

International Projects of Enterprise Systems Implementation

Stages and Critical Factors

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Abstract

The importance of enterprise systems is increasingly growing and they are in the center of attention and consideration by organizations in various types of business and industries from extra-large public or private organizations to small and medium-sized service sector business. These systems are continuously advancing functionally and technologically and are inevitable and ineluctable for the enterprises to maximize their productivity and integration in current competitive national and global business environments.

Also, since local software solutions could not meet the requirements of especially large enterprises functionally and technically, and as giant global enterprise software producers like SAP, Oracle and Microsoft are improving their solutions rapidly and since they are expanding their market to more corners of the globe, demand for these globally branded low-defect software solutions is daily ascending. The agreements for international ERP implementation project consultancy are, therefore, exponentially increasing, while the research on the influencing factors and know-hows is scattered and rare, and thus, a timely urgency for this field of research is being felt.

The final developed five-in-five framework of this study, for the first time, collects all mentioned-in-the-history critical success factors and project activities, while sequencing them in five phases and categorizing them in five focus areas for international ERP implementation projects. This framework provides a bird's-eye view and draws a comprehensive roadmap or instruction for such projects.

Keywords: Enterprise Systems, Enterprise Resource Planning, IT Implementation, International Project Management, Critical Success Factors

General overview and problem statement

Enterprise systems are the wide-ranging complicated application/software systems and tools underlying many of manufacturing and business' administrative- and management-support processes. Examples include the systems associated with finance, human resources,

procurement-to-distribution planning, customer relationship management, and several others. Every day these systems process thousands of business transactions in which data are entered, manipulated, and stored for both operational and informational purposes. The resulting information resources constitute a valuable corporate asset that is used not only for daily operational planning, but also for strategic analysis and decision making.

In recent half century, advances in enterprise systems and solutions have had a considerable influence on the success and productivity of enterprises across all industries in four corners of the globe. The ERP market is anticipated to garner approximately \$41.69 billion in sales by 2020. Besides this, the market would register a CAGR (compound annual growth rate) of 7.2 percent during the forecast period 2014 -2020 (Chaudhari & Ghone, 2015).

Because of such a vibrant and growing market, vendors as well as researches are focusing on advancement and improvement of enterprise systems to offer more efficient solutions and to design/define the next generation of organizational dashboards respectively. To do so, a very critical prerequisite is to identify and evaluate the evolution of enterprise systems which is done in recent years through different methodologies and within (not entirely) distinct contexts; from historical reviews to analytical researches on the need for new functions.

Studying the evolution history of enterprise systems, it is implied that the functional development of enterprise systems correlates highly with the computation capability advancement (which is named technological evolution in this research) during recent decades. With constantly improving hardware available at a reasonable price, and software development keeping pace, it was possible to add functions, which could access a centralized database. The new technologies allowed for system expansion to support increasing numbers of functions while offering the advantage of integration. To understand and plan for future of enterprise systems, therefore, it is necessary to investigate the evolution history, considering two main aspects; functional evolution versus technological evolution.

Enterprise systems (as popularly known as ERP systems) are to solve the problem of information fragmentation in large organizations by uniting and/or combining all business processes into an integrated system environment to improve critical information loading to users and enhance data consistency. Implementing an ERP system is very expensive and time consuming. However, this can put a financial drain on enterprises for at least 2 years before they realize a return on their investment.

Benefits realization and simple operational stability after system run-up are probably the most considerable issues that companies are facing when implementing their new enterprise systems. According to Panorama's 2016 ERP Report, in the year 2015 in comparison to 2014, the data interestingly shows a 1-percent decrease in success rates, a considerable decrease in the percentage of respondents that view their project as a failure (from 21% in 2015 to 7% in 2014), and a corresponding increase in the percentage of respondents claiming neutrality in regard to project outcomes - from 21% to 36% (Panorama Consulting Solutions, 2016).

