Post-merger IT integration: A PRINCE2 project
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ABSTRACT
Mergers and acquisitions (M&A) are frequent in nowadays economy. The importance of IT in the M&A process is growing. The IT becomes a key enabler for most business processes in many sectors and becomes an integral part of daily business operations. Project management in post-merger IT integration is needed for successful M&A, as the role of IT in the business grows. Successful post-merger IT integration not only helps to the whole M&A process, but also creates value through the established synergies. On the other hand, failed mergers not only cost money to the merging parties, but also can bring bad reputation. Research seeks to find a project management method that will help the IT post-merger IT integration.

This paper reviews the current literature that covers the topic of post-merger IT integration. It reviews the main issues in integration processes, critical factors for success and risks for failure of the M&A, and designs a PRINCE2 methodology project for managing the post-merger IT integration.

Keywords
Post-Merger; IT integration; Project Management; PRINCE2

1. INTRODUCTION
Thomson Reuters (2015) shows that in the first nine months of 2015, there were 32000 M&A worldwide deals [1]. That’s two percent more compared to the same period in 2014. M&As deals grow in parallel to global economy growth. The role of IT becomes more significant as it becomes a backbone for daily business operations [2]. Post-merger IT integration projects become more critical to the success of an organization. In some cases finalizing the IT integration in time can save huge amounts of money [3]. In other cases failed IT integration may result in a failed merger. One of the reasons that Ernst and Young and KPMG failed to merger in 1998, was later shown to be due to incompatibility in their knowledge management systems and communications.

PRINCE2 is a globally accepted project management methodology. This paper addresses the problem with the literature on post-merger IT integration projects, by designing a structured PRINCE2 project method for post-merger IT integration.

1.1 Problem statement
To create a project management method for post-merger IT integration, we first need to research the topic of IT integration post-merger context. A few recent studies point out that either studies on post-merger integration of information systems are scarce [4] or that substantial gaps in our knowledge on the challenges associated with the integration of IS/IT during the post-merger integration (PMI) phase exist [5]. Research have to first find the main issues related to the PMI in IT context and have to find success factors and risks linked to the post-merger IT integration.

To create the method, PRINCE2 project management methodology was selected as a being globally accepted and de-facto standard [6].

1.2 Research question
The main research question of this paper is the following:

How can we create a PRINCE2 project for the successful integration of IT within the post-merger processes?

The paper will present a solution the stated problem, by putting the following research sub-questions:

1. What are the main issues in post-merger IT integration?
2. What are the risks and success factors in post-merger IT integration?
3. How to use the acquired knowledge to define a post-merger IT integration as a PRINCE2 project?

1.3 Structure
In section 2 is discussed the research method of this paper. In section 3 a presented some of the related works on the topic. Section 4 serves as an introduction to the merger process and covers the information found on the post-merger IT integration topic and the factors that are important for the successful integration. Section 5 covers the PRINCE2 project management framework. Section 6 covers the design of the PRINCE2 project for post-merger IT integration. Section 7 concludes the paper.

2. METHOD OF RESEARCH
The research consists of two parts. It starts with two-phase literature review. Research then proceeds with a design of a project for post-merger IT integration based on PRINCE2 project management methodology.

Materials will be gathered using systematic and non-systematic the methods for manual literature search [7]. The first phase of the literature review will answer the questions on IT integration in post-merger phase, project management, risks and success factors that affect the merger performance. Second phase of the literature review is dedicated to understanding PRINCE2. The knowledge acquired among the literature review will be used to design a PRINCE2 method for post-merger IT integration.

For more information on the literature review see appendix A.
3. RELATED WORK
The key paper in this research is the work in progress master thesis of Rohied Fagoe (2014), that develops a method for IT integration and validates it through the case study of Rentokil Initial [8].

Another key paper in this research is a comprehensive research article on the topic of “IT Transformation in the Context of Mergers & Acquisitions”. Freitag et al. [2] round up the characteristics of a merger project, key success factors, role of the IT, application and data migration and testing. The results were gathered by means of expert interviews with management and IT personnel, and third-party IT providers in German banking industry.

Wijnhoven et al. [9] develop a business-IT alignment model, that is widely used in the literature on post-merger IT/IS integration and it is used for defining different integration routes in the integration project.

Henningsson and Carlsson [10] developed a framework that describes and explains the IS integration in four case studies. As the “contemporary IT base is composed of a number of different systems and technologies that are tightly intertwined into an information infrastructure”, this framework largely applies for IT integration.

