



Cranfield University

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***MANAGING PROCESSES
AND INFORMATION TECHNOLOGY IN MERGERS***

—

THE INTEGRATION OF FINANCE PROCESSES AND SYSTEMS

School of Industrial and Manufacturing Science

Ph.D. Thesis



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THE INTEGRATION OF FINANCE PROCESSES AND SYSTEMS

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ABSTRACT

Many companies use mergers to achieve their growth goals or target technology position. To realise synergies that justify the merger transaction, an integration of the merged companies is often necessary. Such integration takes place across company business areas (such as finance or sales) and across the layers of management consideration, which are strategy, human resources, organisation, processes, and information technology.

In merger integration techniques, there is a significant gap regarding the management of operational level issues. Yet, especially for the finance business area, an integration of processes and information technology is of high importance and often required swiftly after the merger. The author therefore presents an approach designed for managing the operational level merger in the finance business area.

To close the gap in considering operational level issues, the author has developed a model for integrating finance processes and information technology of merging companies. For such model development, literature resources have been used along with merger experiences of the author, and interviews with merger experts. Validation of the developed model has been conducted by using in-depth case studies for showing the effects of applying the model. Further validation interviews have been conducted to support the generality of the approach.

Accommodating the significant increase of task complexity during mergers compared to normal business operation, the presented approach focuses on managing interdependencies instead of project detail. Features of this approach comprise:

- An organisational proposal to setting up merger programme management
- An interdependency model, vertically interconnecting the finance business area with strategic and organisational merger decisions, and horizontally interconnecting the finance business area with other business areas

It could be shown that the presented model improves merger integration quality by reducing complexity of merger management. The model is most applicable for larger companies, and can be used in any merger phase.

ACKNOWLEDGEMENTS

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To Diane and Vincent.

To my parents.

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GLOSSARY

ABC analysis	Segmentation tool for distinguishing subjects into three categories by their importance, e.g. by revenue contribution
ARIS	Architecture of Integrated Information Systems
BOM	Bill of material
CIMOSA	Computer Integrated Manufacturing Open Systems Architecture
ERP	Enterprise Resource Planning
HGB	Handelsgesetzbuch [German accounting law]
HR	Human Resources
IAS	International Accounting Standards
IASC	International Accounting Standards Committee
ISO	International Standardisation Organisation
IT	Information Technology
JPS	Joint Purchasing System (abbreviation used in case study)
M&A	Mergers and acquisitions
MCSARCH	Manufacturing Control Systems Architecture
P&L	Profit and Loss Statement
QFD analysis	Quality Function Deployment, structured interview and classification tool using weighted performance criteria
R&D	Research and Development
SBA	Strategic Business Area
SBU	Strategic Business Unit
SWOT analysis	Analysis tool for listing Strengths, Weaknesses, Opportunities, and Threats associated with a business decision or an item
UML	Unified Modelling Language
US-GAAP	US Generally Accepted Accounting Practices
USD	US Dollar

1 INTRODUCTION AND OBJECTIVES

1.1 *Information Technology and Mergers*

The number of mergers as well as the value of acquisitions had been increasing year by year until the late 1990s, and the economic downturn that followed since has made mergers that still take place even more a media focus.¹

The value of mergers announced in 1998 was as high as two trillion USD. In 1999, the worldwide value exceeded 2.3 trillion USD.² In 2000 and 2001, the value of mergers has however reduced again due to lower stock prices and subsequently the lack of stock as a transaction currency.

Mergers are yet still valid tools for achieving corporate goals – growth wise or technology wise.

A merger is a risky transaction. It is risky for the company value, but also for individuals on both sides. Studies investigating the success of mergers found, that in 83% of the deals, the combined company value at the stock market was lower than the sum of the two single company values before the merger, and that only 25% of the merging companies achieved their announced synergy goals.³ The risk of failure is great, if there is that fatal lack of considering operational level issues in early merger phases.⁴ Early merger phases are often treated as a secret inside the merging companies; but this implies that there is a small group of top managers making the decisions. If the company is lucky, this group of people knows the company operations well enough to understand the most important merger implications.⁵

Regarding merger reports, it is often mentioned that in early merger phases, effects on operational issues are not sufficiently regarded.

¹ Hubbard, Acquisition Strategy and Implementation; Haspeslagh, Managing acquisitions – creating value through corporate renewal.

² Chatterjee et al, Failed takeover attempts, corporate governing and refocusing.

³ KPMG Consulting, Colouring the Map: Mergers & Acquisitions in Europe; Lefkoe, Why so many mergers fail.

⁴ Armour, How boards can improve the odds of M&A success.

⁵ Haspeslagh, Managing acquisitions – creating value through corporate renewal; Hubbard, Acquisition Strategy and Implementation.

Dealing with other variables, that are perceived to be more of strategic importance, is higher prioritised.⁶

If information technology issues are neglected in the pre-merger phase, the estimated merger integration cost will almost certainly be far too low.

In most companies, information technology today plays an extremely important role; the bigger companies are, the more important the role is. Many applications supporting many standard processes as well as non-standard processes are operated side by side, exchanging data over a huge network of interfaces.⁷

Information technology has become the backbone for many of today's companies: The basis of the day-to-day business, providing the possibility of delivering new products and services to the customer.

The task of integrating information technology in a merger is a big task. It is also an expensive task. Not to mention the time which can be needed to harmonise the IT landscape after a merger, while always hindering an efficient bundling of the merging companies' forces.⁸

This thesis provides a framework that guides IT managers of the finance business area through the merger process. With its checklists and tools, it is aimed towards supplying the basis for a successful identification and management of the complex interdependencies that exist between business areas, and that interlink information technology with the strategic company goals.

1.2 *Positioning the Problem: Motivation of this Thesis*

This thesis is motivated by the lack of generic, systematic, theoretically proven, but applicable approaches to integrate Information Technology of the finance business area in mergers.

1.2.1 Significance of Information Technology in Mergers

Main tool of an accountant in the 1960s was the pencil. People were able to calculate complex calculations in their heads, and write legibly by hand. Since then, the way companies work has changed drastically.

⁶ Hubbard, Acquisition Strategy and Implementation; KPMG Consulting, Colouring the Map: Mergers & Acquisitions in Europe.

⁷ Stahlknecht, Einführung in die Wirtschaftsinformatik.

⁸ Clever, Post-Merger-Management.

Efficiency was the catchword of the late 60s, as well as the 70s and 80s. Efficiency mainly meant a reduction of manpower for a given task, imposing the necessity to improve tools and processes, and expand, coordinate and improve infrastructure provision inside a company. The 80s and 90s were the decades of corporate information technologies. IT support and integration of ERP⁹ processes were the response to cost pressure from increasingly competitive and saturated markets for many industrial products. For the same reason, economies of scale were identified to be an appropriate means to decrease cost even more – leading to the use of growth as a goal in itself. This goal was quickly pursued by acquisition, resulting in the situation called “merger-mania” by some authors.

The development of main merger issues over time reflects the progress in efficiency and the resulting changes in technologies applied to support company processes. While in the 60s, main concern in merger related literature was the strategy of value creation itself as well as human resource integration, the attention shifted towards enabling such value creation by combining two companies’ infrastructure and toolset. The attention broadened to include information technology, reasoned by increased dependency of organizations on their IT infrastructure.

A merger goal can be an integration of business processes. If this is the case, harmonisation and integration of information technology is a logical consequence, as in most of today's companies the processes are enabled by IT systems. In turn, the achievement of synergies through common business processes depends on a successful IT system integration.¹⁰

1.2.2 Significance of the Finance Business Area in Mergers

Prioritising business processes to integrate, there is the finance business area, where integration – at least to a certain extent – cannot be postponed. External requirements, especially from tax authorities and the stock markets, and also the internal requirement of having tools at hand that allow to control the overall success of the integration, make the finance area IT a high priority post merger integration project.

⁹ ERP = Enterprise Resource Planning.

¹⁰ Clever, Post-Merger-Management.

The finance business area is subject to high timely pressure in a merger process. As accurate and timely financial information is critical to direct the companies in all merger phases, the provision of figures is to be assured at all times. This implies the necessity for flexibility, especially in the post merger phase, where the achievement of synergies is to be controlled.

The Finance IT is in a central position. As cost and revenue accounting systems represent the operations of the whole company, numerous interfaces with systems under responsibility of other business areas are to be considered.¹¹

The thesis concentrates on how to manage IT in mergers with a focus on the finance business area.

1.2.3 Lack of Theoretical Approaches for a Merger IT Integration

The number of mergers is constantly increasing, and so do the theories about achieving merger success. Much has been written and said about selecting the right merger partner. Many problems that occur in a merger process have been identified by practitioners as well as by scientists.

Merger relevant theories and solutions for some issues throughout the merger process exist. Especially merger issues on the strategy and human resource layer are widely covered by existing practice examples and scientific literature.

How about the “operational bit” of the merger issues? How about processes, organisation and information technology?

Approaches for merger integration on these operational layers are rare. Literature regarding this topic mainly is of general nature.¹² The author strives to contribute to closing this gap of theoretical approaches by this thesis.

1.3 Objectives of this Thesis and Deliverables

Currently known approaches to merger conduct do not sufficiently reflect the complexity imposed from the integration of processes and

¹¹ Kurbel, Handbuch Wirtschaftsinformatik.

¹² Clever, Post-Merger-Management; Haspeslagh, Managing acquisitions – creating value through corporate renewal.

information technology. This is yet crucial for delivering merger success, especially as it pertains to the finance business area.

The author therefore presents a generic model to manage process and information technology issues in the finance business area throughout a merger. The techniques presented are designed for merger implementation in the post-merger phase, yet they are useful from pre-merger evaluations to post merger integration programmes. The model contains appropriate tools for manufacturing companies producing complex products, but it can be made suitable for other industry sectors with slight modifications. In terms of size, the model elements presented will suit large companies, so that the model can be simplified for the use in smaller companies. In all other respects, the model is generic.

The following chart illustrates the scope of validity for this thesis.

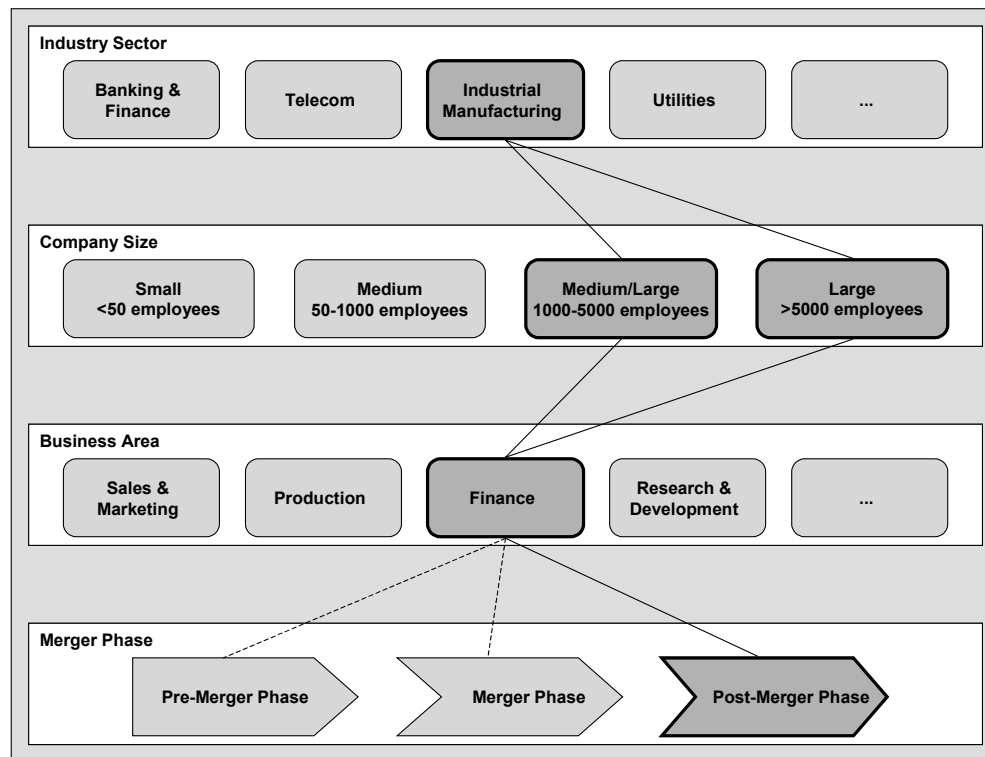


Figure 1: Scope of this Thesis

This document contains a model that interlinks the merger related issues occurring when integrating finance processes and information technology with strategic and operational merger specific decisions. The model will help to identify pitfalls in the merger process as early as possible, and it will also help to identify the appropriate moment in the

merger process to consult staff with detailed operational knowledge. Furthermore, this thesis will contribute a generic procedural approach for practically managing the integration of finance processes and systems in a merger.

The model is presented with a perspective on interdependencies between the finance business area and other business units as well as interdependencies between single merger integration projects. Interdependencies are proposed to be the management focus within the merger integration programme. Systematically focussing the merger integration effort on managing interdependencies, and having a systematic approach to identify and structure them in a specific merger case, are two of the main contributions of this work. This thesis thus presents a new, integrated approach to handle finance processes and information technology in a merger situation.

The deliverables of this thesis are:

- A management approach to manage interdependencies in merger situations
- An interdependency model:
 - Vertically interconnecting the finance business area with strategic and organisational merger decisions
 - Horizontally interconnecting the finance business area with other business areas

Creation of these deliverables is based both on literature review and on real-life experience of interview partners and the author.

Managers who select merger candidates, or managers whose task it is to realise intended merger benefits, may find the approach presented in this thesis useful to achieve their goals.

1.4 Thesis Structure

Besides this introduction, this thesis has eight more chapters.

Chapter 2 contains background information that is required to conduct the research and develop a new approach for merger integration management on process and IT level. Besides presenting and analysing currently known information, chapter 2 also reviews and criticises currently applied methods for merger management and post-merger-integration.

Chapter 3 presents the research methodology used to accomplish the objectives of this thesis.

Chapter 4 contains the first deliverable of this thesis: The interdependency focussed integration approach. It presents a methodology to focus central merger management on the most relevant issues, and proposes approaches to conduct the post-merger integration.

Chapter 5, another deliverable of this thesis, elaborates vertical interdependencies that connect merger integration within the finance business area with strategy, organisation and processes.

Chapter 6, the third deliverable of this thesis, shows horizontal interdependencies, which relate the finance business area on process and information technology level with processes and information technology of other business areas.

Chapter 7 defines guidelines for practical application of the results presented before. It shows how the tools can be linked to the overall business context of the merger.

Chapter 8 contains the validation of the presented approach and discusses its practical applicability.

Chapter 9 presents conclusions of the author, compares the results of the research with the objectives, and evaluates the accomplishments.

A list of literature references, as well as a compilation of the questionnaires collected during validation of this thesis follow chapter 9.

2 BACKGROUND AND LITERATURE REVIEW

2.1 *Why Mergers Need Special Tools*

Mergers are significantly different from the normal conduct of the business in companies. Haspeslagh and Jemison summarize this difference as follows:¹³

- Mergers are sporadic in nature
- They require management capabilities that differ from the managers' regular experiences
- They are driven by opportunity rather than by planned, long-term creation of strategic success potentials
- Decisions must be made at high speed
- Limited access to information and reduced capabilities of information processing
- The opportunity is indivisible
- There is a large inherent risk

The list provided by Haspeslagh and Jemison makes it obvious that managers need support to cope with the special requirements. Tools and techniques to accommodate the limitations stated, and to reduce and mitigate the risk created by these limitations are required.¹⁴

A study conducted by Booz Allen & Hamilton found that of the mergers that are intended to create value by integration, only 32% were successful.¹⁵ The study concludes that it is crucial to have a striking integration approach, along with good communication, clarity about the tradeoffs of decisions, and the balance of conflicting goals.

This chapter reviews tools that are currently applied to achieve this goal, and points towards the gap this thesis is designed to close.

¹³ Haspeslagh, Managing Acquisition.

¹⁴ Lynch et al., Escaping merger and acquisition madness.

¹⁵ Adolph et al., Merger Integration: Delivering on the Promise.

2.2 *Classification of Literature*

Within this chapter, several different sources of literature will be reviewed that approach the merger issue from different sides:

- There is background literature regarding definitions, goals and appropriate phasing of the merger process
- Some of the literature deals with approaching several distinct issues arising within mergers. This thesis is an example of this category.
- A number of authors have dealt with the general issue of managing processes and information technology, and some of the approaches will be presented and discussed as they build one of the basis for the work conducted by this author.

2.3 *Background of Mergers*

2.3.1 What Makes a Merger

A merger is the combination of a plurality of companies to one.¹⁶

Usually interconnected with a capital investment of one company into another, a merger creates an entity that is intended to create more economic value than the sum of the merger partners. The fact that one plus one can equal to more than two can be achieved by realising synergy potentials, cost wise, as well as revenue wise.¹⁷

2.3.2 Objectives of Mergers

The objective of mergers is to create value. This can be achieved by bundling market access for any market (customer markets, employee markets, purchasing markets etc.) or by heightening internal company efficiency.¹⁸

The level of integration of the merging enterprises can vary considerably. In its lightest form, the integration of merging companies is so little that

¹⁶ Bresmer, Vorbereitung und Abwicklung der Übernahme von Unternehmen; Caytas, Im Banne des Investmentbanking – Fusionen und Übernahmen überleben den Crash '87.

¹⁷ Haspeslagh, Managing acquisitions – creating value through corporate renewal; Gadiesh et al., Six rationales to guide merger success.

¹⁸ Heck, Strategische Allianzen – Erfolg durch professionelle Umsetzung.

each of the partners totally preserves its ability to run its business without the other one. These kinds of mergers are not closer than pure capital investments, and therefore the steering of these investments by the acquirer is performed mainly using financial performance measures that are known from investment banking. Value creation at the acquirer is based on positive cash flow and profitable business run at the acquired, on stock price developments, or on the spin-off and sale of portions of the acquired business.¹⁹

This thesis concentrates on merger integration issues in closer forms of mergers. The regarded mergers are those that desire to create value through commitment and integration.

In detail, merger goals from the view of an acquirer can be:²⁰

1. Know-how transfer

Mergers and partnerships can provide access to know-how which is crucial to future success.

2. Change of core competency

Mergers and partnerships can accelerate change processes in companies.

3. System competency

Customers could be provided with integrated solutions by merging or collaborating with providers of adjacent technologies.

4. Economies of scale

Cost decrease by more efficient use of resources or supplier relationships due to increased size.

5. Economies of scope

Access to new customer groups or better access to existing customer groups; also weakening of competition by acquiring a competitor (= horizontal integration).

For achieving any of the mentioned merger goals, a certain degree of integration between the merger partners is required. Besides the goals

¹⁹ Segil, Strategische Allianzen.

²⁰ Segil, Strategische Allianzen; Heck, Strategische Allianzen – Erfolg durch professionelle Umsetzung; Haspeslagh, Managing acquisitions – creating value through corporate renewal; Hubbard, Acquisition Strategy and Implementation.

that are planned to be achieved, the degree of integration depends on many business requirements.

The degree of merger integration can be defined using the dimensions “layers of consideration” and “business areas”. These dimensions, as depicted in Figure 2, are in a matrix relationship.

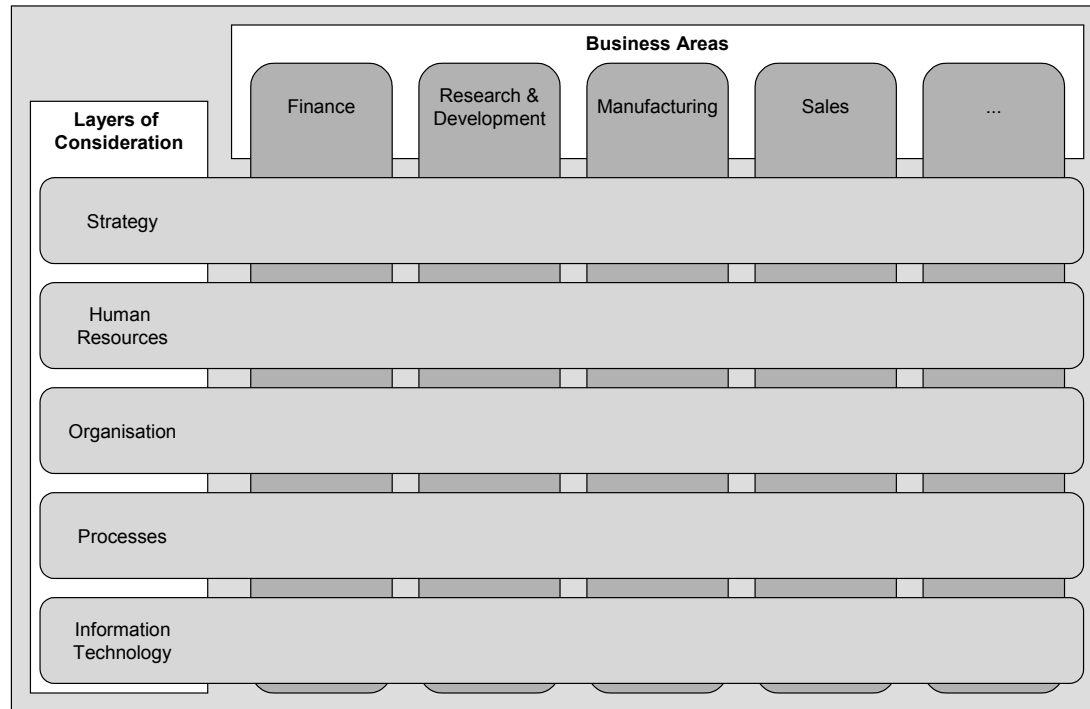


Figure 2: Layers of Consideration and Business Areas

The actual degree of merger integration also depends on time, because a planned integration usually takes some time to be put into action.

Mergers are one means to respond to intensifying competition and rapid technological change. Defining specific merger goals is a prerequisite for delivering and measuring success, crucial to respond to pressures from rising stock market volatility and investor relations. The burden on managers to deliver superior performance and value for their shareholders requires them to rapidly change the organisational structure to more quickly and effectively capture value arising from new opportunities as they unfold in the merger process.²¹

²¹ Gadish et al., A CEO's guide to the new challenges of M&A leadership; Glaister et al., Learning to manage international joint ventures.

2.3.3 Types of Mergers

There are many possibilities to classify mergers. The most common classifications include the two dimensions:²²

1. Legal relationship
2. Business relationship

The following sections will show the classifications in detail.

2.3.3.1 Legal Relationship

Alliances have the goal to create value by joint activities of two companies. An alliance, however, is a form of co-operation in which flexibility plays the decisive role. In most cases, a formal agreement is reached between two companies that sets forth the total scope of the alliance.²³

Alliances mostly do not involve an investment of one of the partners into another. This keeps an alliance as flexible as a long-term supplier contract.

To keep the flexibility required for successfully managing an alliance, an integration of back office structures is not desired. Therefore, alliances are not in the scope of this thesis.

Joint ventures are a common investment of partners into a joint entity. Usual are joint ventures for production, but also for R&D as well as for distribution.²⁴

The new joint entity offers services that are accessible to the partners that have invested in it.

Viewed from the standpoint of integration, a joint venture can require an interconnection between the investors and the new entity. However, as a new entity is set up, the integration with existing structures is in most cases small. Therefore, also Joint Ventures are not explicitly covered by this thesis, however the results can be modified to suit for some of the issues to be resolved.

²² Heck, Strategische Allianzen – Erfolg durch professionelle Umsetzung; Möller, Der Erfolg von Unternehmenszusammenschlüssen – Eine empirische Untersuchung; Hubbard, Acquisition Strategy and Implementation.

²³ Segil, Strategische Allianzen.

²⁴ Segil, Strategische Allianzen.

A merger is the closest form of intercompany relationships. Most mergers take place between two companies. Only in very few cases, a merger comprises three or more companies (one example is the creation of the European Aeronautic, Defence and Space Company, EADS).²⁵

A merger is typically related to the transfer of cash or capital. In the 1990s, the use of stock as an acquisition currency has become increasingly popular. However, the relation of accepting a high amount of cash outflow to accepting a long-term costly payment in capital has to be closely regarded.

After a merger, several legal structures are possible. Depending on the nationality of the participating companies, tax regulations, and management aspects, the target structure can vary. In principle, the following possibilities exist:

- Fusion
- Mother-daughter
- Holding structure

This thesis deals with mergers as the closest form of intercompany relationships, which therefore require the highest degree of integration inside the participating entities.

²⁵ Segil, Strategische Allianzen.

The following chart illustrates the described typology according to the legal relationship.²⁶

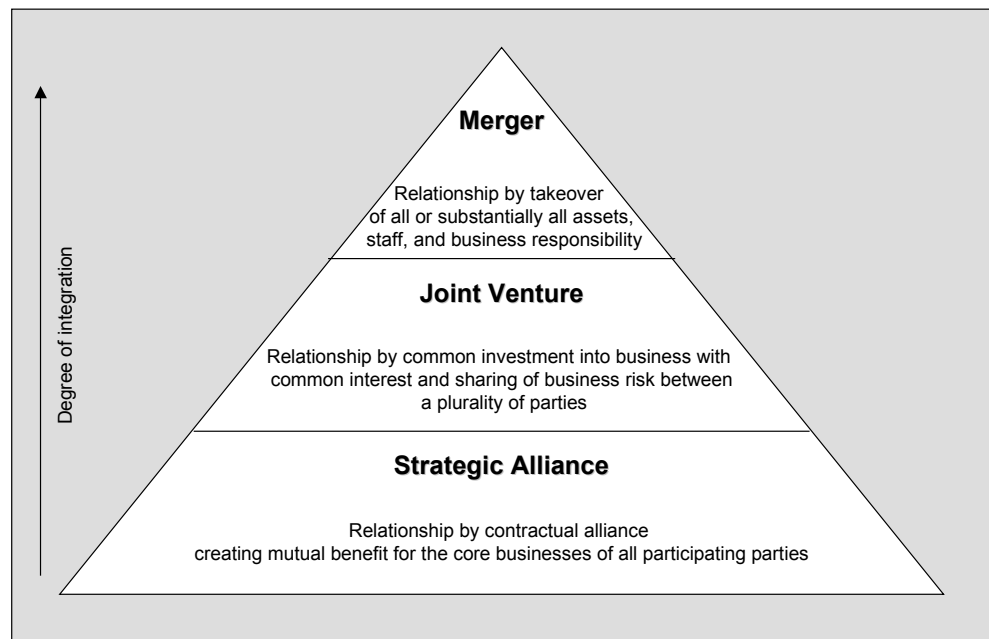


Figure 3: Alliances, Joint Ventures, and Mergers – Merger Typology

2.3.3.2 Business Relationship

Intercompany relationships can be classified according to their relative position on the value chain for producing a product. A vertical relationship therefore is a supplier relationship. Horizontal relationships are concerning companies that either produce a product that is targeted to the same group of customers, or to different groups – the products, however, have no dependency regarding their components.²⁷

Vertical mergers can deliver synergies related to the higher value creation inside the company. The main integration goals of vertical mergers therefore can be found on the production side.

Horizontal mergers can be beneficial if the target market requires larger entities. This is the case mainly in mature markets. The requirement of larger entities can have reasons related to market access (e.g. regional or

²⁶ Thompson, Strategic management: awareness and change.

²⁷ Thompson, Strategic management: awareness and change; Haspeslagh, Managing acquisitions – creating value through corporate renewal.

focussed on a certain customer group) or reasons related to internal structures (e.g. efficiency and product price).

Conglomerate diversification is a form of a horizontal merger, in which products and markets are not congruent at all. An acquisition with the goal of conglomerate diversification therefore creates a new "leg" for a company.²⁸

Concentric diversification covers those kinds of mergers with a weak relationship between products, therefore synergies can still be realised.

2.3.4 Phase Model for Mergers

The integration of companies in mergers can be subdivided into three phases, which typically overlap.²⁹

Managing these phases requires intensive care for different work streams. The integration of business processes and information technology plays an important role.

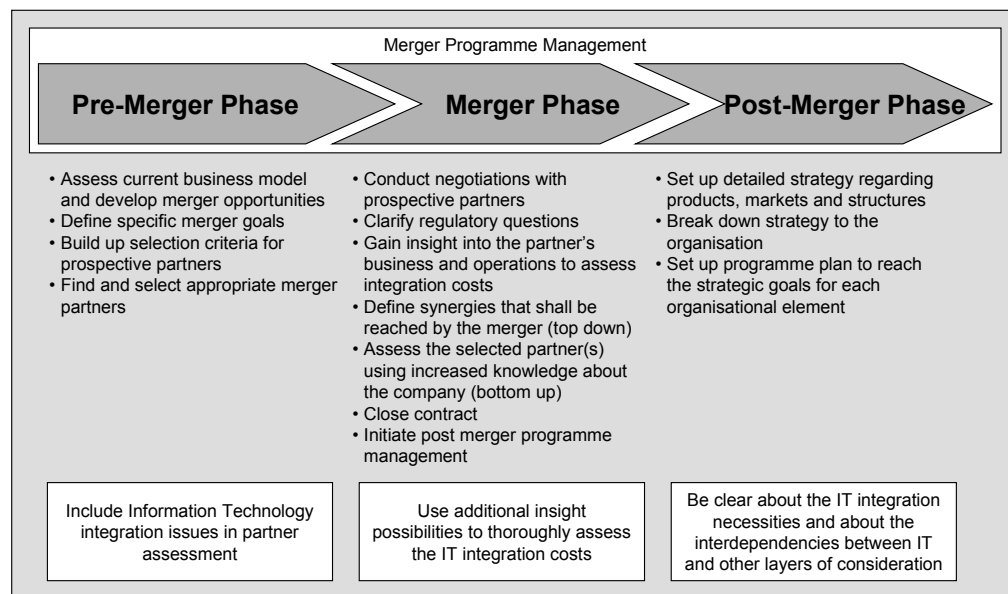


Figure 4: Merger Phases and Tasks³⁰

²⁸ Clever, Post-Merger-Management.

²⁹ Hubbard, Acquisition Strategy and Implementation; Haspeslagh, Managing acquisitions – creating value through corporate renewal.

³⁰ Clever, Post-Merger-Management.

2.3.4.1 Pre-Merger Phase

In the pre-merger phase, prospective candidates are selected. As this selection strongly relates to the driving company's strategy, a deductive approach should be taken. Thus, the pre-merger phase contains the following tasks:³¹

- Assessment of the driving company's own business model and business strategy and comparison with the company's capability to reach the strategic goals. Herewith, the gaps between the goals and competencies are identified.
- Assessment of the possibility and will to close these gaps with the instrument of a merger. The company has to decide, if the own structures are capable of handling a merger.
- Definition of criteria an ideal merger partner has to fulfil.
- Research about candidates and pre-assessment.

The pre-merger phase is often the root of error in the selection of merger partners. The criteria that are set up in order to assess the partner company have to contain operative issues, such as Information Technology.

The most important single item in the pre-merger phase is determination of the acquisition price. Many theories for doing this are being applied. DePamphilis presents a comprehensive approach on how to conduct transactions, focussing largely on financial modelling of mergers.³² DePamphilis also presents due diligence lists, a commonly applied tool for pre-merger research about the company to be acquired – since only if the right information can be accurately lifted, is there a chance to evaluate the post-merger business model and assign an price that can be paid for the soon-to-be-acquired. DePamphilis also gives an overview on various ways to finance the deal.

A useful impression of the problems that need to be avoided in the pre-merger phase is presented by Gilson.³³ Collecting case studies from

³¹ Clever, Post-Merger-Management; Heck, Strategische Allianzen – Erfolg durch professionelle Umsetzung.

³² DePamphilis, Mergers, Acquisitions, and Other Restructuring Activities: An Integrated Approach to Process, Tools, Cases, and Solutions.

³³ Gilson, Creating Value Through Corporate Restructuring: Case Studies in Bankruptcies, Buyouts, and Breakups.

companies that went out of business, this author gives insights to common pitfalls and singular issues that can arise in corporate restructuring processes. For the cases selected, Gilson presents appropriate management concepts and tools, putting a spotlight on how the restructuring is performed, and what motivates the decision to do corporate restructurings. Gilson most notably gives a good impression on how important details can be when restructuring businesses. His collection of case studies makes it obvious how important it is to know about these details when planning for a merger. However, picking out and focussing on the right little details is crucial for maintaining the ability to move forward with the merger decision.

