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## Agile versus Design-based Approach to ERP System Implementation: A Cross-case Study

### Introduction

ERP system adoptions run the risk of failure which grows with the complexity of company's business processes and scale of operations. Among critical success factors for this kind of projects, the significant roles are played by an adequate definition of requirements, project team experience, and involvement of the adopting company resources [Finney, Corbett, 2007]. Considering model approaches to the ERP lifecycle, it appears that the pre-implementation analysis is the main stage which results in the agreement and definition of the requirements for the target system [Markus, Tanis, 2000; Ross, Vitale, 2000; Somers, Nelson, 2004]. In consequence, we may conclude that a good pre-implementation analysis is a critical precondition for a successful ERP adoption project.

During pre-implementation analysis the modeling of enterprise and its business processes is performed, which are considered central activities in an ERP system adoption [Berio, Vernadat, 2001; Dalal *et al.*, 2004]. Nonetheless, the character of these activities may vary depending on the level of national economy development. In particular, Themistocleous *et al.* [2011] suggest that, during pre-implementation analysis, companies from well-developed economies tend to focus on business-related issues, while firms from less developed countries put greater emphasis on system-related issues.

Companies may also use different approaches to information gathering in pre-implementation analysis depending on the type of the system considered. Lech [2012] suggests that for highly configurable systems, the requirements-driven approach should be applied which includes a business process analysis, detailed requirements specification, and system prototype. For systems offering limited configurability, the system func-

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tionality-oriented approach is most suitable which is centered on the system presentation, and the requirements are gathered during this presentation on a “gap-fit” basis.

This study seeks to shed more light on the issue connected with various approaches to the pre-implementation analysis and implementation strategy. The particular research question might be formulated as follows: How does the type of pre-implementation analysis impact the overall implementation approach? The study starts with the discussion of the research background, and then it moves on to the description of two case organizations. Next, it provides the discussion of findings that is followed by concluding remarks.

## **1. Research Background**

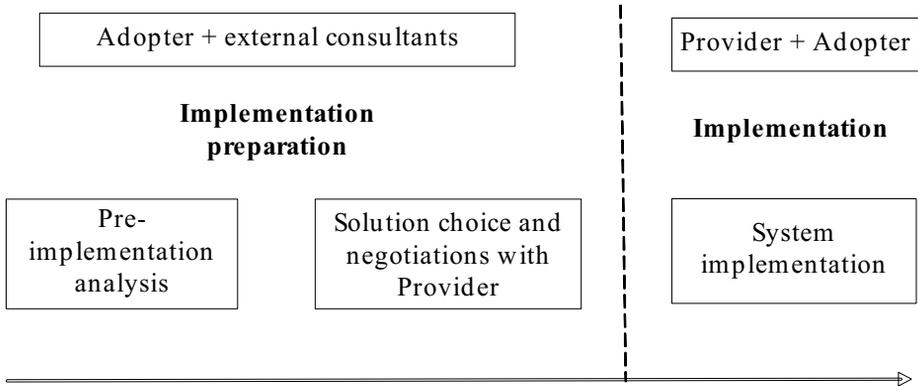
Pre-implementation analysis is a stage of the whole ERP implementation lifecycle which attempts to define the scope of the solution being implemented and related organizational and technical considerations. According to Flasiński [2006], pre-implementation analysis should include the following elements:

- definition of the model of an area of interest,
- user requirement analysis,
- analysis of technical infrastructure required for the system implementation,
- project definition outline.

The contents of individual elements and tools used for their description vary depending on the competence of an adopter company and an employed approach. In particular, with respect to the definition of the domain model, a frequently adopted approach includes identification of the main company processes, which then undergo the de-composition procedure (e.g. following the structural approach set forth by Yourdon [1989]), and next detailed process maps are created. The detailed process map describes tasks being realized, decision making steps, roles responsible for task completion, and defines the data being processed.