During all stages of an ERP implementation project, the whole enterprise, particularly top management, is concerned about many different issues, from change management to project

finance. Enterprises also insist on the importance of the project management effort whose variables, individually and collectively, are not as significant in predicting on-time and on/under-budget implementations as anticipated. When expressed as a percentage of revenue, the average company pays out an average of 6.5% of annual revenue (rather than 5.9% in 2014) (Panorama Consulting Solutions, 2015, 2016) that is large and considerable and an ERP system's return on investment can be difficult to calculate because of the many intangible costs and benefits.

Regardless of many years of experience in selection, implementation, and utilization of enterprise systems, a large percentage of projects fails or exceeds time and budget, and current systems do not fulfill top managers' expectations and are afflicted with low user satisfaction. Several lists of "Dos and Don'ts" as well as vast critical success factors investigation regarding ERP projects have been published on the internet and in business magazines/scientific journals. Many researches during last decade propose an overall list of factors associated with project/system implementations. Also much more specific researches investigate this phenomenon from particular viewpoints such as organizational-related, project-related, etc. All the findings are obtained out of methodologies including identification and synthesis of those critical requirements for implementation that have been recommended by practitioners and academicians, and through a comprehensive review of the literature.

The international nature of the enterprise-vendor relationship is also of importance. There is unfortunately no precise statistics of success or failure rate of international projects of ERP implementations but national case studies prove that the success rate seems to be not too high and satisfactory.

The implementation and utilization of ERP solutions get used to a number of problems due to their complicatedness and the effect they have on business processes. These problems are further aggravated in international environments in which national cultures and local necessities play an important role. Enterprises often should reach to equilibrium between the volume of modifications and local requirements.

Most studies have been allocated to developed countries, while in developing countries many enterprises are approaching to such software solutions. The Enterprise System related researches and instructions have almost been accomplished by technologically advanced and leading countries. But developing countries, which mostly confront with especial challenges, have a different situation rather than the implicit assumptions of developed countries.

Implementation strategies and methodologies are overwhelmingly designed for a western audience. This might lead to even higher failure rates in underdeveloped markets. Most large western firms have gone through several iterations of purchasing and implementing ERP and other large tool systems. They have some (although not always strong) capability and organizational memory around change. In developing nations, the businesses can be younger and going through these challenges for the first time.

As well as recent scattered publications including action research papers and case studies on international projects of ERP implementation there is a huge observations and records about the failure of such projects due to diverse set of reasons all around the world. These observations

have been done through web search, public IT and Business Magazines, and unstructured and unofficial up-in-the-air interviews with non-western executive managers and chief information technology managers especially from Asian and Middle East countries.

This high rate of failure and low amount of practical instructions and frameworks based on systematically done research justify and emerge the need for the studies in this area. Some studies have tried to develop frameworks to compare ERP implementation issues in advanced and developing countries. Some other researchers have accomplished investigations of the challenges surrounding ERP implementations across various organizational and national cultures. But there is a huge need for an overall investigation to develop a framework considering up-to-date researches and case studies regarding international projects of ERP implementation. This study has targeted to do so.

Research methodology

To reach a conclusion about the research method which to be utilized in this study, it is reasonable to evaluate the methodologies of similar investigations. During past three decades of research on enterprise systems various research methods have been utilized. Focusing on recent works since early 2000s so far, it is implied that most of studies have used quantitative or hybrid (quantitative and qualitative) research methods especially empirical surveys by the means of questionnaires to find implementations success or failure factors, or statistical/mathematical heuristic evaluations of literature review to list and prioritize the factors.

According to the aim of this study described in last section, this research is going to develop a framework for international projects of ERP implementations including all influencing factors and project life-cycles. Consequently a vast investigation of all recent major and minor related researches must be done and the desired framework must be emerged from the heart of this expanded investigation. Based on fundamental knowledge of business research methodology, a *conceptual research* is highly recommended for this kind of research purposes.