Marren presents an overview over deal structures that also include some tax considerations for the United States.³⁴ The valuation part is not expanded much, but merely gives a broad look on valuation methods and explains impact of structural decisions to the value of the deal.

Copeland, Koller, and Murrin present a summary of different valuation methods.³⁵ The methods applied can mainly be of help in transactions with the goal of integration, not so much for financial investments. The approaches mentioned however focus on the financial conduct of deal valuation, but give no insights about how later on the anticipated financial effects can be achieved by integrating the merging entities. Regardless of how the future business model is reflected in financial valuation (and certainly, there are better and worse models to apply for this), one should keep in mind that managers could be held accountable for realising the numbers that were anticipated before the deal took place. Valuation assumptions therefore need to be woven into a post-merger integration strategy.

A practical overview of different valuation techniques can be found in the work of Palepu et al.³⁶ The authors present several analysis tools, from strategy analysis to accounting and financial analysis of the deal. Several prospective valuation methods are explained, and financing methods are proposed.

³⁴ Marren, *Mergers & Acquisitions: A Valuable Handbook*.

³⁵ Copeland et al., *Valuation: Measuring and Managing the Value of Companies*.

³⁶ Palepu et al., *Introduction to Business Analysis and Valuation*.

A different approach to valuation is given by Evans and Bishop.³⁷ Besides the different methods of valuating an acquisition target, the authors take differences in integration strategies, synergies and competition into account, and therefore present a comprehensive framework that is able to cope with information that really comes from the post-merger phase. The authors also include a procedural summary of the valuation process. The remaining difficulty is knowledge about the integration process and the timelines and costs associated with it, since this significantly determines the synergies to take into account.

Foster Reed and Reed Lajoux present a comprehensive overview about techniques that can be considered in a merger or carve-out³⁸ case.³⁹ Their work covers issues from planning a deal to valuating and financing the transaction. Importantly for true consideration of the direct financial effects of a transaction, the authors also present various details on accounting, taxation, and contract negotiation. One of their focuses is identification of "hidden value" in the acquisition target by the use of activity based costing. Lifting these kinds of values requires integration, not just "co-habitation", and this should be clear to anybody using the approach in valuation and pricing. The authors present a bridge to post-merger integration by establishing a "post merger plan" during deal making. The plan they advocate is mainly designed to carry the value creation ideas over to the post merger phase; however, it does not contain a comprehensive approach to assess integration costs and timelines in the pre-merger phase.

Another example of a more complete view on corporate restructurings and mergers is provided by Gaughan.⁴⁰ Besides offering an overview of different valuation methods, the work establishes a set of rules to which certain categories of restructuring work, and backs these up with numerous case studies. The author shows how complex mergers are compared with other business ventures, and presents high level techniques to cope with such increased complexity. Gaughan also explains tax and regulatory issues. The broad view Gaughan takes on the issues stated however leaves room for linking his work into concepts that

³⁷ Evans et al., Valuation for M&A: Building Value in Private Companies.

³⁸ Carve-out means the process of separation of a business unit into a separate company.

³⁹ Foster Reed et al., The Art of M&A: A Merger Acquisition Buyout Guide.

⁴⁰ Gughan, Mergers, Acquisitions, and Corporate Restructurings.

deal with operational issues in mergers, especially in post-merger integration.

Brown presents a comprehensive work covering the entire deal-making process.⁴¹ Practical hints on how to find deal mediators are completed with an overview of tools and techniques to value the business – with various different methods – and to negotiate and reach an agreement. The work focuses on closing a deal as opposed to implementing a deal, and readers should, in addition to the tools presented by Brown, apply tools that allow them to link strategic aims and merger implementation issues into the deal-making process.

2.3.4.2 Merger Phase

The merger phase deliverable is a closed deal. In-depth information about the target companies is gathered and assessed in a Due Diligence process. The information is the basis for negotiating the merger contract, which consists of a financial part and a part that refers to the business model.⁴²

Assessment and contract negotiation are complex tasks. As the future integration is usually not finally developed, the analysis of integration obstacles on an operational level is often neglected. However, besides the financial assessment, the substantial analysis of structures and their integration is required.⁴³

One of the critical issues that determine later merger success is the integration of Information Technology. As the IT integration can cause major delays and costs during the Post Merger Phase, opportunities and threats resulting from the IT integration should be an integral element of the merger partner assessment.

For the due diligence process, Crilly provides a very comprehensive overview about due diligence questions.⁴⁴ Crilly also provides forms and tools that can be applied during the information gathering process. It should however be noted that depending on the type of integration that is being targeted, the due diligence should be given the right emphasis.

⁴¹ Brown, Strategies for Successfully Buying or Selling a Business.

⁴² Clever, Post-Merger-Management.

⁴³ Haspeslagh, Managing acquisitions – creating value through corporate renewal.

⁴⁴ Crilly, Due Diligence Handbook.

The time for due diligence is always limited. Therefore, there is just so much that one can ask before a merger decision needs to be made. If the basic idea behind the merger is based on process integration, then information technology needs to play a role.

Negotiation tactics and tools are one of the important issues in the merger phase, and Hindery and Cauley give a nice insight into practical deal negotiation.⁴⁵ The authors consider tangible portions of the deal, as well as covering personality issues and drivers behind it. Although their practical hints are somewhat questionable (“do more homework than the other guy”, “hang in there”, “learn to keep your mouth shut”), the authors provide critical success factors and guidelines to raise probability of success.

Another work on negotiation methods is provided by Fisher et al.⁴⁶ These authors present rules and techniques to come to an agreement from the different sides involved, mainly by focussing on the mutual benefits arising from the deal. The authors also provide hints and techniques to sort personal issues out from the material portion of the deal, and advocate using measurable criteria. Clearly, focussing on the interests requires prior definition of the same; which links the negotiation into business strategy and merger integration.

2.3.4.3 Post-Merger Phase

The post merger phase delivers synergies via an integrated entity, in which the necessary interconnections are implemented.

A programme organisation is set up, that is capable of handling all relevant issues that occur during the post merger integration. Besides the necessary top management empowerment, the programme organisation should include knowledgeable staff from both merger parties.

The very first step of the post merger integration is creating the programme plan, consisting of a work breakdown structure and a timeline. The programme plan integrates the issues that occur across divisions and across work streams. Work streams affect strategy,

⁴⁵ Hindery and Cauley, *The Biggest Game of All*.

⁴⁶ Fisher et al., *Getting to Yes: Negotiating Agreement Without Giving In*.

organisation, processes, human resources, and IT. The timely realisation of synergies is managed by the integration programme.

In the implementation programme, IT issues are often regarded as a separate work stream that interfaces with the process integration in the different parts of the companies.

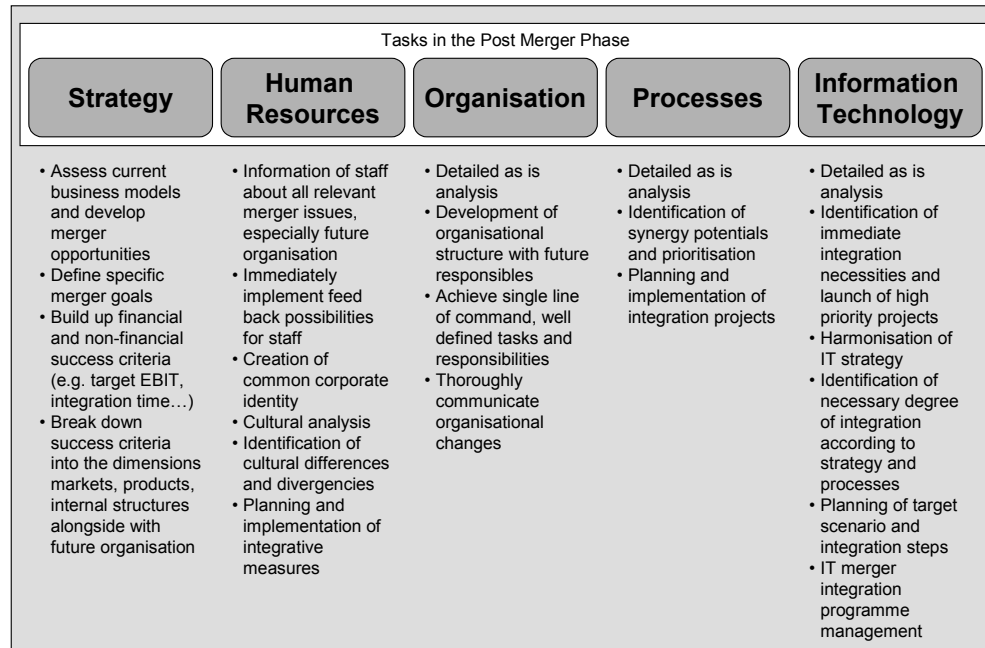


Figure 5: Tasks in the Post Merger Integration Phase⁴⁷

For integrating businesses after a merger, Borghese et al. present a framework aimed towards implementing the merger goals along the approach that was determined in the pre-merger phase.⁴⁸ Besides some pre-merger tools and techniques, the authors focus on tools that cover development, implementation, and monitoring of a merger plan.

More on the level of implementation, Galpin et al. provide insights on how mergers can be made work within an organisation.⁴⁹ One of their main points is that the organisations need careful management of resources to cope with the added workload while keeping the business operating. Reducing the impact on the organisation is presented to be

⁴⁷ Clever, Post-Merger-Management.

⁴⁸ Borghese et al., A From Planning to Integration: Executing Acquisitions and Increasing Shareholder Value.

⁴⁹ Galpin et al., The Complete Guide to Mergers and Acquisitions: Process Tools to Support M&A Integration at Every Level.

one of the main issues for smart post merger management. In addition, getting communication right is considered key for retaining staff and thus being able to implement the merger.

The work by Pritchett et al. elaborates post-merger integration issues with a focus on the right post-merger management to avoid key people leaving the organisation.⁵⁰ The authors advocate fast decision making to reduce the perception of volatility and insecurity of the environment for the staff. Another important post-merger task is identified to be communication, which builds the bridge to requiring comprehensive merger project management.

Focussing the post-merger integration (and pre-merger planning) on strategic synergies is advocated by Clemente et al.⁵¹ Their work emphasizes the market as a main driver for merger success, and denies the idea of the main synergies being realisable in the realm of cost savings. Revenue growth, associated with fast post-merger execution and employee satisfaction, is seen as the most important building block for lasting value creation. Consequently, the authors propose to “focus on people, products and processes”.

Reed Lajoux presents information on a wide level in her book about post-merger management.⁵² The information spans strategy, human resources, and technology. Although the work contains large funds of information, it is only partly built around a coherent methodology. Especially when it comes to the integration of processes – so correctly paraphrased as the main portion of the merger journey – the hints provided remain at the surface. The work is about managing on the level of details, not about coping with them.

The work by Schweiger in turn leaves the reader with a plan.⁵³ Focussing on the early phases of integration, Schweiger points out ways to establish a joint strategy, and to consequently kick the organisational changes off into the strategic direction; he points out the importance of

⁵⁰ Pritchett et al., *After the Merger: The Authoritative Guide for Integration Success*, Revised Edition.

⁵¹ Clemente et al., *Winning at Mergers and Acquisitions: The Guide to Market Focused Planning and Integration*

⁵² Reed Lajoux, *The Art of M&A Integration: A Guide to Merging Resources, Processes and Responsibilities*.

⁵³ Schweiger, *M&A Integration: A Framework for Executives and Managers*.

cultural integration and clear and timely communication during the post-merger phase. The author points towards the fact that in the early post-merger phase, there often is a significant lack of information. According to Schweiger, this lack can be limited by “laying the groundwork during the initial stages of the transaction”. Here the author points towards a connection to smart pre-merger tools on process level: Doing the ground work early on requires insight into the various post-merger issues, and the distinction between things that are issues, and things that are not.

2.3.5 Critical Analysis of Existing Approaches to Merger Management

In the scientific community, there is a strong emphasis on the significant difference of a merger situation to other business situations. However, merger management approaches do not fully provide appropriate tools for considering the issues on process and information technology level; especially in the finance business area, which is subject to a high timely pressure within a merger, tools and techniques are required that allow proper management of processes and IT.

2.3.5.1 Pre-Merger Phase

In all of the approaches dealing with the pre-merger phase, the authors do not fully answer the question how the value of the future joint business model is determined. Any company trying to do this in the pressure environment of a pre-merger will run into serious issues especially when asked to correctly determine the integration costs.

What is needed here is a framework that allows getting an overview of the various costs that arise from the different integration approaches that can be put into action. Certainly, these different integration approaches may be in support of different merger goals and future business models.

Especially in larger companies, process integration that is supposed to deliver merger success is only possible if information technology is integrated. This integration can however be associated with significant costs and time consumption.

In the pre-merger phase, the model presented in this thesis therefore provides important additional knowledge about the price tag on the acquisition, and about the timeline in which the future business model can be implemented – which in turn determines the time at which merger benefits can be realised.

2.3.5.2 Merger Phase

Due diligence lists are nice tools to get the information one asks for. There is only one problem: Since every merger is different (which means the problems at every merger are different), one needs to ask many questions before one gets the knowledge to ask the right ones.

This problem gains importance as the size of the companies increase and the desired degree of integration rises. Merger synergies by growth instead of cost reduction? Good idea, but only if the integration of value creating processes is possible.

None of the approaches to the technical conduct of a due diligence actually provides insights on how the right questions are derived on process and IT level. Establishing the right set of questions can only be done if the dependencies of merger strategy and process and information technology are known. This thesis provides a framework that can help asking the right questions.

A similar argument applies for the negotiations tactics. What is the right price for the other company? At least in the merger cases where value is supposed to come out of process integration, one would think this depends on the size of such value, from which the integration costs are subtracted. Integration costs and timelines need to be known with considerable accuracy before superior negotiation skills can be applied.

2.3.5.3 Post-Merger Phase

Many tools span the post-merger phase. Let us again look at the mergers where synergies are supposed to come from joint processes: if the post-merger team would actually call the merger integration done and leave after every measure recommended by the mentioned authors has been applied, none of the actual results and synergies would have been delivered. The current post-merger approaches neglect real integration of processes.

Merging companies need information about how precisely the business is supposed to run after the merger is completed. In addition, there needs to be a clear path from the present separated worlds to a future joint one. The amount of required interactions and the amount of mutual dependencies of different tasks are enormous. None of the frameworks reviewed provides a coherent technique, which can be applied to cope with this problem.

Information technology does not play a significant role in current post-merger integration approaches. Since information technology is however one of the main drivers of any of today's businesses, it must be considered sufficiently and could even be seen as the main driver of the post-merger process. If not cared for to a sufficient extent, information technology can be an enormous bottleneck for post-merger integration.

This thesis provides a management approach that allows managing the integration of information technology by identifying the interdependencies one should focus on. Thus, the framework presented in this document is designed to deal with the complexity in the post-merger phase, and to enable the new company to realise synergies quickly.

2.4 *Layers of Consideration in a Merger Process*

Regarding a company, there are several layers that have to be considered in any kind of decision. This holds true for merger decisions as well as for any other company decision:

- The strategy layer
- The human resources layer
- The process layer
- The organisational layer
- The Information technology and infrastructure layer.

The following sections will define these layers of consideration, as these layers have been chosen by the author to set the theoretical framework for identifying merger decision interdependencies.

2.4.1 Business Strategy Integration

Strategic management is understood as the overall direction of large and complex entities – originally applied in the military environment. Two aspects are contained:⁵⁴

1. The instrumental aspect of the strategies to reach subordinate goals
2. The decisive holistic influence of strategies

⁵⁴ Ulrich, Management.

Today, the word strategy is often applied for an alternative to reach a goal. Strategic planning therefore concerns the route that leads a company from today's situation to the future.

The concept of strategic planning has been decisively developed in recent decades, when the long-term survival of companies is not as certain as it was in the years of large economic growth.

In the centre of strategic goals are the factors that differentiate successful from unsuccessful companies. However, especially in strategic management, irrational aspects such as political calculations largely influence decisions.

In general, strategic planning can be logically divided into four phases, which can overlap in time:⁵⁵

1. As is analysis (markets, competitors, own structures)
2. Strategy development (opportunities, threats, scenarios, prioritisation and selection)
3. Strategy implementation
4. Strategic control

Building on the company's mission statement, strategic core competencies and strategic success potentials finally lead to the creation of strategic business units, which manage the strategic business areas.⁵⁶

⁵⁵ Ulrich, Management; Clever, Post-Merger-Management.

⁵⁶ Pümpin, Management strategischer Erfolgspositionen; Quezanda et al, A methodology for formulating a business strategy in manufacturing firms.

This relation is shown in the following figure.

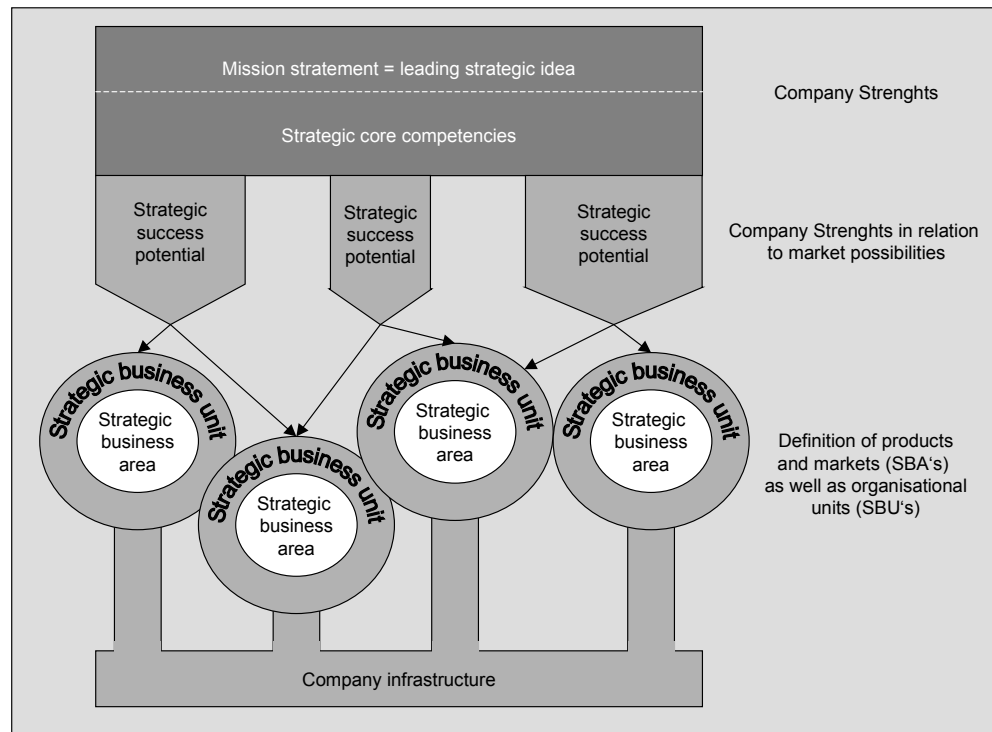


Figure 6: Strategy and its Implementation

Strategic success potentials form the dominating properties of the company, which allow a long-term position above the market average. Three kinds of success potentials can exist:⁵⁷

1. Product related strategic success potentials
2. Market related strategic success potentials
3. Functional strategic success potentials

Usually, the long term planning and achievement of an appropriate mix of these three kinds of success potentials decide about the success of a company.

In a merger, one of the very first steps after closing the deal is the reconsideration of strategic success potentials. The goals regarding these dimensions form the basis for prioritisation and integration inside

⁵⁷ Clever, Post-Merger-Management; Scheiter, Die Integration akquirierter Unternehmungen.

the merged entity.⁵⁸ The joint strategy after a merger is seen to be concluded from the merger goals. Those goals can encompass a variety of topics.⁵⁹

The route of post-merger integration is an integral part of strategy integration itself. The work presented above support the selection of the right merger integration strategy.

However, the past has shown that most mergers fail⁶⁰; amongst these even some at which a "strategic fit" was identified before the merger took place. This thesis shows reasons for failure located in the merger implementation, especially in process and IT integration. However, just as important, the merger goals and the joint vision need to be set up before the integration work starts.

Company visions are intended to guide the companies throughout their lifecycle towards achieving an economic goal. Visions are mostly formulated with respect to the customer group ("building great ships to provide safe and fast transport" and the like). Getting to a joint vision – or even better: selecting a merger partner with a similar vision for the future – is a most important task.

Strategic fit therefore does not only mean serving the same customers or having product lines that can be bound together. A real strategic fit includes the same vision for the future, and fast integration of merger partners will only be possible if the organizations are headed into the same direction before they merge. Expressing the degree of merger fit in financial terms therefore is a dangerous way to summarise any pre-merger assessment.

Development of a post-merger strategy requires development of a post-merger vision. Clearly, over-ambiguous visions can be as dangerous as a lack of vision: providing a realistic vision can guide an organisation towards making the right decisions on the way. Taking the hard and soft facts that are prevalent in the merging entities into account, managers first need to apply a structured process to develop a realistic vision, which later on needs to be translated into goals and strategies.

⁵⁸ Haspeslagh, Managing acquisitions – creating value through corporate renewal.

⁵⁹ Haspeslagh, Managing Acquisitions.

⁶⁰ Habeck et al., After the Merger.

Such strategic development in the pre-merger planning phase and with the selection of merger targets can only be done in the light of post-merger management and integration approaches. Wall presents a strategic view on merger management, in which the author emphasizes the tight integration between merger goals and post-merger planning.⁶¹ Similarly Steinöcker presents an all-round approach that is intended to provide guidance from an alliance concept to strategic merger implementation.⁶²

A study provided by Sirower tries to put a spotlight on synergies and ways to realise them.⁶³ Especially, fast action, sticking to strategies and overcoming cultural differences are perceived as critical success factors for achievement of merger goals. Measures to assess merger performance are provided, along with the advice to precisely know before the merger how merger synergies can be achieved by integration of the value chain. Only this knowledge can, according to the author, lead to paying the right price for the merger partner.

Clear visions and strategies are the prerequisite for merger integration success. No procedure or technique for post-merger integration can outweigh deficits in the strategic area. The approach presented in this thesis therefore relies on strategic "homework" being done early in the merger process, and hence the presented approach provides for interfaces to link different strategic decisions into post-merger management.

2.4.2 Human Resources Integration

The goal of integrating two companies is the joint development of company strengths – a task that is driven forward by the employees. Integrating culture and therefore boosting the understanding amongst individuals is one of the enabling factors in mergers.⁶⁴ Furthermore, harmonising salary and bonus systems is important as it directly influences employee satisfaction.

⁶¹ Wall et al., Post- Merger Management - Die optimale Integrationsstrategie. Gemeinsam zu einem neuen, starken Unternehmen

⁶² Steinöcker, Mergers und Acquisitions: Strategische Planung von Firmenübernahmen. Konzeption - Transaktion – Controlling.

⁶³ Sirower, The Synergy Trap.

⁶⁴ Hubbard, Acquisition Strategy and Implementation; Nahavandi, Organizational Culture in the management of mergers.

Cultural integration covers the identification of differences and divergencies in behavioural patterns inside the merging entities and implements countermeasures. In many mergers, the information of all staff about general proceedings during the merger project is carried out by the Human Resources work stream.

In their work "The New Corporate Cultures: Revitalizing the Workplace After Downsizing, Mergers, and Reengineering", Deal et al emphasize the importance of having management decisions understood by the workforce, and state that today's employees are interested in seeing the meaning of their actions inside and outside of their workplace.⁶⁵ This calls for careful management of structural changes, especially post-merger integration, as management needs to provide the context for workers to see their place within the organisation. Showing cases in which corporate culture has been destroyed over time, the authors point towards the drivers for a loss of corporate cultures: Altered decision making due to the increase of shareholder's influence; necessities to rapidly change the number of employees either by downsizing or merging; and also the change of working environment towards mechanisation and computerisation. Although lacking concrete hints on true implementation of proposed measures, the work provides a good analysis of current challenges for corporate cultures, and makes it obvious that during a merger, cultures require management attention.

Hanson is one example of a more hands-on, process-oriented approach to bring the workforces of two merging companies together.⁶⁶ Naming a lack of employee integration as the main reason for merger failure, the author provides a framework that leads managers to gather appropriate information during the pre-merger phase to integrating two workforces in the post-merger phase. Interestingly, the author points out that sensibly integrating human resources requires starting the process in the pre-merger phase. This is a parallel to processes and information technology: Without clearly seeing the as-is situation before the merger, decisions and integration efforts might prove to be flawed.

Clemente et al. present an approach that spans human resource integration from candidate screening to due diligence and finally to

⁶⁵ Deal et al, The New Corporate Cultures: Revitalizing the Workplace After Downsizing, Mergers, and Reengineering.

⁶⁶ Hanson, The M&A Transition Guide: A 10-Step Roadmap for Workforce Integration.

merger integration.⁶⁷ Similar to Hanson, Clemente et al. provide guidance to hands-on integration, however more along the lines of critical success factors and ways to overcome what the authors identify as commonly occurring roadblocks.

Successful creation of a cooperative way of working together is yet another requirement for putting the process and IT integration to work. While this thesis does not elaborate how the integration of human resources should be performed, application of the techniques presented do require people to concentrate on the material heart of the problems and not to waste too much precious energy on celebration of cultural differences.

2.4.3 Organisational Integration

Integrating the organisation in mergers can be divided into two main sub issues:⁶⁸

1. Finding an appropriate macro organisation, thus defining legal entity structures – mostly according to tax regulations and management as well as shareholder control issues
2. Finding an appropriate micro organisation, company internal structures that are capable to achieve the outcomes of the processes in a controllable manner

Both organisational issues have direct impact on the integration of finance IT systems. Therefore, the organisational integration will be one of the focal points in the thesis.

The integration of legal structures can be performed along these following principles:

- Fusion – one single legal entity per tax region
- Mother / daughter – superior legal entity with several sub- and / or sub-sub-entities
- Holding – one (usually lean) legal entities in which several sub-entities are consolidated

⁶⁷ Clemente et al, Empowering Human Resources in the Merger & Acquisition Process: Guidance for HR Professionals in the Key Areas of M&A Planning & Integration.

⁶⁸ Clever, Post-Merger-Management.

The selection of legal structure possibilities has to be performed per tax region. For instance, a target structure for a trans-national merger could consist of a mother/daughter construction for the main legal entities, whereas the sales subsidiaries in different countries are fused.

Micro organisation depicts the assignment of and the responsibility for tasks to (impersonal) roles. Same tasks, if directed to different target groups (e.g. customers, hierarchy levels), can be assigned to different roles.⁶⁹ A role later assigned to a suitable member of the staff.⁷⁰

After a definition of processes to be performed by the merged entity, the assignment to roles should be performed under consideration of a highest possible degree of integration. Roles and their bundling, organisational units, are responsible for meeting the defined success criteria of assigned processes or sub-processes and for ensuring the constant improvement and fit of their process outcomes to external and internal requirements.⁷¹

Variables in micro organisation are:⁷²

- Centralisation / Decentralisation
- Types of management structures
- Delegation
- Standardisation
- Subdivision of tasks

For the integration of finance IT systems, mainly the first two points are relevant, as they influence the definition of cost accounting structures.

Integrating organisational design with process design is one important task after a merger. It can however be difficult to adjust the organisation in one single step, so that multiple iterations may be required to reach optimal reflection of targeted processes within the organisation.

⁶⁹ Hermesen, Mergers & Acquisitions: Integrationsmanagement von Akquisitionsobjekten - dargestellt anhand der Aufgabe des Personalmanagements.

⁷⁰ Ulrich, Management.

⁷¹ Ulrich, Management.

⁷² Ulrich, Management.

2.4.4 Process Integration

2.4.4.1 Why Processes are Important in a Merger

Processes define the way a company performs its tasks. Macro processes are divided into sub-processes, which creates a process breakdown from the very top tasks down to a detailed work flow, which is often supported by IT systems.⁷³

In interconnection with the tasks performed according to the company processes, a quality management, e.g. ISO 90001, can be implemented. This quality management ensures that the processes are documented and applied.

To be able to merge two companies, selected processes have to be harmonised. Process selection mostly goes alongside the realisation of merger synergies, as similar processes allow rationalisation.⁷⁴

However, in many companies, process documentation contains considerable gaps. These gaps can exist regarding the broadness of process definitions, especially across organisational units, or regarding the logical dependency of macro processes to sub-processes. Integrating processes in a merger therefore mostly starts with a thorough analysis and documentation of processes.

In order to measure the efficiency of processes, a system of performance indicators can be built up. Applied to processes with a direct customer oriented output, these performance indicators deliver valuable information about the efficiency of product or service creation. Applied to overhead processes, the approach has severe impact on cost accounting structures as well as systems, and is not performed successfully by many companies.

The integration of processes in mergers also covers a harmonisation of performance indicators.

⁷³ Porter, Globaler Wettbewerb – Strategien der neuen Internationalisierung.

⁷⁴ Hubbard, Acquisition Strategy and Implementation.

2.4.4.2 Tools for Process Analysis and Process Design

Requirements

There are two main requirements that a process analysis model for merging entities needs to meet:

1. Full coverage of all processes that shall be integrated in a sufficient level of detail
2. Ease of use to enable its efficient and fast application in the volatile merger situation

Besides these two main requirements, other requirements might play roles that are mostly very specific to the merger case. Such requirements can be:

- Compatibility with existing documentation
- Compatibility with cultural aspects, especially if important staff has had previous good or bad experiences with one or the other method, or in case of methodologies that were developed in-house
- Compatibility with organisational structures and project management tools, since the route to analysing and designing processes is again a process
- Ability to cover adjacent processes spanning different levels of detail in process definition

The specific requirements should be defined and explicitly agreed upon between the decision makers of all merging entities to ensure the right selection of methods and their continued support throughout the process analysis and design. Such requirements will help in deciding for the process analysis method, and will contribute to getting the methods discussion out of the way before process integration starts.

Application of the process analysis and design methodologies needs to be supported and ensured by the central merger programme management. Various requirements need to be fulfilled to be able to efficiently propagate the selected methods through the organisation. The three most important prerequisites are as follows:

1. Documentation. Only what is properly documented can be applied on a larger scale. The documentation needs to be as

detailed as necessary, but as high-level as possible to remain easily accessible. Entities should keep in mind possible language barriers, thus using easy language might be recommended.

2. Training and support. Training courses should be available, as well as institutionalised support in process analysis tool set-up for specific projects. Depending on the size of the analysis procedure, hot-line support and regular format reviews – possibly within the quality management procedures – might be indicated.
3. Management focus. Methods will be applied if managers openly support their use. Even if the methods might not be optimal for a specific task within the large merger undertaking, the value of consistently applying the method throughout the company and thus being able to bring the information together in a central programme management is obvious and should be clearly communicated.

Process Models

Company process models are the basis for merger integration of processes and IT. Process models are applied to define and document purpose, content, performance measurement, and organisational reflection of a business process. For accomplishing this purpose, these models contain various levels of breaking down macro processes into their various steps.⁷⁵

To properly depict links between processes, it is most crucial to use a unified process model throughout the company. In a merger process, this boils down to the recommendation stated above: The first step in starting business process integration is the agreement on one set of tools and templates for process analysis and design. This set is referred to as process analysis methodology.⁷⁶

⁷⁵ See: Gruninger, Fox, The Logic of Enterprise Modeling.

⁷⁶ Scheer et al, Entwicklungsstand in der Referenzmodellierung.

There are various process analysis methodologies. A subset of these methodologies will be presented here.⁷⁷

Harrington presents an approach to process improvement.⁷⁸ The tools and techniques presented in his work link process analysis and design tools with approaches to quality management. Using customer requirements as a starting point, Harrington proposes techniques that provide users with the ability to design and implement procedures to fulfil those. The recommendations encompass organisational variables.

Similarly, Hammer presents an approach to design processes that focus on what he calls customer value creation.⁷⁹ The basic assumption he propagates is his work is that the end point of process performance in a company is not a "product" or a "service", but value in the customer's value system.

Jacka et al extend Hammer's view to a larger group of stakeholders, including shareholders and employees.⁸⁰ Their approach tries to solve the conflict resulting from different requirements to company processes that arise from the varying interests of those stakeholders.