Actual implementation projects vary not only with respect to the contents of pre-implementation analysis and tools employed (which is also illustrated by case studies analyzed in this article), but also differ as regards to time arrangement of the analysis within the whole ERP implementation process. The model arrangement of phases of ERP implementation project is presented in figure 1.

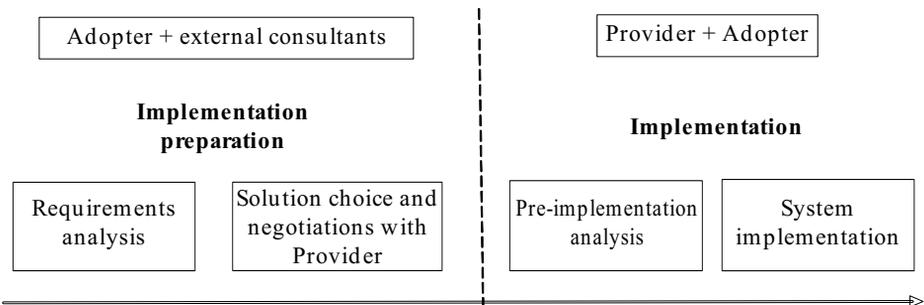
**Figure 1. Phases of implementation process – model approach**



Source: Own elaboration based on [Flasiński, 2006].

In the model approach presented in figure 1, the pre-implementation analysis is mainly carried out by the adopter company. However, since the adopter internal staff usually lacks experience in such tasks, the author suggests employing external consultants for support. Such an approach might be considered as a model and secure solution, however, the practice suggests that there are many ERP implementation projects that follow the arrangements of phases described in figure 2.

**Figure 2. Phases of implementation process – approach with pre-implementation analysis carried out after the provider choice**



Source: Own elaboration.

In such an approach the adopter creates the requirements list describing the target solution. The list is most often prepared by representatives of organizational units affected by a prospective ERP implementation. On the basis of the requirements list, the process of the system provider choice is carried out, using various approaches such as system presenta-

tions, reference visits etc. [Lech, 2012]. After the provider selection, the pre-implementation analysis is being carried out jointly by the adopter and provider as the first stage of the actual implementation process. Such an approach often requires special amendments to the contract between the adopter and provider since only after the completion of the pre-implementation analysis it is possible to define finally the project parameters such as budget, time, and scope. Therefore, both parties should have the possibility to cancel the contract at this stage. In this approach, due to the fact that the pre-implementation analysis is carried out by the provider, the final scope of the solution might change significantly.

In the model approach, the analysis is preformed in order to define which processes should be supported by the prospective ERP system and how – this might be considered as a typical business analysis. The analysis does not include a concrete vision of the target solution that would describe how business processes would be performed because the adopter company has not yet chosen the specific system and system provider (this choice will be carried out in the next step). In the alternative approach, where the adopter already had chosen the implementation partner and the system, the analysis might be extended with various elements relating to the actual system and describing the final solution design. These elements might include:

- mapping company data structures onto the data structures of the target ERP system,
- user interface design that includes screen shots and printouts,
- mapping system documents flow onto company business processes,
- design of interfaces between the target ERP system and company legacy systems.

Drawing for the authors' experience, prior literature (e.g. [Żeliński, 2014]), and practice, another practical approach to pre-implementation analysis might be noticed. The adopter company, on the basis of needs analysis resulting in the list of requirements, makes a decision on the choice of the provider who starts the actual implementation process omitting the pre-implementation analysis stage and detailed needs analysis. Such an approach faces the greatest risk; however, some measures may be undertaken in order to limit the risk. They are related to the application of agile techniques in the implementation process discussed in next sections.