Conceptual research focuses on the concept or theory that explains or describes the phenomenon being studied. What causes disease? How can we describe the motions of the planets? What are the building blocks of matter? The conceptual researcher sits at his desk with pen in hand and tries to solve these problems by thinking about them. He does no experiments but may make use of observations by others, since this is the mass of data that he is trying to make sense of. Until fairly recently, conceptual research was considered the most honorable form of research—it required using the brain, not the hands (Stevenson, 2014).

A conceptual research is primarily based on theoretical considerations, theories, frameworks, models, etc. Such studies tend to use no empirical data (sometimes to support certain thoughts and conclusions). The conceptual research has normally no intentions to run specific analytical procedures, due to the lack of empirical data.

Conceptual studies have their own importance. They are the starting point for many ideas, models, frameworks, theories etc. They may not face the rigor of a research paper yet their significance cannot be overlooked. Conceptual studies are counted as a qualitative research that is a method of inquiry utilized in many different academic disciplines, including not only the

social sciences and natural sciences, but also in market research, in business, and other contexts including service demonstrations by non-profits (Denzin & Lincoln, 2011). Qualitative research is considered in opposite of quantitative research which is based on experiments and empirical (statistical) analysis.

In quantitative researches, reliability and validity are important criteria in establishing and evaluating the quality of the research. However, there has been some discussion among qualitative researchers concerning their relevance for qualitative research. Some writers have suggested that qualitative studies should be judged or assessed according to quite different criteria from those used by quantitative researchers (Bryman & Bell, 2011).

Denzin and Lincoln (2011) propose two primary criteria to evaluate a qualitative research that provide an alternative to reliability and validity: trustworthiness and authenticity. Trustworthiness is made up of four sub-criteria of credibility, transferability, dependability and confirmability, and authenticity is made up of some sub-criteria such as fairness, ontological authenticity, educative authenticity, catalytic authenticity and tactical authenticity. According to them, although the validity and reliability of quantitative researches are provable by statistical methods, the trustworthiness and authenticity of qualitative researches are not necessarily required to be proofed by the researcher. These kinds of criteria are sensible by providing a comprehensive set of evidences such as a vast literature review (Denzin & Lincoln, 2011).

Literature Reviews, similar to conceptual papers, normally tend to use no empirical data unless it is taken from existing publications to make a case for a specific argument which is performed through this study too. The aim of the literature review lies in summarizing, synthesizing, discussing, criticizing and, hopefully, showing research gaps.

Implementation Life-Cycle

ERP systems can be complex and difficult to implement, but a structured and disciplined approach can greatly facilitate the implementation. That's why there are a considerable number of researches categorizing the whole ERP story in the enterprise which is called Life-cycle. The ERP life-cycle has been structured in dimensions and phases, generic enough to permit the classification of publications and comprehensive enough to give a general vision of the whole ERP lifecycle (Nazemi, Tarokh, & Djavanshir, 2012).

Primary researches suggest instructions by steps. Esteves & Pastor (2001) and Umble et al. (2003) have presented most cited ERP implementation procedures respectively in 6 and 11 steps. Since late 2000s, researches have often divided ERP life-cycle into five major stages (Ehie & Madsen, 2005; Munkelt & Völker, 2013; Winkelmann & Klose, 2008). These phases are preceded by a critical look at the strategic enterprise architecture and surrounded by change management and business development components. The strategic enterprise architecture analyzes the driving motive for implementing an ERP system while change management and business development seek to integrate the human resource dimension and coordinate daily operations with the new business process design, respectively (Ehie & Madsen, 2005). Although most of the researches categorize the attempts in some-how similar phases in number, some of them have strategic and planning point of view while the others have technical point of view. This study considers both views. Also there are some overlaps and exchanges in different

definitions of phases. This study tries to merge them and introduce a comprehensive plan of actions by phases as below.