Womack et al present a different angle on process design.⁸¹ They support "lean thinking", which is intended to reduce waste of resources of any kind. Their underlying view is that such waste is either a drain on profits in the form of direct costs, or as indirect costs if it reduces the probability of repeat business.

The authors above mainly focus on understanding why processes should be designed one way or the other, and how to interlink company goals with the goals of value creation processes. The most well-known process modelling technique ARIS ("Architecture of Integrated Information Systems") presented by Scheer contains templates and tools to depict the outcome of process analysis and design.⁸² The striking advantage of ARIS is its uniform toolset, its ability to encompass process definition

⁷⁷ See also: Kosanke et al., CIMOSA: Geschäftsprozessmodelle für Wissensmanagement und Entscheidungsunterstützung.

⁷⁸ Harrington, Business Process Improvement: The Breakthrough Strategy for Total Quality, Productivity, and Competitiveness.

⁷⁹ Hammer, Beyond Reengineering: How the Processed-Centered Organization is Changing Our Work and Our Lives.

⁸⁰ Jacka et al, Business Process Mapping: Improving Customer Satisfaction.

⁸¹ Womack et al, Lean Thinking.

both from the process owner side, as well as from the IT system owner side. The flexibility of its use has made ARIS the method of choice for many IT implementation projects, especially since the method is used by SAP in its R/3 environment and the commercial success of R/3 has boosted the proliferation of ARIS in practice. Of particular interest is the workflow impact that is contained within ARIS. All aspects of a business workflow can be covered, and thus can be carried over into information technology requirements. Automation of workflow requires precise definition of all tasks and connectors, thus ARIS is widely used for covering these aspects. The Unified Modelling Language (UML) is the basis for the systematic information model in ARIS.

CIMOSA is a process modelling technique that was developed by researchers and practitioners across Europe in a collaborative effort. Being focussed on manufacturing enterprises, it features a framework for enterprise modelling, an infrastructure layer that is supposed to provide integrated business information, and methods to capture, document and communicate a life cycle of computer integrated manufacturing.⁸³ Monfared and Weston have taken the CIMOSA model to a next level, defining a meta process definition approach to be used for defining and re-defining processes in change-capable cells. The technique presented by these authors contains approaches to abstract from specific processes to a meta process model, and being able to re-apply the meta process model to slightly different environments while maintaining a joint infrastructure layer.⁸⁴ Depending on the process environment in the merging companies, these approaches might be useful.

To save time and cost, existing process models should be re-used if appropriate. Their re-usability might yet be limited and needs to be assured with regards their correct interpretation to the changed context. Bernus et al present a method to assess re-usability of existing enterprise models based on a concept of efficiency and completeness.⁸⁵

Result of process analysis is a map of existing procedures. Using the techniques mentioned above, new processes may be designed. In the

⁸² Scheer, ARIS: Business Process Modeling.

⁸³ Ngyuen et al., Cooperative Information Systems in Integrated Manufacturing Environments.

⁸⁴ Monfared, et al., An application of CIMOSA concepts in the development of change capable manufacturing cells.

majority of cases, such design will lead to the creation of various alternative process designs. End point of such design is the decision for one of the alternatives. This point is probably one of the most difficult steps, since if the process design has been done correctly this is the time to prioritise the requirements of the different stakeholders. In his work about the design of manufacturing systems, Wu suggests useful evaluation methods that can be used to decide on a particular process analysis alternative.⁸⁶ Various different decision support methods can be applied, most well-known is probably a simple SWOT analysis, but also ABC analysis, QFD tools known from quality management, decision trees and value analysis can be useful. Again, it cannot be emphasized enough that the agreement on such methods amongst the decision makers is crucial for an efficient process design of the merging entities.

The following chart depicts the links described.

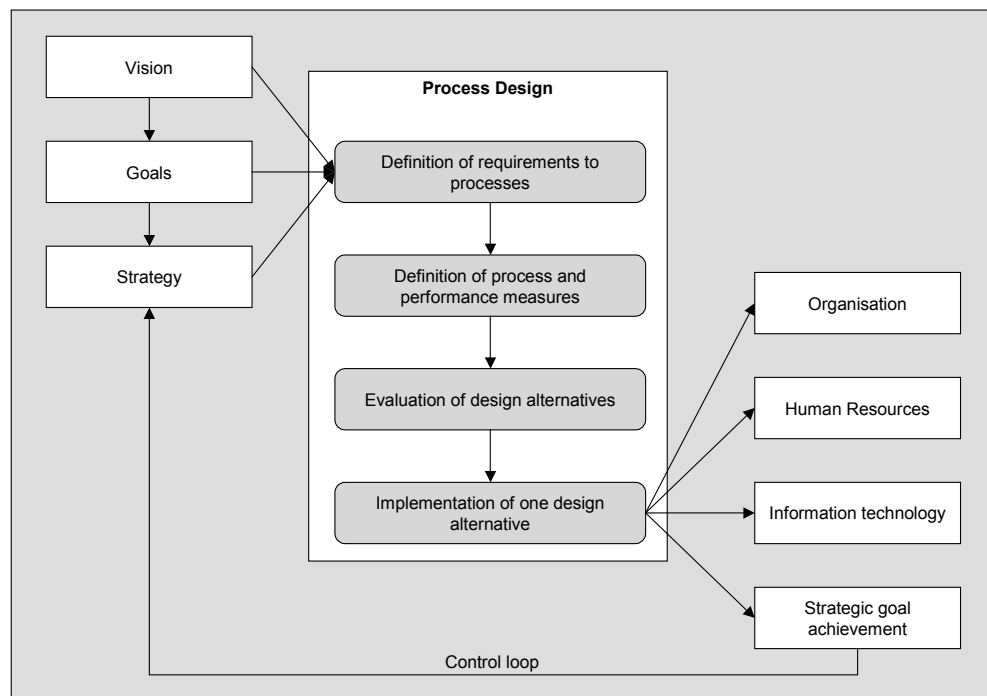


Figure 7: Process Design Linked to Layers of Consideration

⁸⁵ Bernus et al., Possibilities and Limitations of Reusing Enterprise Models.

⁸⁶ Wu, Manufacturing and Supply Systems Management: A Unified Framework of Systems Design and Operation (Advanced Manufacturing).

Process Design in a Merger

Every company is different, and every merger is different. Merging companies must decide early on in the merger process which analysis and design tools will fit the specific requirements best. This decision should be a joint one, including all relevant staff and responsible managers, so that the agreed-upon templates can be used as widely as possible during the integration process.

2.4.5 Information Technology Integration

2.4.5.1 How to get from processes to IT systems

IT systems today widely determine process performance and the flexibility of process designs. Their correct choice and design enables reaching the goals defined within the process analysis and design steps.

Three generations of information technology systems can be distinguished:

1. Dedicated systems age. Several IT system applications, all designed to fulfil a very dedicated purpose, exist and need to be interconnected. Expansion or change of procedures results mostly in IT system redesigns, which in turn means that there can be significant time and effort required to implement procedural changes. A landscape that consists of several interconnected, but dedicated systems can be quite inflexible.
2. ERP system age. Integration is the key word for ERP systems. Designed for a large variety of processes, ERP systems such as SAP R/3, BaaN, or J.D. Edwards offer some flexibility and comparably easy implementation of various processes. There is however a big difference between implementing an ERP system from scratch and changing an existing ERP system: The latter can be associated with large effort if the change is associated with an alteration of data structures.
3. Web system age. Fast interchange of information and the connection of various data sources is the striking element of the web system age, of which we are currently on the verge. There are some important issues still unsolved, mainly in the area of transfer security over a web structure, and the issues

associated with reliable process and workflow coverage in an environment that allows for limited feedback and checks.

In almost any of the larger companies, especially in the manufacturing area, systems from each of the generations can be found. This imposes a completely new problem: designing an IT system, especially in a merger environment, is limited by the capabilities of existing system landscapes and generations to cope with changes quickly.

This fact makes it obvious that any process design, which does not involve experts from the respective IT functions, has a high chance of ultimate failure. Involving IT experts is a prerequisite for high quality process design and implementation.

The web system age however yields significant potential to simplify the exchange of information in the future. In supplier relationships, it becomes increasingly popular to establish joint processes along with a joint web interface to be able to easier and more swiftly perform research and development, purchasing activities, or the like.⁸⁷

2.4.5.2 Handling of Information Technology in a Merger

IT is related to processes and organisation. Being the backbone for many processes and enabling their fulfilment of performance indicators as well as an important tool for cost accounting along organisational structures, IT also has its own degrees of freedom.

Goal of the merger IT integration is enabling the process integration and organisational consolidation. Information processing and creation should constantly allow the company management to gain enough insight into the company to securely steer towards defined financial and non-financial goals.

Besides these tasks, the integration of IT systems opens new strategic opportunities. Depending on the selection of IT systems, a merger can boost the IT support of at least one of the merger partners significantly. Setting up a clear IT strategy and managing the merger integration in close co-ordination with process and organisational requirements can

⁸⁷ For instance see: <http://msiri.lboro.ac.uk/ccg/index.html>. The page refers to an engineering partner interaction and integration project conducted by Loughborough University with various large industrial partners.

lead to realising cost saving potential and optimising the support of processes by Information Technology.⁸⁸

In principle, four possibilities for integrating IT in mergers exist:

1. **Separate systems with interfaces.** This solution is suitable for companies that strive not to integrate their business processes too much and has the advantage of keeping separable entities alive. However, creating a high amount of interfaces and maintaining two totally different IT system maps is costly, and it furthermore delays the realisation of cost saving potential in the process layer significantly, should the decision once be made to integrate the entities closer.
2. **Cherry Picking.** This solution is suitable for small companies with not too many IT systems, as the creation of a totally new IT system map by mixing together systems from several companies is the most time and resource consuming of all possible approaches. On the other hand, an optimum IT support for the merged company can be created.
3. **Take-over of one system map.** In this solution, one company entirely uses the system suite of the merger partner and stepwise switches off all its own systems. Being a comparably cheap solution, this alternative does however make the modification of existing systems necessary, as the system suite of one of the merger partners is not necessarily capable of performing all operations that the merged entity requires. Issues that arise are mostly capacity, multi client capability, multi language capability, and others. Furthermore, take-over of data from one entity into the data logic of the merger partner can be an extremely complicated task.
4. **Development of new system map.** This approach leads to a suite of IT systems that is significantly different from the system suite used in either merger parties. It is suitable, if through the merger the systems requirements of the entities have changed dramatically, or if the both merger parties did not possess a suitable system map before and thus the merger is used as an opportunity to renew the IT support of the business processes. The development of a new system map is

⁸⁸ Clever, Post-Merger-Management.

comparably expensive and has to be justified by substantial business benefits.

These strategies need to be evaluated and a joint view on the IT piece of the merger has to be established. Having the IT strategy as well as the process integration strategy in place, the integration of IT systems can be tackled.

In the work presented about process integration, the interface to information technology is clearly defined. Böhm et al present an approach to information technology integration, which is strongly workflow and software oriented.⁸⁹ The following chart summarizes this approach.

⁸⁹ Böhm, Eine Methode für Entwurf und Bewertung von Integrationsvarianten für Anwendungsprogramme und Workflow-Management-Systeme in Geschäftsprozesse.

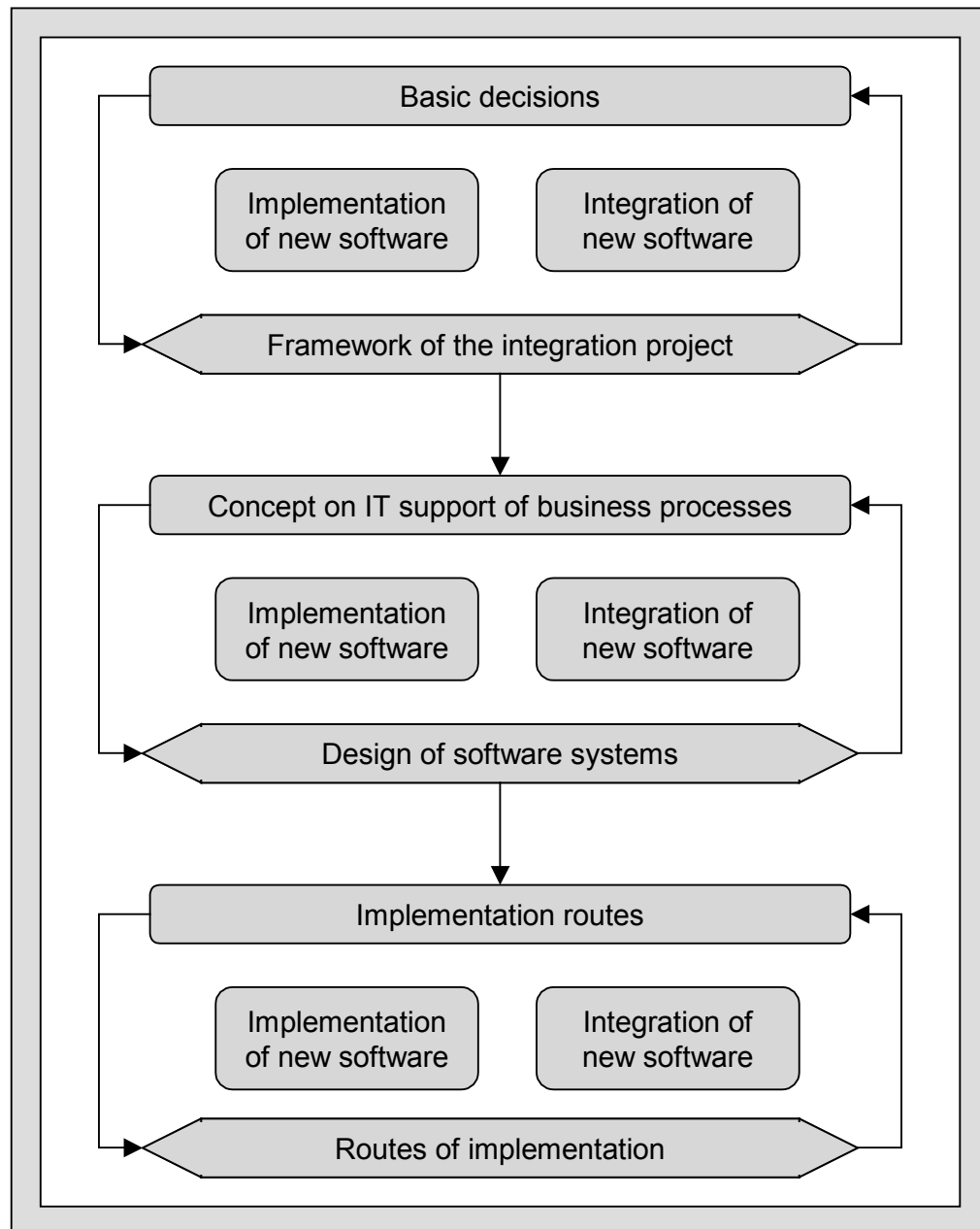


Figure 8: Software Development Interlinked with Process Design⁹⁰

The interesting point with software driven approaches as shown above is that they take software as the main starting point. Within a merger, managers need to find out how the software departments view

⁹⁰ Böhm, Eine Methode für Entwurf und Bewertung von Integrationsvarianten für Anwendungsprogramme und Workflow-Management-Systeme in Geschäftsprozesse.

themselves within the process redesign. If the views differ, namely if one merger partner takes IT as a starting point, whereas the other merger partner is strongly process or organisation driven, misunderstandings can almost be taken for granted. Designing the process and IT integration project thus requires proper research on the underlying assumptions that reside in the merging organisations in order to support fast and long-lasting integration success.

2.4.6 Critical Analysis of Current Methods for Layer-Focussed Merger Management

Selecting the right partners and having the right idea for a joint business model is indeed a critical success factor. However, it tells nothing about the implementability of this idea. Therefore, a strategy is only worth the paper it is written down on if it can be put into practice. This is where the other layers come into play.

Human resource management is the essence of making mergers work quickly. O'Brien and Smith identify internal culture as one of the four main drivers for innovation, and consequently the satisfaction of customer needs.⁹¹ The authors break innovation-supporting internal culture up into three items: encouragement of supportive learning, willingness to take risks, and team based responsiveness. Each single one of those three items needs to be re-built after a merger to leverage the merged entities' joint technology portfolio. Swift integration requires extraordinary efforts of people involved in merger projects. Extraordinary efforts can only be achieved if there is an extraordinary motivation.

About the same argument would apply for organisational structures: only if it is clear who needs to do what with whom, can the organisations work together smoothly.

For the above topics selecting merger partners, human resource management, and organisational structures, many approaches have been presented and many more exist. They all have their advantages or disadvantages that make them more or less applicable to a specific case. Methods for integrating strategy, human resources, and the organisation are available.

⁹¹ O'Brien et al., Strategies for encouraging and managing technological innovation.

Looking at the integration of processes and information technology, the picture looks however different. The approaches mentioned have the ability to fulfil the requirements imposed onto processes and information technology by the complex merger situation.

Being designed to cope with very detailed tasks that are mostly limited to only a part of one company, most of the existing tools are very complex. This complexity results in a high demand if they are used within a merger process, in which two entities need to be mapped to a level on which decision for a joint process and IT landscape can be sensibly made.

This level varies from merger case to merger case, and this is why if the merger process is to be fast and successful, the first step needs to be a redefinition of process analysis and design tools to match the specific requirements. Time to implementation is of the essence.

This thesis helps to remain on the right level of detail. It is therefore kept independent of the analysis method that is applied in a specific case. In this thesis, the author presents a framework that can guide the selection of the most applicable level of detail in a specific merger situation. Processes need to be analysed, and IT systems need to be mapped, but only to the extent necessary. Whatever extent is selected by the merger project team in merging entities, the appropriate tools can be drawn from the process analysis work presented above.

It can however not be emphasised enough that this selection needs to be done with the large workload on the relevant staff in mind. Moreover, for a merger, it is especially true that the planning and analysis step has to end soon to be able to quickly move towards the realisation of the expected synergies.

2.5 *Process Clusters in the Finance Business Area*

The process clusters offered within this chapter serve to determine manageable units that can be regarded separately with the least possible interfaces between clusters. In a specific merger case, clustering should be reviewed and built up so that the break-up of processes fulfils these criteria.

2.5.1 Description

The finance business area drives or is part of several business processes that deal with enterprise planning and steering. As the target of each

investment is value creation, the finance sub-processes have the task to track this success and produce reports that document the value creation for outsiders, such as investors.⁹²

Management of each company needs to be informed about the financial situation of the company and subsequently needs to bring this information in line with the desire to allocate resources to different tasks. The outcome of such tasks should be again value creation. This is the interconnection between finance and strategy; and no strategic decision can be made without estimating its financial impact. Furthermore, the impact of strategic decisions and therefore the success of the business strategy cannot be verified without the provision of profitability indices that can be related to the business decision that was intended to influence it.⁹³

Communication of the financial situation towards investors is crucial especially for stock listed companies. The contents and formats required for this purpose are defined by the legal regulations in the country the stock exchange is located in; and these requirements differ from country to country. Creation of documents is in this context a question of accurate provision of numbers in different accounting standards.

However, in each communication a company makes towards investors, information about the company future is included. This information, whether positive or negative, has direct impact on the stock price. The company management therefore is interested in receiving reports that indicate future profitability as timely as possible – otherwise their statements towards investors could cause expectations, which inadequately raise or lower the baseline for measuring the future performance of the company. Risk of negative influence on the stock price and thus the company's ability to raise financial resources to support growth plans is mostly as direct as it is massive.

⁹² Kurbel, Handbuch Wirtschaftsinformatik.

⁹³ Linnert, Handbuch Organisation.

In detail, the finance area creates several process outputs, which are interconnected with creating external and internal financial reports and with managing the cash and asset position of the company. The tasks can be set up as follows:⁹⁴

- Provide timely, accurate budgets, financial reports, and accurate information to management
- Maximise cash flow / investment earnings
- Optimise the entity's capital structure
- Optimal tax structure to minimise overall taxes
- Comply with financing agreements / covenants and minimise financing costs

Financial aspects are incorporated in all company processes. For example, the finance business area provides marketing with product cost figures, and supports R&D with the development of products having an appropriate cost position.

In addition, the finance business area is responsible for enabling and conducting the measurement of process cost inside the company. This task is especially important, when profit requirements to the company rise, e.g. through a merger.

The finance business area provides the management with valuable information about the success of their strategic decision in terms of value creation. It furthermore creates all necessary documentation in the formats required for the company external communication of the business performance.

⁹⁴ Linnert, Handbuch Organisation; Kurbel, Handbuch Wirtschaftsinformatik; Schmidt, Grundlagen der Aufbauorganisation.

2.5.2 Finance Area Process Model

To achieve the above-mentioned outputs and goals, the finance area can usually be divided into process clusters. These clusters are named according to the tasks they perform:⁹⁵

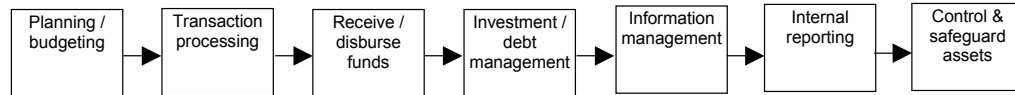
- Cash management and liquidity planning
- Investment planning
- Asset accounting
- Purchase requests and accounts payables
- Customs compliance and transport accounts
- General Ledger
- Revenue and gross profit accounting
- Cost centre accounting
- Product costing
- Material, work-in-progress, inventory
- Consolidation and group reporting

The following table shows a breakdown of procedures within the finance business area. Process clusters shown vary from company to company; especially the organisational reflection and the split-up of tasks is dependent on size and organisational philosophy.

No.	Process/Sub-Process Name	Process Description
1	Cash Management and Liquidity Planning	Central payment process
2	Investment Planning	Investment planning, approval and control
3	Asset Accounting	Central registration of assets, calculation of depreciations, posting to general ledgers
4	Purchase Requests and Accounts Payables	Checking of incoming invoices against order data and physical goods receipts
5	Customs Compliance and Transport Accounts	Optimisation of transport logistics, financial control of transport invoices. Financial customs handling, revaluation in case of retrospective price changes.
6	General Ledger	Posting of general ledger accounts
7	Revenue and Gross Profit Accounting	Posting of sales ledgers and accounts receivables
8	Cost Centre Accounting	Accounting and layout of cost centres, cost control
9	Product Costing	Calculation of product costs for pre-series and series products
10	Material, Work- in Progress, Inventory	Inventory valuation and posting
11	Consolidation, Group Reporting	Consolidation of intra-group profits, calculation of overall profit and reporting

⁹⁵ Modified from Kurbel, Handbuch Wirtschaftsinformatik.

In principle, any finance area performs the following process steps:



Various inputs are used to achieve the process outputs. First, the strategic plan provides the framework for resource allocation and control. However, also the economic environment and market data feed into the financial processes, as do customer requirements.

Usual transactions that are performed include cash receipts or disbursements, daily financing and cash management. The calculation and provision of accruals, issuance and retirement of debt as well as estimating tax accruals are performed.⁹⁶

The following chart shows how the different tasks in the finance area interlink by their mutual flow of information. The outside large grey box highlights the finance business area itself. Boxes outside the grey box represent tasks performed by adjacent business areas, which feed into the finance business area.

⁹⁶ Kurbel, Handbuch Wirtschaftsinformatik.

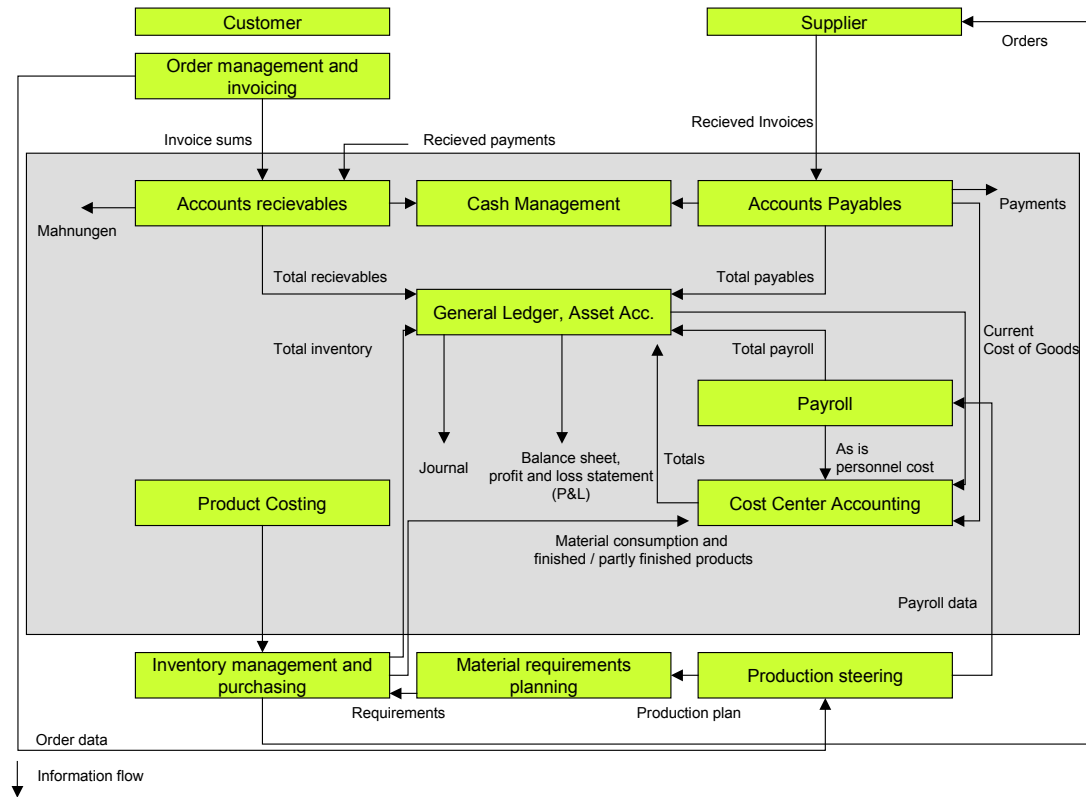


Figure 9: Tasks and Information Flow inside the Finance Business Area⁹⁷

2.5.3 Finance Area IT Reference Model

Different degrees of integration in respect to finance processes and finance information technology are possible. However, in most enterprises today the integration of the finance processes with the help of IT systems is very high. As an effect, the amount of manual interventions is low compared to other business areas. Yet, as mostly different IT systems are interconnected, the amount and complexity of interfaces rises with the integration.

For the finance business area, many standard software products are available on the market. Therefore, in most cases, at least the financial accounting and cost centre accounting are performed using standard

⁹⁷ Kurbel, *Handbuch Wirtschaftsinformatik*, p. 36; Stahlknecht, *Einführung in die Wirtschaftsinformatik*, p. 348.

software. For the other parts of the finance area, bespoke IT systems are more often found.⁹⁸

While there are differences in IT requirements regarding company layout and specifics (different brands, sites, companies, consolidation strategies, etc), the general IT system map, as it can be found in most companies and branches, is depicted in the following chart.

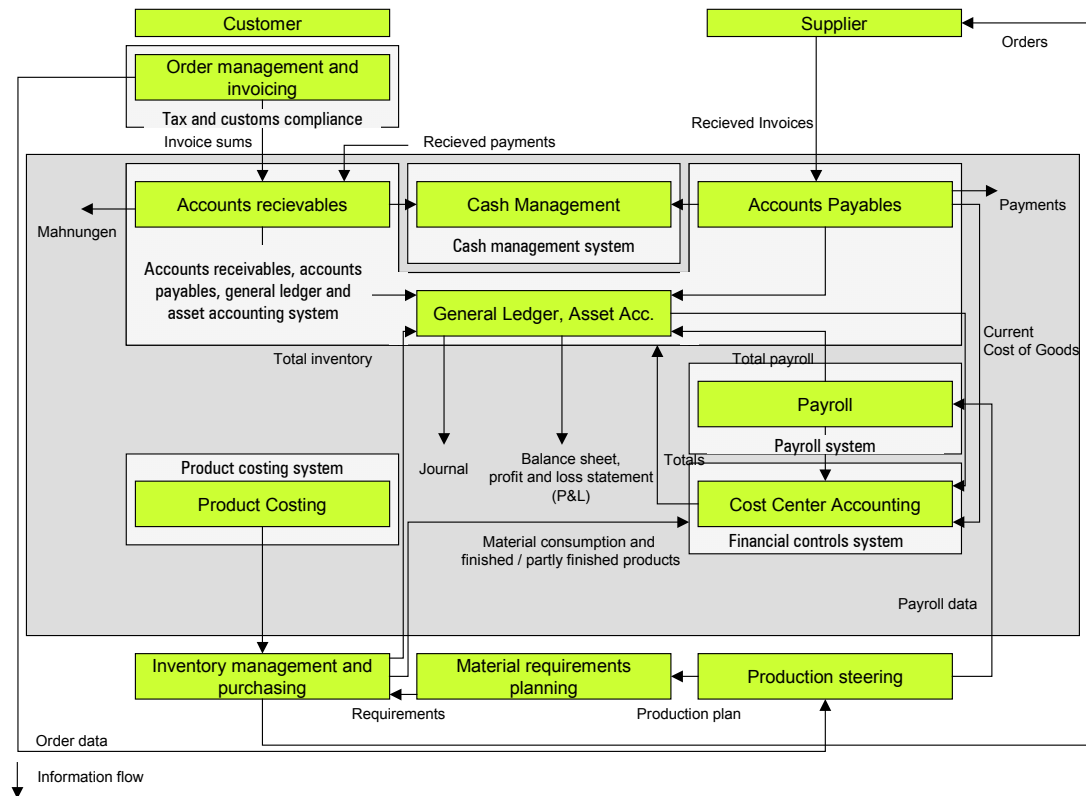


Figure 10: IT Systems in the Finance Area⁹⁹

⁹⁸ Kurbel, Handbuch Wirtschaftsinformatik.

⁹⁹ Adapted from: Kurbel, Handbuch Wirtschaftsinformatik; Stahlknecht, Einführung in die Wirtschaftsinformatik.

Outputs created by this suite of finance systems are in general:

- Budgets / forecasts
- Internal reports
- External financials
- Investment statistics
- Investment management
- Performance measurements
- Disbursements

While supporting the process tasks and producing the required outputs, finance IT systems underlie external requirements. For example, data in the systems has to be unchangeable once it is entered.¹⁰⁰

The process model presented in this chapter is used in the following chapters to structure the specific interdependencies occurring in a merger process.

¹⁰⁰ Stahlknecht, Einführung in die Wirtschaftsinformatik.

3 RESEARCH METHODOLOGY – SCIENTIFIC APPROACH

In the course of analysing and explaining the topic of this thesis, the author has posed a number of scientific questions. This chapter shows how these questions have been answered by selection and application of a suitable research strategy.

3.1 *Research Methodology Overview*

There are two basic ways of creating new knowledge: deductive and inductive research methodology. While both can yield scientifically valuable results in principle, it is imperative to select the approach suitable for a specific topic.

3.1.1 Deductive Research Methodology

Deductive research starts with premises that involve a set of assumptions. These premises serve as a basis for the development of a new theory, which is a possible answer to a problem or question to be answered by the researcher. Using data gathered in the research process, the researcher tests the theory on its validity.¹⁰¹

The basis of developing theories is necessarily incomplete. Deductive research thus inherently bears the risk that the theories developed are also incomplete. Research carried out after the theory has been deducted and tested might reveal its flaws. However, since it is possible to take a small subset of reality as a starting point for a theory, deductive research is suitable even in very complex situations.

In his work “Real World Research: A Resource for Social Scientists and Practitioner-Researchers”, Robertson presents an approach to deductive research that comprises five steps:¹⁰²

1. Using theory as a starting point, derive a hypothesis
2. Define variables that determine the hypothesis
3. Test the influence of the variables on the hypothesis

¹⁰¹ Leedy, Practical Research.

¹⁰² Robertson, Real World Research: A Resource for Social Scientists and Practitioner-Researchers.

4. Accept the hypothesis if the tests have not contradicted the hypothesis
5. Reject and possibly modify the hypothesis if it was contradicted by the tests.

