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FACTORS WHICH HAVE FATAL INFLUENCE ON ERP IMPLEMENTATION ON SLOVENIAN ORGANIZATIONS

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Abstract: *A lot of ERP implementations are failure, because organizations which bought ERP systems thought that this was all what they should do. But failure cases of ERP implementation showed, that organizations have to do extensive work on implementation. Because of that, organizations have to create conditions, in which they can implement chosen solution in expected time, scope and evaluated costs. That means that organizations should be aware of what most critical factors for success (CSF) in ERP implementations are. The high failure rate of ERP implementations call for better understanding of critical success factors (CSFs). In the paper we will research the CSFs in ERP implementation by studying published prior research on the field of ERP implementation. We will build a model of CSFs for ERP implementation, discuss in depth some most important factors and present preliminary results of importance CSFs of ERP implementation in Slovenian organizations.*

Keywords: *Enterprise resource planning (ERP), critical success factors (CSF), ERP implementation.*

1. INTRODUCTION

Like many new fields in information systems, ERP solutions have many synonyms, such as integrated standard software packages, enterprise systems, enterprise wide systems, integrated vendor systems etc. ERP solutions were introduced in the early 1990s and were evolved from MRP systems (Material Requirements Planning). ERP solutions allow organizations to replace their existing information systems, with a single integrated system. They are defined as customizable, standard application software which includes integrated business solutions for the core processes and the main administrative functions. They can be also defined as comprehensive package software solutions seek to integrate the complete range of a business processes and functions in order to present a holistic view of the business from a single information and IT architecture. ERP solutions consist of more modules and they support business processes on operative level in organization. ERP solution include an enterprise-wide set of management tools that balances demand and supply; containing the ability to link customers and suppliers into a complete supply chain; employing proven business processes for decision-making; providing high degrees of cross-functional integration among sales, marketing, manufacturing, operations, logistics, purchasing, finance, new product development and human resources; and enabling people

to run their business with high levels of customer service and productivity, and simultaneously lower costs and inventories; and providing the foundation for effective e-commerce [24]. ERP systems use new technologies such as graphical user interfaces, relational databases, fourth generation languages, computer-aided software engineering tools, and client/server architecture [5]. ERP systems could have following additional characteristics: support for multiple currencies and languages, support for specific industries and ability to customize without programming [17]. On that basis, we can say that ERP systems consist of multi-functional standards, multi-languages, multi-legislative software modules and offer process integration across an entire organisation. The ERP system not only provides real-time information to the enterprise, but also improves business operations flow in organizations.

ERP solutions are design by principles of best practices, which means, that ERP vendors search for the best organizational business models in branch and then adopt that business model in their ERP solutions. Instead of tailoring the ERP system specifications to meet organization requirements, organizations have to adopted business processes to an ERP system.

Organization should select the ERP package, which: fit organization; provide industry functionality; support changing business environment; easy integrate with other information systems in organizations; support vendor by implementation; must be complete; are stable and have good support after implementation; have availability of implementation accelerators such as training materials, user procedures, help text, process models; etc [20].

The implementation projects of ERP systems are big, strategic and complex projects which involve lots of risks, what is reflected on time, scope and costs of project implementation. Because of that, organizations have to create conditions, in which they can implement chosen solution in expected time, scope and evaluated costs. That means that organizations should be aware of what most critical factors for success (CSFs) in ERP implementations are. In the paper we will research the CSFs in ERP implementation by studying published prior research on the field of ERP implementation. We will build a model of CSFs for ERP implementation, discuss in depth some most important factors and presented preliminary results of survey CSFs of ERP implementation in Slovenian organizations.