4. THE M&A PROCESS
According to Mehta and Hirschheim [11], the M&A process consists of three phases: pre-merger, merger and post-merger. It starts with a pre-merger phase, which broadly consists of: strategic planning, searching for a partner, due diligence analysis and negotiations. Then follows the merger phase, where the deal is closed. The post-merger phase begins on Day One and continues until the new firm “settles” down.

Figure 1. The merger process

The pre-merger and merger phase are not part of this research. Nonetheless, pre-merger phase has significant role in the successful IT integration of the firms. According to Blandford [12] assumes that inclusion of the IT division in the core team throughout the initial stages of an M&A will add value and decrease the risk to any merger and acquisition project. He also states that IT due diligence should play a critical part in the pre-M&A due diligence. A research done in 2012 by Patel [13] indicates that major part of the successful merger and acquisition projects have six or more months of preparation, planning and due diligence.

Post-merger integration is defined by Vieru et al. [5] as the mechanism of coordination of the activities of the merging organizations to bring to fruition the potential synergy identified in the pre-merger phase. On the other hand the IT integration is defined as introducing changes in IT strategy, IT structure, and systems supporting the combined IT and business units that allow them to function as a whole. The literature emphasizes the critical role of IT integration during the post-merger phase [2].

4.1 Objectives, Approaches and Alignment
Wijnhoven et al. [9] developed a business-IT alignment model in the context of post-merger integration. The model aligns the business M&A objectives – absorption, symbiosis and preservation with the IT integration objectives – complete IT integration, partial IT integration and IT co-existence.

They also identify four IT integration methods (approaches), suitable for the selected IT integration strategy:

1. Renewal – involves the designs and realisation of completely new processes, activities and related IT.
2. Takeover – involves using the IT of one of the merging parties as the new system of the newly formed company.
3. Standardisation – integrates only similar IT functions across the whole company.
4. Synchronisation - realises only marginal IT integration since it preserves the original ITs of both organisations.

Recent research in 2014 by Baker and Niederman [14] suggests that majority of the reviewed successful merger and acquisition projects have aligned business-IT objectives. On the other hand it confirms the suggestion of Wijnhoven et al. [9] that non-aligned M&A integrations can also occur. Non-alignment issue can be traced back to little or no participation by IS/IT leaders in due diligence prior to execution of the mergers [14]. As a result the true value of the IS assets had been underestimated and the execution of IT infrastructure was accomplished much more slowly than initially anticipated.

Thus, business-IT alignment is an important factor in the design of the post-merger IT integration method.

4.2 Critical Success Factors
Marie and Collerette [15] list one of the success factors to be “Manage the integration project in a systematic way”, which justifies the decision to use a PRINCE2 project management methodology for the post-merger IT integration.

According to Lundquist [4] there are six determinants, that must be successfully dealt with in order to minimize the risk of merger failure. The six determinants are: strategic vision and fit, deal structure, due diligence, pre-merger planning, post-merger integration, and external factors that are influencing in a long-term perspective.

According to Freitag et al. [2], [16] key success factors to successful post-merger integration include:

- Clear business vision, commitment, explicitly described and measurable.
- Project organization (structures and processes)
- Coordinated and holistic planning of business and IT
- Consistent decisions for business and IT
- Knowledge management
- Risk management

These factors will be taken into account while designing the PRINCE2 method by defining proper Business Case, stage planning, integration strategy, roles and responsibilities.

4.3 Risks and risk management
Patel [13] lists key reasons for failure in M&A, which include:

- Poor planning and execution
- Disputes of power
- Lack of executive buy-in or support
- Loss of employee morale and key talents

As the project is designed, these risks will be managed through planning, roles and responsibility definitions, involving an executive to direct the project and building IT personnel commitment.
4.4 IT ecology, Integration architecture and integration role

Heningsson and Carlsson [10] identify different group of systems classified by their organizational function: infrastructural, transactional, informational and strategic. They also present five approaches to IT integration: point-to-point, middleware, enterprise-wide, meta-level, SOA.

Finally, they define two types of IS/IT integration role: reactive and proactive. The reactive role is found to be the normal approach of contemporary business. That means after the merger deal is closed and potential synergies and barriers are determined, the integration task is commenced. On the other hand, the proactive approach the IS/IT integration is introduced in the due diligence, in the pre-merger phase.

4.5 IT due diligence

The IT due diligence process and the post-merger integration planning are inextricably linked [8]. Organizations often fail to realize the objectives of a merger, due to the lack of a proper IT integration roadmap as a part of the due diligence. The due diligence review can identify synergies during an integration and uncover opportunities to reorganize and consolidate IT operations. Schonewille [17] suggests three technical criteria in a successful strategy of enterprise-wide IT system integration. First the enterprise systems should not be dependent on hardware or software platforms. Second criteria suggests using standard technologies and protocols. Final criteria is to have real-time support for key business processes throughout the organization.