The underlying assumption, as can be seen from the above flow, is that a hypothesis is valid as long as it has not been contradicted by the findings drawn from the tests.

3.1.2 Inductive Research Methodology

Inductive research uses an observation of a problem as its starting point. Collecting information and positioning a hypothesis, the inductive research method then empirically tests the hypothesis by a data analysis.¹⁰³

Inductive research, in contrast to deductive research, can only work if the researcher makes no assumption concerning the correlation of the variables he uses to describe the phenomena observed. The knowledge to be derived is exactly this correlation. Validation of such correlation then needs to be performed using a different dataset than the one the correlation was derived from.

3.1.3 Validation and Data Gathering

The data gathered to validate the research outcomes of the thesis is qualitative in nature. Focussing on the descriptive meaning of information incorporated in practical experiences, and not on measurable parameters, this collection method supports the creation and validation of the described deliverables out of complex business interdependencies.¹⁰⁴

3.1.3.1 Qualitative versus Quantitative Data

Qualitative data consists of non-numerical information, whereas quantitative data consists of numbers. By the means of statistical methods, certain qualitative information can be converted into quantities. Depending on the variability of the qualitative source data, a certain number of data points are needed to derive reliable statistical quantities.

¹⁰³ Leedy, Practical Research.

¹⁰⁴ Leedy, Practical Research.

It is yet inherent to the derivation of such statistical quantities, that if a scientist wishes to estimate her or his accuracy, or possibility of failure when deriving quantities from qualitative source data, the number of variables needs to be known.

Most business situations are very complex in the sense that their conduct depends on a vast number of variables. Only some of them can be measured. Within the context of this thesis, neither can the number of variables be estimated, nor is it possible to obtain enough data points to be able to produce a sound quantitative basis.

Validating the hypothesis will thus be done using a qualitative evaluation.

3.1.3.2 Obtaining Qualitative Data

The data required to validate this thesis is obtained using words to describe the information.

Information from persons is collected using interviews. Interviews are a set of questions that are posed with the goal of obtaining the view of the interview partner on a certain topic. Interviews can be unstructured, semi-structured or structured. The ability to compare interviews with one another raises with their structure – by the same token the flexibility during the interview decreases. Within the validation of this thesis, the author chose to conduct semi-structured interviews, in which a certain set of topics was prepared, but freely discussed during the conversation. These topics are listed below in the form of questions.

Another way to obtain data for validating this thesis is the conduct of a case study. Within a case study, the author investigates a certain research object to draw conclusions in the context of the research work. In this thesis, a case study is used to present potential impact of applying the presented merger integration approach in comparison to the approaches applied within the research object.

3.2 *Research Methodology Applied*

3.2.1 Development of Hypothesis from Real-World Observations

The basic premises leading to the research problem have been presented in chapters 1 and 2 can be summarised as follows:

- Many mergers fail to achieve the defined goals
- Costs of the mergers are often underestimated
- Integration of the merging companies is often hindered by lacking IT integration
- Effects of strategic decisions on processes and IT are not clearly understood in mergers

This thesis is based on the following further assumptions:

- Dependence on IT is high in today's companies
- Process synergies cannot be achieved without IT integration
- Finance area is a high priority business area to integrate

The lack of integration quality that was observed and documented by various authors has led the author of this thesis to the question, which methods would be suitable to increase such integration quality. What makes a merger special is the complexity of the tasks imposed to managers. Thus, it seemed logical that by reducing complexity within a merger situation integration quality can be increased.

The complexity in turn is determined by the amount of interdependencies between everything that needs to be managed during merger integration. Reducing complexity to the management therefore means to focus on those interdependencies that are truly crucial for the success of the integration effort.

The hypothesis of this thesis is thus:

Managing interdependencies in a merger will reduce management complexity and hence increase integration quality.

3.2.2 Selection of Research Methodology

The deductive research methodology has been selected by the author of this thesis. Two reasons were decisive for discarding inductive research methodology:

1. Complexity of relationships. The development of the desired deliverables is a very complex topic. It is unclear which

relationships between observations and results exist, and by the same token, it is clear that in a management topic like this one, the number of such relationships is most probably very large.

2. Availability of data. For drawing conclusions from an existing data pool, the data would first need to be classified according to the variables that have influence on the result. As mentioned above, the number variables that are of influence is very large. By the same token, gathering enough information from existing merger cases to be able to sensibly obtain information about the variables is not possible: the reality behind the newspaper cover stories is almost never told. Very few accessible sources give information about why mergers had a high integration quality, or why they did not.

The deductive research methodology however allows creating a working hypothesis that corresponds to observations and impressions that are collected on multiple layers of detail, and with varying knowledge about the in-depth details of a specific merger case. The author of this thesis is of the opinion that for the work to be presented here, the practicality of the deductive research method outweighs its disadvantages.

Applying deductive research methodology for creating this base thesis enabled the author to formulate an “out of the box” approach from literature. This approach by itself sounded compelling and has the attractiveness required to make managers think about the possibility to integrate processes and systems in a simplified way that might be different from what has been done in their own company environment.

The most striking disadvantage of the deductive research methodology is that it cannot easily be estimated to which extent the deliverables will be valid. Future researchers are invited to use the methods presented here in merger integration cases and thus determine their applicability.

Insofar feedback from persons has been used to improve the developed models and approaches, the deductive research – strictly speaking – contained in inductive element. The author chose this combination of deductive and inductive research methodology because of the openness of the inductive approach to personal experiences of the interview partners.

3.2.3 Development of Research Deliverables

3.2.3.1 Approach for Programme Management

Existing project and programme management literature was used to develop a programme management approach to be used in the research project.

Key point of this approach was to define the correct level of detail a programme management needs to have enough insight to sensibly steer the merger efforts on the one hand, but on the other hand not to drown in project detail and thus become unable to focus on the context of the merger programme. The approach developed is designed for balancing the need for content with the need for context.

The programme management approach was also talked through in interviews with process and IT merger managers. First hurdle was to create an understanding for the distinction between programme and project management. Once this distinction was made, it could be found that in all companies there had not been a strong interconnection between persons responsible for processes and information technology.

It was found that programme and project management approaches were too different across companies to serve as a basis for generalisation. The chosen deductive research methodology with qualitative data collection thus yielded a sound statement about the suitability of the approach.

3.2.3.2 Approach for Process and IT Analysis

To tailor process and IT analysis to the environment that is characteristic for merger situations, two domains of thesis content were developed:

1. A process analysis methodology
2. A model of interdependencies of the finance business area to other business areas, which is generic within the scope of the thesis

Key point of the developed approach was finding a means to benefit from the special situation in full mergers. Based upon literature research and experience of the author, an approach was created to cover the most comprehensive and interdependency-intensive method for process and IT integration.

The suitability of the developed deliverables was investigated using interviews. These interviews all started out by open questions about experiences in mergers, and the question about pitfalls and critical success factors. Subsequently, the hypothesis was discussed in detail to be able to create a SWOT analysis in the interview.

Within the interviews conducted, the author presented a generic process model for the finance business area. After discussing this model and its suitability, impact from the strategy and organisational layer of consideration were regarded and the attempt was made to put these impacts into a generic form of words.

3.2.3.3 Development of Interdependency Model

The task of creating the interdependency model was preformed along the following workflow:

1. Derive a generic process model for the finance business area with interfaces to other business areas from literature
2. Define possible decision parameters on each level of consideration in a merger process
3. Define the direct implication of all separate decision parameters on the finance processes and IT
4. Define decision parameters for the finance care that are related to the decisions from other layers of consideration
5. Define decision parameters for the finance process and IT that are independent from other layers of consideration
6. Define the impact of finance specific decisions on other business areas via the process interdependencies
7. Find a way of representing the results in a comprehensive manner

3.3 *Validation Approach*

It is inherent to the topic of this thesis, that the author is not in the position to validate the outcomes in a forward application. The validation will therefore take place in a retrograde analysis of past mergers.

The author verifies the applicability of the generic outcomes of the thesis by a case study as well as interviews. These two elements of the validation have slightly differing goals:

- The case studies are intended to provide information about the likely impact of using the approaches set forth in this thesis on the result of the thesis. The underlying question for the case studies is therefore, if using the procedural merger approach and the interdependency model would have likely resulted in a reduction of management complexity and increased integration quality. By selecting a variety of different case studies, some information about the applicability of the thesis results in different kinds of merger situations can be won.
- The interviews are intended to investigate the degree of generality of the thesis results. Selected experts with a high degree of merger experience have reviewed the thesis results in detail and applied their personal judgement about their applicability in the merger cases in which they had collected experience. The interviews also give an indication about the overall suitability of the thesis results to achieve reduction of management complexity and increase integration quality.

3.3.1 Case Study Selection

To enable the suitability of the validation site to be confirmed, the following approach was chosen:

1. Interviews with management personnel that were involved in the merger
2. Insight in company internal merger related documentation
3. Insight in company internal organisational, process and IT related documents
4. Comparison of the company structures with the scope defined for this thesis
5. Identification of company internal merger problems, issues and solution approaches
6. Evaluation of fit in order to ensure generality of the validation

A merger case in the manufacturing industry was found to be a suitable validation site using the criteria stated above. In the merger reviewed, various different approaches were applied over time and therefore

several strategies for optimising merger integration success are familiar to the company staff. Since this thesis contains previously unreleased information, it was not possible for the author to state the names of the merging entities.

The case study is mainly based on existing documentation and public sources. In some respects interviews were used to obtain additional detailed information, however interpretation of the obtained facts in respect to this thesis was conducted by the author.

Generality and consistency of the research results was strived to be achieved by combining multiple methods of information gathering with multiple sources of information. The selected validation approach allows this in the following form:

1. Application of multiple methodologies:
 - Interviews
 - Testing against literature
2. Multiple sources of information can be used:
 - Case study
 - Interviews

3.3.2 Conducting the Case Study

The following steps have been applied in the conduct of the case study:

- Identification of integration areas
- Methodologies applied to integrate these areas
- Issues that arose within the application of a certain methodology
- Reasons for these issues
- Comparison of approach proposed in this thesis with methodologies applied
- Evaluation of degree of fit of current approach to the integration compared with the approach that was used in practice

Core point of the validation is the comparison of the approach applied by the merger team, and the likely effects of using the approach presented in this thesis instead. A SWOT analysis was used to systematically document advantages and disadvantages of the applied approach.

The case studies encompass approaches that were applied within the finance business area, as well as approaches applied within the sales and marketing business area.

3.3.3 Interview Partner Selection

The main requirement for the interview partner is experience in a merger environment, especially a sound view on the feasibility of management approaches.

Most interview partners preferred their names not to be stated in this thesis. The author therefore decided not to state any of the names within this document, but rather provide a brief description of the personal backgrounds of the interview partners.

3.3.4 Conducting the Interviews

The interview process consisted of the following steps:

- Presentation of general topic
- Presentation of the issue that is being tackled by the new approach
- Presentation of the approach
- Walkthrough of questionnaire

The topics that were used to guide the interview process are presented below in the form of questions:

A. Background of interview partner

1. Please describe your experience with merger integration. Which industries, company sizes, and business areas were involved?
2. Would you agree to have your name and position published?

B. Procedural merger integration approach

1. Which programme and project management methodologies were applied for steering the merger integration?
2. During the merger process, did you feel that the methodologies applied were capable of coping with the special requirements imposed by the merger situation?
3. To what extent did the methodologies look at the dependencies between layers of consideration and between business areas?

4. Did the methodology yield management capabilities of the right level of detail? If no: Was the level of detail too high or too low?
5. Suppose you had applied the management methodology presented in the thesis, what impact on quality of the integration would this have had?
6. Would you consider the presented methodology feasible for the your specific integration task?

C. Interdependency model

1. Which layers of consideration influenced your process and IT integration?
2. Were changes in goals or approaches in other layers of consideration communicated to the process and IT integration in a timely and complete manner? If yes, how was this communication link established? If no, could the efficiency of the merger integration have been improved by a better communication between the layers of consideration?
3. Were the approaches chosen by other layers of consideration clear enough before you had to start process and IT integration?
4. Please rate the quality impact of looking at the dependencies between layers of consideration and between the various business areas (a) in normal business environment, (b) in a merger situation.
 - Little impact, things have to be done at one layer of consideration or in one business area only
 - Some impact, there needs to be some information from other layers of consideration or from other business areas before processes and IT can start
 - Great impact, it is crucial to have regular and close interaction between layers of consideration and business areas to reach a high quality output
5. Which impact would the approach that was presented to you have had on your specific merger project, especially on the ability to deliver the desired results?

3.4 *Summary of Research Approach*

The following table gives an overview of the logical connection between the real-world observation, the hypothesis, the research questions

formulated, and the research methodology chosen to answer the questions and validate or otherwise the hypothesis (see Figure 11). The deliverables that are needed on the way from hypothesis to validation are mentioned, and can be found in the following chapters of this thesis.

Observations	Hypothesis	Research Question	Research Method	Deliverable	Validation
<p>Companies that strive for total merger integration can often not achieve this goal. In most cases, a lack of capability to implement the integration on process and IT level can be seen as the main reason. The quality of the integration process is too low.</p> <p>There is a lack of theoretical approaches providing methods to cope with the merger complexity on operational level.</p>	<p>Looking at interdependencies in a merger will reduce management complexity and hence increase integration quality.</p>	Can a comprehensive approach to obtain and steer interdependencies in a merger process reduce complexity and increase integration quality?	<p>Deductive: Produce deliverables from literature and experience. Document interdependency model.</p>	Step-by-step model to obtain and manage interdependencies in a merger.	<p>Conduct case study to see if there are past merger cases in which the application of different or similar approaches to the one shown in this thesis has resulted in what degree of quality.</p> <p>Use documented deliverables to conduct interviews with managers to assess its potential for quality improvement.</p>
		Can looking at interdependencies between layers of consideration and between business areas in the process and IT layer reduce management complexity and improve integration quality?		Interdependency model showing the interdependencies of processes and information technology to other layers of consideration. The model is limited to the finance business area.	

Figure 11: Observation, Hypothesis, and Methodology

3.5 *Description of Research Process*

The following steps describe the research process as laid out in this document.

1. **Existing literature review**, giving an overview over the general area of mergers and the different views on how to best integrate companies. This includes the presentation of various existing merger approaches.

This part describes what currently is covered by existing research, and what is not. It is based on literature research; mainly general merger literature is consulted.

2. **Development of the interdependency model for managing finance IT in mergers**. Using the merger background information and existing approaches, the model covers:

- A procedural approach to identify and manage the relevant parameters
- Finance process and IT implications of decisions on the various layers of consideration

Using finance specific, IT related and process related literature alongside the experience of the author, a holistic concept was developed. This part contains the main research results of the thesis.

3. **Validation of the strategic IT merger integration concept** with the help of a case study and expert interviews.

Validation of the model is performed by identifying reasons for success or failure in case studies, and the position of model features regarding success factors or reasons for failure. In addition, validation is conducted using semi-structured interviews with merger integration managers.

The scientific approach applied in this thesis is deductive, combined with qualitative validation through case study analysis and interviews. The following chart depicts the scientific approach.

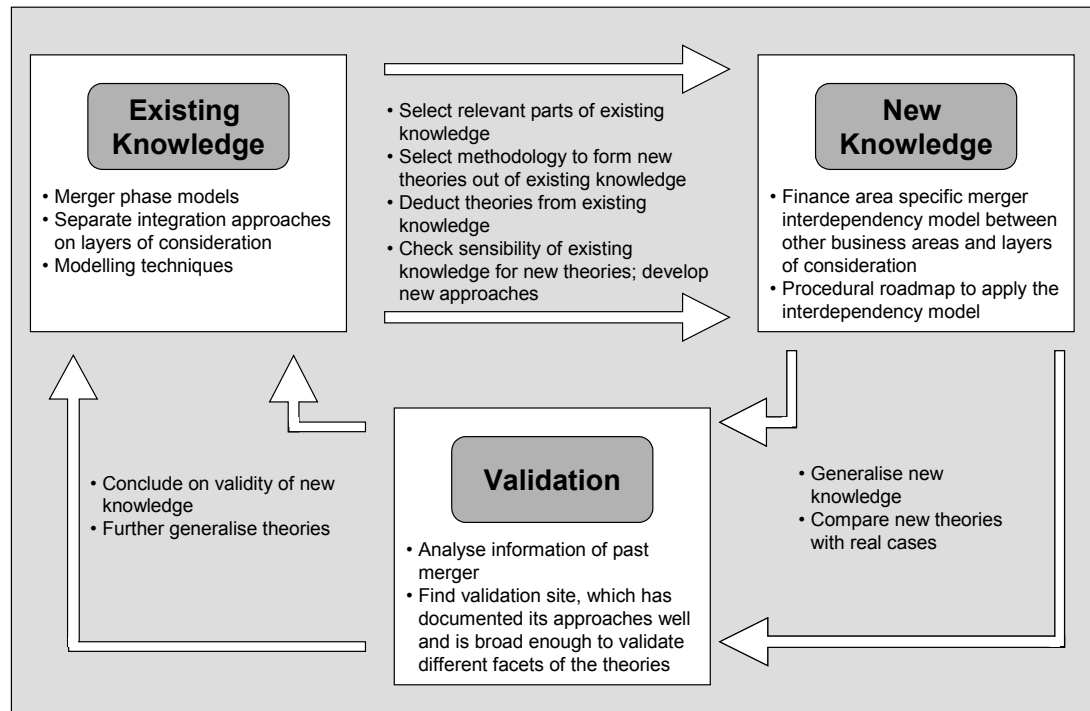


Figure 12: Scientific Approach Used in the Research Project

4 INTERDEPENDENCY FOCUSED INTEGRATION

4.1 *Interdependencies and Project Interactions*

This thesis uses two distinct terms to describe the complexity of a merger situation. The definitions used for these terms are:

Interdependencies. Interdependencies are crucial relationships between organisational units. These crucial relationships are of such importance that in a merger situation, one organisational entity cannot proceed to full merger integration without caring about such relationships. Interdependencies have their foundation within the way a company performs its business processes, and they are sometimes formal, sometimes informal. Interdependencies can exist in two directions:

- *Vertical interdependencies* between layers of consideration such as Strategy, Human Resources, Organisation, Processes, and Information technology
- *Horizontal interdependencies* between different business units on one layer of consideration

In the context of this thesis, the process and IT layer is regarded with a focus on the finance business area. Since the distinction of business areas is not made on the other layers of consideration, there are no diagonal interdependencies. This is certainly purely a matter of definition, and if this information is found to be interesting in a special merger case, the model can be extended to accommodate this additional direction of interdependencies.

Project Interactions. Within a merger programme, several projects have to be performed and coordinated to achieve the desired business outcome. Outcomes of projects will be prerequisites for launching or ending other projects. To distinguish these relationships between projects from the relationships mentioned above within this thesis, they are being called “project interactions”.

4.2 *The Issue with Interdependencies*

Concentrating on the harmonisation of finance IT systems according to process and organisational premises, the model described in this thesis provides links to other layers of consideration and other business areas. Figure 13 shows these interdependencies.

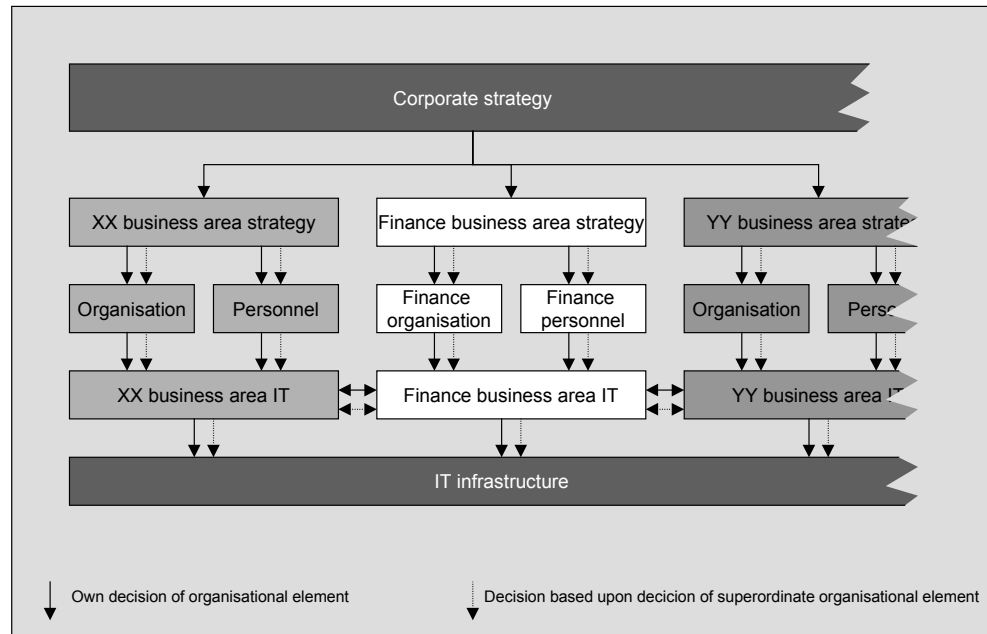


Figure 13: Interdependencies Between Layers of Consideration and Business Areas

As different parts of a merging company have different business requirements, the merger integration model at operational level has to be an approach specific to the business area.

4.3 *Organisational Considerations and Programme Management*

4.3.1 Central Merger Programme Management

Focussing on interdependencies means co-ordinating single integration projects, while catering for interfaces of the whole integration effort with other parts of the business, especially on the strategic and organisational layer.

The complexity of this task requires large management involvement, and therefore top management support. A central integration programme management should be established at or directly below managing board level and actively supported by managing board members.

Given these premises, a systematic programme organisation could appear as follows:

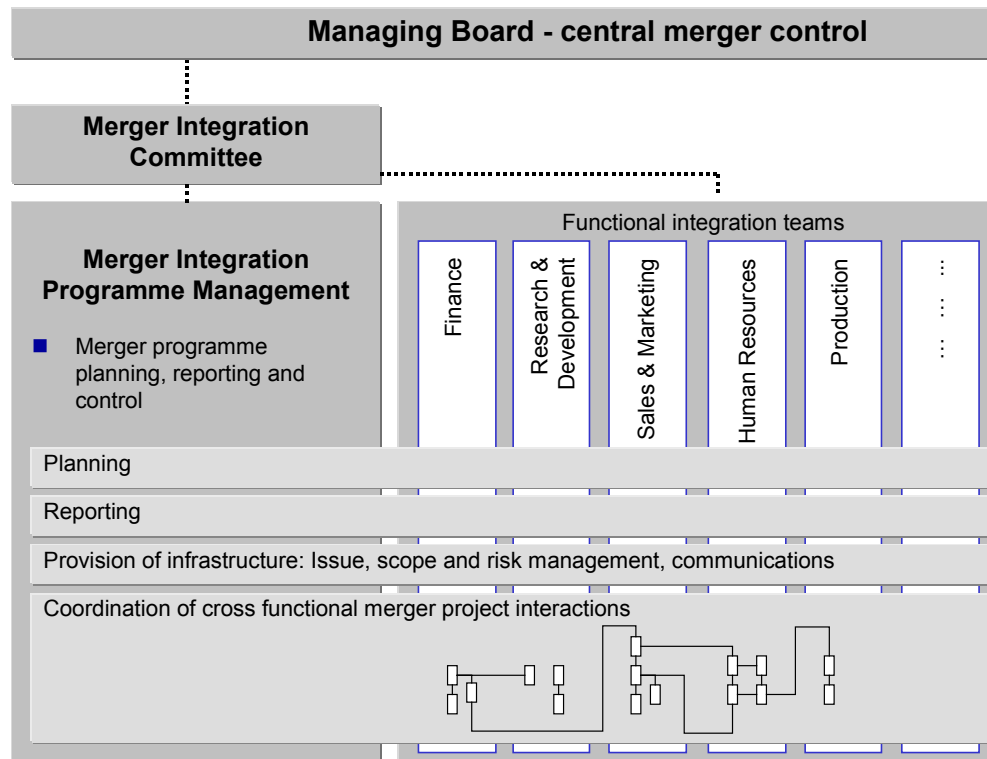


Figure 14: Merger Programme Management and Line Organisation

The central integration programme management's tasks include maintaining company quality standards throughout the integration, and management of communication and co-ordination efforts. In general, programme management should not focus on individual projects, but should be responsible for reaching the desired integration levels.

Integration levels are plateaus on which certain integration benefits are measurably realised. These integration levels are defined by deriving desired merger business outcomes from the business strategy. These merger business outcomes are in a matrix relationship with integration projects: each project should contribute a portion to the merger business outcome.

In order to reach the desired merger business outcomes, projects have to reach their project goals while meeting budget restrictions. These project goals, or project deliverables, have more or less direct impact on the merger business outcome, and can be enablers for subsequent projects to create subsequent deliverables. Project deliverables are the breakdown of goals into manageable sub-elements.

Project deliverables, together with the inputs of a respective project, lead to identifying project interactions:

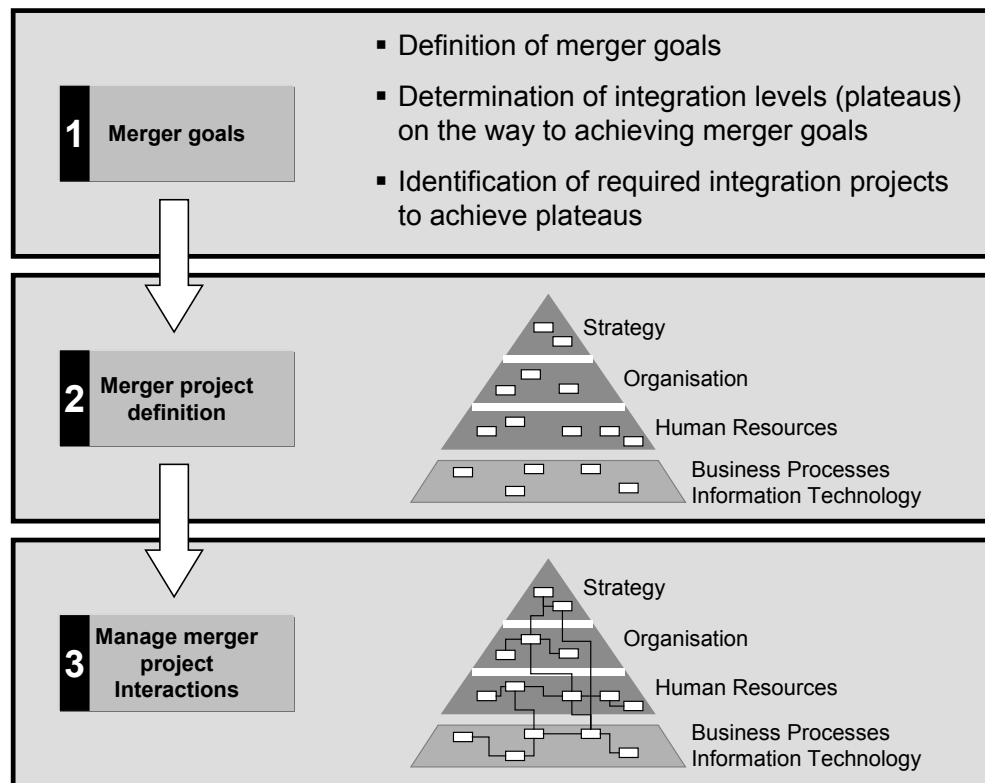


Figure 15: How Merger Business Outcomes Interlink to Merger Project Interactions

Projects are steered using known project management tools. However, the complex merger situation requires the establishment of a super-ordinate organisation that coordinates the cooperation between projects, work streams, and business process owners. The role of this super-ordinate organisation can be played by a central merger programme management.¹⁰⁵

The following chart depicts the difference between programme management and project management.

¹⁰⁵ Anavi-Isakow et al., Managing multi-project environments through constant work-in-process.

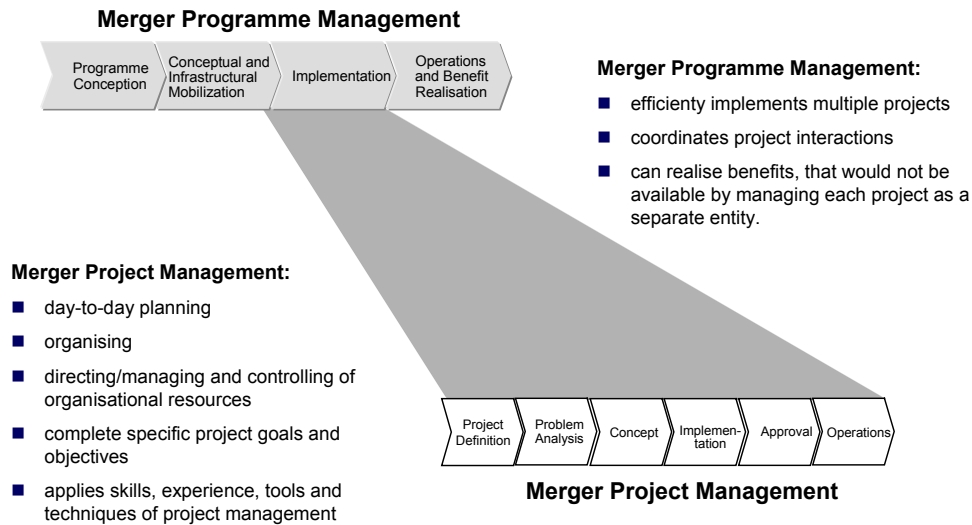


Figure 16: Merger Programme and Merger Project Management

Central programme management fulfils several tasks, which are listed below:

- **Planning.** Merger integration planning should provide an insight to subordinate merger programmes and projects, focussing on project interaction and not on project detail. Herein, the desired business outcomes and the project deliverables for achieving them should be defined. Project interactions should clearly be pointed out.
- **Risk control.** A risk management process, strategically focussing on risk avoidance and mitigation, is crucial for reducing the impact of both intrinsic and extrinsic risk. The process also structures communication inside the team and makes sure that risk identification, risk assignment, and the resulting activities are properly performed.
- **Issue Control.** Issue control structures handle escalated as well as extrinsic issues brought to the Programme organisation. It makes sure, that issues to be resolved are assigned to the right group of persons, and that resulting risks or scope change requests are handed over to the then appropriate programme management processes.
- **Scope change control.** For constantly controlling scope of the programme and changing the scope in a well-defined and clear

manner, a process to manage scope changes should be applied. It helps avoiding “scope creep” towards goals that are not fully included in the original purpose and / or scope of the merger integration programme – and if those goals should be included, then the effects of these changes are clearly understood.

- Reporting and Controls. As a means of merger programme direction, but also for reporting purposes to the integration committee and the board, a comprehensive reporting and control structure is required. The reporting content should not only focus on financial aspects and time, but also include all other Programme relevant topics such as risks, scope changes and issues as well as quality.
- Communications Management. Communication has to be orchestrated, because it has a vital supportive function for all other merger integration processes. All participating parties benefit from efficient communication, as it actively, comprehensively, and reliably informs all possible audiences with relevant and consistent material.
- Quality and Standards. This point is mostly covered by implemented ISO 9000 standards and regulations for project and programme management as well as for verification of deliverables. The merger integration programme should actively participate and should be audited within the quality process.

The key for successful merger programme management is however located in the planning task: the right projects have to be identified and their tasks have to be clearly defined. Subsequently, all programme management processes have to be flexible enough to incorporate scope changes by incorporating new projects or cancelling existing ones. Only with this combination of thorough planning and flexibility, merger programme management can lead to successful merger integration.¹⁰⁶

¹⁰⁶ Dvir et al., An empirical analysis of the relationship between project planning and project success.

4.3.2 Differentiating Between Business and IT Goals – Programme Management on Multiple Levels

Many companies experience a difference between their “business” and their “IT”. In a merger programme, close interaction between responsible managers is necessary.

Project deliverables can contain elements on various layers of consideration: IT, strategy, process, organisation, or human resources. The interdependencies amongst these elements, as well as the interaction of projects are a management focus of the central integration programme management.

Depending on the size of the integration effort and company culture, a management layer that solely deals with IT related interdependencies can be added to the central programme management. This merger-IT programme management is then responsible for the timely realisation of IT projects as well as for monitoring interdependencies to other layers of consideration.

