that these key competences make SAP consultants productive and successful.

Q 2: What does it depend on whether an end user is capable of transferring crucial information about the business to a consultant?

The successful transfer of crucial information about the business depends on having all the competences. In the case of SAP consultants, if we have lack of communication skills, as well as misunderstanding, problems that require more time to resolve them can occur. By having a combination of all four competences leads SAP consultant to productivity, key users, and achievement of company goals.

Q 3: What kind of key competences must a SAP consultant possess and why is that important for problem solving in SAP system?

Key competences that every SAP consultant should have are: previous education, x-competence, communication skills and business experience. The x-competences are most interesting of them all, and they can include the following:

- The ability to work on three projects simultaneously
- The ability to express skills for problem solving
- Extremely fast, easy and immediate access to end-users
- Solving cases with extremely high percentage of success.

Thus, x-competences are a mix of competences required for the work of SAP consultants in a business environment.

These four types of competences are necessary and important for solving the existing problems in the SAP system because they can reduce the work of key users in the SAP application, create a form of cost-effectiveness for the company, help in the rapid, effective and efficient solving of problems, etc.

Q4: Is the productivity of SAP ERP consultants directly related to realization of key objectives of the company that has implemented SAP system?

Since the key users, not only in Bosnia-Herzegovina, but also from the Croatian company, confirmed that productivity of SAP ERP consultants is directly related to realization of key objectives of the company that has implemented SAP system, then this is the positive response.

The key combination of four types of competences entitles SAP consultants to create work productivity of a company over those consultants who do not have this kind of competences. These necessary competences of SAP consultants result in positive outcomes for the company and meet the aims of the entire organization; thus in response to the questions, this research has a positive outcome.

CONCLUSION

SAP ERP consultants play an important role in any company which implemented SAP system. This system is a unique business solution that gives companies insight into the entire business, exercising control of operations and the use of existing data in order to make key decisions in organization.

SAP system holds the first place among the top ten vendors of business software. The SAP solution is designed in a way that belongs to the type of software "off the shelf" that is acceptable for most companies. However, if companies could tackle the emerging problems of any software solution, in this case of SAP ERP system, it is inevitable that they have high-quality SAP consultants.

SAP consultants regardless of the type, have a task to solve the problem, either of external or internal nature of the SAP system. The most interesting types of consultants that were presented in this work are called functional consultants. Their task is to fully understand the initial information that indicates a dysfunction in the part of SAP system used by an end user who, in most cases knows the job, but does not understand technical terminology.

In this process, the final and key user of SAP ERP systems must establish good communication with the consultant, which will enable smooth transfer of information. However, if the user has failed to convey key information, and the need for changes in the software, or if SAP consultant failed to understand the main guidelines which the

user sends, such results often turn out to be negative for the company, and the two-way communication is impossible.

Productivity analysis of SAP ERP consultants in this research, in Bosnian and Croatian companies, showed that SAP consultants are an inevitable factor in SAP business environment.

If we want successful implementation of the SAP system and subsequently continuous maintenance and upgrading of software, it is necessary to engage or "empower" SAP consultants who will play the key role with their abilities, skills, and four key competences. In this way we create conceptual and strategic approach to the implementation of SAP system, and on the other hand, as a direct consequence we have a satisfied customer and another successful project behind us.

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