5. PRINCE2

Projects IN Controlled Environment 2 is a structured project management methodology [18]. The standard is developed by the Office of Government Commerce of the United Kingdom and functions as de-facto standard for project management within government projects [6].

The PRINCE2 method structure consists of four integrated elements of principles, themes, processes and tailoring the project to its environment (see Figure 2). The last element helps the project environment "fit" the specific context. Three factors influence the tailoring requirement: environmental factors, project factors and PRINCE2 principles.

The environmental factors that affect the project and influence the tailoring requirement include: multi-organization, external customer/supplier, corporate standards, being within a programme, organization maturity (e.g. centre of excellence), terms and language, geography, organization culture, project priority. The project factors include: scale, solution complexity, team maturity and project type and lifecycle model.

The seven principles of PRINCE2 are:

1. **Continued business justification** – there should be a justifiable reason for the project to start and that reason should remain valid throughout the life of the project. During the whole IT integration, the reason for the integration should be checked during the project stages.

2. **Learn from experience** – the organization learns from previous experience, lessons are recorded and acted upon through the whole project. The knowledge acquired and lessons learned during the IT integration will be stored in a knowledge repository for later use.

3. **Defined roles and responsibilities** – project has defined and agreed roles and responsibilities for the people involved. In the integration project, agreed roles and responsibilities guarantee proper project organization, consistent decisions and decrease the risk of disputes of power.

4. **Manage by stages** - project is planned, monitored and controlled on a stage by stage basis. This the IT integration will be coordinated and planned.

5. **Manage by exception** – there are tolerances for the project objective that establish limits of delegated authority. If an issue occurs during the IT integration, it will be escalated to the Project Board, as it ensures executive involvement and control.

6. **Focus on products** – project focuses on definition and delivery of products, in particular their quality requirements. In every stage in the IT integration project, there are products with clearly defined requirements.

7. **Tailor to suit the environment** – project is tailored to suit the environment, size, complexity, importance, capability and risk.

The seven themes are:

1. **Business Case** – establish mechanisms to judge whether the project is (and remains) desirable, viable and achievable.

2. **Organization** – define and establish the project’s structure of accountability and responsibilities.

3. **Quality** – define and implement means by which the project will create and verify products that are fit for purpose.

4. **Plans** – facilitate communication and control by defining the means of delivering the products.

5. **Risk** – identify, assess and control uncertainty and keep the project on the path to success.

6. **Change** – identify, assess and control any potential and approved changes to the baseline.

7. **Progress** – establish mechanisms to monitor and compare actual achievements against those planned.

These themes are addressed in the IT integration project stages in section 6.

The seven processes are the following: Starting up a project, Initiating a project, Directing a project, Controlling a stage, Managing stage boundaries, Managing product delivery and Closing a Project. These PRINCE2 processes will be discussed in the project stages with the activities and recommendations to the project.

![Figure 2. PRINCE2 structure](image)

The project is defined as "a temporary organization that is created for the purpose of delivering one or more business products according to an agreed Business Case." [18]. Thus,
the IT integration process in a post-merger environment can be structured in a PRINCE2 project.

In PRINCE2 the terminology in project management differs from the generally accepted project management terminology in ISO® 21500:2012 and PMBOK® Guide.

6. PRINCE2 IT INTEGRATION PROJECT
This section covers the design of the PRINCE2 method for IT integration. The IT integration method developed by Fagoe [8] was used as a base for composing the activities and products in the project stages.

The first two stages of the PRINCE2 project (from Pre-project stage to the end of Initiation stage activities: orientation and analysis) are for decision making, orientation and analysis.

The IT integration role for the merger can be either reactive or proactive. In a reactive approach, project starts after the deal is closed. In a proactive approach to the IT integration, the project can start earlier, in the pre-merger phase of the M&A process, where the first two stages of the project will be executed. This way the IT due diligence, synergies and risks can be assessed and the report will answer if the integration is feasible and justified.

According to the PRINCE2 guide [18], this project of IT integration is scaled as “Daunting Project”. This is because it is characterized with multiple organizations and being multi-disciplinary (IT and business change). Because of that, the IT integration project is tailored to have multiple delivery stages, extended project board. It is suggested that the IT integration team managers to have separate role.

The project stages follow as described in PRINCE2 management methodology.