4.4 *Three Phases from Analysis to Management*

As shown in the previous sections, the majority of issues and problems in managing the integration of IT landscapes have their reasons in an improper identification and management of interdependencies between layers of consideration, processes, IT systems and integration steps.

In order to increase the success of IT integration, the integration focus should lie on managing interdependencies and project interactions, as opposed to managing on task level. Tasks thus can be co-ordinated with a significantly more holistic view, rising in importance with the size of the integration effort.

Prerequisite of a proper management of interdependencies is the identification of company process oriented clusters on the several layers of consideration, and the identification and formulation of the interdependencies between them. Several possibilities exist, depending on the merger approach on the process and IT level (e.g. separate systems with interfaces, take-over of one process and IT map as opposed to cherry-picking or the creation of an entirely new map).

The following chart gives an overview over the three phases of analysis, planning, and management, which lead to setting up a merger programme management and identifying its management scope.

The chart is divided in two horizontal traces: The upper one deals with tasks that have to be performed in order to install the programme management itself, the lower one deals with tasks that lead to establishing the scope of management, i.e. interdependencies between layers of consideration and project interactions.

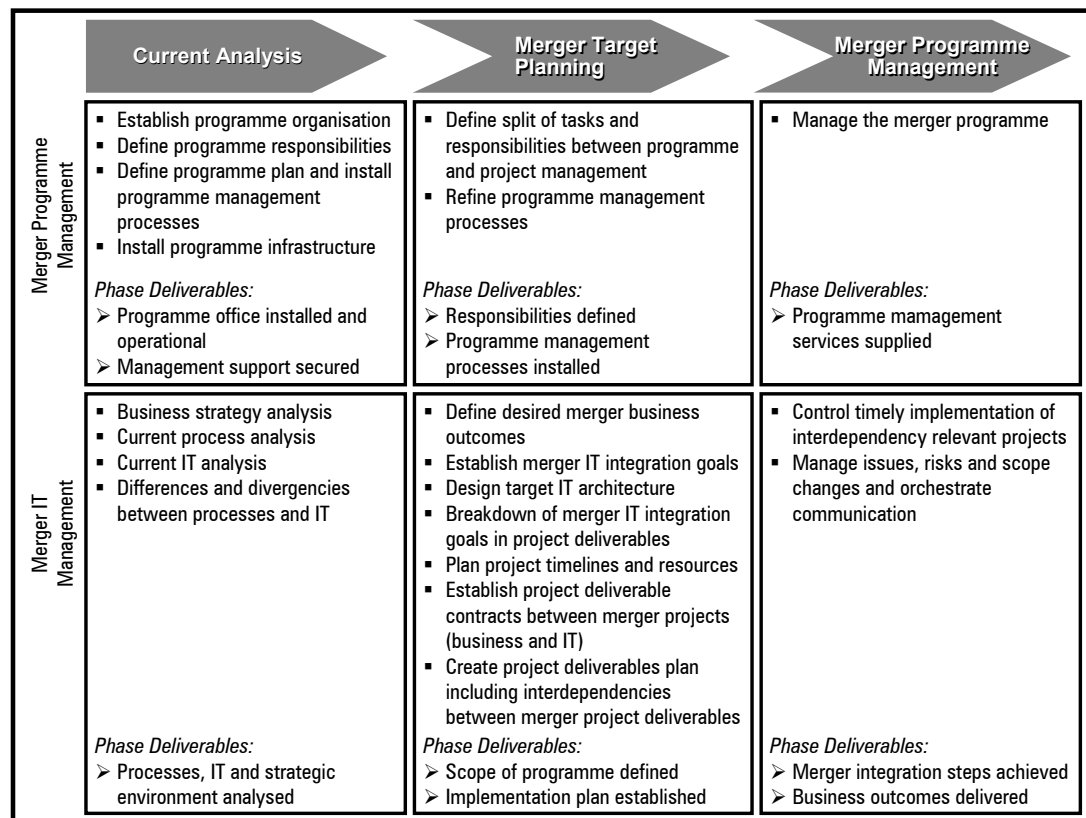


Figure 17: Phases from Analysis to Merger Programme Management

4.5 Phase 1: Interdependency Focused Analysis

The integration project should start with a thorough analysis of the current situation in each layer of consideration and in each process cluster.

4.5.1 High Level Process Analysis

Within the merger IT projects, the first step is the creation of a clear understanding and a clear subdivision of the targeted business processes. Deriving from the companies' value chains, a breakdown to unified process clusters is its deliverable. This is especially important, as a unified view on included and excluded business processes amongst all participants is necessary to establish an effective team structure for managing the IT integration on process and IT level.

Depending on the degree of information system support in the merging entities, persons may be involved that have experienced low information system support and hardly automated process in the process cluster they are responsible for. This situation has to be approached with great sensitivity, as the merger IT integration project could lead to changing requirements regarding headcount and skill sets in the respective business areas.

4.5.2 Business and IT Strategy Analysis

Goal of the strategy analysis step is to collect strategic directives that are relevant for the respective process cluster. The strategy analysis should involve all relevant organisational units in both merging entities.

In the course of such analysis, gaps in the current business strategy and inconsistencies regarding the strategic direction should be documented and addressed to the responsible organisational units. Whereas it is not the task of the IT integration project to create strategic directions, a proper IT integration management requires sound business strategic foundation and therefore has to point out its requirements to setting the strategic frame. The analysis can be carried out along the following steps.

Step 1 – Definition of strategic requirements for the IT integration in the cluster

Each process cluster requires specific strategic premises as a basis for moving the integration forward. These strategic premises are mostly uniform for the entire business area. Therefore, the definition of strategic requirements should be performed under involvement of all process clusters inside the business area.

Besides the pure strategic decision parameters that are relevant for the business area, timing of a respective strategic decision plays an

important role. Depending on the IT integration timeline, some strategic directives can be relevant right from the start, while others can gain relevance in the course of the running IT integration projects. Thus, the definition of strategic requirements should also contain a timeline showing when each directive is required.

Step 2 – Definition of organisational units creating relevant strategic directives

Organisational units that create strategic directions, which have relevance for the integration, are most probably in the first place located in the top management of the merging entities. Especially for IT, there may also exist organisational units that specifically create IT strategic premises out of business strategic considerations. In the merger situation, an important influence arises from the merger on the business side. If there are several merger projects ongoing, and the focus of these merger projects is not centrally managed by a co-ordinating business merger programme management, then these individual business integration projects can be a valuable source of strategic premises that are relevant for the IT integration.

Step 3 – Structured interview process and documentation

The interview process serves for reviewing the company's existing strategic initiatives and efforts under way. This serves as a basis for evaluating in how far these premises are relevant for the IT integration in the respective business area. Information is gathered by reviewing strategy documents and budget plans, and by conducting interviews, surveys, and workshops.

The information that should be gathered in the interviews can be grouped around the following topics:

- Which main business initiatives are currently driven forward?
- In terms of the overall importance, to which extent do these initiatives contribute to increasing the overall performance of the company?
- Which links to internal and external partners are critical for the business?
- How do current IT applications support the business processes?

- Which main IT initiatives are currently driven forward?
- What is the overall IT strategic framework and goals these initiatives are based on or derived from?
- What is the interconnection between the IT efforts and the business performance?
- What are current opportunities for IT to improve or enable business success?

The reviews rely on interviewing business leaders in order to gather their high-level view on existing strategic premises. To be successful, this step in the merger project requires extensive involvement of senior business managers. Documentation has to be made available, and interviews conducted to care for the special requirements in the fast-moving merger environment.

The step delivers a set of relevant strategic directives that affect the merger IT integration in terms of scope, task, and financial possibilities.

Step 4 – Gap analysis and formulation of requirements regarding further strategic direction

The interdependency focused strategy analysis phase ends with a documentation of all strategic directions, that are missing to be able to properly steer the integration project.

4.5.3 Detailed Process and IT Analysis

Performing the process and IT analysis of the merging companies, the following framework should be followed. Each of the points should be covered for both merging entities.

1. Description of key sub-processes inside the business area
 - Breakdown of sub-processes
 - Description of established process goals and their measurement
 - Description of process inputs and outputs and their sources and destinations (key interfaces to layers of consideration and business areas)
 - Description of responsibilities

2. Description of IT system coverage and creation of IT inventory list
 - Description of IT system map per sub-process
 - Description of IT interfaces
 - Description of responsibilities
3. Description of fundamental conceptual and methodical business differences
4. Description of organisational and process related differences
5. Description of differences in software and hardware technology
6. Description of differences in people, organisation and responsibilities
7. Description of current projects aiming at the modification of processes or IT systems
8. Initial feasibility check of process and IT integration
9. Review scope and detail of the analysis and tailor the planning phase

4.6 Phase 2: Interdependency Focused Planning

4.6.1 IT Strategy Planning

IT strategy must be compliant with overall business strategy. However, within the business strategic framework, several different ways of handling information technology will exist.

Deciding about the way in which information technology can contribute to the overall strategy requires a sound view on the "IT opportunity". This IT opportunity will describe the possible positive impact a certain IT strategic decision can have.

The IT strategy, and especially the post-merger integration strategy for information technology, has to be strongly oriented at the current landscape of systems and processes. Existing systems, processes, and IT organisation in all merging entities will be the framework at which the new processes and systems landscape needs to be oriented.

Resulting from these considerations, the integration approach can be chosen. The following table gives an overview about impact of different IT merger integration approaches on the IT and process integration.

Integration approach	Identification of company process oriented clusters
Separate systems with interfaces	Relationships between the merged entities have to be carefully defined and thought through; if processes and IT system maps are intended to remain separate, the IT integration does in most cases not exceed interface agreements.
Take-over of one map	Formulation of interdependencies on all layers of consideration should follow the company process clusters of the selected map. This means, for example, that the functional post-merger strategies should cover entire process and IT clusters in a 1:n relationship, and therefore the responsibilities for such relevant strategic decisions should be adjusted according to the process clusters of the selected map.
Cherry picking	Before interdependencies can be identified, a cluster layout has to be created and agreed throughout the merging entities.
New map	The formulation of strategies and organisational requirements should be done following the new cluster definition, after which the process and IT map will be designed.

Having identified company process clusters, the IT integration follows the steps laid out in the following sections.

4.6.2 Process and IT Integration Planning

Planning the integration of IT systems requires involvement of responsible groups and persons in all layers of consideration. Several tools can be suitable for planning the integration – IT based and paper-based.

Identification and management of interdependencies requires planning of individual projects and tasks first. The following approach is recommended:

1. Define business outcomes to be achieved by the process and IT merger integration
2. Identify target process and IT landscape that supports the business outcomes
3. Identify stages that are on the way to realising the to-be process and IT map ("plateaus")
4. Identify projects and sub-projects that have to be implemented in order to reach the plateaus
5. Identify project inputs and results

6. Identify project inputs, that are results of a different project ("project interactions").
 - Identify project interactions using the interdependency model disclosed in this thesis
 - Identify further project interactions by bottom-up analysis using project interaction contracts
7. Identify interdependencies between layers of considerations and impact of these interdependencies to the IT merger integration programme
 - Identify interdependencies using the interdependency model disclosed in this thesis
 - Identify further interdependencies by bottom-up analysis using questionnaires to project managers: Which strategic, organisational or HR decisions does an individual project base its approach on?
8. Build up master plan and optimise the order of projects to minimise backward dependencies, as these backward dependencies will require interim fixes
9. Determine necessary financial and headcount resources for each individual project and build summary view

The process of identifying project interactions gains complexity with increasing size of the integration effort. Therefore, Identification of important project interactions should be performed involving project level managers, preferably using contract-like documents, that describe the purpose and content of the interfaces between work clusters on single or on multiple layers of consideration. This document fulfils two further purposes: it serves as a clear definition of deliverables, which is a valuable asset in volatile merger environments, and it allows a central programme management to focus on the underlying issues and manage the project interactions properly.

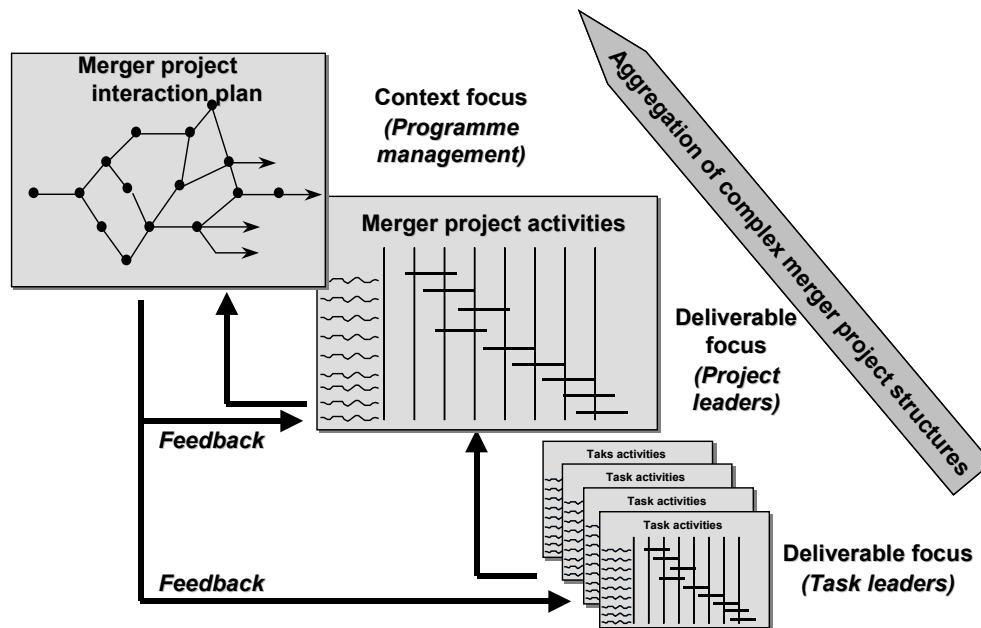


Figure 18: Aggregating Single Tasks to Project Interactions

Establishing these “project interaction contracts” can be done using a push methodology or a pull methodology. This, in turn, depends on organisational circumstances.

Central Programme Management “Pulls” Interdependencies

The goal of this approach is to make decentralised organisational units develop, close and communicate project interaction contracts to the central programme management. This requires decentralised pressure to fulfil the integration task, and at the same time, a significant service offered by the central programme management to decentralised organisational units. This service could be to take over project manager’s responsibility for timely realisation of milestones and tasks, providing a relief of “uncertain” interactions of a project with other projects. A push methodology leaves responsibility at the level of actual integration work. It still requires strong management support in order to build up the appropriate pressure on project level.

Central Programme Management “Pushes” Interdependencies

Depending on the size of the integration effort, and therefore the complexity of the integration task, central programme management can be in a position at which it can supervise and control a large portion of

interactions between individual integration projects and tasks. In case this situation exists, project interaction contracts can be requested specifically for individual projects by the central programme management.

Central Programme Management Combines Approaches: Push and Pull

Combining elements of both approaches provides flexibility to scale the approach to suit bigger as well as smaller integration efforts.

Once projects have been planned and their integration has been orchestrated, the description and timeline relevance of interactions should be stored in a database. These interactions act as a focus for the programme management team, and the installed tools are used to identify any issues that could potentially affect the timely realisation of milestones relating to critical project interactions.

4.7 Phase 3: Interdependency Focused Integration Management

Getting from pure knowledge of the route to process and IT integration to an actual step on this route requires the application of management tools, as well as the constant creation of an overview of achievements and costs.

4.7.1 Managing Interdependencies

Projects within the merger programme are managed using the agreed-upon project management tools. However, ensuring that the central programme management remains in the picture, requires the application of similar tools on this higher level:¹⁰⁷

- Regular meetings
- Progress reports
- Reports about issues and their handling
- Risk management reports
- Scope change identification, handling and tracking
- Continuous update of the integration plan

¹⁰⁷ Burghardt, Projektmanagement; Rinza, Projektmanagement; Wischnewske, Modernes Projektmanagement; Crawford, Project Monitoring and evaluation: a method for enhancing the efficiency of aid project implementation.

- Continuous update of the integration budget and associated achievements
- Periodic review of integration projects that have critical interdependencies and project interactions

If performed thoroughly and correctly, the available information should always be sufficient to decide about continuation or cancellation of the merger integration process.¹⁰⁸

4.7.2 Measurement of Merger Success

Merger success is made up of three ingredients: integrating in time, on budget, and with the desired integration results. For all three ingredients, measures are required. The following table contains an overview about possible performance indicators and their measurement. Percentages given in the table below are examples, and need to be determined in the light of the specific merger situation and the priorities therein.

Subject	Indicator	Measurement
Time	% of project completion matches plan	Critical projects: allow 10% fluctuation. Other projects: allow 20% fluctuation. Corrective action if: Fluctuation greater than limit, or fluctuation prevalent for three review cycles
	% of programme completion matches plan	Allow 5% fluctuation. Corrective action if: Fluctuation greater than limit, or fluctuation prevalent for three review cycles
	Project interaction status	Qualitative determination of attitude towards projects that have to deliver to enable a dependent project to move forward. Manager of dependent project is required to submit status chart (green-yellow-red). Corrective action if: red, or yellow for three review cycles
Budget	% of project budget spent matches plan	Critical projects: allow 15% fluctuation. Other projects: allow 10% fluctuation. Corrective action if: Fluctuation greater than limit, or fluctuation prevalent for three review cycles
	% of programme budget spent matches plan	Allow 5% fluctuation Corrective action if: Fluctuation greater than limit, or fluctuation prevalent for three review cycles
Result	Process improvement	Take current performance indicators from analysis phase. Determine new performance indicators in case of process redesigns. Provide measurements of performance indicators pre-merger and during-merger. Analyse development of indicator at each integration level.

¹⁰⁸ Burgess et al., Making project status visible in complex aerospace projects.

Overall merger success will be the sum of the development of all performance indicators. Continuous measurement will enable a view on how well joint capabilities that enable synergetic business models are created. Measurement of merger integration progress, if complemented by a view on reaching the defined integration plateaus, gives a view on merger success in relation to its original goals. Chapter 7 provides information on the creation and control of the entire merger business case.

5 INTERDEPENDENCY MODEL: VERTICAL INTERDEPENDENCIES

Building on the literature review as well as on the research methodology sections, this chapter contains a core deliverable of this thesis. It contains a process model for the finance business area, which will then be used to point towards interdependencies between layers of consideration as well as between the process and IT layer of the finance business area and other business areas.

First, a process model will be described, that subdivides the finance business area into multiple sub-process clusters.

Then, this process model will be used to point towards the interdependencies mentioned above.

5.1 *Basic Process Model*

This chapter uses the process model that has been presented in chapter 2, which is repeated here for convenience of the reader:

No.	Process/Sub-Process Name	Process Description
1	Cash Management and Liquidity Planning	Central payment process
2	Investment Planning	Investment planning, approval and control
3	Asset Accounting	Central registration of assets, calculation of depreciations, posting to general ledgers
4	Purchase Requests and Accounts Payables	Checking of incoming invoices against order data and physical goods receipts
5	Customs Compliance and Transport Accounts	Optimisation of transport logistics, financial control of transport invoices. Financial customs handling, revaluation in case of retrospective price changes.
6	General Ledger	Posting of general ledger accounts
7	Revenue and Gross Profit Accounting	Posting of sales ledgers and accounts receivables
8	Cost Centre Accounting	Accounting and layout of cost centres, cost control
9	Product Costing	Calculation of product costs for pre-series and series products
10	Material, Work- in Progress, Inventory	Inventory valuation and posting
11	Consolidation, Group Reporting	Consolidation of intra-group profits, calculation of overall profit and reporting

This section provides information that helps planning the IT merger integration by pointing out issues that can arise in an IT merger

integration project within the finance business area. This section concentrates on vertical interdependencies, whereas:

- Vertical interdependencies exist between layers of consideration, such as between strategy and information technology.
- Horizontal interdependencies exist between entities on one layer of consideration, such as between processes in logistics and processes in finance.

The issues described should, if applied for planning IT merger integration, be checked upon completeness and appropriate level of detail for the specific merger case.

As stated in the introduction of this thesis, the main area of application for the subsequent lists is a manufacturing industry environment of large companies. However, the information can in part be useful also for mergers in smaller companies and/or in different industries.

5.2 *Vertical Interdependencies*

This section describes several managerial decisions, which have an impact on how to conduct the business within the finance area. The decisions described are a subset of all relevant decisions to be made in a specific merger case; they however describe the most relevant topics for most mergers.

5.2.1 Business Strategy and Finance

Decisions about the company strategy or about the organisation are much wider in a merger than under normal business operation circumstances. It is crucial, that – no matter when in the merger process – the effect of decisions on high levels of consideration especially on IT are clearly understood. Otherwise, integration success will be strongly hindered. The development throughout the merger phases determines requirements to IT, and IT can be the bottleneck for realising defined merger goals.

However, if there was a closer integration of strategy and information technology, and if the IT significance was not underestimated in so many cases, mergers would certainly be more successful. In addition, if the interrelationship of business area specific decisions to the information technology of other business areas were more clearly understood,

including information technology parameters in earlier merger phases would be easier.

In mergers, separate strategies usually exist for all merger partners. These strategies should be closely regarded in the “as-is” analysis step of the development of a new common strategy. Using innovations from the strategic ideas that were developed in the pre-merger phase (especially in the market and business due diligence), one of the first actions in the post merger phase should be the development of a joint business strategy. The joint business strategy should contain a joint business model, market strategies, product strategies, personnel strategies and infrastructure strategies and should cater for financial aspects.

In short, the joint strategy should give a picture of how the merged enterprise is planning to realise the merger benefits.

Once developed, a strategy has to be broken down into achievable parts. These parts then have to be fed into the organisation in order to deduct action plans.

For reasons of secrecy, the strategy is only partly subject to communication within and outside the company. For the part that is to be published, the strategy is usually documented in relation to its influence on the market, product, and financial success of the merged company.

With respect to the Finance area IT in the merging companies, some aspects of the common strategy are especially important, as they influence the management of the integration of these IT systems.¹⁰⁹ These strategic decisions and their effects on the finance business area are described in the following sections.

5.2.1.1 Product Range Strategy

Description

Harmonising product ranges means creating a holistic view of the several products that are available from the merged companies for a market. This holistic view has its effects on all areas of the company, from engineering to marketing and finance. It requires proper coordination of a

¹⁰⁹ Moeser, Internationale Akquisitionen und Fusionen als Strategie des Markteintritts in Auslandsmärkte: Probleme und Chancen, p. 557; Clever, Post-Merger-Management, p. 59.

company's efforts, which is in turn resulting in the necessity to establish cost accounting structures that can provide comparable insight into product lines.

The strategic decision of having a harmonised, common product range leads to the necessity of harmonising the product costing procedures and systems in the merged entity. Only with harmonised product costing, a holistic pricing strategy can be implemented.

Relevant Decision input parameters

Parameters that are relevant for this decision:

- Attractiveness of products from both merger parties to the same customer group
- Possibility to combine products into a sensible product line including upgrade pathways, upselling¹¹⁰ and cross-selling¹¹¹

Decision Alternatives and Impact on Finance Process Clusters

- No product line integration

No.	Process cluster	Effects of decision
1	Cash Management and Liquidity Planning	No direct effect from this decision
2	Investment Planning	No direct effect from this decision
3	Asset Accounting	No direct effect from this decision
4	Purchase Requests and Accounts Payables	No direct effect from this decision
5	Customs Compliance and Transport Accounts	No direct effect from this decision
6	General Ledger	No direct effect from this decision
7	Revenue and Gross Profit Accounting	No direct effect from this decision

¹¹⁰ Selling more and more expensive products to the same customer over time.

¹¹¹ Selling several different products to one customer.

No.	Process cluster	Effects of decision
8	Cost Centre Accounting	No direct effect from this decision. However, harmonisation of top-level cost centre accounting figures including profitability per product line and sales forecasts per product line can be desired. This can result in the subsequent necessity to also redefine some lower level cost centre accounting data in order to make different product lines comparable, possibly extending scope to integrate asset accounting, investment planning, product costing and material management.
9	Product Costing	No direct effect from this decision
10	Material, Work- in Progress, Inventory	No direct effect from this decision
11	Consolidation and Group Reporting	No direct effect from this decision, but integration required out of legal regulations

- Partial integration of product lines.

No.	Process cluster	Effects of decision
1	Cash Management and Liquidity Planning	Integration of some product lines results in the question, in which cash management systems data from these integrated lines should be processed. During the integration of product lines, product and part numbering logics will possibly be modified and sales forecasts will start to exist in a harmonised manner for these product lines. Thus, there should be the subsequent decision which of the cash management systems will be used to handle the integrated plans and forecasts, or if the cash management process cluster should also be subject to integration and redesign. Both alternatives require the design of interfaces from one numbering logic into the other.
2	Investment Planning	To make products in one product line comparable, investment planning and budgeting should be subjected to integration. Besides the issue of comparability, user friendliness and the prevention of errors play a role: One product line will most probably be managed by one group of employees, for whom it might prove impractical to use two separate suites of systems for investment planning.
3	Asset Accounting	Processing of depreciations should be harmonised and availability of data should be guaranteed in the same manner and actuality for all products in a product line. This however goes down more to the integration of processes and accounting rules, and will in certain cases not require the full integration of IT systems, as this integration more depends on the decision on integrated general ledger systems.
4	Purchase Requests and Accounts Payables	No direct effect from this decision. The integration of product lines however provides opportunity to also realise synergies from supplier management, as numbering logics will anyway be integrated.
5	Customs Compliance and Transport Accounts	No direct effect from this decision. The integration of product lines however provides opportunity to also realise synergies from forwarding agent management, as numbering logics will anyway be integrated.
6	General Ledger	No direct effect from this decision
7	Revenue and Gross Profit Accounting	One suite of processes and systems should be used for one product line. Otherwise, actuality and correctness will suffer and the combined product line will be more difficult to manage than the separate ones.

No.	Process cluster	Effects of decision
8	Cost Centre Accounting	Proper accounting for cost of products in product lines requires full integration of cost centre accounting processes and reports. This in turn imposes the requirement to use one IT system for one product line, or work with relatively complicated interim fixes that require deep understanding in how cost centre accounting data is gathered and what transactions the data is based on.
9	Product Costing	Product costing needs to be integrated for all products in a product line.
10	Material, Work- in Progress, Inventory	Because of the influence to cost centre accounting data, this process cluster and data produced therein should be harmonised.
11	Consolidation and Group Reporting	No direct effect from this decision, but integration required due to legal requirements

▪ Full integration of product lines

No.	Process cluster	Effects of decision
1	Cash Management and Liquidity Planning	Full integration will in most cases be the best solution. The complexity of creation and maintenance of interfaces between products and different cash management systems however depends on the degree of higher-level differences between those logics.
2	Investment Planning	Full integration is the best solution.
3	Asset Accounting	Full integration is the best solution.
4	Purchase Requests and Accounts Payables	No direct effect from this decision. The integration of product lines however provides opportunity to also realise synergies from supplier management, as numbering logics will anyway be integrated.
5	Customs Compliance and Transport Accounts	No direct effect from this decision. The integration of product lines however provides opportunity to also realise synergies from forwarding agent management, as numbering logics will anyway be integrated.
6	General Ledger	No direct effect from this decision. Full integration of asset accounting processes and systems could however make an integration of general ledger systems recommendable.
7	Revenue and Gross Profit Accounting	Full integration is the best solution.
8	Cost Centre Accounting	Full integration is the best solution.
9	Product Costing	Full integration is the best solution.
10	Material, Work- in Progress, Inventory	Full integration is the best solution.
11	Consolidation and Group Reporting	No direct effect from this decision, but integration required due to legal requirements.

5.2.1.2 Regional Market Strategy

Description

Integrating regional markets implies the implementation of uniform regional cost centre accounting structures, in order to be capable of comparing regional performances. The regional sales reporting and cost tracking systems are affected.

Relevant Decision input parameters

Parameters that are relevant for this decision:

- Integration of product lines to be distributed via centralized sales network
- Sales and service networks addressing identical customer groups
- Leverage sales management infrastructure for entire sales and service network in a region (possibly while maintaining brand recognition)

Decision Alternatives and Impact on Finance Process Clusters

- No harmonized regional target formulation, adaptation and cost accounting

No.	Process cluster	Effects of decision
1	Cash Management and Liquidity Planning	Central cash management needs to build up mechanisms to harmonize sales forecasts. Feedback loops with regional controllers need to be installed, and strong escalation pathways enabling central cash management to react to volume and budget alterations need to be established.
2	Investment Planning	No direct effect from this decision.
3	Asset Accounting	No direct effect from this decision.
4	Purchase Requests and Accounts Payables	No direct effect from this decision.
5	Customs Compliance and Transport Accounts	No direct effect from this decision.
6	General Ledger	No direct effect from this decision.
7	Revenue and Gross Profit Accounting	No direct effect from this decision.

No.	Process cluster	Effects of decision
8	Cost Centre Accounting	Decentralized cost accounting infrastructures need to be maintained. Transparency and accuracy of data available on central level cannot be guaranteed, since premises might be inhomogeneous without the knowledge of the central cost accounting department.
9	Product Costing	No direct effect from this decision.
10	Material, Work- in Progress, Inventory	No direct effect from this decision.
11	Consolidation and Group Reporting	No direct effect from this decision, but integration required due to legal requirements.

- Harmonized regional target formulation, adaptation and cost accounting

No.	Process cluster	Effects of decision
1	Cash Management and Liquidity Planning	Cash Management and Liquidity Planning can rely on timely and accurate information due to more streamlined and homogeneous processes in the regions.
2	Investment Planning	No direct effect from this decision.
3	Asset Accounting	No direct effect from this decision.
4	Purchase Requests and Accounts Payables	No direct effect from this decision.
5	Customs Compliance and Transport Accounts	No direct effect from this decision.
6	General Ledger	No direct effect from this decision.
7	Revenue and Gross Profit Accounting	No direct effect from this decision.
8	Cost Centre Accounting	Central cost accounting needs to be expanded to cope with the increasing amount of data that needs to be consolidated.
9	Product Costing	No direct effect from this decision.
10	Material, Work- in Progress, Inventory	No direct effect from this decision.
11	Consolidation and Group Reporting	No direct effect from this decision, but integration required due to legal requirements.

5.2.2 Organization and Finance

The strategic decision to realise synergies interconnected with a centralised and integrated organisation leads to various financial implications regarding processes and systems. Cost accounting structures, cost and performance figures and responsibilities,

consolidation, as well as the centralisation or decentralisation of accounting responsibilities has to be considered.¹¹²

Besides the fact that the financial processes need some degree of integration even if the rest of the companies remain separate, deciding to integrate the merging entities' organisation in many cases also affects the finance area directly. Methods to integrate finance processes themselves are mentioned below.

Organisational Variables and Impact on the Finance Business Area

The way a company organises itself has severe impact on the finance business area, as budgeting and cost accounting are usually performed alongside organisational structures.

Effects of the different options in macro organisation have already been mentioned in 5.2 above. As regards micro organisation, different variables exist when creating the organisational concept for a company:¹¹³

- Centralisation / Decentralisation
- Types of management structures
- Delegation
- Standardisation
- Subdivision of tasks

For the integration of finance IT systems, the first two points are relevant, as they influence the definition of resource allocation and cost accounting structures.

Relevant Decision input parameters

Parameters that are relevant for this decision:

1. Capability to separate the merged entities at a later point in time
2. Business areas in which synergies can be achieved
3. Achievability of synergies by integration of organization and processes
4. Manageability of integration on all management levels

¹¹² Bullinger, Neue Organisationsformen im Unternehmen.

¹¹³ Ulrich, Management; Schanz, Organisationsgestaltung; Frese, Grundlagen der Organisation; Schertler, Unternehmensorganisation.