- 1 Initiatives; Strategic and Technical
- 2 Selections
- 3 As-Is to To-Be: Analysis to Blueprint
- 4 Tests and Final Preparation
- 5 Go Live! And Continuous System Engineering

Up-to-date general critical factors

Early ERP implementation reports confess that only a low percentage of enterprises experienced a smooth rollout of their new ERP systems and immediately began receiving the advantages they predicted. An uneven utilization and low return on expectations are normally rooted by human issues, not software failure. Therefore, the critical factors are investigated by enormous point of views, and categorized in multifarious frameworks.

In a very primary vast investigation of success factors, (Al-Mashari, Al-Mudimigh, & Zairi, 2003; Kræmmergaard & Rose, 2002; Nah, Lau, & Kuang, 2001; Somers & Nelson, 2001, 2004) propose a then overall list factors associated with project/system implementations obtained out of a methodologies including identification and synthesis of those critical requirements for implementation that have been recommended by practitioners and academicians, and through an comprehensive review of the literature. They show that top management support, project team competence, interdepartmental cooperation and partnership with vendor/implementer are important during almost all implementation stages.

Other researches provided detailed and focused investigation on factors associated with ERP projects rather than overall taxonomy reports. For example, (Motwani, Mirchandani, Madan, & Gunasekaran, 2002) detect that organizational environment, ready culture, and balanced network relationships are key factors to ERP success, and (Mabert, Soni, & Venkataramanan, 2003) emphasize that a clear instructions on how to recruit outside consultants and apply detailed plans for training users are critical. Individual characteristics (knowledge, cognitive abilities, and motivation), group characteristics (goals, roles, norms, diversity, and problem solving), and organizational characteristics (strategy, resources, rewards, culture, and structure) could affect the ERP implementation (Xue, Liang, Boulton, & Snyder, 2005).

Several studies have categorized multifarious factors into 8 to 12 major classes including top management support and commitment (Bradley, 2008; Finney & Corbett, 2007; Lin, 2010; Muscatello & Chen, 2008), effective project management and team (Chen, Law, & Yang, 2009; Finney & Corbett, 2007; Skaf, 2012; Umble, Haft, & Umble, 2003), business process reengineering and continuous system engineering (Muscatello & Chen, 2008; Somers & Nelson, 2004; Thome & Hufgard, 2006), vendor support and employees training (Bernroider, 2008; Ehie & Madsen, 2005; Finney & Corbett, 2007; Upadhyay, Jahanyan, & Dan, 2011). Findings and classifications on critical factors related to ERP implementation success have been continued and carrying currently on. The original research of this paper has studied first almost all major papers that are covering critical success factors of ERP implementation and then categorizes them as

management-, HR-, project- and IT-related factors. A new category of international-related factors is aimed to be added by this research.

Specific factors associated with international projects

The failure of global ERP projects raises the importance of studies that are investigating the factors and conditions impacting international aspects of these projects. This section reviews almost all recent studies which have focused on international projects of IT adoption and ERP implementation.

To do so, in this section, the differences and characteristics of international projects in general have been reviewed. Studying and evaluating the conditions surrounding and the factors impacting international projects demonstrates that national and consequently organizational cultures in different countries strongly matter. There are some best practice cultural theories which are utilized in international business and management studies like Hofstede's dimensions and Lewis model, both of them are explained in this section.

Almost all significant and mostly cited researches investigating cultural perspectives of IT management and ERP adoption are utilizing Hofstede's model (Gallivan & Srite, 2005; Hwang & Grant, 2011; Krumbholz, Galliers, & Maiden, 2003; Rajapakse & Seddon, 2005; Sheu, Chae, & Yang, 2004; Shore, 2006; Srivastava & Gips, 2009; Van Everdingen & Waarts, 2003; Zhang, Lee, Huang, Zhang, & Huang, 2005). A very abstract sense of these studies imply that low power distance, low uncertainty avoidance, high collectivism and more long-term oriented cultures may handle huge impacts of transborder ERP implementation projects because these projects require open communication through all enterprise (critical assessments and clear comments), low resistance to change (risk-taking), teamwork, and optimistically futuristic top management and staff. But the studies do not observe any evidence to relate the success of such projects to Hofstede cultural dimensions of Masculinity and Indulgence.