This study focuses on the issue how detailed is the pre-implementation analysis, which is understood by the range of information being

available to the provider before the start of the actual implementation of the ERP system. Depending on the level of details, the pre-implementation analysis can be described in one of the following ways:

- requirements list – tables/lists containing plain-text descriptions of requirements usually divided into functional areas, e.g.
  - logistics – the system handles orders with different completion times,
  - finance – the system automatically generates profit and loss account for a given period,
- business analysis – a model of main processes (according to the model approach defined in [Flasiński, 2006]), a multilevel map of elementary processes with their detailed specifications and requirements mapped onto the individual processes,
- solution design – the above defined business analysis extended with the elements related to the system which has been already chosen and is being implemented. The design defines the vision of the processes in the target solution and is equally important and binding for both parties – adopter and provider.

The last approach addresses all issues that were mentioned in the two preceding methods. Therefore, it will constitute the guideline in the discussion of cases analyzed in this study.

## **2. Research Method**

The research method applied in this study can be described as a mixture of the case study and the action research method. The choice of such a research strategy has been influenced by the form of the research question, lack of the investigators' control over behavioral events, and focus on contemporary events [Yin, 2003]. In particular, the adopted "how" research question is explanatory and is likely to lead to the use of case studies. The employed data-gathering technique involved interviews with multiple stakeholders of the investigated projects.

In addition, it should be noted that the first author of this study acted as a deputy project manager from the system provider's side during the implementation period of ERP software in IT Integrator. He was responsible for the pre-implementation analysis and was managing the documentation process during the whole project. As a result, he offered recommendations in interpreting the findings of the interviews based on his first-hand experience. His experience and knowledge were also very ben-

eficial during the cross-case analysis and in formulating suggestions and final conclusions.

Data collection was based on personal interviews with multiple stakeholders involved in the investigated implementation projects. The choice of interviewees was made with the assumption to investigate perspectives of various stakeholders, not only from the adopter company, but also representing the system and implementation services provider. In consequence, the interviews were conducted with respondents who played various roles in the projects, such as: system user, project manager, project supervisor, project sponsor, and members of the project team.

The interviews lasted from 30 to 60 minutes and were guided by a semi-structured interview guide. The questions included in the interview guide were connected with various considerations of the implementation project such as motivations, impediments, benefits, and achieved success. In the case of TireCo, the interviews were conducted during the final stage of the implementation project. In the case of IT Integrator, data gathering took place in the planning period and during the early implementation phase.

### **3. A Design-based ERP Implementation: TireCo**

#### **3.1. Company Description and Implementation Project Considerations**

TireCo (a fictitious name in order to prevent disclosing company's identity) is a company whose core operation is the distribution of car tires and supplementary accessories. The company is based in Poland and started its operations in 1970s as a small, family-owned service station. At the moment the company employs 120 people and is a regional leader in tires sales. TireCo is a supplier for wholesalers, retail stores, and service stations. The supplied goods include tires, wheel rims, inner tubes, and other accessories. The main activity of the company is the wholesale trade; however, the company is also engaged in retail trade and service. The area of sales is the whole country but the company has also several partners from abroad. While dispatching its orders the company uses courier services and its own transportation.

The wholesale and retail distribution of tires involves an advanced infrastructure which includes an on-line facility for cooperation with business partners and the system of ten warehouses. The company is constantly expanding its portfolio of products and services, making new brands of tires available to Polish customers. TireCo relies on strong coop-

eration with its business partners, offering a comprehensive loyalty program and technical and sales consulting. The company organizes annual training conferences connected with new products and solutions in the tire industry.

The company motivation for the implementation of an ERP was influenced by a number of factors:

- Information needs: Company's top management reached the conclusion that contemporary market's demands and a growing company size require access to reliable information. This information and possibility to perform advanced analyses are necessary for managing a company and managerial decision making;
- Legacy systems shortcomings: Legacy systems did not satisfy the growing informational needs of the company and caused problems in operational activity. The employees notified problems connected with system efficiency, its stable operation, and records reliability in the database. In addition, company's growth involved an increasing number of documents and transactions that were not properly handled by legacy systems. All these problems incurred additional costs;
- Support for company growth: TireCo underwent a period of rapid growth and company's top management came to a conclusion that company's effective operation and further growth is impossible without a reliable and efficient enterprise system;
- New functionality: Company's operations cover both wholesale and retail trade which requires an adequately advanced enterprise system capable of integration with legacy systems. New functionality perceived as crucial for company's operation included online cooperation with business partners (B2B), multicurrency support, and real time transactions in accounting system;
- Company reorganization: The former motivations are mainly connected with company's legacy systems; however, there were also reasons connected with the need for company reorganization. Since TireCo's core activity involves distribution of goods, the company decided to reengineer its logistics processes in order to achieve better performance in inventory control and obtaining fuller information regarding the profitability of goods being sold.

### **3.2. Implementation Approach and Pre-implementation Analysis**

The implementation method applied at TireCo can be described as a design-driven approach, i.e. a careful, well-thought-out design was the central element in the implementation process. The company design (also called 'model') is a document which was signed and approved by both companies involved in the implementation – adopter and system provider. The model guides the remaining phases of the implementation process.

The company design (model) is an effect of a detailed pre-implementation analysis which is the first major phase during the implementation procedure. The analysis of the company from the perspective of a chosen system is being performed. In consequence, the model is created, agreed upon and signed. The model contains rules how to create and operate database dictionaries, identified business processes, documents generated by the system and the description of their circulation within the company, definitions of jobs, and reporting needs. The ultimate goal of the pre-implementation analysis includes a list of potential modifications and extensions required in the system. The document worked out during the pre-implementation analysis is a blueprint of the final solutions which are accepted by both organizations and is binding from the system start.

In the approach adopted by TireCo, the next phase was Implementation, during which the technical infrastructure was prepared and the selected system was installed and configured, database was filled in, end user trainings were performed, and, finally, the system was rolled out. The next phase was called Authorship overseeing, during which the provider oversaw the system operation for some time after the system roll out. Next, the client company became autonomous and the full potential of the system operation was reached. Possible system reconfiguration and changes in the business model might be performed.

### **3.3. Project Run**

The ERP system implementation process in TireCo was a multi-phased process which involved a range of stakeholders, including representatives of practically all organizational levels of the adopter company, and representatives of the system provider. The most important project participants were the following: project manager (from the adopter side), provider's project manager, owners/top management representatives, department managers, provider's programmers and consultants specialized in various areas (such as high-bay storage).

The overall implementation process can be divided into pre-implementation, implementation, and post-implementation phases. The pre-implementation phase consisted of pre-implementation analysis whose goal was to define company needs and goals, implementation time and budget. Also, people responsible for the project were selected in this phase. The most important participants in this phase included company owners, department managers, and the project manager. Prospective system users, delivering information about company needs, were also involved in this phase.

The pre-implementation analysis was concluded with the elaboration of the blueprint (model) that defined how the company will operate with the help of the new system. The legacy business processes were compared with the system logic and, in consequence, a change plan was defined that described the required changes in the system and in company business processes. The main players involved in the blueprint design were project managers from both companies. Company owners and department managers were also involved to a certain extent.

The actual implementation phase started with the preparation of data necessary for the new system start. This activity was based on the legacy systems data which were cleaned and imported to the new ERP system. Data preparation was supported by provider's programmers and involved project managers from both companies. The next activities involved preparation of the technical infrastructure needed for the project and were followed by the system installation and configuration that were guided by the agreements defined in the blueprint. People responsible for these activities included project managers from both companies who were supported by provider's IT specialists.

The next activities within the actual implementation phase included user trainings that were conducted by the provider's project manager. Practically all employees of the adopter company attended trainings that were organized around many training sessions with participants selected on the basis of their roles in business processes. The actual implementation phase was concluded by the system start that was overseen by the provider's consultants.

The post-implementation period included a so called system modeling whose goal was to achieve a final alignment between the company and system. The original blueprint was fine-tuned on the basis of user experience; appropriate changes were applied in company business pro-

cesses, and some system modifications were performed. In this phase project managers from both companies, department managers, and provider's programmers were involved.