5. Cost of integration
6. Time of integration
7. Implications of concentrating on integration efforts to the ability of the finance area to focus attention to core business of the companies
8. Expected reaction by competition and business partners

5.2.2.1 Organisation of Legal Entities

Description

The decision of how to establish the legal structures of the joint company depends on a number of different parameters. Since legal structures are to some extent slow to change, there is going to be a transitional phase in which the company processes need to support all requirements imposed on the group from the authorities, share holders and other stake holders.¹¹⁴

In broad terms, the possibilities are:

1. Central holding – opting for the creation of a central holding during a merger leads to the necessity of implementing a homogeneous set of accounts. In addition, the accounting standards, as regards capitalising options etc., have to be harmonised and centrally co-ordinated. The legal consolidation processes and systems have to be accommodated. These tasks can be performed at central holding level or by altering the respective rules at a decentralised level. Depending on the individual merger situation, this will have different cost impact.
2. Full central integration (fusion) – this option usually leads to an extension of the set of accounts in order to carry over the balance sheet from the merger partner. Accounting standards, especially capitalisation and depreciation, are to be harmonised. This possibility only works in a national merger, as unless the foreign merger partner will be integrated with the foreign sales subsidiary of the national merger partner, the foreign assets have to be held by a separate legal entity within this country.

3. Adding subsidiaries – in this case, the buying entity usually adds the merger partner as a subsidiary. In this case, the same rules as for all other subsidiaries need to be applied for the merger partner. This adds complexity with the size of the merger partner and the effects of this decision have to be weighed with the additional costs of a central holding.

Besides the question of how to best structure the central company, an integration of sales subsidiaries can be beneficial. Implementing the merger in sales regions can be performed using one of the above-mentioned options per region. Consequently, the regional entities face implications to their set of accounts, accounting standards, as well as the legal consolidation. This point, however, is also relevant for the central entity, as regional subsidiaries have to be consolidated.

Relevant Decision input parameters

Parameters that are relevant for this decision:

1. Taxation
2. Political considerations
3. Preserving the ability to quickly sell one entity
4. Possibility to use existing central structures, e.g. an existing central holding with the appropriate infrastructure

¹¹⁴ Schmalensee, Handbook of Industrial Organization, Volume I; Bühner, Strategie und Organisation.

Decision Alternatives and Impact on Finance Process Clusters

- Central holding

No.	Process cluster	Effects of decision
1	Cash Management and Liquidity Planning	If Cash Management and Liquidity Planning are centralized in the central holding entity, all processes delivering input data need to be harmonized in terms of timings, formats and conflict resolution. In case this process cluster is left up to the different entities, central holding processes need to take care mainly of escalation processes, since structures need to be maintained that enable the central level to be informed in a timely manner. However, since Cash Management and Liquidity Planning is mostly one of the immediate source of synergies, the merger partners should consider centralizing this process cluster.
2	Investment Planning	Investment planning feeds into asset accounting and therefore needs to comply with procedures and timings that are defined within the process of harmonizing the asset accounting process cluster.
3	Asset Accounting	Asset accounting remains on decentralised level. Since for consolidation purposes interfaces from all decentralised entities to central asset accounting systems need to be maintained, the asset accounting process cluster installs the prerequisites for system interfaces as well as for harmonized asset accounting procedures, standards, and timings.
4	Purchase Requests and Accounts Payables	This process cluster remains on decentralised level, but will partly be affected by harmonization of general ledger accounts.
5	Customs Compliance and Transport Accounts	No direct effect from this decision.
6	General Ledger	To allow efficient consolidation on central holding level, either general ledger accounts have to follow a harmonized logic, or appropriate interfaces need to be created. These issues are handled by the general ledger process cluster, either by harmonizing at least parts of the chart of accounts or by creating appropriate interface systems together with procedures.
7	Revenue and Gross Profit Accounting	Just as in the general ledger process cluster, creating a timely and accurate view on group revenues and profits requires a harmonization of charts of accounts, processes, and IT systems.

No.	Process cluster	Effects of decision
8	Cost Centre Accounting	A central holding organization usually leaves room for the subsidiaries to perform their businesses largely to their own discretion. This is why in holding structures central cost accounting is one of the few sources of reliable information for central management. Opting for a central holding therefore goes along implementing group-wide, strong cost accounting structures capable of understanding and accompanying all business requirements on decentralised levels.
9	Product Costing	No direct effect from this decision.
10	Material, Work- in Progress, Inventory	No direct effect from this decision.
11	Consolidation and Group Reporting	Central consolidation processes need to rely upon correct and timely information from the subsidiaries, allowing to distinguish between intra-group business and business performed with business partners outside of the group. Prerequisite to do this is accurate posting of mass transactions on decentralised level, which can only be guaranteed if the chart of accounts is set up accordingly. For auditing purposes, it is inevitable to create a drill-down ability to the transaction. With this respect, an integration of IT systems providing homogenized transaction databases is sensible to gain efficiency, yet organizational measures and increased staff can yield similar results and therefore again costs and benefits have to be outweighed for the specific merger case.

- Full central integration

No.	Process cluster	Effects of decision
1	Cash Management and Liquidity Planning	Take over procedures and systems from one merger partner.
2	Investment Planning	Take over procedures and systems from one merger partner.
3	Asset Accounting	Take over procedures and systems from one merger partner.
4	Purchase Requests and Accounts Payables	Take over procedures and systems from one merger partner.
5	Customs Compliance and Transport Accounts	Take over procedures and systems from one merger partner. Depending on decisions for integrating regional subsidiaries, the Customs Compliance and Transport Accounts process cluster might face parallel procedures.
6	General Ledger	Take over procedures and systems from one merger partner.
7	Revenue and Gross Profit Accounting	Take over procedures and systems from one merger partner.
8	Cost Centre Accounting	Take over procedures and systems from one merger partner.
9	Product Costing	Take over procedures and systems from one merger partner. Depending on decisions for integrating procedures in decentralised production locations, the necessity of parallel procedures might arise.
10	Material, Work- in Progress, Inventory	Take over procedures and systems from one merger partner.
11	Consolidation and Group Reporting	Since this decision results in one legal entity ceasing to exist, there is no direct effect on this process cluster. Out of various reasons, especially taxation or pension rules or contracts, the merged legal entity might be kept in existence, yet with reduced or without business activity. If this is the case, consolidation requirements are limited, and most importantly do not impose requirements to mass transactions, since those will be carried over to the one entity that performs the main part of the business.

- Adding subsidiaries

No.	Process cluster	Effects of decision
1	Cash Management and Liquidity Planning	Apply existing group rules for subsidiaries to the merger partners. This results in an integration of processes and IT systems being sensible.
2	Investment Planning	Apply existing group rules for subsidiaries to the merger partners. This results in an integration of processes and IT systems being sensible.
3	Asset Accounting	Apply existing group rules for subsidiaries to the merger partners. This results in an integration of processes and IT systems being sensible.
4	Purchase Requests and Accounts Payables	Apply existing group rules for subsidiaries to the merger partners. This results in an integration of processes and IT systems being sensible.
5	Customs Compliance and Transport Accounts	Apply existing group rules for subsidiaries to the merger partners. This results in an integration of processes and IT systems being sensible.
6	General Ledger	Apply existing group rules for subsidiaries to the merger partners. This results in an integration of processes and IT systems being sensible.
7	Revenue and Gross Profit Accounting	Apply existing group rules for subsidiaries to the merger partners. This results in an integration of processes and IT systems being sensible.
8	Cost Centre Accounting	Apply existing group rules for subsidiaries to the merger partners. This results in an integration of processes and IT systems being sensible.
9	Product Costing	No direct effect from this decision.
10	Material, Work- in Progress, Inventory	Apply existing group rules for subsidiaries to the merger partners. This results in an integration of processes and IT systems being sensible.
11	Consolidation and Group Reporting	Apply existing group rules for subsidiaries to the merger partners. This results in an integration of processes and IT systems being sensible.

5.2.2.2 Research and Development Organisation

Description

By integrating research and development resources, the merging entities strive to gain R&D efficiency, increased system competency, or both. Put in practice, integrating R&D means the creation of teams that can work under high pressure, accept a single leadership and can overcome issues arising from working in different locations or in different languages or measurement systems.

Research and development is expensive and at the same time critical for the company's long-term success. Controlling the efficacy and efficiency

of the R&D procedures therefore is an important task that is in most companies supported by the financial accounting organisation.

The decision to bundle R&D resources leads to the necessity of harmonising project cost and performance control systems, and with it, the systems that allow tracking of employee time devoted to specific R&D projects. Only when the project management and R&D effort per project can be tracked in a common and standardised way, can the product cost for R&D overhead be properly calculated and deviations can be identified in a timely and effective manner. Integration of these systems therefore is key to maintaining manageability of R&D efforts and providing provable synergies from this business area.

Besides the cost / benefit view of the R&D process itself, it is crucial to create products that are able to meet market expectations in terms of functionality as well as sales prices. Product costing, especially product target costing, is an integral part of the R&D process in companies which have managed to meet these expectations.

Relevant Decision input parameters

Parameters that are relevant for this decision:

1. Similarities in the product line
2. Amount of R&D projects justifies more R&D staff
3. Experience and ability to work in distributed environments
4. Willingness of R&D staff to travel
5. Language barriers

Decision Alternatives and Impact on Finance Process Clusters

- No R&D integration

No.	Process cluster	Effects of decision
1	Cash Management and Liquidity Planning	No direct effect from this decision.
2	Investment Planning	No direct effect from this decision. However, the decision of not integrating research and development might still impose the necessity to compare investments in one or the other R&D facility. Investments, as they potentially alter the factual basis of decisions taken, should be reviewed in how far they impact the decision parameters that have resulted in not integrating research and development.
3	Asset Accounting	No direct effect from this decision.
4	Purchase Requests and Accounts Payables	No direct effect from this decision.
5	Customs Compliance and Transport Accounts	No direct effect from this decision.
6	General Ledger	No direct effect from this decision.
7	Revenue and Gross Profit Accounting	No direct effect from this decision.
8	Cost Centre Accounting	Even if research and development are not planned to be integrated, cost centre accounting still needs to be capable of creating a set of figures that make efficiency comparable between R&D departments. Therefore, even if mechanisms and tools do not need to be identical, the reports should contain measurement figures, that cover similar areas and are of similar accuracy and timeliness.
9	Product Costing	Product costing is crucial for market success, and a homogenisation of procedures, tools and the integration of product costing into the R&D process should be reviewed and assessed even if the R&D process as a whole is kept separate between the merging entities.
10	Material, Work- in Progress, Inventory	No direct effect from this decision. However, handling of materials required for prototypes might be integrated independently from the integration of the other R&D procedures.
11	Consolidation and Group Reporting	No direct effect from this decision.

▪ Joint R&D work on selective projects

No.	Process cluster	Effects of decision
1	Cash Management and Liquidity Planning	No direct effect from this decision.
2	Investment Planning	Investment planning needs to create the capability to manage R&D investments in joint facilities or projects.
3	Asset Accounting	No direct effect from this decision.
4	Purchase Requests and Accounts Payables	No direct effect from this decision.
5	Customs Compliance and Transport Accounts	No direct effect from this decision.
6	General Ledger	No direct effect from this decision.
7	Revenue and Gross Profit Accounting	No direct effect from this decision.
8	Cost Centre Accounting	Since joint projects need to be managed also from a cost perspective, cost centre accounting is required to be able to create a harmonised, timely, and accurate view on these projects, and to compare joint projects with such projects pursued in only one of the merger partners. This can be achieved by building interfaces between the different reporting systems and logics, or by integrating the cost centre accounting cluster as a whole. The latter decision will in most cases not be justified by some joint R&D projects, but will depend on the level of joint work executed within research and development and also within other areas of the merging companies.
9	Product Costing	Product costing procedures and systems need to be integrated for R&D projects pursued jointly.
10	Material, Work- in Progress, Inventory	To manage prototype materials, the respective process clusters need to be integrated or need to build interfaces. The extent and level of automated processing depends on the size of the joint research projects.
11	Consolidation and Group Reporting	No direct effect from this decision.

- Full R&D integration

No.	Process cluster	Effects of decision
1	Cash Management and Liquidity Planning	No direct effect from this decision.
2	Investment Planning	Investment planning needs to create the capability to manage R&D investments in joint facilities or projects.
3	Asset Accounting	No direct effect from this decision.
4	Purchase Requests and Accounts Payables	No direct effect from this decision.
5	Customs Compliance and Transport Accounts	No direct effect from this decision.
6	General Ledger	No direct effect from this decision.
7	Revenue and Gross Profit Accounting	No direct effect from this decision.
8	Cost Centre Accounting	Pursue full integration to ensure capability to manage the R&D process.
9	Product Costing	Pursue full integration.
10	Material, Work- in Progress, Inventory	Depending on the size and dependence of R&D projects on prototype materials, and depending on the complexity of products, an integration of this process cluster should be considered.
11	Consolidation and Group Reporting	No direct effect from this decision.

5.2.2.3 Organisation of Production Capacities

Description

If the merging entities decide to bundle their production capabilities, they seek to gain efficiency, flexibility or both by being able to switch certain or all of their products between certain or any of their production facilities.

This decision has strong impact on all business areas and business processes, from product design to parts or product number assignments, logistics and purchasing to finance. Especially, implementation of this strategic decision should be pursued hand in hand with an integration of those product lines for which production capabilities are planned to be bundled.

Benefits, on the other hand, can be large: Additional production facilities with the capability of cross-using equipment, parts and know-how, as

well as the ability to adjust production capacities for certain products during their lifecycle by switching them between production facilities can yield large benefits.

Within the finance business area, integrating production facilities makes the harmonisation of cost centre accounting structures and systems necessary, as production costs from different facilities have to be comparable. Comparable cost structures are indispensable when deciding about the allocation of products to facilities.

Further impact on the finance business area result from the parts handling side: In order to use IT systems for stock management and production facility logistics, numbering logics need to be integrated in to avoid building two separate IT infrastructures in one production site. The requirement for financial management is therefore to provide parts cost values in the correct numbering logic. This in turn affects transport accounts, since parts costs, depending on the implemented cost accounting logic, may or may not include cost of shipment to a production site. For cost of shipment, tracking and calculation can be specific for parts and locations, or can be averaged over parts or over locations.

Relevant Decision input parameters

Parameters that are relevant for this decision:

1. Degree of similarity between product lines
2. Volatility of production volume and ability to switch products or use facilities for multiple products
3. Status of and timelines for product line integration
4. Export regulations and limitations

Decision Alternatives and Impact on Finance Process Clusters

- No integration of production capabilities

No.	Process cluster	Effects of decision
1	Cash Management and Liquidity Planning	No direct effect from this decision.
2	Investment Planning	No direct effect from this decision.
3	Asset Accounting	No direct effect from this decision.
4	Purchase Requests and Accounts Payables	No direct effect from this decision.
5	Customs Compliance and Transport Accounts	No direct effect from this decision.
6	General Ledger	No direct effect from this decision.
7	Revenue and Gross Profit Accounting	No direct effect from this decision.
8	Cost Centre Accounting	No direct effect from this decision. Financial management can however be urged to create a common view over different production facilities to identify possibilities for efficiency gains.
9	Product Costing	No direct effect from this decision. To create comparable cost figures on parts or modules level, homogenising product costing logic and systematic is yet decisive.
10	Material, Work- in Progress, Inventory	No direct effect from this decision. Depending on the requirements from financial management, this process cluster might yet need to establish unified standards for handling of materials.
11	Consolidation and Group Reporting	No direct effect from this decision.

■ Integration of production for selective product lines

No.	Process cluster	Effects of decision
1	Cash Management and Liquidity Planning	Since integration of production capabilities will result in using a common part and product numbering logic, revenue projection systems in the sales business area might be affected. In case revenue forecasts are created using different numbering logics, this process cluster needs to build interfaces that allow the use of such data.
2	Investment Planning	No direct effect from this decision.
3	Asset Accounting	Depreciations for specific production facilities are however used for product lifecycle cost considerations and therefore need to be provided in the correct numbering reference for this purpose.
4	Purchase Requests and Accounts Payables	No direct effect from this decision. The integration of product lines, which is very probable before integrating production facilities, however provides opportunity to also realise synergies from supplier management, as numbering logics will anyway be integrated.
5	Customs Compliance and Transport Accounts	No direct effect from this decision. The integration of product lines, which is very probable before integrating production facilities, however provides opportunity to also realise synergies from forwarding agent management, as numbering logics will anyway be integrated.
6	General Ledger	No direct effect from this decision. An integration of revenue and gross profit accounting is not yet sensible without the integration of general ledger accounting logics and systems.
7	Revenue and Gross Profit Accounting	No direct effect from this decision. Since integration of production capabilities will result in using a common numbering logic, revenue accounting needs to build interfaces to support different numbering logics inside single merger partners; since this is one important prerequisite for full integration, this should be considered.
8	Cost Centre Accounting	Integration for those product lines and facilities, which are to be integrated. Full integration should be considered.
9	Product Costing	Integration for those product lines and facilities, which are to be integrated. Full integration should be considered.
10	Material, Work- in Progress, Inventory	Integration for those product lines and facilities, which are to be integrated. Full integration should be considered.
11	Consolidation and Group Reporting	No direct effect from this decision.

- Full integration of production capabilities for all product lines

No.	Process cluster	Effects of decision
1	Cash Management and Liquidity Planning	Take over procedures and systems from one merger partner.
2	Investment Planning	No direct effect from this decision. Depending on the complexity of interfaces, an integration should be considered.
3	Asset Accounting	Take over procedures and systems from one merger partner.
4	Purchase Requests and Accounts Payables	Take over procedures and systems from one merger partner.
5	Customs Compliance and Transport Accounts	Take over procedures and systems from one merger partner.
6	General Ledger	Take over procedures and systems from one merger partner.
7	Revenue and Gross Profit Accounting	Take over procedures and systems from one merger partner.
8	Cost Centre Accounting	Take over procedures and systems from one merger partner.
9	Product Costing	Take over procedures and systems from one merger partner.
10	Material, Work- in Progress, Inventory	Take over procedures and systems from one merger partner.
11	Consolidation and Group Reporting	Take over procedures and systems from one merger partner.

5.2.2.4 Organisational Reflection of Supporting Processes

Description

Back office structures include all business processes required to manage the companies, such as human resources, information technology infrastructure, or financial accounting. Parts of the organisation that reflect such back office processes are in turn part of the financial management process of the company in terms of investments, budget and cost control.

If back office structures and infrastructure are intended to be rationalised, the financial management structures have to be adjusted accordingly. In case of the decision of centralising and rationalising the finance business area itself, there are also implications regarding the finance internal organisation.

Relevant Decision input parameters

Parameters that are relevant for this decision:

1. Necessity to keep fully functioning entities, which can easily be separated
2. Opportunities to realise synergies by jointly using infrastructure

Decision Alternatives and Impact on Finance Process Clusters

- No back office integration

No.	Process cluster	Effects of decision
1	Cash Management and Liquidity Planning	No direct effect from this decision.
2	Investment Planning	No direct effect from this decision.
3	Asset Accounting	No direct effect from this decision.
4	Purchase Requests and Accounts Payables	No direct effect from this decision.
5	Customs Compliance and Transport Accounts	No direct effect from this decision.
6	General Ledger	No direct effect from this decision.
7	Revenue and Gross Profit Accounting	No direct effect from this decision.
8	Cost Centre Accounting	No direct effect from this decision. To create a comparable set of cost accounting figures, an integration should be considered.
9	Product Costing	No direct effect from this decision.
10	Material, Work- in Progress, Inventory	No direct effect from this decision.
11	Consolidation and Group Reporting	No direct effect from this decision.

- Integration of selective back office processes

No.	Process cluster	Effects of decision
1	Cash Management and Liquidity Planning	No direct effect from this decision.
2	Investment Planning	Integration for those processes that are integrated, or establishment of interfaces.
3	Asset Accounting	No direct effect from this decision.
4	Purchase Requests and Accounts Payables	No direct effect from this decision.
5	Customs Compliance and Transport Accounts	No direct effect from this decision.
6	General Ledger	No direct effect from this decision.
7	Revenue and Gross Profit Accounting	No direct effect from this decision.
8	Cost Centre Accounting	Full integration is sensible; integration is necessary at least for those processes that are homogenised.
9	Product Costing	No direct effect from this decision.
10	Material, Work- in Progress, Inventory	No direct effect from this decision.
11	Consolidation and Group Reporting	No direct effect from this decision.

- Full back office integration

No.	Process cluster	Effects of decision
1	Cash Management and Liquidity Planning	No direct effect from this decision.
2	Investment Planning	Integration is sensible, however depends on the integration of other process clusters and the amount of investments that need to be managed for the back office processes in comparison to product investments.
3	Asset Accounting	No direct effect from this decision.
4	Purchase Requests and Accounts Payables	No direct effect from this decision.
5	Customs Compliance and Transport Accounts	No direct effect from this decision.
6	General Ledger	No direct effect from this decision.
7	Revenue and Gross Profit Accounting	No direct effect from this decision.
8	Cost Centre Accounting	Take over systems and processes from one merger partner.
9	Product Costing	No direct effect from this decision.
10	Material, Work- in Progress, Inventory	No direct effect from this decision.
11	Consolidation and Group Reporting	No direct effect from this decision.

6 INTERDEPENDENCY MODEL: HORIZONTAL INTERDEPENDENCIES

6.1 *Basic Process Model*

This chapter uses the process model that has been presented in chapter 2 and which is used for presenting the information in chapter 5. For convenience of the reader, it is presented again here:

No.	Process/Sub-Process Name	Process Description
1	Cash Management and Liquidity Planning	Central payment process
2	Investment Planning	Investment planning, approval and control
3	Asset Accounting	Central registration of assets, calculation of depreciations, posting to general ledgers
4	Purchase Requests and Accounts Payables	Checking of incoming invoices against order data and physical goods receipts
5	Customs Compliance and Transport Accounts	Optimisation of transport logistics, financial control of transport invoices. Financial customs handling, revaluation in case of retrospective price changes.
6	General Ledger	Posting of general ledger accounts
7	Revenue and Gross Profit Accounting	Posting of sales ledgers and accounts receivables
8	Cost Centre Accounting	Accounting and layout of cost centres, cost control
9	Product Costing	Calculation of product costs for pre-series and series products
10	Material, Work- in Progress, Inventory	Inventory valuation and posting
11	Consolidation, Group Reporting	Consolidation of intra-group profits, calculation of overall profit and reporting

This section provides information that helps planning the IT merger integration by pointing out issues that can arise in an IT merger integration project within the finance business area. This section concentrates on horizontal interdependencies, whereas:

- Vertical interdependencies exist between layers of consideration, such as between strategy and information technology.
- Horizontal interdependencies exist between entities on one layer of consideration, such as between processes in logistics and processes in finance.

The issues described should, if applied for planning IT merger integration, be checked upon completeness and appropriate level of detail for the specific merger case.

As stated in the introduction of this thesis, main area of application for the subsequent lists is a manufacturing industry environment of large companies. However, the information can in part be useful also for mergers in smaller companies and/or in different industries.

6.2 *Horizontal interdependencies*

This section describes the integration issues on process and IT level. Strategic, organisational and HR issues are not regarded within this chapter, as it is the assumption for all of the described process clusters, that strategic, organizational and HR merger integration strategies are finalized and can be used as a mere input to the process and IT integration.

6.2.1 Process Cluster 1: Cash Management and Liquidity Planning

Purpose of the Process Cluster

Cash Management optimises the balance between liquidity and interest gains or expenses created by money market investments.

In the case where the company is in a cash-rich position, cash management processes use their information on future cash needs to forecast free liquidity, which can be used for money market investments. Furthermore, time and amounts of payments and partial payments are aligned with possible interest gains and liquidity needs of the company.¹¹⁵

In the case where the company has a low amount of free cash, cash management processes focus on minimizing interest expenses for borrowings and take care of an optimal balance between securing the ability to pay and reducing interest payments.¹¹⁶

Within the Cash Management and Liquidity Planning process cluster, currency exchange rate calculations can be included. Those processes include the determination of group-wide currency exchange rate

¹¹⁵ Wöhe, Grundzüge der Unternehmensfinanzierung.

¹¹⁶ Jarrow, Finance.

exposure, the calculation of exchange rate gains and losses, as well as handling of exchange rate divergencies to update plans.¹¹⁷

Cash management is to some extent supported by most ERP standard solutions. Some analyses, currency calculations, and functions can be covered by spreadsheets or bespoke systems.

Inputs, Outputs and Interfaces with other Process Clusters

Input information	Source	Interdependency focus
Investment plan	Investment Planning	
Budgeted expenses	Cost centre accounting	
Budgeted staff	Cost accounting, HR	●
Interest rate forecasts	External analyses	●
Exchange rate forecasts	External analyses	●
Exchange rate fluctuations	External analyses, sales	●
Sales plan	Sales accounting	●
Sales analyses and plan updates	Sales	●
Actual expenses	Fin. accounting, cost centre acc.	

Output information	Target	Interdependency focus
Cash plans	Management reporting	
Credit line strategy	Management, external debtors	●
Cash collection strategy	Accounting, Sales	●
Financial investment strategy	Management, external creditors	●
Payment strategy	Accounting	
Purchasing strategy	Purchasing	●

Critical Integration Success Factors

Integration of Cash Management and Liquidity Planning requires certain actions at organisational level. As this process cluster relies strongly on input information from subsidiaries, those have to support the integration fully and should be involved in the integration project right from its start.

Furthermore, the relation of the merged company to its banks has to be reviewed. Too many or too few bank accounts can complicate cash management significantly, if automatic interfaces have to be established and maintained.

¹¹⁷ Matschke, Finanzanalyse und Finanzplanung.

Process and IT Integration Approach and Timely Phasing

Major tasks to be performed before starting the integration of this process cluster:

1. Create a concept for harmonising input data. Especially, data that is later used for automatic processing should be harmonised either by waiting for supplying systems to be integrated, or by building data converters. Special focus in this context should be given to the sales process cluster, as integration of forecasts depends again on integration of numbering logics.
2. Define customers for output data. In particular, management reports should be designed based on requirements analyses.
3. Harmonise output data. It should be ensured that the integration effort for the cash management cluster is integrated with automated use of forecasts for the payment systems and is in line with formats required from purchasing.

Major integration tasks for this process cluster:

1. Work in parallel according to same cash management rules
2. Consolidate cash needs of the merged entities and consolidate free cash positions to reduce external interest payments (quick win)
3. Define target format for outputs and inform customers of change in formats
4. Install translation interfaces to old output information format where necessary
5. Harmonize rules and formats for input data and create translation points where necessary (e.g. for cost control reports)
6. Switch to one system for cash management
7. Constantly review further integration process and switch off input or output interfaces when possible

Consequences of the Integration on IT support

An ERP system suite mostly supports cash management. Some analyses, however, are in many companies performed in spreadsheets. Within cash management, spreadsheets can become a major tool that needs special attention within the integration process. It is

recommended to list reports and other tasks performed with the help of spreadsheets to which automated interfaces from the ERP system suite are required.

6.2.2 Process Cluster 2: Investment Planning

Purpose of the Process Cluster

Investment planning includes defining, approving and managing two possible kinds of investments: investment in product lines ("product investments") and investment in the general company infrastructure ("structural investments").¹¹⁸

Because of the high volume and long runtime of these investment projects, splitting up one total investment into several different sub-investments and then budgeting each of these sub-investments with only a part of the whole investment budget is necessary for effectively carrying out cost control measures. Investment projects have to be numbered, and subsequently this numbering logic is then used as a key for allocation of budgets and actuals.¹¹⁹

For splitting up the whole investment, an investment hierarchy has to be built up and put into a database. Based upon this, sub-investments are budgeted.

Purchase requisitions, as long as they are not overheads, thus have to refer to a sub-investment budget. Whenever a purchase requisition is entered to the appropriate system, the investment planning system has to check against budgeted investment funds – and has to reject the purchase requisition if the remaining investment budget is insufficient.

Furthermore, in terms of actual-to-plan comparisons and investment forecasts, investment planning processes should offer a consolidated view on all investments driven forward in the merged entity.

¹¹⁸ Rolfes, Moderne Investitionsrechnung; Mensch, Investition; Zimmermann, Investitionsrechnung.

¹¹⁹ Adam, Investitions-controlling.

Inputs, Outputs and Interfaces with other Process Clusters

Input information	Source	Interdependency focus
Approved investment projects	Management	●
Investment budgets	Cost Centre Accounting	
Purchase orders	Purchasing	
Paid invoices	Accounts Payables	
Investment project progress	Management	●

Output information	Target	Interdependency focus
Investment plans	Management reporting	●
Depreciation on investments	General ledgers, cost accounting	
Accruals	General ledgers	
Releases of budget portions	Project responsible	●
Budget vs. actuals reports	Management reporting	●

Common Issues and Success Factors

The investment planning process needs to be linked to strategic company planning procedures as well as to the plans within all parts of the companies and subsidiaries. To integrate this process cluster, involvement of all business units pursuing strategic planning and project management is required.

To integrate investment planning with project planning procedures, the quality department can play an important role, since in most companies this department is responsible for installing and maintaining project management procedures and rules and also controls this administrative portion of project and programme management.

Since investment planning is interlinked with levels of organisational responsibility, integration requires harmonisation of responsibilities. This goes in line with the target setting process: targets for investment budgets might be set centrally or decentralised. IT systems and especially access rights and reports need to reflect the philosophy.

Project wise, investment planning can involve planning on asset level or planning on lump sum level. Managers of projects and subprojects will precisely know which assets need to be acquired, yet there is a trade-off with respect to the level of detail this knowledge is being transferred to the finance business area for planning and checking purposes. The chosen level of detail influences IT support significantly.

Budget releases are in some companies connected to timeframes. It might be sensible to release investment budgets for the entire duration of the project in the course of which these assets are purchased or created. Another philosophy releases investment approvals only for a given period and requires quarterly or half-annual resubmission of the asset approval request. Harmonisation of these rules is recommendable.

Process and IT Integration Approach and Timely Phasing

Major tasks to be performed before starting the integration of this process cluster:

1. Identify differences between the merger partners with respect to investment approval and budget release procedures
2. Establish discussions between the persons and organisational units responsible for project management
3. Create common standards for project management and tracking of spending

Major integration tasks for this process cluster:

1. Homogenise rules for investment approval and budget releases
2. Create concept on transfer of existing data about investment projects
3. Integrate automatic input from asset accounting or build interfaces
4. Create further interfaces required to other process clusters
5. Switch to one IT system

Consequences of the Integration on IT support

Investment can be supported by ERP standard software, by bespoke systems or spreadsheets. Depending on the level of IT penetration within companies, investment budgets can be planned, decentralised in spreadsheet templates, or via direct inputs into an ERP system.

In the case where spreadsheet templates are used, designing and distributing these spreadsheets with enough advance notice increases acceptance of new templates and thus simplifies the subsequent collection and consolidation procedures.

If investments are planned within cost centre planning, the interface with cost centre accounting becomes a focus point of the integration work. It is recommendable to include staff from cost centre accounting into the project from project launch.

6.2.3 Process Cluster 3: Asset Accounting

Purpose of the Process Cluster

Asset accounting processes identify and capitalise assets that are either bought in from third parties, or self-made. These assets, once capitalised, are then depreciated, causing a variety of balance sheet and P&L implications. Respective postings reflecting the acquisition, depreciation and disposal of assets in general ledgers are performed by this process cluster.¹²⁰

Once a capitalisation and depreciation strategy is defined, depreciation amounts are calculated for each single asset by the asset accounting process. The possibilities of defining a depreciation and capitalization strategy are dependent on the accounting standard used. As the standard may vary by country and target group for the reports, the asset accounting process cluster needs to cover these different national or international accounting standards.¹²¹

Depending on the country in which capitalization and depreciation is being performed, different rules may apply. For instance, some countries request that portions of larger investments are depreciated when they are ready for use, which might be already before the entire investment is being made, while in other countries depreciation does not start before the entire investment is finalized and therefore the entire investment is held in work-in-progress until this date.

Complexity of the asset accounting process rises with internationality and size of the company. To guarantee an automatic capitalization of assets, the purchasing process needs to reliably identify such assets that need to be capitalized and needs to provide the asset accounting process with all relevant information about them, such as date of

¹²⁰ Eisele, Technik des betrieblichen Rechnungswesens, pp. 329 – 344; Schneider, Finanzbuchführung, pp. 8 – 54.

¹²¹ Wöhe, Grundzüge der Buchführung und Bilanztechnik, pp. 111 – 224; Kühnberger, Buchhaltung.

purchase, date of installation, value, type of asset etc. For self made assets, the asset accounting process needs to be supplied with the date of usability of the asset.