ERP implementation critical success factors

In the past years several papers on subject CSFs in ERP implementation have been published. We have scanned computer databases and published books on that theme. Through the review of these sources, we came across nineteen papers that are focused in success factors of ERP implementation. If one author has more than one paper in that area, we chose the latest publication. In table 1 we have summarized major CSFs mentioned by authors. Table 1 shows that fourteen factors were mentioned more than five times by nineteen authors. Number in brackets represents number of authors, who mentioned CSF. These factors are:

- top management support and involvement (16);
- clear goals, objectives and scope (14);
- project team competence and organization (13);
- user training and education (13);

- business process reengineering (BPB) (11);
- change management (10);
- effective communication (9);
- user involvement (9);
- data analysis and conversion (9);
- consultants (8);
- project management (8);
- project champion (7);
- architecture choice (package selection) (7);
- minimal customization (7).

Beside those factors we found more factors which were mentioned by less than five authors. Those factors are: legacy system management, methodology of project, effective control, interdepartmental cooperation, management of expectations, dedicated resources, steering committee, package selection, organization culture, vendor partnership, vendor tools, system integration and testing, knowledge transfer, performance measures, etc. Below the conclusions of mentioned authors are summarized for listed CSFs.

1.1. CLEAR GOALS, OBJECTIVES, SCOPE AND PLANNING

Aduri et al. (2002) identified clearly defined business and strategic objectives as the most critical factor. And some authors added ([3], [14], [23] and [18]) that having a clear defined vision/mission and the formulation of the right policies/strategies that can serve as the blueprint for any organization success. Clear goals and objectives, should be specific and operational and indicate the general directions of the project [22]. Akkermans and Helden (2002) added that clear goals and objectives seem to form a clear-cut CSF, but can actually be rather problematic. This is because, at the outset of an ERP project, it is often very difficult to determine them in a clear-cut manner. Likewise, consensus among managers about the determining objectives of the ERP implementation, and how these objectives will be monitored and measured, will lead to higher user satisfaction [7]. Well-defined objectives help to keep the project constantly focused, and are essential for analyzing and measuring success. They must clearly define objectives, they must be measurable and controllable, and the savings must be quantified for each objective [25]. Project scope is related with concerns of project goals clarification and their congruence with the organisational mission and strategic goals [9]. Reif (2001) pointed out that project scope is defined as closely corresponding to the range of outcomes and the portions of the organization that will be affected by the ERP system. After that, extensive planning and an understanding of the concepts of ERP system will result in the company saving much more time in the implementation [4] and the implementation plan and subsequent progress should be communicated regularly to employees, suppliers and customers [15].

Table 1: Published articles about CSF of ERP implementation in last five years

CSF	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Top management	X	X	X	X		X	X	X	X	X		X	X		X	X	X	X	X
Clear goals, objectives, scope and planning	X	X	X	X		X	X		X		X	X	X	X		X	X	X	
Project team	X	X			X		X			X	X	X	X	X	X	X	X	X	
User training and education	X	X	X	X	X	X	X			X		X			X	X	X		X
BPR		X	X		X	X	X	X		X					X	X		X	X
Change management		X	X	X	X		X			X			X		X	X	X		
Effective communication		X	X	X	X		X		X		X	X				X			
User involvement				X			X	X	X		X				X	X		X	X
Data analysis and conversion		X		X				X			X			X		X	X	X	X
Consultants		X	X	X			X				X				X	X		X	
Excellent project management		X	X	X										X		X	X	X	X
Project champion		X			X		X				X		X		X	X			
Architecture choices		X		X			X	X		X						X			X
Minimal customization		X		X			X				X	X	X			X			

[1] Aduri, Lin and Ma (2002)

[2] Akkermans and Helden (2002)

[3] Al-Mashari, Al-Mudimigh and Zairi (2003)

[4] Al-Sehali (2000)

[5] Bancroft, Seip and Sprengel (2001)

[6] Bradford and Florin (2003)

[7] Estaves, Pastor and Casanovas (2002)

[8] Gattiker and CFPIM (2002)

[9] Holland and Light (1999)

[10] Jarrar, Al-Mudimigh and Zairi (2000)

[11] Khan (2002)

[12] Mabert (2003)