6.1 Pre-project stage
The stage serves as a formal start the PRINCE2 project for post-merger integration. It begins with Starting up a Project Process (SU) [19]. The stage products are Project mandate, Daily Log, Lessons Log, Project Brief, Project Initiation Document (PID) and Benefit Review Plan.

The Project Mandate is the trigger that formally start the PRINCE2 project. It could be a document, an email from the CEOs, or a press release. It must appoint Executive and Project Manager. Fagoe [8] suggests that Project Board usually consists of the CIOs and IT directors and also defines the role of “merger integration leader”, that must be chosen from the IT departments. In PRINCE2 this role takes the Project Manager. Selection of a single project manager reduces the risk of “disputes of power”. In order to mitigate the risk of “lack of executive buy-in or support”, it is encouraged to include a business executives to the Project Board.

The process continues with the creation of a Daily Log and Lessons Log. Freitag et al. [2] suggest that companies should have a knowledge repository, which holds the specific IT transformation knowledge, gained during past M&As. If there is already established knowledge repository, the important lessons learned from past M&A should be added to the PRINCE2 project’s Lessons Log.

The process continues with creation of a Project Brief that contains the Project Product Description, Project Management Team Structure, and Outline Business Case. Project Product Description describes the IT integration project scope and requirements. Outline Business Case describes the expected outcome and its validation criteria.

Project Manager identifies key project team members and fills in the Project Management Team Structure with their roles. Project manager also creates the Project Product Description and Outline Business Case that are aligned to the business as explained in section 4.1.

Then the composed document Project Brief is sent to the Project Board for approval. If approved, the project manager continues with the creation of Initiation Stage Plan for next stage.

Initiation Stage Plan must also be approved by the Project Board, so the project may continue to Initiation stage. It is because it contains a lot of activities for orientation, analysis and planning the IT integration strategy and route.

6.2 Initiation stage
This stage is about planning the IT integration.

According to PRINCE2 the stage begins with Initiating a Project (IP) process. The stage products are Project Initiation Documentation (PID), Benefits Review Plan, Risk Register, Quality Register and Issue Register. Risk Register, Quality Register and Issue Register live throughout the lifecycle of the project. PID replaces Project Brief and consists of Risk Management Strategy, Configuration Management Strategy, Quality Management Strategy, Communication Management Strategy, Product Descriptions, Project Plan, Business Case and Tailoring. Stage ends with approval of PID, Benefits Review Plan and next stage plan.

Project Team is involved in some orientation and analysis activities, so it can properly define the Project Initiation Documentation.

Orientation activities
Project Team completes a Resource Capacity Analysis to determine the availability of existing resources and to assess the need for third-party support, needed to form and execute the IT integration roadmap. If the internal personnel has no capability to execute the IT integration, then the Project Team have to outsource the integration tasks. Wirz and Lusti [20] suggest the possibility of outsourcing the integration task. But interviews done in the German banking industry by Freitag et al. [2], show that interviewees admitted to prefer their own in-house work force to external labour, even if induced costs are higher in the first run.

Project Team forms IT integration teams and assigns roles and responsibilities. The selection of the team members is based on a staffing plan that includes members of both IT departments [8]. Third-party external support teams should be included, if Resource Capacity Analysis suggests that. The IT integration teams are responsible for carrying out the integration. These teams will be added to the Project Management Team Structure in the PID.

Analysis activities
Project Team identifies the business merger objectives and aligns it with the IT integration strategy as in the model described in section 4.1. The IT integration teams created during the orientation activities perform IT due diligence so they can assess the synergy possibilities between the two IT departments. Then Project Team decides on IT integration approach as described in section 4.1.

After the analysis activities are over, Project Team fills in the Project Initiation Documentation in accordance to the selected integration approach – Renewal, Takeover, Standardisation or Synchronisation. Then Project Initiation Documentation is send to the Project board for approval.
If PID is approved, Project Team continues with the creation of a plan for the IT process integration stage, which includes Product Breakdown Structure, Schedule and Dependencies. When completed, the plan is sent for approval to the Project Board. If approved, project continues to the next stage.

Unfortunately, in some cases as shown in the research of Henningsson and Carlsson [10], integration approach may change over time. In the following stages of the project Business Case is monitored and if it goes beyond the set tolerances, will be managed by exception and changed if needed. The change may include changing the integration approach.

6.3 IT process integration stage
Depending on the IT integration approach defined in the PID, different work packages and products are expected in this stage.