## **4. An Agile ERP Implementation: IT Integrator**

### **4.1. Company Description and Implementation Project Considerations**

IT Integrator (a fictitious name in order to prevent disclosing company's identity) operates in IT industry and specializes in system integration. The company's business activities might be divided into three areas: system integration, ICT infrastructure, and IT service and outsourcing. The company has 18 branches scattered over the whole country that allow for a delivery of time-critical services. IT Integrator offers its services first and foremost to companies and institutions operating in public administration, banking and financial sector, telecommunication, manufacturing, trade, and service. In 2009 the company employed 400 people and was one of the Polish largest system integrator in the ranking performed by the Computerworld magazine. The main objectives of the implementation of the new ERP system were:

- Improvement and updating project reporting: IT Integrator is a project-driven organization and its activities are divided into many simultaneously realized projects. The most important information for the company's management boils down to the project profitability. During the project realization various organizational units are involved and a range of products and services might be delivered. Therefore, the cost and profit accounting must be more granular and multidimensional. The main information problem is that all source data gathered within an organization (pay-roll, purchase and sale invoices, etc.) have to be classified (recorded in the financial and controlling system) simultaneously into all controlling cross-sections that are important from the perspective of managerial analysis. This requirement is difficult to satisfy when an organization has a number of independent systems governing operational processes and autonomous analytical tools for controlling analysis. In such a situation, performing complex project analyses is very time consuming and error prone. The ERP system used by IT Integrator did not have any dedicated module for project management; therefore, the projects repository was maintained in an external application. The analyses were performed in the external, independent tools;

- Optimization and integration of business processes: The most difficult area involved services with a special focus on so called service logistics involving management of parts which might have been owned by the company or held on deposit. IT Integrator used a dedicated service desk portal to manage service requests. Service desk could be accessed by both customers and company's employees from various departments such as service, logistics, and call center. The service portal was not integrated with the ERP system which resulted in the necessity of manual entering data connected with service requests into the ERP system's logistics module. Lack of integration resulted in process discontinuity and excessive workload required in order to meet service deadlines (SLA).

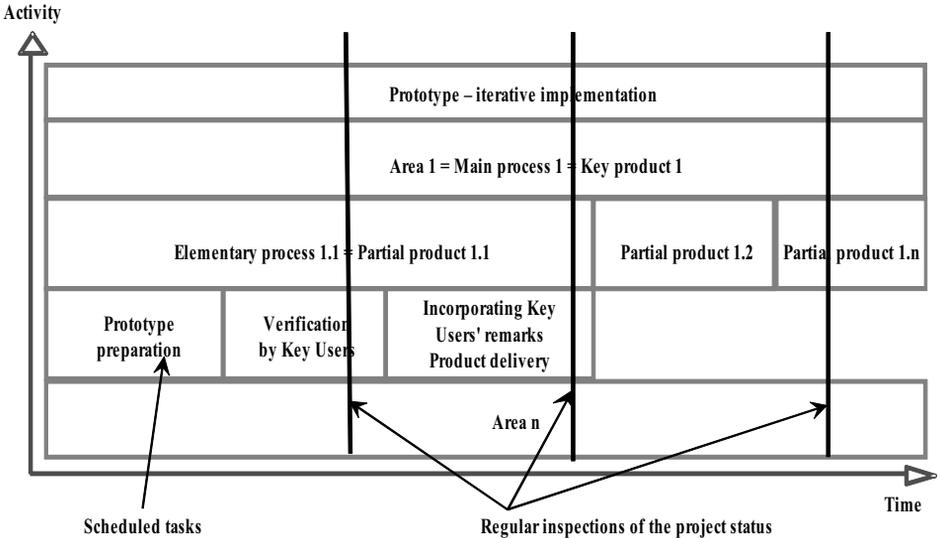
#### **4.2. Implementation Approach and Pre-implementation Analysis**