[13] Parr and Shanks (2000)

[14] Reif (2001)

[15] Skok and Legge (2002)

[16] Somers and Nelson (2003)

[17] Umble, Haft and Umble (2002)

[18] Welti (1999)

[19] Zhang, Lee, Zhang and Banejee (2002)

Project team

When speaking about project team a lot authors talk about their competences, knowledge and also organization of team. We put all this area in one critical success factor. A decisive element of ERP implementation success or failure is the project team's business and technological competence [22]. Some authors said that importance of team competence has been well recognised [2], [1]. Implementation team spent extra time up front to define in great detail exactly how the implementation would be carried out [15]. This included what modules and process options would be implemented and how the senior management priorities would be incorporated. So, selecting the right employees to participate in implementation process and motivating them is critical for the implementation's success [14], [13]. Implementation team consists of highly respected individuals' from each function and that they should be entrusted with critical decision-making responsibility [23]. Team must consist of right mix of business analysts, technical experts and users from within the organization and consultants from external companies [18], [6], [21], who are chosen for their skills, past accomplishments, reputation and flexibility [23] and must have the following characteristics [14]: be motivated and ambitious, have good functional knowledge, have good decision making capability, be willing to work long hours, be able to act quickly and work as team player. Welti (1999) added that because project work is very demanding and a complex project requires people with a high learning potential and at least all key project members must be available full-time to ensure project continuity and progress. Implementation team is also important because it is responsible for creating the initial, detailed project plan or overall schedule for the entire project, assigning responsibilities for various activities and determining due dates [23]. So, implementation team should be provided it with clear role definitions [6]. Organization of a project team should have the matrix type structure [14], which is flat and streamlined organizational project structure, with its short communication and decision lines [25].

User training and education

Lack of user training and not understanding how ERP system works, appear to be responsible for many problems ERP implementations and failures [22]. Some authors, e. g. [3], [23], [1], [7], [6], [9], [2] added that inadequate training has been one of the significant reasons of many ERP systems failure. If the employees do not understand how a system works, they will invent their own processes using those parts of the system they are able to manipulate [23]. So, the full benefits of ERP can not be realized until end users are using the new system properly. The main reason for education and training is to increase the expertise and knowledge level of the people within the company. Therefore, training strategies should be developed in advance and continually updated during the implementation [15]. Education and training refers to the process of providing management and employees with the logic and overall concepts of ERP system [26]. To make end user training successful, the training should start early, preferably well before the implementation begins [23]. Three aspects concerning the contents of training are [26]): (1) logic and concepts of ERP; (2) features of the ERP system software; and (3) hands-on training.

Training takes on a moderately important role during the latter stages, when training on continuous basis is required to meet the changing needs of the business and enhance employee skills [22]. It may only take days to change hardware and software, but it takes weeks or months to scale learning curves [4]. A particular challenge in ERP implementation is to select an appropriate plan for end-user training and education [3].

Executives often dramatically underestimate the level of education and training because of associated costs [23] and he added it has been suggested that reserving 10 to 15 % of the total ERP implementation budget for training will give an organization an 80 % chance of implementation success.

Business process reengineering

ERP systems are essentially developed as instruments for improving business processes such as manufacturing, purchasing or distribution [3] and they are built around best practices in specific industries [17]. However, the software may not necessarily fit our business processes, because implementing ERP is not a matter of changing software systems, rather it is a matter of repositioning the company and transforming business practices [13]. So we can choose customization of ERP packages to better fit a company's need or to change our business processes to fit the packages [7]. If we choose customization of the software it results in higher implementation cost and longer implementation [8]. So implementing an ERP system involves reengineering the existing business processes to the best business standard. This could be possible if, we did an extensive analysis of current business processes and identify the potential changes of reengineering. Organization should be prepared and ready for fundamental change to ensure the success of BPR [26]. All authors in this group agree that business process reengineering is a key to successful implementation, but they do not have the same opinion, when organization should change their business processes. Some authors said that, we should change business processes before or through implementation [6], [22]. It is moderately important in the acceptance stage and tends to be less important once the technology becomes routine and infused [22]. But other authors suggested that business process reengineering should be carried out after and not before or during the project implementation, because the functionality and therefore the real potential of software are not fully known at that time [25].