Inputs, Outputs and Interfaces with other Process Clusters

Input information	Source	Interdependency focus
Invoice details	Purchasing	●
Depreciation rules	Management	

Output information	Target	Interdependency focus
Depreciations	General ledgers	●
Asset numbers	General ledgers	
Equipment actuals	Investment planning	
Equipment actuals	Purchasing	

Common Issues and Success Factors

Possible differences in handling of assets can exist in the level of detail: Each single asset can be depreciated, or assets can be lumped together and depreciated in a total sum. While the first possibility results in increased accuracy, the second possibility provides reduced requirements in terms of mass data processing and tracking. This point should be clarified and a decision should be taken before the integration of the process cluster is launched.

In terms of tooling located at suppliers, tracking of detailed inventories might be in the responsibility of the supplier, or might be sourced at the merging company itself. Levels of detail might vary. Since an integration of this process can require interaction with a number of external companies, it is recommendable to clarify handling of supplier tooling early in the integration process and check the respective supplier contracts for provisions providing the merging company with possibilities to request a detailed inventory list.¹²²

If systems are planned to be used for both of the merged entities, these systems need to be checked regarding their capability to comply with local accounting rules. This compliance needs to include processing of input data, since local accounting rules might require input of certain information that is not required for other regions.

¹²² Eilenberger, Betriebliches Rechnungswesen, pp. 50 – 128.

Process and IT Integration Approach and Timely Phasing

Major tasks to be performed before starting the integration of this process cluster:

1. Define which accounting standard is used in which local company
2. Thoroughly investigate data streams from purchasing and identify gaps

Major integration tasks for this process cluster:

1. Define depreciation strategy per accounting standard and tax region
2. Establish reliable interfaces to purchasing and general ledgers
3. Define rules for consolidation from different local accounting standards to group accounting and reporting
4. Select target IT support and verify that the selected system fulfils all requirements imposed from accounting and tax rules in the different regions

Consequences of the Integration on IT support

Most ERP systems offer an asset accounting package. Depending on the number of transactions, these packages might yet be not fast enough to cope with mass data and therefore might be complemented with bespoke systems that collect incoming asset data, calculate depreciations and prepare the respective postings. Due to the variety of accounting rules that need to be covered in larger companies, off-the-shelf ERP systems offer a clear advantage over bespoke systems, since the vendor of these systems usually embeds the different sets of rules.

6.2.4 Process Cluster 4: Purchase Requests and Accounts Payables

Purpose of the Process Cluster

The sub-process dealing with purchase requests and accounts payables collects purchase requisitions, forwards these to the financial sub-process of investment planning for funds sufficiency verification and to

the purchasing process. Incoming invoices are checked, and if a payment has to be made, respective postings are entered into the ledgers.¹²³

Relationships to suppliers can be organized in a variety of ways using a variety of different tools, such as frame contracts, production forecasts, purchasing forecasts etc.¹²⁴ Within the merger process, the merging entities have the possibility to streamline their supplier relationships, and to also use state of the art IT support to integrate suppliers more into the production process. Due to the comparably complex integration of existing systems for the management of purchase requests and accounts payables, the purchase requests processes are one of the few business areas in which the use of web-enabled services might be considered, even if in none of the merging entities those systems have previously been used.

Inputs, Outputs and Interfaces with other Process Clusters

Input information	Source	Interdependency focus
Invoices	Suppliers	●
Parts numbers	Bill of material	●
Approved budgets on order level	Investment planning	
Detailed supplier information	Suppliers	●

Output information	Target	Interdependency focus
Orders	Suppliers	●
Payment releases	Cash management	
Purchase request details	Cost centre accounting	
Purchased assets	Asset accounting	

Common Issues and Success Factors

The purchase requests and accounts payables process cluster is in a central position within the finance business area, and needs also to maintain comparably extensive interfaces to bill of material and external parties. Its full and uninterrupted functioning is crucial for maintenance of production capabilities, especially in just-in-time environments.¹²⁵

¹²³ Trier, Matthias, IT-Unterstützung im Supply Chain Management.

¹²⁴ Koppelman, Beschaffungsmarketing, pp. 382 – 410.

¹²⁵ See: O'Brien, Head, Developing a full business environment to support just-in-time logistics.

For accurate invoice checking, the invoiced amount has to be checked against the purchase order issued to the supplier, and the delivery or performance purchased needs to be checked upon quality. These pieces of information are obtainable in several ways, requiring different levels of manual interaction and systems support. A decision on the level of acceptable manual interaction for the merged entities needs to be made, which might vary from the level that had been previously existing in the single entities. Especially when invoices have to be physically sent to the issuer of a purchase order, the process can become time consuming and unreliable with increased company size.

The previous matter goes in line with the decision on the threshold of invoices to be checked. If each invoice, however small, needs to be signed off by the issuer of a purchase order, the paperwork can become too extensive to be sensibly performed manually.

Invoice checking is interconnected with the strategy on supplier integration into a company's back office processes. A closer integration of ERP systems of a company with the ERP systems of its suppliers however requires openness of IT interfaces as well as long-term supplier relationships providing the necessary basis of trust. Since supplier integration can result in significant increases in efficiency, the use of such technologies and processes might be recommendable.¹²⁶

Process and IT Integration Approach and Timely Phasing

Major tasks to be performed before starting the integration of this process cluster:

1. Establish interfaces to all processes supplying purchasing with parts numbers
2. Determine and align with integration strategy of the bill of material processes

Major integration tasks for this process cluster:

1. Assessment of capability of different suppliers to be part of integrated processes
2. Definition of targeted degree of supplier integration

¹²⁶ See: Browne, Sackett, Wortmann, Future manufacturing systems – Towards the extended enterprise.

3. Identification of interfaces to bill of material, cost accounting etc.
4. Selection of system support, interfaces to suppliers and security strategy

Consequences of the Integration on IT support

To enable the IT support of this process cluster to integrate while maintaining its functions at all times, the integration approach needs to be well coordinated with the other process clusters.

Today's ERP packages support all of the processes within this process cluster; they might however be limited in speed and therefore, depending on the transaction load, be complemented with supporting systems for the handling of data import and export.

The use of web-enabled services, such as on-line communication of production plans to suppliers, on-line ordering of parts or on-line posting of delivery notes and installation reports might ease the day-to-day handling of supplier relationships. In this respect, efforts and costs of the establishment of a new internet-based infrastructure might be in the same range than integrating two existing off-line system infrastructures.

6.2.5 Process Cluster 5: Customs Compliance and Transport Accounts

Purpose of the Process Cluster

Ordering, managing and controlling transport services are the tasks of this sub-process. Transport costs are optimised by bundling goods and optimising usage of space and weight capacities offered by the forwarding agents.¹²⁷

International trade and production at various different places around the globe imposes a number of tasks associated with customs handling. Whenever goods are shipped, the respective documents for customs handling have to be included. Customs handling processes all customs issues are handled appropriately, and constantly survey changes in legal customs regulations in all relevant countries.

A freight and customs information system creates a link between customs and legal processing of foreign trade with administrative and

¹²⁷ Gudehus, Logistik, pp. 663 – 852; Gollwitzer, Logistik-Controlling; Charenkamp, Logistik-Management, pp. 170 – 173..

logistic procedures. To optimise freight and customs handling, central freight consolidation is required, which in turn demands integration of part numbering systems. For central management of freight accounts, only a one-entry system allows a sufficient degree of legal confirmation as well as the opportunity to reduce costs and handling.¹²⁸

Inputs, Outputs and Interfaces with other Process Clusters

Input information	Source	Interdependency focus
Customs regulations	External sources	●
Delivery notes	Forwarding agents	
Forwarding agent details	Forwarding agents	
Goods receipt data	Logistics	●
Outgoing freight information	Distribution	●

Output information	Target	Interdependency focus
Payment approvals to forwarders	Cash management	
Transport orders	Forwarding agents	●
Customs papers	Distribution, logistics	●

Common Issues and Success Factors

In distributed environments, consolidating data from forwarding agents can lead to major cost reductions. To enable a company to make use of bundling transport orders and verifying freight invoices from forwarding agents on larger scale, sophisticated IT support is required. An automatic system for freight accounting and invoice checking needs to integrate freight orders, goods pickup and goods receipt at all decentralised locations.

The integration of Customs Compliance and Transport Accounts must be based upon a decision to centralise or decentralise the tasks mentioned above. If transport volumes are deemed high enough to justify creation of an automatic freight accounting system, which in addition can be used for customs handling, creation of a central department is sensible and should be pursued.

Process and IT Integration Approach and Timely Phasing

Major tasks to be performed before starting the integration of this process cluster:

¹²⁸ Schulte, Logistik, pp. 51 – 112.

1. Establish production location strategy and corresponding company logistics network
2. Determine parameters that will be used to manage forwarding agents and in-house freight
3. Select forwarding agents to be used by the merged entity and communicate to them which information and reports are required in the future

Major integration tasks for this process cluster:

1. Create directory of customs and taxation rules relevant for the different production locations
2. Establish freight management strategy, especially regarding allowed trade-offs between delivery times and transport cost
3. Integrate forwarding agent directories
4. Establish interfaces to purchasing, production and accounting
5. Integrate all transport management and customs handling procedures
6. Select and switch to common IT platform

Consequences of the Integration on IT support

Systems for transport and customs handling are available in strongly variable degrees of integration. Especially as pertains to possible on-line forwarding agent integration, the capabilities of systems existing in the merging entities can be a limiting factor.

Integration of the process cluster can sensibly be performed only with the establishment of a common IT backbone structure.

6.2.6 Process Cluster 6: General Ledger

Purpose of the Process Cluster

Within the General Ledger, all relevant information is handled for efficiently creating the tax and trade balance sheets as well as the P&L statement.¹²⁹

¹²⁹ Dusemond, Rechnungslegung kompakt: Einzel- und Konzernabschluß nach HGB mit Erläuterungen abweichender Rechnungslegungspraktiken nach IAS und US-

General ledger IT systems use automatic interfaces to receive data about value flows inside a company. Management and investors increasingly demand a high speed of creating monthly, quarterly, and annual closings, thus an efficient scheduling of tasks as well as a high degree of automated processing is required.¹³⁰

General ledger bookings are the domain of ERP standard software, as by definition this process is highly standardised and has been one of the early adopters of standardised IT solutions. Nevertheless, even standard IT systems in many cases do not necessarily allow an easy view on the company's value streams in different accounting standards. Depending on the company focus, performance reasons can force a company to use proprietary software equipment to guarantee timely processing of mass postings, such as stock changes in a series production environment. In these cases, for instance, smoothly running and fast interfaces to stock management systems are required.

Inputs, Outputs and Interfaces with other Process Clusters

Input information	Source	Interdependency focus
Asset details	Asset accounting	●
Depreciations	Asset accounting	
Cash changes	Cash management	
Inventory details	Logistics	
Financial investment details	Cash management	
Credit and credit lines	Cash management	
Accounts payables	Accounts payables	
Accounts receivables	Revenue accounting	
Bad invoices	Revenue accounting	
Exchange rate details	Cash management	

Output information	Target	Interdependency focus
Financial statements	Investors, Management	●
Management reports	Management	●

GAAP, pp. 6-104; KPMG Deutsche Treuhand-Gesellschaft (editor), International Accounting-Standards: eine Einführung in die Rechnungslegung nach den Grundsätzen des IASC.

¹³⁰ Selchert, Internationale Rechnungslegung.

Common Issues and Success Factors

Integration of legal entities affects general ledger accounting. On the one hand, creation of holding structures or merging of legal entities after a merger is up to decision, and on the other hand, the integration of local sales subsidiaries, entities holding production facilities or entities responsible for wholesale functions can be considered. Strategies on these matters should be clarified before the general ledger process cluster is integrated.

Differences between IT support can make an integration of general ledger functions and processes complicated. Level of detail with respect to postings plays an important role: Only if multiple level data is held in one system, drill-down functions can be easily applied. An integration between general ledger systems and cost accounting systems yields easily accessible insights about the organisational correlation of changes in general ledger bookings.

Comparability of figures between legal entities is a prerequisite for proper management of general ledger figures. Since several philosophies exist in terms of depreciations, cost of sales, margins and the like, and since the acquisition of these figures for a company or product view might require consolidation of legal entities, harmonisation and integration is one of the most urgent tasks for the general ledger process cluster. Accuracy and timeliness of data can only be guaranteed with automatic reconciliation between financial accounting and cost centre accounting procedures.

To clearly distinguish between cost centre accounting and financial accounting, some IT systems provide the possibility of using separate books. If pure cost centre postings can be separated, the variety of cost categories is enlarged and therefore allocation of cost figures can be more precise. Within a merger, the merging companies should consider using such a system if it already exists in one of the merger partner's accounting system suites. Even if such a system does not exist, it might be possible that through the merger the combined entity reaches a size for which the necessary level of cost control is increased to a state that makes separation of books sensible.

Process and IT Integration Approach and Timely Phasing

Major tasks to be performed before starting the integration of this process cluster:

1. Decide about legal structures to be used to reflect the merged entity
2. Decide about accounting standards to be used
3. Determine targeted degree of general ledger system integration
4. Define interfaces to be maintained during the integration process
5. Coordinate with company strategy, investor relations and define reporting structures during and after the integration

Major integration tasks for this process cluster:

1. Determination of value streams in the merged entity
2. Maintenance of interfaces and reporting capabilities during the integration
3. Set-up of joint account structure
4. Selection and establishment of common IT system support and integration with adjacent business processes

Consequences of the Integration on IT support

The general ledger process cluster is mostly covered by standard ERP systems. An integration of this process cluster therefore involves the decision on which ERP system is going to be used in the future; with some luck, both merger partners are anyway using the same ERP system.

Whether the same systems are used or not, carrying over the general ledgers of one company to the IT system of the other company can be time consuming and will require good handling of legacy data. Especially for analyses, having figures from past periods in easy access might be required, and the appropriate decision needs to be taken early in the integration process.

Availability of financial statements and corresponding management reports are the highest priority. System availability and accuracy of entries therefore needs to be ensured at all times.

6.2.7 Process Cluster 7: Revenue and Gross Profit Accounting

Purpose of the Process Cluster

Revenue and Gross Profit Accounting records all accounts receivables. Only detailed recording of accounts receivables enables subsequent analysis by product lines, regions, or entities, and therefore is a key element in company internal analyses.¹³¹

Main issue is to create congruency between revenues and associated costs. Therefore, depending on the desired view either on accounts (which represent customers) or on products, organisation of relationships between accounting logics is required and has to be built into the respective processes and IT systems. Furthermore, the revenue and gross profit accounting process has to ensure that transactions between companies of the same group are marked properly to allow subsequent consolidation.

As in the general ledger area, accounts receivable postings are today mostly supported by standard ERP systems. However, the account view can be created by a different module than the product view.

In case mass processing is an issue, proprietary systems can be required to ensure proper performance in collecting invoices, especially if a high number of subsidiaries exist.

Inputs, Outputs and Interfaces with other Process Clusters

Input information	Source	Interdependency focus
Outgoing invoices	Sales	●
Legal structure	Management	●
Costs of goods sold	Product costing, cost accounting	

Output information	Target	Interdependency focus
Revenues per product	Management, general ledger	●
Revenues per region	Management, general ledger	●
Revenues per legal entity	Management, general ledger	●
Revenues per organisational entity	Management, general ledger	●
Margins	Management, general ledger	●
Bad receivables	General ledger	

¹³¹ Lehmann, Betriebswirtschaftliches Rechnungswesen, pp. 311 – 410; Selchert, Internationale Rechnungslegung; Eilenberger, Betriebliches Rechnungswesen.

Common Issues and Success Factors

For comprehensively managing product lines, revenues and gross profits should be available at product level. Reports about product lines should be issued to responsible managers in sensible intervals that allow timely reaction to fluctuations in figures. This goes in line with the necessity to integrate databases and formats across several legal entities in different regions.

Depending on the complexity of the products, revenue and profit analyses below product level can be suitable and necessary. For instance, separate analyses about revenues on specific options that can be ordered for one product or across products, or revenues on service contracts can be drawn out of the systems if the respective input is provided.

Especially in a merger situation, the companies should take special care about their market position and revenues, since due to the necessary efforts to integrate the merging entities attention to customers might be reduced.

Process and IT Integration Approach and Timely Phasing

Major tasks to be performed before starting the integration of this process cluster:

1. Define reporting structures with management and investor relations
2. Coordinate integration strategy and timelines with general ledger and cost centre accounting

Major integration tasks for this process cluster:

1. Maintain and create data import interfaces
2. Select and implement IT support
3. Implement and refine reports

Consequences of the Integration on IT support

The integration of revenue and gross profit accounting IT systems should go in line with the integration of cost centre accounting and general ledger integration. If the choice is an off-the-shelf ERP solution, the same system should be used throughout these process clusters.

6.2.8 Process Cluster 8: Cost Centre Planning and Accounting

Purpose of the Process Cluster

Cost centre planning and accounting allows a view on the consumption of financial resources by the company. To allocate costs to the point of their occurrence and to correlate costs with responsible organisational units and managers, the basis of cost centre accounting is a system of interlinked cost centres that represent the organisational structure of the company, and on which costs are booked in parallel to their timely occurrence.¹³²

A cost centre usually is the budget-planning unit in a company. Cost centre accounting processes therefore include planning of budgets, which is usually performed annually. During a planned period, actual costs running into a cost centre can be compared with the plan to allow managing the cost position of the company at the level of cost occurrence.¹³³

Numbering logic, planning and accounting procedures and reporting cycles have to be harmonized to provide the cost centre accounting prerequisite in a merged enterprise. However, the degree of detail in which planning and cost accounting is performed varies significantly from company to company. A high degree of detail implies high accuracy in cost allocation and provides transparency regarding cost occurrence, yet imposes high resource requirements to the cost centre accounting department as well as to the planning units.¹³⁴ The strange situation can therefore occur, that if companies have to economise on back office resources, they often lower the degree of cost centre planning and accounting.

Cost centre accounting is supported by all ERP standard solutions. Replacement of a cost centre accounting IT system after a joint numbering strategy has been established however requires thorough planning of adjacent IT integration steps. If cost centre numbers should

¹³² Schulte, Kosten-management; Botta, Rechnungswesen und Controlling; Piontek, Controlling, pp. 224 – 382; Kung, Controlling, pp. 27 – 47; see also: Aguirre et al, MCSARCH: An Architecture for the development of manufacturing control systems.

¹³³ Zimmermann, Betriebliches Rechnungswesen, pp. 142 – 164; Ossadnik, Controlling; Hammer, Unternehmensplanung; Rosenkranz, Unternehmensplanung, pp. 53 – 206.

¹³⁴ Horváth, Controlling, pp. 93 – 330.

be harmonized, then ordering systems, accounting systems and investment planning systems have to allow the new numbering logic. If, for instance, an order is issued to a supplier, the ordering system has to be able to recognise the cost centre responsible for the order to be able to automatically pass all information to goods receipt and invoice checking systems.¹³⁵

Inputs, Outputs and Interfaces with other Process Clusters

Input information	Source	Interdependency focus
Budget requests	Management	●
Spending per cost centre	Accounting	
Depreciations	Asset accounting	
Guidelines on cost accounting principles	Management	●

Output information	Target	Interdependency focus
Cost accounting principles	Management	●
Budget request forms	Management	●
Standard figures for performances	Management	●
Cost centre structures	Management	●
Reports about cost centres, projects, other entities, cost categories	Management	●
Budget releases	Management	●
Consolidated budgets	Management	●

Common Issues and Success Factors

Central cost centre accounting can be responsible for assumptions, such as average labour costs, for cost centre planning and accounting guidelines, and survey of compliance. In a merger, these responsibilities need to be harmonised, what might lead to centralisation if in a merger partner parts of the above mentioned issues were handled in decentralised units.

To quickly create a harmonised view on the cost side of the merged entities, management needs to decide on the level of detail deemed to be necessary to steer the company appropriately. This is especially important for the reflection of production facility performance and project performance. With respect to production facilities, it is helpful to be able to compare the cost incurred within parts of the production process with similar processes in other facilities. Therefore, complicated processes

¹³⁵ Horváth, Controlling, pp. 343 – 776.

should be broken down in pieces and be reflected by separate cost units. Especially for bundling production capabilities, the resulting detailed comparison figures will be required for deciding about allocation of individual production facilities to individual products.

The creation of comparable cost information throughout the merged companies results in the requirement to plan and account in the same level of detail. For increased precision and timeliness of information provision the establishment of a multi-level cost centre structure, using primary and secondary cost centres, with consolidation rules can be helpful.

For cost centre budgeting, the same procedures and systems should be used throughout the company. While internet technologies can help, to propagate forms and procedures quickly through the organisation to cost centre responsible individuals, management needs to decide on these procedures and timelines in the first place.

Differences between the merging entities can exist in the consideration of internal work: To allow for reconciliation between cost centres and allocation of internal performances, work orders can be used. Cost settlement between cost centres provides availability of reconciliated cost figures for especially for product costing and project costing. Since these areas are of great importance in the merger process, using such procedures should be considered.

Process and IT Integration Approach and Timely Phasing

Major tasks to be performed before starting the integration of this process cluster:

1. Determine and define required level of detail in cost centre structure with management
2. Establish rules and responsibilities for cost centre planning and budget responsibility

Major integration tasks for this process cluster:

1. Harmonise cost centre structures
2. Implement company-wide rules, timelines and responsibilities for cost centre planning
3. Harmonise report structures

4. Switch cost centre accounting to a common IT platform

Consequences of the Integration on IT support

Cost centre accounting needs to be integrated with the accounting processes at all times to assure timely and accurate provision of actual posting data. For the budgeting process, several tools can be used, and spreadsheets will work considerably well up to a certain size of the company and are widely used in practice. Focus of the IT integration should therefore be on using similar spreadsheets for the budgeting process. When the accounting ledgers are switched to a common platform, cost centre accounting should also use the one single system.

It is recommendable that, if a standard ERP solution is the system of choice for the merged entity, the same system than for general ledger is also implemented for cost centre accounting. This approach has the clear advantage of solving a number of interface issues that would otherwise exist.

There are a number of analysis and reporting tools for cost accounting, which can work on a variety of databases. The use of the same tools throughout the merged entity can be considered because of efficiency reasons, but is not a necessary IT integration step.

6.2.9 Process Cluster 9: Product Costing

Purpose of the Process Cluster

The purpose of the product costing sub-process is to perform evaluations on what a product will cost including fixed assets (for pre-series), as well as evaluations on what a product actually costs (for series products).¹³⁶

In the pre-series phase, the product costing process supports R&D by providing information about cost impact of product design options.¹³⁷ This is reached by building up a virtual product into a BOM that is evaluated with parts cost estimates. The more R&D moves towards a finalised product, estimated costs are replaced further and further with their actual values, as these actual values become known. Some time

¹³⁶ Ehrlenspiel, *Integrierte Produktentwicklung*, pp. 577 – 662; Nebl, *Production Management*, pp. 88 – 107; Klenger, *Operatives Controlling*, pp. 391 – 411.

¹³⁷ Albers, *Handbuch Produktmanagement*, pp. 333 – 358; Müller, *Controlling*, pp. 240 – 261.

before the product is produced in series production, all estimated values have been replaced and the actual cost overview of the product is given.¹³⁸

In series production, values from product costing systems can be used to identify the necessity of price changes as well as to calculate their amount.

For parts and product costs, there is a planning process and an actual cost feedback. Cost planning for parts, components and products results to some extent from cost centre planning. Other values, such as exchange rate fluctuations or development of transport prices, come from other processes or have to be estimated within the product costing process cluster.¹³⁹

IT system support includes systems that calculate and store cost values based on BOM information and known cost values from past BOM's. Cost elements regarded can for instance include material cost, transport and insurance costs and costs for working hours per part. Costs of working hours differ by factory and qualification of the workforce required for a part. Bought-in parts are mostly kept separate from in-house parts: As values for working hours are managed within production systems, values for bought-in parts are in most cases held in purchasing systems.

To simplify access to parts cost values, a central database holding a complete list of all costs related to a product and its parts can be established.

Inputs, Outputs and Interfaces with other Process Clusters

Input information	Source	Interdependency focus
Cost rates	Cost centre accounting	
Work plans	Logistics, production	●
Price data for purchased items	Purchasing	●
Parts numbers	Logistics	●

¹³⁸ Voegelé, Das grosse Handbuch Konstruktions- und Entwicklungsmanagement, pp. 313 – 446

¹³⁹ Adam, Produktions-Management.

Output information	Target	Interdependency focus
Costs for parts and products	Cost accounting, revenue accounting, management	●

Common Issues and Success Factors

Differences between the merging companies can exist in the definition of product costs. Especially the ability to exclude overhead costs from parts cost figures affects the required level of sophistication of IT support and accounting procedures. Different philosophies regarding the inclusion of several cost elements will result in reduced comparability of values for different production locations, if labour costs cannot be separated from overhead costs such as transport costs, capital investment costs, tooling costs and production facility costs.

Since calculating anticipated costs for pre-series products is mostly based on values derived from current series products, different philosophies need to be homogenised to contribute to a fast bundling of product development capabilities.

Homogenised handling of base product costs and option costs is important to compare the cost positions of different products. This also applies for the frequency of cost figure updates.

Process and IT Integration Approach and Timely Phasing

Major tasks to be performed before starting the integration of this process cluster:

1. Point out variations in product complexity between merger partners and use this information for selection of IT systems in cost accounting
2. Decision on parts numbering logics to be used
3. Harmonisation of cost accounting policies and desired level of detail in parts costing
4. Determination of appropriate cost values in the breakdown required, e.g. differing transport costs by factory

Major integration tasks for this process cluster:

1. Integrate costing procedures and logics in cost planning and accounting

2. Select and implement IT system support in close coordination with bill of material, cost accounting and purchase requests and accounts payable systems
3. Implement structures that ensure acquisition and maintenance of appropriate cost data on decentralised level (e.g. factories)

Consequences of the Integration on IT support

Integrating the product costing systems requires close coordination with integration efforts of the process clusters delivering mass data to product costing. These are mainly bill of material for parts numbers and product structures, and cost accounting for several cost values required for product costing.

While ERP systems offer standardised interfaces to cost accounting and mostly provide analysis tools appropriate to extract the necessary information from the databases, the interfaces to bill of material are not as easy to handle and standardise. The complexity of these interfaces certainly rises significantly with the complexity of the product.

IT support of the product costing cluster itself can be achieved with standard ERP systems. Due to the close connection to cost accounting, it is sensible to coordinate selection and implementation of systems between these process clusters. In this respect, since product costing has, of all finance processes, the closest interface to production and bill of material, product complexity and therefore requirements to the costing systems might determine to a great part also the system selection for the entire finance and accounting process cluster.

6.2.10 Process Cluster 10: Material, Work- in Progress, Inventory

Purpose of the Process Cluster

The sub-process Material, Work-in-Progress and Inventory performs all necessary evaluation for consistently reflecting the amount of parts and products on stock in the general ledgers.¹⁴⁰

Within the sub-process, physical stock is counted using several different methods. Physical stock amounts are then connected with values

¹⁴⁰ Luczak, Produktionsplanung und -steuerung, pp. 60 – 72, pp. 420 – 457.

originating from the product and parts costing systems. Valuated stock and valuated stock movements are posted to the general ledgers.¹⁴¹

The accuracy and timeliness of the process relies on physical stock movements data from several logistics systems.

IT system support of this sub-process cluster requires collecting electronic documents from logistics systems and bringing this data together with values stored in product costing systems. The results of this operation are then passed on to general ledgers. When collecting data from logistics systems, it is crucial to include information about the issuing organisational unit in order to be able to correlate this information with the appropriate balance sheet.¹⁴²

Inputs, Outputs and Interfaces with other Process Clusters

Input information	Source	Interdependency focus
Product costs	Product costing	
Stock	Logistics	●
Currency exchange rates	Cash management	
Status of production per product	Production logistics	●
Invoice values	Purchase accounting	

Output information	Target	Interdependency focus
Value of stock	General ledger	
Reports about stock value dev.	Management	●

Common Issues and Success Factors

The integration of material, work-in-progress and inventory processes is strongly linked to product costing and general ledger integration. To maintain these links while integration efforts are performed in these processes, identifying differences between the merger partners with respect to procedural and data infrastructure links is crucial.

These differences can exist in processing and ownership of quantities and values, as well as their calculation. Homogenisation of valuation principles for raw materials, parts and components as well as non-

¹⁴¹ Günther, Produktion und Logistik, pp. 252 – 267; Kahle, Produktion, pp. 96 – 201, pp. 242 – 266; Eisele, Technik des betrieblichen Rechnungswesens, pp. 36 – 66, pp. 299 – 328.

¹⁴² Hoitsch, Produktionswirtschaft, pp. 423 – 546; Siersdorfer, Dietmar, Bausteine für die IT-gestützte Produktion.

productive parts and finalised products is crucial as a first integration step.

Process and IT Integration Approach and Timely Phasing

Major tasks to be performed before starting the integration of this process cluster:

1. Establish interfaces to all stock systems of the merged entity
2. Establish interfaces to all valuation systems and be aware of possible differences in valuation

Major integration tasks for this process cluster:

1. Coordinate with product costing, production and logistics
2. Take part in selection of IT system support

Consequences of the Integration on IT support

The process cluster material, work-in-progress and inventory should support the system selection within product costing and logistics processes. It is recommendable to perform the integration of this process cluster alongside with the product costing processes.

6.2.11 Process Cluster 11: Consolidation and Group Reporting

Purpose of the Process Cluster

This sub-process handles financial data in different aggregation levels on the one hand related to organisational structures, such as legal entities, business units or other areas of management responsibility, and on the other hand related to products or product lines. This consolidated view can be created for the budget process as well as for actuals and forecasts.¹⁴³

From subordinate entities, such as legal entities within a group or from business units, cost centre budget plans as well as volume plans for products are generated. For every product code, cost information and price information is drawn from the respective sources, such as product

¹⁴³ Zdrowomyslaw, Jahresabschluss und Jahresabschlussanalyse: Praxis und Theorie der Erstellung und Beurteilung von handels- und steuerrechtlichen Bilanzen sowie Erfolgsrechnungen unter Berücksichtigung des internationalen Bilanzrechts, pp. 558-596.

costing, sales price information systems, and freight cost information systems. In case the sales organisation is performed via dealerships, whether wholly owned by the central entity or not, views to be generated can contain ex-factory prices as well as dealer prices. Depending on the complexity implemented within this consolidation, volume dependencies can be built dynamically into the forecasts, which requires proper handling of prices, products and options, freight costs as well as cost of sales, bonuses, sales support, direct selling expenses, warranty and goodwill.¹⁴⁴

The result is a gross profit calculation and creation of an estimated income statement for all legal entities, areas of responsibility or products.

As soon as a planned P&L and balance sheet is created for the subsidiaries based upon a standardised structure, the usual legal consolidation rules can be applied to create a planned group P&L statement as well as a group balance sheet with eliminated inter-company transactions. In parallel, volumes and calculation data for every product code can be used to create a central view as well as a subsidiary view on contribution margins for every model code. Further to this subdivision, representations regarding regions or product families can be issued.¹⁴⁵

The forecast process can run very similarly to the budget process. Forecast data always contains actual data. Those actuals are gathered out of invoicing and ordering systems (e.g. revenue data from a local invoicing systems in a sales subsidiary).

Inputs, Outputs and Interfaces with other Process Clusters

Input information	Source	Interdependency focus
Product costs	Product costing	
Revenues	Revenue accounting	
Investments	Asset accounting, general ledger	

Output information	Target	Interdependency focus
Consolidated accounting figures	Accounting, management reports	●
Group financial reports	Investors, Management, other	●

¹⁴⁴ Baetge, Konzernbilanzen.

¹⁴⁵ Schildbach, Der Konzernabschluss nach HGB, IAS und US-GAAP.

stakeholders

Common Issues and Success Factors

Differences between the merger partners might exist in the degree of integration of systems, which determines the ability to drill down from high-level reports into detailed transaction data. Integration of systems throughout legal entities will also determine the ability to include data from regional subsidiaries into standard reports.

Depending on the frequency of updates on budget and forecast figures, the group reporting process gains the ability to report on quarterly or even monthly updates of actuals as well as budget and forecast figures.