The work packages are defined as follows:

**Renewal approach**
- Work package for defining new IT processes
- Work package for defining new IT activities
- Work package for defining new IT standards
- Work package for defining new laws and regulations

**Takeover approach**
- Work package to appoint best of both ITs

**Standardisation approach**
- Work package to find overlapping IT processes

**Co-existence approach**
- Work package to list best practices

Project Manager distributes the work packages to the IT integration teams and manages the product delivery and the stage boundary.

When products of the work packages are delivered, Project Team creates the plan for the System integration stage and sends it to Project Board for approval. If approved, project continues to the next stage.

6.4 System integration stage
It has the same structure as the previous stage.

**Renewal approach**
- Work package for defining new IT systems
- Work package for deploying/buying new IT systems
- Work package for developing system integration plan
- Work package for developing data integration plan

**Takeover approach**
- Work package to list used systems
- Work package to find overlapping system functionalities

**Standardisation approach**
- Work package to list used systems
- Work package to perform best of breed selection
- Work package to develop system integration plan

**Co-existence approach**
- Work package to list used systems
- Work package to find overlapping system functionalities
- Work package to develop software bridges

6.5 IT infrastructure integration stage
It has the same structure as the previous stage.

**Renewal approach**
- Work package to define new location
- Work package to define necessary equipment
- Work package to acquire equipment
- Work package to design new IT infrastructure
- Work package to establish security management

**Takeover approach**
- Takeover approach skips this stage.

**Standardisation approach**
- Work package to define IT infrastructure
- Work package to assess infrastructure compatibility
- Work package to choose most suitable location
- Work package to develop equipment move strategy
- Work package to develop IT infrastructure integration plan

**Co-existence approach**
- Work package to define IT infrastructure
- Work package to assess infrastructure compatibility
- Work package to choose most suitable location
- Work package to develop IT infrastructure integration plan

6.6 IT personnel integration stage
It has the same structure as the previous stage.

**Renewal approach**
- Work package to hire IT personnel
- Work package to perform training
- Work package to assign responsibilities

**Takeover approach**
- Work package to retrain the personnel

**Standardisation approach**
- Work package to inform and reassure personnel
- Work package to assign responsibility
- Work package to build IT staff commitment
- Work package to develop IT personnel integration plan

**Co-existence approach**
- Work package to inform and reassure personnel
- Work package to build IT staff commitment

6.7 Final stage
Project Manager and Team verify the user acceptance criteria of the project products.

In this stage is common to test the IT integration. Freitag et al. [2] states that testing of the recently integrated application landscape as well as the underlying IT infrastructure was deemed important by all interviewees.
Project proceeds with a Closing a Project process, only if tests are done and no issues are found and all acceptance criteria are met.

During the Closing a Project, three documents are produced: Product Status Account, Lessons Report and End Project Report.

Lessons Report should be used to update the knowledge repository that holds the specific IT transformation knowledge. The End Project Report is send to the Project Board.

7. CONCLUSION

This research explains the problem with IT integration in post-merger context. It provides information on main issues, critical factors and risks in the integration processes. The knowledge acquired from the literature review was used to design a PRINCE2 post-merger IT integration project.

The topic of post-merger IT integration in the literature is covered less than initially expected. This provides opportunities to continue the research on this topic, by extending the scope of project. For instance, the project may be expanded and split in several projects and managed in a programme. The PRINCE2 methodology is closely related to the Managing Successful Programmes (MSP) structured framework.

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REFERENCES


APPENDIX

A. LITERATURE REVIEW

A.1. Sources

The majority of the literature was found using Google Scholar and Web of Science. Other sources of material include Scopus and University of Twente (digital) library search and Google web search.

A.2. Selection criteria

The literature search and selection was done in two phases:

1. is about IT integration in a M&A context.
2. is about project management in M&A context.
3. is about success factors and risks in M&A.
Second phase is specifically about PRINCE2 and finding training materials and guides.

A.3 Search Terms

List of selected academic search engines: Web of Science, Scopus, Google Scholar, Microsoft Academic Search.

Search terms/keywords:
Post-merger, M&A, Merger and acquisitions, IT Integration, Information Technology integration, IT alignment, Project Management, PRINCE2.

Example search queries:
For Google Scholar and Microsoft Academic Search: “post-merger information technology integration”
For Web of Science or Scopus: “post-merger” and “it integration”

A.4 Search Results

The number of materials gathered during the literature study is 69. The literature consists of journal articles and papers. After passing through a selection process the remaining number of materials for reviewing was 28. The most relevant of these materials are used in the research. In addition to the materials found by manual literature search, books and other materials are used to prepare the PRINCE2® project management methodology will be read in order to answer properly the questions to PRINCE2® project for IT integration.

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