Change management

The existing organizational structure and processes found in most companies are not compatible with the structure, tools and types of information provided by ERP systems [23], because every ERP system imposes its own logic on an organization's strategy, organization and culture. These changes may significantly affect organizational structures, policies, processes and employees, and can cause resistance, confusion, redundancies, and errors if not managed effectively. Many ERP implementations fail to achieve expected benefits possibly because companies underestimate the efforts involved in change management [22], [3]. Because of that, it is important that an organization goes through a carefully planned transformation that is based on adequate strategy and well-defined methodology of implementation [6]. It will not change overnight and strategies need to be used to get employees not only to change how they work but also how they behave. Some organizations need to make long-term plans to begin to change the culture long before ERP is implemented [21]. Such activities appear to be important from the early stages of a project and continue throughout the adaptation and acceptance stages [22]. If people are not properly prepared for the imminent changes, then denial, resistance and chaos will be predictable consequences of the changes created by the implementation. All employees must be made to understand how the new system can both benefit the company and make their jobs easier [23].

Effective communication

The importance of communication across different business functions and departments is well known in the IT implementation literature, because communication has a high impact from initiation phase until system acceptance, as it helps to minimize possible user resistance. Communication has to cover the scope, objectives and tasks of an ERP implementation project [3]. We need effective communication in project team and within the organization. Good communication in project team can be ensured by: weekly team meetings where team and project status updates are provided; postings on the company intranet; formal and informal information sessions; etc [14]. Project team also should be on same location in the same area (floor) that they can have common meeting, etc. The progress of the ERP project should be readily discernible to all of the employees in the organization [4]. It has to include project status, impending changes, training announcements through company intranet, newsletters, e-mails, etc. Some authors such as [3] and [22] suggested that organization should have a communication plan. The communication plan has to detail several areas including the rationale for the ERP implementation, details of the business process management change, demonstration of applicable software modules, briefings of change management strategies and tactics, and establishment of contact points [6].

User involvement

ERP systems cross-functional and departmental boundaries, cooperation and involvement of all people in the organization are essential [22]. System implementation represents a threat to users perceptions of control over their work and a period of transition during which users must cope with differences between old and new work systems [10]. Involving users, in the stage of defining organizational information system needs, can decrease their resistance to the potential ERP systems, since by which users have feelings that they are the people who choose and make the decision. User involvement refers to participation in the system development and implementation processes by representatives of the target user groups. There are two areas for user involvement [26]: (1) users involvement in the stage of definition of the company's ERP system needs, and (2) users participating in the implementation of ERP systems. Open and honest communication across the organization is of paramount importance to satisfy the information needs of users, and to prevent the circulation of unfounded rumours [25]. Users need reliable information, because any project affects them directly and may even threaten their jobs. These help the user to become acquainted with the new situation, to build up confidence in the project and its members, and finally to accept the project.

Data analysis and conversion

The quality of pre-existing data and information systems has been cited as an important factor in the successful implementation of ERP system [10]. If problems with data are not fixed in legacy systems, they will be apparent in the new system as well [4]. ERP modules are intricately linked to one another, inaccurate data input into one module will adversely affect the functioning of other modules [26], [23]. The data residing in the legacy systems, both master data and transaction data, needs to be migrated to ERP system [14]. This effort often involves translating or amalgamating existing data to conform to the specifications required by the ERP system [19]. Conversion and interfaces must be ready in good time to allow for the data transfer and data verification [25]. There are two places where this data

can be checked: on legacy side before migration or on ERP site after migration [14]. System testing is defined as a set of tasks designed to assure that the ERP system is functioning as desired. It should include testing of all types of potential situations, ensuring that the results produced in the test environment match those expected to occur. Khan (2002) named it as integration test. Integration testing should be performed using business scenarios that are very comprehensive. The data should be checked and tested after conversion by the project members and key users before it is released into production [25]. Data issues are critical from initiation through adaptation of the system and are moderately important during system acceptance and use [22].