The other cultural aspect is the misfit between business and operational processes behind standard software packages that are generally recommended and the actual business and operational processes in adopting enterprise. Although ERP vendors and implementation consultants need to comprehend how the industries and businesses in other radically vibrant business environments are functioning, to modify and generalize their software packages and help them to accept that these systems make effect just in totally new business processes, adopting enterprises should also fully understand the importance of business process reengineering and continuous system engineering.

Studying other specific impacting factors and implementation frameworks for international projects of ERP adoption shows that a strong commitment to longer time period of projects, open communication through advanced technologies, single language reporting (oral and written) standards, reducing high costs resulted from different money values and economies, empowering implementation skills and knowledge by special trainings, increasing task congruency and bolding and emphasizing the competitive environment to reduce the impact of cultural misfit, initial planning based on localized solutions and decentralized implementations, and establishing partnership between foreign vendor/consultant and local developers/consultants are some specific factors that can strongly help the projects to be successful as well as long-term

strategies, governmental policies to strengthen foreign investment and fair competition, careful package selection, minimizing customization, and at last but not least, a bilateral trust among all project stakeholders during project negotiations.

In parallel to some theoretical works investigating international aspect of ERP implementation projects, there has been a large number of case reports studying the specific factors influencing ERP implementation projects in different desperate countries of the world having different national and organizational cultures. Case studies in different countries that are reviewed in this section share sometimes similar and sometimes specific implications for international ERP implementation.

The failures of foreign ERP implementation projects convince the international consultants to have a more localized strategy which is *cooperation with a local ERP service company* that is more familiar with the host culture and domestic business and overall conditions to guide enterprises who implement their new systems. Partnership with local ERP service companies raises another challenge for foreign vendors/consultants namely Training. They should ensure that their partners know their services, products and tools very well and are reliable.

Implementation consultants who look forward entering foreign markets can use the framework and results of this study to better accomplish international ERP projects and to adopt better strategies. They can also recognize the environmental and internal essentials and prepare in a way that is appropriate to the particular circumstances.

Framework development and discussion

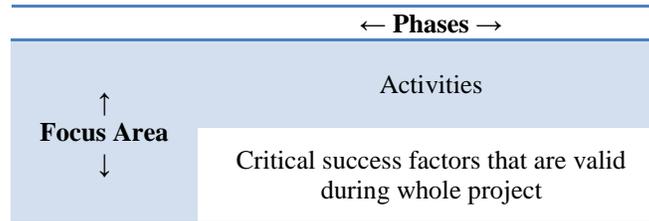
Project Managers plan the project based on the project time-line and influencing criteria such as budget, risks, quality expectations, etc. which are known as critical success factors in details in the literature. A framework containing almost all these information and criteria would be like a bird's eye view to the project for the top management and the project leaders. This study has reviewed most-cited modelings and classifications of ERP implementation success factors to evaluate the existing models, and to recognize ideas for a new practical classification/framework.

The vast literature demonstrates that a successful ERP implementation often needs identification and management of critical factors and their components at each stage of the ERP Life-cycle (Beheshti et al., 2014). Literature review also shows that recent publications are more focused on organizational, managerial and strategic aspects of ERP implementation rather than technical and system issues that had been reflected in former publications till mid 2000s. Recent publications add new and significant less-paid-attention factors and criteria into the old lists of critical success factors. The assessment of these factors and also the attempt for categorization of them hand over a new framework to understand an ERP implementation project life-cycle, and activity areas classification and importance.