The implementation project started with a detailed pre-implementation analysis which involved business process modeling and definition of data structures and inter-system interfaces (in accordance with the Yourdon Structured Methodology YSM). The project team has been set up and various roles and responsibilities have been allocated. A member of the IT Integrator board has been appointed as the Chief of the Steering Committee. The most experienced employees from all company's areas have been selected as Key Users. The main analytical areas were: finance and controlling, service and logistics, CRM, and HRM. The analysis started with the definition of the company's main processes. Workgroups (including Key Users and provider's analysts) prepared the process decomposition at lower levels and elementary processes specification. As a result of the performed analysis, seven main and eighty five elementary processes have been identified. On the basis of elementary processes, the user requirements list was prepared. Also, the project schedule, methods of communication, and project tasks performance monitoring have been defined. The analysis stage lasted for three months and was concluded by the acceptance (in an iterative process) of the final version of the document.

In the implementation of the described processes, an iterative approach using prototypes has been employed (a prototype-iterative approach), which was based on the agile approach [Trąbka, 2011; Trąbka, Soja, 2013]. The implementation consultants delivered prototypes of working elementary processes to the Key Users. Next, the Key Users, on

a regular basis, verified the created solutions and indicated conceptual mistakes. This procedure was repeated until the final approval of the prototype. The prototype-iterative implementation approach is illustrated in figure 3.

**Figure 3. Prototype-iterative implementation**



Source: Own elaboration based on [Trąbka, Soja, 2013].

### 4.3. Project Run

The implementation project started with the installation of the ERP system on the IT Integrator premises and was followed by key users training. The project teams, similarly composed as in the pre-implementation analysis, started the cycles of the prototype-iterative implementation process. The first task was the definition of dictionaries common for all modules (i.e. clients, inventory, projects, employees, accounts). The next task was the initial configuration of the project management module, which was very important for the company operations since other system modules derived data from this module. The next iterations were connected with specific processes in individual company areas. The most time-consuming task was the alignment of individual system areas with the project-related specificity of the company. This was connected with marking most of the ERP system transactions with a project identifier and other relevant attributes. The two-way interface between the ERP and service sy-

stem was a very time-consuming element of the implementation project. In general, the adopted strategy for the system rollout can be described as a phased approach [Soja, 2011]. The phased strategy gave priority to launching logistics, project management, HRM, and finance areas from the beginning of the fiscal year. The remaining areas, in which many requirements appeared during the implementation phase (e.g. CRM and controlling), were launched later on. Overall, the implementation of project-related, financial, HRM, and service-logistics modules lasted for 6 months, which was consistent with the planned project schedule. The implementation of CRM and controlling modules was concluded in 6 months after the productive start of the basic modules.

## **5. Discussion**

The following section includes an in-depth comparison of the analyzed organizations. The comparison is performed from the perspective of project phases. For each phase, similarities and differences in approaches adopted by the implementers are discussed.

### **5.1. Implementation preparation**

In both cases the adopters did not perform a detailed business analysis consisting in an initial process mapping and detailed description of requirements. Instead, the requirements were gathered from people responsible for different companies' areas affected by the implementation projects. Internal employees of the companies performed requirements gathering. They formulated lists of requirements as a result of interviews and workshops with top management representatives. This phase also included the definition of implementation goals, budget, and preliminary schedule. The system selection was performed on the basis of system presentations delivered by potential providers and the verification of implementation projects in companies of comparable size and operating in similar industries. The final decision was reached on the basis of the opinions of all people taking part in this process. In both cases the adopter representatives emphasized that provider credentials played the most important role in the selection process. To sum up, in both cases we observe a different methodology from the one defined as the model approach (figure 1).

### **5.2. Implementation**

**Implementation team building.** In both cases the project teams were built following the same rules with respect to the adopter and provider sides. The strategic project management was entrusted to top manage-

ment representatives (in the case of TireCo they were also the owners of the company), and an operational coordination was delegated to middle managers.