Consultants

A great deal of know-how is essential for the complex implementation of an integrated standard software package. The success of a project depends strongly on the capabilities of the consultants because the consultant is the only one with in-depth knowledge of the software [25], [4]. They provide a very valuable service by filling gaps, providing expertise, and thinking outside the box [14]. They are specialized and can usually work faster and more efficiently. An organization frequently uses outside consultants for setup, installation, and customization of their software availing themselves of the consultants' experience, comprehensive knowledge of certain modules, and experience with the software application [22]. The use of consultants is important, but it is vital that over-use of consultants does not mean that the company loses ownership of the project [21]. Therefore, an organization has to establish a knowledge transfer mechanism by which consultants' role is defined clearly and their skills and expertise are acquired and transferred adequately [3]. Their knowledge and skills can come at a high cost to the business [21]. It is critical to have strategies and agreements in place to manage the consultants.

Project management

Since the combination of hardware and software and the organizational, human and political issues make many ERP projects huge, complex and risky, effective project management is crucial from initiation to acceptance [22], [2]. Approximately 90 % of implementation are late or over budget, which may be due to poor cost and schedule estimations or changes in project scope, rather than project-management failure [3]. Because ERP systems implementation is a set of complex activities, involving all business functions and often requiring between one and two years of effort, thus companies should have an effective project management strategy to control the implementation process, avoiding overrun of budget and ensuring the implementation within schedule [26]. To fulfil this task efficiently and effectively, the management needs broad authority over all aspects of the project [25]. ERP system implementation must be managed or directed by an effective project leader [19]. The project manager/leader is defined as the person who is responsible for overall day-to-day management of the ERP system implementation effort and coordinates the use of the organization's resources with those of contractors or consultants, vendors and other parties involved in the implementation effort [4]. This person's effectiveness is measured by his or her ability to motivate others to perform the work necessary to successfully implant the ERP system. Some degree of improvisation may also need to be part of the skill set of ERP project managers [2]. There are five major part of project management [26]: (1) having a formal implementation plan, (2) a realistic time frame, (3) having periodic project status meetings, (4) having an effective project leader who is also a champion, and (5) having project team members who are stakeholders. The

project should establish aggressive, but achievable, schedules that instil and maintain a sense of urgency [23].

Project champion

Project champion or sponsor is a person who had a good understanding of what was going on and was very influential [21]. They also added that he/she should had experiences in previously implementation and that that experience was essential to manage conflicts that arose before and after implementation. A project champion is person who performs the crucial functions of transformational leadership, facilitation and marketing the project to the users. Championship should also be considered as a critical enabling factor [22]. Project champions play a critical role in acceptance of the technology and he or she is usually somebody at senior management level, so that this person has the authority to make substantial organisational changes happened [2]. A champion role has someone from CIO or CEO. The project champion should be an individual who can make things happen and ensure that [14]: management stake in the project is conveyed to all levels, top management support is maintained throughout the project, necessary resources are provided at critical junctures, parties at loggerheads are brought together and, decisions and compromises are enforced.