To do so, after precise evaluation of the most cited and recent publications and case studies in the field of critical success factor identification and ERP project life-cycle definition, a new staged instruction (framework) for international ERP implementation projects based on up-

to-date critical factors is developed. This framework models an enterprise system implementation project by two major dimensions of project stages and focus area. Although the activities can/should be divided through project stages, almost all critical factors are effective during whole project while they can be categorized by activity areas.

Table 1-The modeling structure of the instruction developed by this study



Most of researches have divided an ERP project to five stages of Initiatives, Requirement analysis, Realization, Final Preparation and GO-Live (Ehie & Madsen, 2005; Monk & Wagner, 2012; Munkelt & Völker, 2013; Winkelmann & Klose, 2008). This type of phasing has two major weaknesses according to this study's point of view; 1) although the selection of consultant and/or vendor/software is very crucial to project success, it is a bit neglected to be considered in this life-cycle models, and 2) the capacity of activities is not divided in an equivalent form. In fact, if the selection processes for consultant and/or vendor/software are considered as activities in Initiatives phase (or any other), that phase lasts equal to other four phases.

This study, therefore, divide the project based on the attention that has been paid into the activities of a normal enterprise system implementation. There is a considerable emphasize on vendor selection during an enterprise system project, just after defining strategies and vision of the project. In fact, top management can start the implementation practically after selecting the vendor/software getting help from external consultants. Therefore, consultant and vendor selection is a stage alone right after initiatives and before practical implementation which begins with requirement analysis and blueprint development. Although some researches or cases separate the phases for requirement analysis (As-Is Analysis and To-Be Analysis), this study combine these stages because the target of all activities is actually similar which is to develop new business process definition and project blueprint. Also this study emphasize on the activities regarding a middle exclusive phase to test the system and migration issues, and continuous business information processing after final go-live or run-up!

On the other hand, the recent CSF classification studies (Ram & Corkindale, 2014; Thomas, Spillan, & Carolina, 2012) are doing categorization regarding focus areas of organizational, technological, project-related, and people-related. This study adds the focus area of international-related issues to make a framework for international projects of implementations. This kind of classification makes specialized experts in enterprise or consultants able to concentrate on specific activities and factors.

As the origin and nature of management-, HR- and Project-related activities are so close to each other, some researches consider them as a unique area of organization-related activities, while recent researches are focusing to separate them in detail to define particular tasks and

responsibilities and identify specific success factors for all project members and departments. Thus, although the activities and factors which are affiliated with international-related issues could be counted or considered as organizational activities and factors too, they are separated as an exclusive focus area just for the sake of their importance in international projects.

Projecting project stages on focus areas helps project members not only to focus on their specialized activities and success factors, but also to prioritize their tasks and responsibilities considering related factors to which they have to pay attention. Also it makes top management able to have an overall view of the project to plan and strategize. For example, in strategizing phase, management-related factors have more relevance than technological factors.

Because of the whole-project-importance nature of the success factors, they are supposed not to be categorized by phases in this study, but some factors seem to be specified to only one or two phases. For example in management-related area, factors concerning selection criteria are belonging specifically to selection phase of the project while they are applicable somehow in other phases though. Therefore, one possible future research idea or recommendation could be developing a more detailed instruction model which separate factors step-by-step in the project, while some of them would be projected to whole period of project.

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Table 1 - New staged Instruction for Enterprise System implementation based on up-to-date critical factors