**Implementation methodology.** In both cases the employed implementation methodologies assumed that a detailed pre-implementation analysis is performed together with the provider. However, there were differences in the level of details. In the case of TireCo, the provider, naming this stage “Identification of needs”, built the model describing how the adopter company would function using the provider’s system. This was a detailed vision of the system operation in the adopter premises. Such an approach involves a comprehensive solution design which defines the contract between the adopter and provider. In the case of IT Integrator, the pre-implementation analysis included process modeling, data structure definition, and requirements mapping onto individual processes. However, in this case the analytical activities disregarded the specific system. During the analytical works the adopter did not have any contact with the new system. Similarly, the elaborated document did not have any references to the specific system solution. In the next step, the provider, on the basis of the elaborated analytical document, worked out the list of required modifications in the system. However, since this list was not thoroughly verified by the adopter, it was difficult to treat it as a target, complete scope of the solution. The approach adopted by IT Integrator can be classified as a business analysis. Both companies defined the required technical infrastructure and implementation project schedule in their analysis documents.

**Actual implementation.** In the case of TireCo it is difficult to notice a distinct stage which would consist in performing programming tasks in order to realize the specific requirements of the adopter. Such works, due to the availability of the detailed specification of changes approved by both sides, could be performed by the provider without the involvement of the adopter team to test and verify the modified solution. Testing could be performed internally at the provider’s side. The implementation strategy followed the “big bang” approach for the system rollout, i.e. starting the new system simultaneously in all major areas of the company and abandoning legacy systems. Such an approach was possible due to the design-based approach to pre-implementation analysis which provides the highest level of details. System users were granted access to system after

its installation, during training sessions preceding the system start. The provider guaranteed constant supervision over the system productive start by securing the presence of the provider consultants and programmers on the adopter premises. Any errors appearing during the first period of the new system operation were corrected in this phase.

In the case of IT Integrator, the stage of requirements implementation, i.e. customizing the system according to the requirements defined during requirements analysis, were clearly separated. The involved works related to both system parameterization and programming tasks, i.e. changes in the system functionality and interface. According to implementation methodology employed, along with the implementation project start, the system was installed and, in the next step, the adopter key users were trained. From this moment, the provider consultants and programmers started the preparation of prototypes of the processes defined during the pre-implementation analysis. The adopted method in the case of IT Integrator can be classified as a typical agile approach which assumes the possibility of requirements redefinition during the implementation works. Such additional requirements might appear because project team members just begin to operate the system and do not have any prior hands-on experience with the system. In the authors' opinion, in the case of IT Integrator, this agile approach was the main determinant of the overall implementation success.

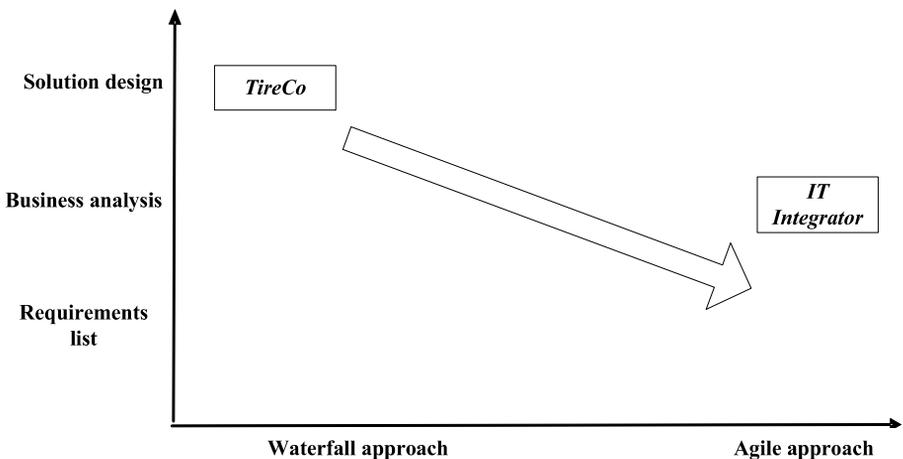
From the perspective of the strategy of the system productive start, it was difficult to consider the "big bang" approach because it was impossible to estimate in advance the actual duration time of requirements implementation stage. This duration time depends on additional requirements which appear during the iterative progress of works. The adopted strategy of the system productive start can be classified as a phased approach. Nonetheless, the phased approach is connected with a high risk of exceeding a planned implementation time [Soja, 2011] and this risk materialized in the discussed case. In particular, launching the system in standard areas, such as finance or logistics, which are less prone to specific requirements, went according to the schedule. However, in the more complex areas, such as CRM and controlling, the new system was launched with a few-months delay.