Architecture choices (packages selection)

ERP systems often cost millions of dollars to purchase and implement [4]. He added it follows that it would make sense to spend a small fraction of this money investigating the various software options available. All ERP packages have limited capabilities. Some packages are more suited for larger firms, some more for smaller ones. Some packages have become a “de facto” standard of industry; some have a stronger presence in certain parts of the world [2]. To increase the chance of success, management must choose software that most closely fits its requirements such as hardware platforms, databases, and operation systems [26]. An ERP system relies in its operation on sophisticated information technology infrastructure [13]. Two aspects should be cared when selecting software and hardware [26]: (1) compatibility of software/hardware and company’s needs and (2) ease of customization. And after choice for the package is made there is the decision what versions or modules of the package would best fit the organization. If the wrong choices are made, the company faces either a misfit between package and business processes and strategy, or a need for major modification, which are time-consuming, costly and risky [2]. Choice of the right package during the initiation and adoption phases involves important decisions regarding budgets, time-frames, goals and deliverables that will shape the entire project [22]. Therefore, selecting the package that meshes well organizational requirements is critical [10]. The greater the effort involved in ERP selection, the greater the chance of overall success [22].

Minimal customization

The integrative design of ERP systems increases the complexity involved in source code modification, most companies significantly underestimate the effort required for modifications [15]. Therefore, do not change basic software code [4]. He added that the vendor’s code should be used as much as possible, even if this means sacrificing functionality, so upgrades form release to release can be done easily. On that base, [18] suggest that we use vanilla ERP, which mean minimal customization. Successful ERP

implementations are often the result of minimal customization as customization usually associated with increased ERP implementation cost, longer implementation time, the inability to benefit from vendor software maintenance and upgrades, etc [22]. If no modifications are made, the systems will perform very well but it may fail to support the business [14]. Therefore, every modification request should be carefully evaluated and approved, or rejected, after considering all the options.

Preliminary results CSFs of ERP implementation

To investigate importance CSFs of ERP implementation in Slovenian companies an empirical study was designed. Prepared was web questionnaire, which was mailed 265 companies with implemented SAP solution (SAP R/3 or mySAP ERP), Microsoft Navision solution or GEAC solution (System21). Mailed were 54 companies, which have implemented SAP solution; 117 companies, which have implemented Navision solution and 5 companies, which have implemented GEAC solution. There were 48 responses to the survey questionnaire, which represents 18 percentages. Of the 48 answers received, 22 (or 46 percent) belonged to SAP solution, 23 (or 48 percent) belonged to Navision solution and 3 (or 6 percent) belonged to GEAC solution (see Table 2). In table 2 we can also see that 13 received answers belonged to small companies, 16 answers belonged to medium companies and 19 answers belonged to large companies. The organizations under consideration were for the most part from industry (52.1 percent), followed by retail (14.6 percent), service (14.6 percent) and other (18, 7 percent).

Table 2: Distribution of organization size and solution

	SAP	Navision	GEAC
Small companies	1	12	0
Medium companies	5	8	3
Large companies	16	3	0
Total	22	23	3

* We used Slovenian classification of organization size.

Companies had to make own ranking list of fifteen the most important CSF of ERP implementation from literature. 1 meant the most important factor and 15 meant the least important factor. On this part of questionnaire answered 31 (or 65 percent) companies. CSFs from survey by importance from most important to lest important factor are:

1. clear goals, objectives, scope and planning ($M_x = 2,72$)¹,
2. top management support and involvement ($M_x = 5,66$),
3. project team ($M_x = 5,81$),
4. user involvement ($M_x = 6,42$),
5. communication between project team and organization ($M_x = 7,28$),
6. communication inside project team ($M_x = 7,58$),
7. bser training and education ($M_x = 7,71$),

¹ M_x represents arithmetic mean.

8. business process reengineering ($M_x = 7,74$),
9. consultants ($M_x = 8,47$),
10. project champion ($M_x = 8,84$),
11. data analysis and conversion ($M_x = 9,13$),
12. minimal customization ($M_x = 9,19$),
13. project management ($M_x = 9,87$),
14. change management ($M_x = 10,74$) and
15. architecture choice ($M_x = 11,63$).