	Phase 1- Strategizing	Phase 2 – Selections	Phase 3 – Process Re-engineering	Phase 4 – Migration and Testing	Phase 5 – RUN-UP and CSE
Management-related	Comprehensive planning Vision based on objectives Budget targets (Economic justification) Steering committee introduction	Comprehensive market analysis Criteria and factors definition Negotiations (business vs. legal) Consultant selection Vendor/Software selection Forecasting selection consequences	Organ. Operation Analysis (Business Process Re-eng.) Cooperation with consultants Comparable realignment Conflict resolution Prototyping and adjustment toward final system	Final preparation Testing scenarios' definition Help-desk planning RUN-UP date scheduling	Help-desk setting System behavior optimization User requirement adjustment Continuous System Engineering
	Top management support <ul style="list-style-type: none"> • Top-down promotion • Rational targets definition • Fully support the costs (necessary financial resources allocation) • Technologically oriented top management • Strong and committed leadership • Continuous monitoring Clear selection criteria definition <ul style="list-style-type: none"> • Real experience and knowledge in same industry • Meeting future needs • Honest commitment 			Change management <ul style="list-style-type: none"> • Corporate culture ready for change and learning • Organizational characteristics (strategy, resources, rewards, culture, and structure) • Revolutionary/evolutionary change tactics Organization learning <ul style="list-style-type: none"> • Learning by Doing • Knowledge sharing • External information use • Learning strategy Non-tight budgeting strategy Enterprise-consultant support, acceptance and trust Inter-departmental (cross-functional) collaboration and trust	
	Training planning (content and infrastructure) Top management reeducation	Project team selection Vendor/Consultant's training and knowledge transfer evaluation	End-users involvement in defining the implementation process Project members' training Integration concept reeducation Know-how training Seminars and round-tables	End-user trainings Testing documentation and user's guide preparation	Empower internal consultants Enterprise specific guideline
HR-related	Balanced network relationship Communication channel within enterprise and supply chain Compensation plans to control team members marketability Individual characteristics (knowledge, cognitive abilities, and motivation) Group characteristics (goals, roles, norms, diversity, and problem solving)			Stimulating work environment and acknowledgment Decision-making authorization Post-implementation meetings User accountability activation Up-to-15% budget for training	

	Phase 1- Strategizing	Phase 2 – Selections	Phase 3 – Process Re-engineering	Phase 4 – Migration and Testing	Phase 5 – RUN-UP and CSE
Project-related	Project scope Detailed project plan (assignments and responsibilities) Implementation methodology	Project teams selection (consultant selection team, vendor selection team, and implementation team)	Process documentation New Process Simulation Process measurement Data flow diagrams Project blueprint New process design mapping	Extreme situations simulation and testing New processes debugging	Project completion and delivery Post evaluation (self- and external- evaluation)
	Project team-Vendor/consultant flexibility Project team competence Project champion familiar to IT, enterprise processes and leadership Project definitions (scope, time and cost, milestones, etc.)			Risk evaluation Performance Quality control (KPIs and Balanced Score Cards) Benchmarking best-practices Management of expectations	
Information Technology-related	Hardware and network infrastructures development planning System landscape (Servers and Network)	Software selection Technical team selection IT-Department/Vendor acceptance and collaboration	Current master and transaction data analysis Cleaning up of suspect data Tool based requirement analysis Technical blueprint • Access levels • External system integration • Emergency and backup Technical infrastructure upgrading or renovation Vendor support and upgrading Legacy system consideration and analyses	Testing: • Full data load Testing and simulation exercises Data migration and centralization Software customization • Codeless configuration • Application development • KPI and reports Configuration and parameterization of software	Master data migration from test-system Technical tuning All legacy system remove
	Knowledge/technology transfer and Vendor support and update Organization-Information Integration Single consistent data format Functionality and quality of the software and service			Data accuracy Tool-based implementation New technologies deployment (e.g. In-Memory data Management) None-busy RUN-UP date	
International-related	Initial planning based on localized solutions and decentralized implementations Legal consultation	Careful package selection Establishing partnership between foreign vendor/consultant and local developers/consultants	Process Reengineering based on national and org. cultures Empowering implementation skills and knowledge by special trainings		Continuous relationship with consultants
	Cultural investigations based on cross-cultural models Reducing the impact of "Cultural Misfit" by • Comprehensive BPM • Minimum customization • Increasing task congruency • Bolding and emphasizing the competitive environment			Strong commitment to long-term strategies, longer project duration and extra budget Open communication through advanced technologies Single language reporting (oral and written) standards Reducing high costs resulted from different money values and economies Governmental policies to strengthen foreign investment and fair competition More efficient and trustable negotiation strategy	

Conclusion

The importance of enterprise systems is increasingly growing and they are in the center of attention and consideration by organizations in various types of business and industries from extra-large public or private organizations to small and medium-sized service sector business. These systems are continuously advance functionally and technologically and are inevitable and ineluctable for the enterprises to maximize their productivity and integration in current competitive national and global business environments.