## Conclusion

The conducted analysis of case studies illustrates the relationship between the level of details employed during pre-implementation analysis and the overall implementation approach. This relationship is presented in figure 4.

The main recommendation for ERP practitioners which stem from this study is connected with the choice of implementation strategy depending on the character of pre-implementation analysis. In particular, it is advised to adopt an agile implementation approach when the target solution is not elaborated jointly by the adopter and provider during the preparatory stage of the implementation. In such a situation the provider does not transfer the knowledge connected with the system operation and its interface. The analytical works are restricted to answering the questions what the system should do and which processes should the system support (business analysis). Such an approach is not sufficient for the adopter company since they need an answer to the question how the system will support the actual company processes. The traditional waterfall approach, where users are trained in the system operation before the actual system rollout, usually results in additional requirements which are usually being abandoned due to the resource constraints.

**Figure 4. Relationship between the level of details employed by the pre-implementation analysis and implementation approach**



Source: Own elaboration.

In the best case, the adopter uses the system having awareness that the system does not fully satisfy their requirements. In the worst case, the adopter withdraws from the project. In general, the application of an agile approach can reduce the risk of ERP implementation failure.

This study also illustrates the importance of a proper fit between the approach to implementation project and the adopter company. In this regard, the findings suggest the crucial role of the adopter company's industry and IT awareness of their employees. The agile approach to implementation project requires the project team's awareness of the system development lifecycle which is necessary for the reliable evaluation of prototypes. In the case of IT Integrator, a company from IT industry, the project team members were involved in IT-related endeavors on a daily basis and were familiar with relevant concepts and mechanisms, which formed the good basis for the agile approach. In the case of TireCo, the adopted design-based approach required first and foremost business-related competences from their employees, rather than IT-related knowledge. Such an observation allows us to hypothesize that the agile approach might pose a greater challenge and can be connected with an increased risk in the case of companies operating outside of technology-intensive industries. This greater risk should be minimized by an appropriate training of the implementation team during the initial stage of the project.

Naturally, the current study has some limitations, which are mainly connected with the generalization of results. This is due to the fact that it is an exploratory research and is based on just two case studies. Its main purpose is to illustrate the complexity of the researched topic and the richness of various potential relationships among the discovered issues. Naturally, other organizations may benefit from this study's findings; however, the scope of the formulated recommendations is rather restricted to companies operating in industries similar to those of the case organizations.

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## **Agile versus Design-based Approach to ERP System Implementation: A Cross-case Study (Summary)**

Prior studies on ERP systems implementations emphasize the importance of agile project management and the role of a pre-implementation analysis within the whole system lifecycle. This study links these issues together and illustrates relationships between the level of details employed by the pre-implementation analysis and an overall approach to the implementation project. The study builds on two cases of ERP implementation projects conducted in two Polish organizations operating in different industries: tires distribution and IT integration. The case projects differ with respect to the approach to the pre-implementation analysis and the applied implementation methodology. The illustrated relationship between the character of pre-implementation analysis and implementation strategy might be treated as a good practice minimizing the risk of ERP implementation failure.

### **Keywords**

ERP, implementation, pre-implementation analysis, agile approach, Poland