We also examined correlation between single CSF and we got, that between them exist positive correlation. These CSF are:

- project management and architecture choice ($r = 0,499$),
- change management and minimal customization ($r = 0,487$),
- project champion and business process reengineering ($r = 0,469$),
- communication between project team and organization and change management ($r = 0,465$),
- top management support and involvement and consultants ($r = 0,464$),
- project sponsor and user involvement ($r = 0,464$),
- communication between project team and organization and data analysis and conversion ($r = 0,457$),
- user training and education and minimal customization ($r = 0,45$),
- business process reengineering and architecture choice ($r = 0,433$),
- communication inside project team and business process reengineering ($r = 0,432$),
- project team and change management ($r = 0,429$),
- project team and user involvement ($r = 0,419$),
- user involvement and change management ($r = 0,416$),
- communication inside project team and data analysis and conversion ($r = 0,415$),
- project champion and minimal customization ($r = 0,4$).

We would like to know if there is correlation between ranking list of survey and ranking list of literature (see table 1). Between ranking lists of both exist high statistical correlation at the 0.001 level ($r = 0,745$).

Table 3: Comparison of ranking list CSF of literature and survey

	Literature	Survey
clear goals, objectives, scope and planning	2	1
top management support and involvement	1	2
project team	3	3
User involvement	9	4
Communication between project team and organization	7-8*	5
Communication inside project team	7-8*	6
User training and education	4	7
Business process reengineering	5	8
consultants	11	9
Project champion	13	10
Data analysis and conversion	10	11
Minimal customization	15	12
Project management	12	13
Change management	6	14
Architecture choice	14	15

* CSF communication is divided on two CSF's which are communication between project team and organization and communication inside project team.

In table 3 is represented comparison of ranking list CSF by professional literature and ranking list of CSF by survey. It can be seen, those very important CSFs in both areas (professional literature and in survey) are: clear goals, objectives, scope and planning; top management support and involvement and project team. On fourth place survey puts CSF user involvement, but literature put it on ninth place. The biggest difference in place of CSF between literature and survey is for factor change management. Professional literature put it on sixth place, but our survey put it on fourteenth place. For other CSF the place of rang is changing for place up or down in table but CSFs stay in upper part or in downer part of table. In the table 3 thick line divides upper and downer part of table.

2. CONCLUSION

The implementation projects of ERP systems are big, strategic and complex projects which involve lots of risks, what is reflected on time, scope and costs of project implementation. Because of that, companies have to create conditions, in which they can implement chosen solution in expected time, scope and evaluated costs. This means, that companies should be aware of what most critical factors for success of ERP implementations are. In the paper we will research the ERP implementation CSFs by studying published prior research on the field of ERP implementation. We will build a model of ERP implementation CSFs, we will discuss in depth some most important factors of ERP implementation and we will represent preliminary results CSFs of ERP implementation survey.

We summed up findings of nineteen authors about CSFs. Our findings are somehow comparable but exact the same as in two other studies about CSFs publications. Both mentioned research attempts listed different authors than we. Number in brackets bellow represents number of authors, who mentioned CSFs. First review by Nah et al. (2001) defines eleven CSFs from ten authors, which are: ERP teamwork and composition (8),

change management program and culture (7), top management support (6), business plan and vision (6), business process reengineering and minimum customization (6), effective communication (5), project management (5), software development, testing and troubleshooting (5), project champion (4) and appropriate business and IT legacy systems (2). Second review by Huang et al. (2004) defines nine CSF from eighteen authors. These CSF are: clear definition of demand (14); efficient management (13); support from senior management (12); communication (12); support by software suppliers (11); enterprise (11); education and training (7); level of e-business (4); and accurate information (3).

We concluded the most important factors for authors and also for Slovenian company are: clear goals, objectives, scope and planning; top management support and involvement and project team. Big difference between them is for CSF user involvement. Slovenian company put factor user involvement on fourth place but published literature put it on ninth place. The biggest difference in place of CSF between literature and survey is for factor change management. Professional literature put it on sixth place, but our survey put it on fourteenth place. For other CSF the place of rank is changing for place up or down in ranking list. Our next step in research the ERP implementation is to examine those factors more carefully in survey of organizations and to research some case studies of ERP implementations.

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