Also, since local software solutions could not meet the requirements of especially large enterprises functionally and technically, and as giant global enterprise software producers like SAP, Oracle and Microsoft are developing and since they are improving their solutions and products by huge investments and international talented human work forces, and expanding their market to more corners of the globe, demand for these globally branded low-defect software solutions is daily ascending. The consultants that are implementing such systems in developed countries (e.g. North America and Europe) face a great request for implementation consultancy in other (especially developing) countries (e.g. Asia, Middle East and South America). The agreements for international ERP implementation project consultancy are, therefore, exponentially increasing, while the research on the influencing factors and know-hows is scattered and rare, and thus, a timely urgency for this field of research is being felt.

From the general perspective for ERP implementation projects, this study reviews almost all related publications since early 2000s and tries to summarize all previously investigated success factors and make a single conclusion and categorization for both old mostly mentioned factors as well as recently-addressed detail investigations, while assessing the mostly referred suggested project life-cycles to come up with a promising effective phased life-cycle for these projects. Not so surprisingly, this study repeats the importance of top management support, clear selection criteria definition, change management strategies, organizational learning, trainings, project management efforts, consultant support, compensation plans, decision making authorization, and realistic time and budget planning as well as risk evaluation, tool-based implementation and continuous system engineering, although the aim of this study is to develop an all-in-one framework for international ERP implementation projects.

This study suggests a five-stage project life-cycle including strategizing, selection, re-engineering, migration, and go-live and continuous system engineering. Phased approach to the project enables the enterprise management, project team and consultants to organize all activities of the project in a timeline, while each phase should be started when the previous one is quite wrapped up. In line with very recent researches, this study recommends the project stakeholders to separate all activities and also impacting factors into focus areas in order to more concentration on related issues and an effective and efficient resource/task allocation. The general ERP implementation project activities and critical factors are categorized in four focus areas of management-, HR-, project- and IT-related issues, which are inter-rowed or intertwined by five stages of project life-cycle to form this study's framework. Also this study focuses on international projects of ERP implementation and as the activities and specific factors related to the international nature of these projects should be addressed separately because of their unignorable importance, this study adds the fifth focus area of international-related issues to the framework.

From the international perspective for ERP implementation projects, this study reviews and integrates all sporadic and diffused investigations about international projects of ERP implementation as well as some about IT adoption projects because the impacting factors could be common. The result of this integration demonstrates that paying an especial attention into national and organizational (that is influenced by national culture too) cultural differences with the help of cross-cultural theories in the time of strategizing and planning, special vast cultural process re-engineering and a minimum customization to eliminate the cultural misfit between software and adopting enterprise, single-language high-technology communication and documentation standards, and more commitment to longer project duration and extra budgets are very critical to be considered in these projects. This study also recommends the international consultants who are seeking new markets in foreign countries to localize their solutions and also establish partnerships with local vendors/consultants to reduce the high costs that are derived due to different economies and money values, research more on legal differences, and at last but not at least, do their bests to create a trustable relationships especially during primary negotiations.

The final developed five-in-five framework of this study, for the first time, collects all mentioned-in-the-history critical success factors and project activities, while sequencing them in five phases and categorizing them in five focus areas for international ERP implementation projects. This framework provides a bird's-eye view and draws a comprehensive roadmap or instruction for such projects. The author of this study strongly believes that, due to some methodological limitations, the study is not the bible and needs further considerations and supplementary investigations.

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