Process and IT Integration Approach and Timely Phasing

Major tasks to be performed before starting the integration of this process cluster:

1. Determine desired ability to access detailed financial data
2. Define reporting in close coordination with management and investor relations

Major integration tasks for this process cluster:

1. Structure reports and define necessary input information
2. Establish interfaces to source systems
3. Switch to harmonised procedures for consolidation
4. Consider using the same IT systems, dependent on the desired degree of accessibility of detailed financial information

Consequences of the Integration on IT support

Consolidation can be done providing various levels of drill-down possibilities. The targeted level of detail relates to the necessary IT support and to the amount of manual work to be performed. Most ERP packages offer a consolidation tool that is updated more or less on-line.

If for general ledgers a harmonised IT support is implemented, the group gross profit calculation, group consolidation and reporting process cluster should also consider switching to one IT solution. It is however possible to independently implement respective reporting tools that might well be able to extract the necessary information from the source systems even if these source systems are not fully integrated.

7 DEPLOYMENT OF THE PRESENTED APPROACH

7.1 *Defining the Right Plateaus to Support the New Business Model*

What has been presented in the previous chapters can be used for conducting the merger integration once the integration levels are defined. These presented methods are a prerequisite for making the merger integration happen, so that having these methods at hand provides the freedom of mind to worry about what has originally been intended by the merger, namely reaching synergies.

Realising synergies in a business case, as mentioned before, requires capabilities of the processes and the information technology to support such business case. As the merger integration goes along, more and more joint capabilities will be created, and hence more and more synergetic business cases will be enabled. Usually, there needs to be a lot of integration legwork done to enable a set of business cases. The results of integration projects, which, once finished, enable a synergetic business case, is referred to as "plateau" in chapter 4.3.

Crucial for the success of the merger integration will be a clear view on the relationship between merger goals, integration plateaus, the business cases that these plateaus enable, projects, deliverables, and the interdependencies. The following chart, which has been shown above in chapter 4.3, re-iterates the logical subdivision these items.

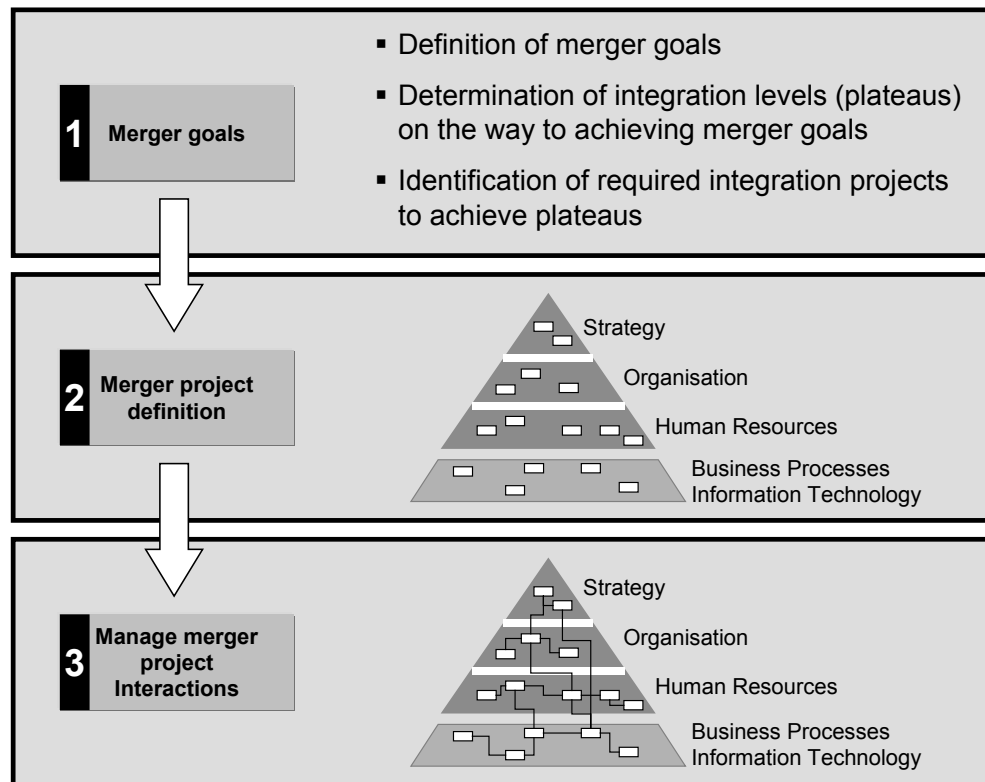


Figure 19: How Merger Business Outcomes Interlink to Merger Project Interactions

The analysis of the current process and IT map will reveal the starting point of the integration. The decision for an integration strategy and a target map of processes and systems will define the goal of all the efforts. Yet on the way from now to then, there are many possibilities to support this or the other joint business case, or to decide between an island merger support for the sake of a quick merger win, and an acceleration of the entire merger integration effort.

Which joint business cases should be supported during the process and IT migration? How will this fit into the then still existing mixed map of processes and systems? Should these business cases at all be supported, or should the merger integration first be completed in its entirety?

To decide joint business cases to be pursued while the merger integration is still in process, a couple of parameters should be regarded. Figure 20 lists these parameters, which are described below:

- Cost. The merging companies need to get a fast view on summary revenues and costs. This listing may result in requirements to realise certain savings or additional revenues at specific points in time to ensure liquidity.
- Competition. Depending on the anticipated actions of the competition, the merged entities may be forced to launch jointly developed products, jointly access markets, or the like. Thorough analysis regarding this matter will reveal necessary time points at which certain joint business cases need to be enabled.
- Risk. Besides running out of money and being struck hard by the competition, there may be other risks the merged companies may wish to prepare for by merger related growth or consolidation. This needs to be defined and planned for.
- Rewards. Any promises made to stakeholders, if related to the goals of the merger, should be included in the plan when to realise which merger benefits.

These parameters are crucial for the development of alternative joint business cases, which can then be classified on a high level by their contribution to the above parameters, and which can certainly be combined to various scenarios.

The possible joint business cases, which may or may not be pursued during the time of merger integration, include those mentioned in this thesis. The common decisions in this realm of thought pertain to the product range strategy (see chapter 5.2.1.1), regional market strategy (see chapter 5.2.1.2), the organisation of legal entities (see chapter 5.2.2.1), the research and development organisation (see 5.2.2.2), the organisation of production capacities (chapter 5.2.2.3), and the organisational reflection of supporting processes (chapter 5.2.2.4).

Each of the scenarios will require certain joint business capabilities be present at certain times during the merger integration. Applying the frameworks and methods presented in this thesis, an iterative cost assessment process can then be launched that will provide the

respective efforts to the each joint business case and the scenario as a whole.

Finally, further integration costs that arise outside of the specific business cases included into scenario of what will be enabled during the merger integration process can be added, again using the frameworks methods described herein.

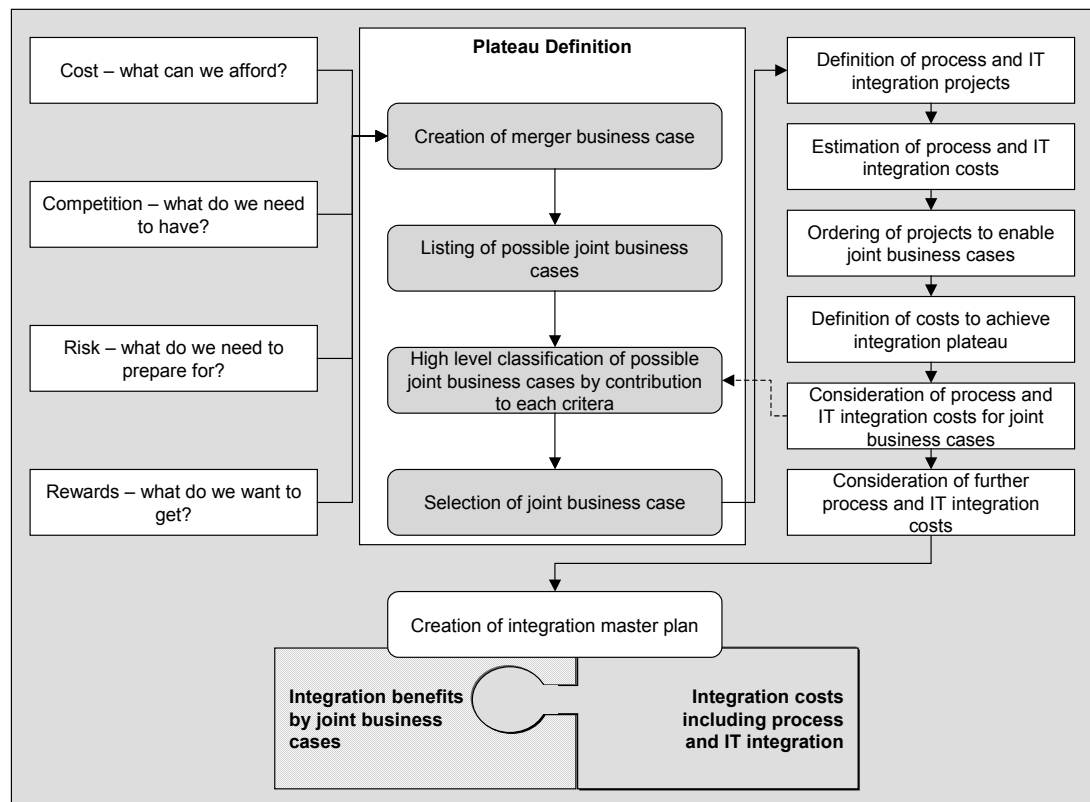


Figure 20: How to Define Integration Plateaus

The endpoint of this process is the integration master plan. This plan defines the joint business cases, and the capabilities that the merged companies must create to reach them. It also includes a view on the costs associated to the joint business cases as well as to the merger as a whole.

Figure 21 shows a graph of how plateaus interlink with synergies and costs. Each of the possible combinations of business cases will result in a certain break-up of costs and benefits, with different joint capabilities being present at an integration plateau. In principle, reaching an

integration plateau increases the slope of the curve that describes the cumulative merger synergies.

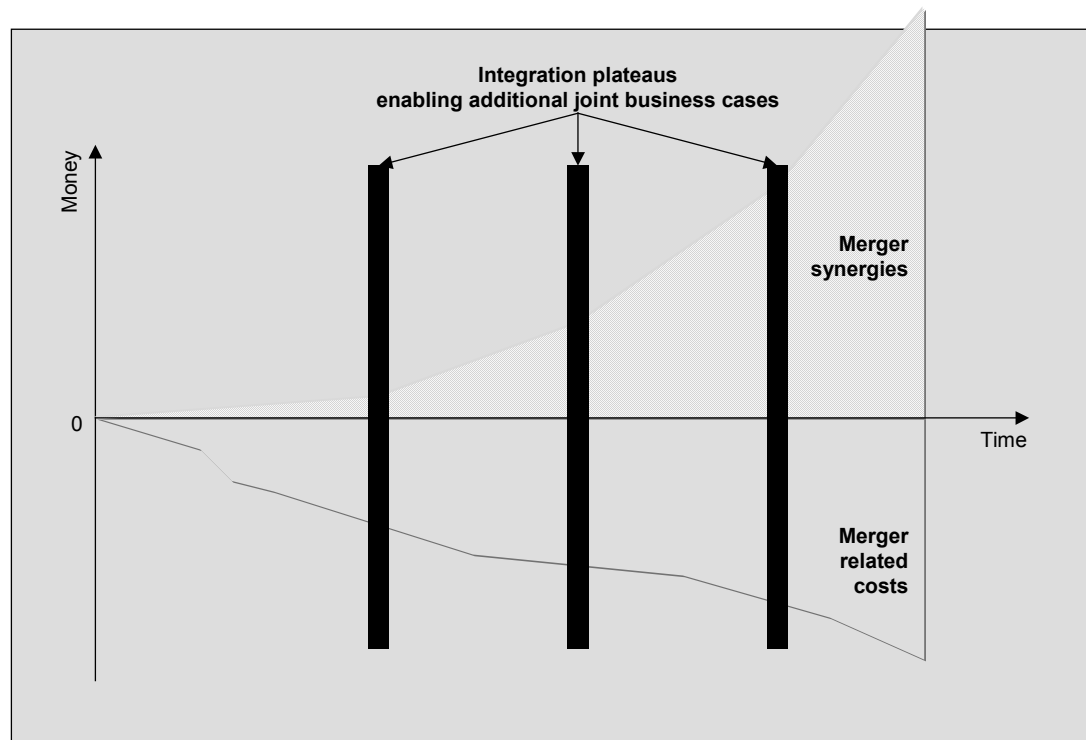


Figure 21: Building Merger Synergies while Watching the Costs¹⁴⁶

The cost and synergy view shows which synergy is expected by when, and if there is a way the companies can afford the investment into realising this synergy. The integration process on process and IT level can however be slowed down significantly if joint business cases need to be supported – there may be significant investment into interim solutions that later on will be obsolete. This is why quick wins always have their price tag, which is expressed either in money, or in time.

The longer the merged entities wait for enabling a joint business case, the more uncertainty as to whether the underlying market, cost, competition, or other assumption is still correct. Therefore, it may probably be worthwhile not to bet too much on the “end state” at which suddenly all the merger benefits come true, but to make sure some synergies materialise even short-term or mid-term. The method of

¹⁴⁶ Initial payments are disregarded in the graph. They can be included by a negative offset of the cost curve.

evaluating project benefits and project costs, the degree of uncertainty, the financial position and therefore the ability to take risks, are highly specific to a merger case. This specificity calls for the development of a specific strategy along the presented lines.

7.2 End-To-End Merger Conduct

The integration of the models presented herein into the detailed merger programme plans should be implemented early on in the merger. Yet, even if merger partners have started the merger process or even are already in the midst of the post-merger efforts, it is not too late to start looking at interdependencies as a method of post-merger management. The process below however maps the “ideal” world of a process and IT involvement early on in the merger, and the use of the methods presented in this thesis throughout all merger phases.

The approach presented in the previous chapters can be applied using the phase models shown. In a broad overview, the following chart depicts a generic merger process and how the presented model can be linked to it. Again, the specific implementation and linking points will vary depending on the merger case.

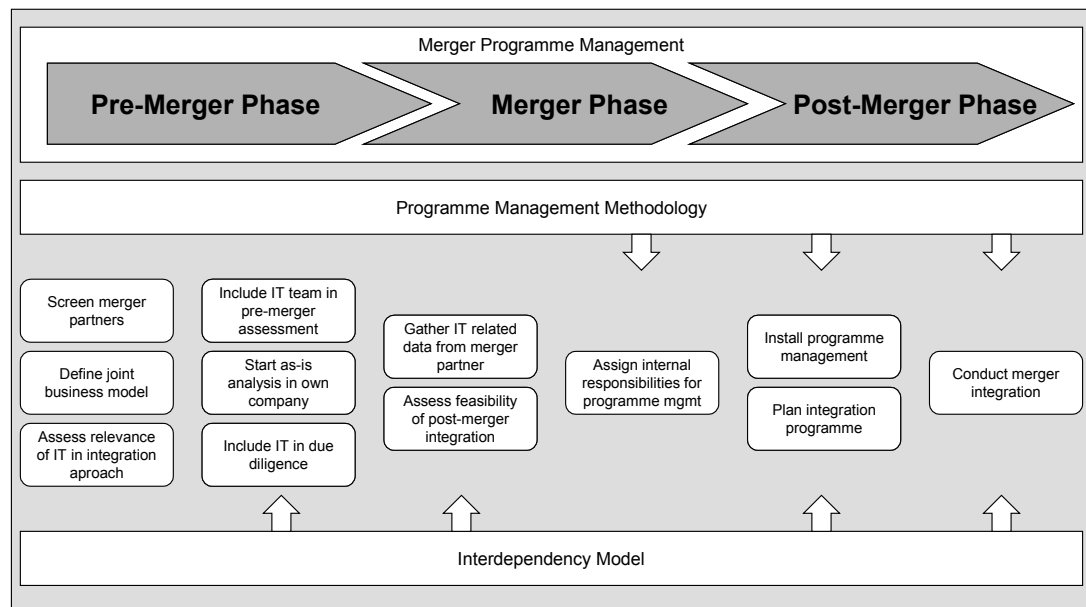


Figure 22: Merger Integration Approach and Links to Presented Methodology

Pre-merger phase

Within the pre-merger phase, the interdependency model can be used to better identify possible future integration issues. Looking into processes and IT at this point also requires precise definition of the future joint business model.

When the ideas for a future joint business model are being developed, their feasibility, cost and time impact should be evaluated. By using vertical interdependencies as explained in chapter 5, or by developing additional topics along the lines and with the help of the templates used to present the information in chapter 5, the merger team can determine which additional staff needs to be involved to provide a reality check of the merger concept.

To structure the input from these now newly involved people, the templates used in chapters 5 and 6 can be applied on a high level of information.

It depends on the seriousness of the merger effort, if a company wishes to install a merger programme organisation already in the pre-merger phase. This thesis provides information about merger programme management in chapter 4 – if the merger is pursued later on, an early installation of superordinate implementation management structures will be of help. Especially by appointing implementation responsibility during deal conception, there will be a closer look on implementation possibilities.

Merger phase

In the merger phase, the interdependency model supports creation of the due diligence list, as well as the assessment of documentation provided by the merger partner. Interdependencies on operational level will be of interest to estimate the real price tag on the implementation. Issues that will probably arise during post-merger integration can be structured using the information presented in chapters 5 and 6.

As the merger idea matures, the programme management should be formally installed as described in chapter 4 – possibly incorporating the staff that has supported the pre-merger process – and the interdependency focussed analysis phase should be started.

Post-merger phase

In the post-merger phase, both the interdependency model and the programme management methodology can be used to define, conduct, and control the merger integration projects.

Use of the tools described in chapters 4, 5, and 6 will then come to full fruition. Using the information described in the mentioned parts of this thesis, a case specific integration plan should be established. It will be crucial to agree on the tools and templates to be used for analysis, planning, and control, and there should be a formal agreement by all participating parties.

Control of merger success can be conducted using the concept presented in chapter 4.

End-to-end view

The sum of all plateaus, business cases, and costs on a timescale is the true business model of the merger. It was the starting point in the pre-merger phase, and it is the endpoint of merger integration. The tools within this thesis support the initial creation, planning, implementation and adjustment of the integration business model and master plan.

8 VALIDATION

8.1 *Case Studies in the Manufacturing Industry*

The following case studies are taken from a merger in the manufacturing industry for mass production goods. All four cases presented took place in one merger. The merging companies employed more than 20,000 staff each at the time of the merger. The merger was international.

Since the case studies presented contain previously unreleased information, the names of the companies are not stated in this document. The buying company is called "company A"; the purchased company is called "company B".

8.1.1 **Merger Conduct: General Information**

Company A purchased company B in the nineties. Company B, as a manufacturer of high volume products in the lower and middle segment, was intended to complete the product and brand portfolio of company A and ensure long term existence of company A, as the management believed that only companies with a high product output would be able to achieve sustainable growth and ensure their long term independence.

In addition to the company B brand, company B also included a separate division focussed on specialized products, which were perceived to be one of the world leaders with the highest worldwide reputation. This company had merged with company B a few years before. Seen from a market strategic perspective, the merger thus seemed to put company A into a very promising position.

Company B, however, had faced severe problems during the decade before the merger. Back office structures were comparably lean, yet still the company was hardly profitable and company B was not able to create enough value to fund the product developments that would have been required to maintain its market share. It had participated in a strategic alliance with a different company, and company B's highest volume products were based on products that were jointly developed with this company in order to reduce development cost. As production facilities were not at the forefront of technology, product quality – and reputation – was poor compared to competitors.

Company A initially chose to keep company B as a separate entity and to concentrate on realising quick merger wins, e.g. in the area of material purchasing. Other business areas, such as product development and production were intended to co-operate but not to integrate, mainly because company B was supposed to cover market segments that the company A brand did not intend to access. Thus, true process integration possibilities were estimated to be low. Furthermore, management of company A feared that a too close integration of the companies would diminish the brand recognition in the market.

Initially achieving sufficient financial results, mainly by cutting cost, company B seemed to develop well. However, in 1997, company B started to make losses that increased quickly over the following quarters.

The companies had to realise that strategic fit on a macro level was not enough. The ways of conducting business were significantly different. On the one hand there was company A, having strong technology and product focus in the high-end segment, and on the other hand there was company B, concentrating on process optimisation and cost awareness in order to be able to compete in the mass segment. Moving into financial difficulties, keeping two different approaches operational in one company was seen to be not affordable. By refraining from integrating business processes and IT systems, the synergy potentials had remained widely unexploited.

Company A thus decided to reduce the degrees of freedom of company B management by sending company A managers to company B. These managers, however, did not find the environment they were used to at company A. Besides cultural barriers, the cost accounting procedures and systems did not deliver the figures in a level of detail, accuracy and timeliness that company A were accustomed to steer allocation of resources.

Concurrently, the financial issues started to induce a high pressure on the necessity to realise synergies. The decision was made to fully integrate the two companies into one.

This decision, four years after the merger transaction, affected all layers of consideration. The organisational functions were centralised by extending the company A functions with their company B counterparts. Company A launched another cost cutting programme, which was intended to reduce company B headcount by 20%.

However, the strong desire to quickly bring the companies closely together was hindered by the lack of integrated information technology. Being a prerequisite for any integration of business processes, IT proved to the managers to be an important bottleneck for all subsequent integration efforts. The time and effort needed to implement a homogenous system map had been significantly underestimated.

In close co-ordination with the harmonisation of business processes, the company A business areas in charge of Information Technology created a plan, which it was intended to lead to an integrated system map within 5 years. The IT integration of several business areas, such as finance, engineering, design, and sales was started during the implementation of a central IT Convergence Programme Management.

In early 2000, having not yet completed these integration efforts throughout the whole company, company A decided to separate out company B and sell parts of company B separately to two different investors. The main reason for this decision was the continued loss incurred by company B, which was perceived to be too high a drain on company A's ability to invest into its businesses.

For the integration efforts tackled during the time company B was owned by company A, the documentation available to the author describes different merger approaches and results on process and IT level. Summarising the results of the documentation review and conducted interviews, the following conclusions can be drawn:

- Several approaches for merging the companies were applied over time
- The approaches and results are well documented
- Company A offers an extremely large basis of consistent information and is therefore considered by the author as a unique possibility to verify the outcomes of the thesis
- The information required for this can be drawn in enough detail from the merger of company A and company B.

The different case studies that can be deducted from the documentation are described in the following section.

8.1.2 Case Studies Within the Described Merger

8.1.2.1 Development of Product Successor

Situation

Company A develops, manufactures, and markets products for the high-end segment of its market. One of the specifics of this segment is the ability to flexibly adjust to customers needs in terms of product variations.

Although company B has the largest part of its revenue in the medium and lower-end segment, the product L00 had gained a leading reputation for a specialty segment in the high-end portion of the market. The time had come to design the successor of this product, the L01.

During product definition, two points were seen to be crucial:

1. L01 was a high-end product, so customers demanded flexibility in product variations.
2. L00 was based on an old technology platform, which was seen to be inadequate for the successor product. A major redesign of most parts was indicated.

Company B's systems could not fulfil the first requirement: Bill of material systems were too inflexible, and ordering systems did not allow for more than three product variations.

The decision was made to develop L01 for company B on company A's design systems.

A few years into the development, responsible staff realized that although the development was moving forward quickly and very successfully, the sales systems did still not allow for a sufficient number of product variations. In addition, the homogenisation of manufacturing systems, especially production planning and materials management, proved to require a higher effort as originally assumed, and timely availability for the L01 production start was in question. In addition, the ownership of the production line and the financial handling of the products were unclear. Using company A's systems for production would have fed inventories directly and automatically into company A's accounting systems.

What Integration Quality Meant in this Case

The goals pursued in the L00/L01 case were:

- Develop a product suitable for the targeted market segment
- Ability to produce L01 in a company B factory
- Launch product on time
- Remain within development budget

Description of the Approach Chosen

The approach chosen by the merging companies can be characterised as follows:

No.	Item	Approach chosen
1.	General IT strategy	Cherry picking. Use company A's processes and systems for a very limited task within company B, and capsule the use of the systems to ensure manageability.
2.	Programme management	Main programme management in development department. Some projects launched that punctually integrated other departments.
3.	Interdependency focus	Focus on project interactions. Process dependencies were used to define projects in adjacent departments. Project definition was however incomplete, especially sales was missing.
4.	Tracking of outcomes	Focus on research and development goals. End points were finished development, and production capability.

Impact of using the Techniques Presented Herein

Consequences of using the approach proposed in this thesis are summarised below.

No.	Item	Benefits of Interdependency Focussed Integration approach
1.	General IT strategy	Stronger interdependency focus along would have shown the real cost of cherry picking. This would most probably have resulted in catalysing the decision towards a more comprehensive integration strategy earlier. The cherry picking approach does not seem to have been selected in light of all possible impact on other departments.
2.	Programme management	To involve all relevant departments into the decision, this thesis proposes installing a comprehensive merger IT programme management that spans the entire company.
3.	Interdependency focus	Starting out from business goals, a stronger interdependency focus would have been called for by the approaches presented in this thesis. This would most probably have resulted in better knowledge of limiting factors, and therefore a more realistic estimate of the costs associated with bringing L01 to the market.
4.	Tracking of outcomes	Focus on business goals. Main integration plateau is the ability to create revenue from the new product L01. This goal definition would have included sales, after-sales, and service.

Conclusion

The following table presents the results that the use of the interdependency focussed integration approach as presented herein would have had on the case under review.

The table lists strengths and weaknesses of the integration strategy chosen, and lists the influence of the new approach on these strengths and weaknesses.

No.	Item	Strengths / Weaknesses of approach chosen	Approach chosen	Interdependency Focussed Integration Approach
1.	General IT strategy	S	Rapid start of integration programme for L01 because of limited process and IT focus.	Slower start by upfront discussions with a larger group of departments.
		S	Rapid start of integration programme for L01 because of little demand for prior strategic and organisational decisions.	Using interdependency focussed integration would have demanded some decisions to be taken before the integration starts.
		W	Insecure outcome; risk of overlooking some required interaction with other departments.	Broader decision basis would have resulted in better understanding of real integration requirements, giving a more reliable view on outcome
		W	Compliance with overall integration strategy questionable. The development of L01 on company A systems in fact made it impossible for company A to do anything but fully integrating processes and systems to company A system map.	Compliance with overall integration strategy would have been secured. Implications to company-wide integration would have been understood.
2.	Programme management	S	Lean organisation, acceptable complexity of programme management.	Organisation spanning more of the companies, but management complexity reduced by interdependency focus.
		W	No formal power over any departments but the ones involved in the limited scope.	Broader involvement in programme management would have resulted in direct access to adjacent departments.

No.	Item	Strengths / Weaknesses of approach chosen	Approach chosen	Interdependency Focussed Integration Approach
3.	Interdependency focus	S	Low focus on interdependencies allows using previously known integration and project / programme management approaches.	Using the approach presented herein would not have diminished the ability to manage projects in the traditional way; it would only have resulted in a more suitable coordination of projects.
		W	Low focus on interdependencies resulted in overlooking important interfaces to sales and marketing, and to finance.	Interdependencies would have been clear and manageable.
4.	Tracking of outcomes	W	Focussing on R&D goals as opposed to business goals limited the focus of the teams working on this case.	Wider focus of goals would have resulted in a better understanding of all implications, and would have made it clear that integration success has a customer oriented meaning, not a purely technical one.

The impact on integration quality can be summarized as follows:

No.	Goal	Impact of using Interdependency Focussed Integration approach
1.	Develop a product suitable for the targeted market segment	Development part of this goal remains unaffected. The approach within this thesis would have been as suitable as the approach chosen. The marketing portion of the goal was hardly achievable by the approach chosen in practice, and could have been fulfilled by the interdependency focussed integration approach.
2.	Ability to produce L01 in a company B factory	This goal is uniformly achievable by both approaches, however using the interdependency focussed approach proposed in this thesis would have put a more correct price tag on the integration, and would have resulted in better management of implications to sales and finance.
3.	Launch product on time	The approach chosen was unable to cope with all implications that needed to be managed. Therefore, timely product launch was in question. Applying the approach presented in this thesis would yet have resulted in a better planning right from the start, and most probably, although the start-up phase would have been slower, a safe product release timeline with earlier real release dates.
4.	Remain within development budget	Due to limited focus of the approach chosen, the real budget of L01 development remained undefined. Remaining within the budget therefore was impossible. Using the interdependency focussed integration approach however would have enabled the programme management team to more precisely define and manage their budget, and include all costs arising from the programme approach.

From the assessment of the above information it can be concluded that the approach presented herein would have been superior to the approach chosen by the integration team. Main reason for L01 problems was a lack of integration with other business units. This would have been solved by focussing more on interdependencies. The approach would yet have been more time consuming in the start-up phase, however the benefits outweigh the time implications by far.

Had the L01 team created and communicated a clear understanding of all implications that resulted from developing the product on company A's systems, the decision on which systems to use may have been different.

8.1.2.2 Bundling Purchasing Capabilities

Situation

Purchasing prices are a good source of integration benefits. Company A and company B tried to leverage their combined purchasing power after the merger, so that prices of purchased goods could be reduced.

Both companies had implemented automated purchasing processes which fed into IT systems that were directly linked with material management, supplier databases, transport handling systems as well as the financial systems reflecting the parts flow from suppliers into inventory, and that automatically triggered payment upon entry of goods receipt at the point of delivery. Quality problems, if detected at the point of goods receipt, were entered into the purchasing system and automatically transmitted to the supplier. Also prices of material calls and the frame contracts associated to the calls, as well as prices for single orders placed without a frame contract with the supplier, were stored within the purchasing systems and compared with detailed goods receipt data upon delivery.

Company A's system chain was significantly more automated. The purchasing system of company B was found to be unable to be integrated into company A's existing system chain, so the project team chose to use company A's purchasing system for the entire group as a Joint Purchasing System (JPS).

During the implementation of JPS, it however became obvious that the interfaces with pre-existing processes and systems within company B were very difficult to manage and cope with. When finally JPS went live, company B was unable to place orders automatically for a significant amount of time. Reason for these problems mainly were problems integrating parts numbering logics and the just-in-time delivery systems within the factories.

What Integration Quality Meant in this Case

The goals pursued in the Joint Purchasing System (JPS) case were:

- Bundle purchasing capabilities
- Reduce purchasing prices
- Remain within implementation budget

Description of the Approach Chosen

The approach chosen by the merging companies can be characterised as follows:

No.	Item	Approach chosen
1.	General IT strategy	Cherry picking. Use company A's processes and systems for a very limited task within company B, and capsule the use of the systems to ensure manageability.
2.	Programme management	No real programme management focussing on coordination of all projects.
3.	Interdependency focus	Low interdependency focus, more focus on tasks and project deliverables.
4.	Tracking of outcomes	Focus on business goals: Reduction of purchasing prices.

Impact of using the Techniques Presented Herein

Consequences of using the approach proposed in this thesis are summarised below.

No.	Item	Benefits of Interdependency Focussed Integration approach
1.	General IT strategy	Stronger interdependency focus along would have shown the real cost of cherry picking. This would most probably have resulted in catalysing the decision towards a more comprehensive integration strategy earlier. The cherry picking approach does not seem to have been selected in light of all possible impact on other departments.
2.	Programme management	To involve all relevant departments into the decision, this thesis proposes installing a comprehensive merger IT programme management that spans the entire company.
3.	Interdependency focus	Starting out from business goals, a stronger interdependency focus would have been called for by the approaches presented in this thesis. This would most probably have resulted in better knowledge of limiting factors, and therefore a more realistic estimate of the possibilities and costs associated with implementing JPS.
4.	Tracking of outcomes	Focus on business goals would have remained similar.

Conclusion

The following table lists strengths and weaknesses of the integration strategy chosen, and lists the influence of the new approach on these strengths and weaknesses.

No.	Item	Strengths / Weaknesses of approach chosen	Approach chosen	Interdependency Focussed Integration Approach
1.	General IT strategy	S	Rapid start of integration programme for JPS because of limited process and IT focus.	Slower start by upfront discussions with a larger group of departments.
		S	Rapid start of integration programme for JPS because of little demand for prior strategic and organisational decisions.	Using interdependency focussed integration would have demanded some decisions to be taken before the integration starts.
		W	Insecure outcome; risk of overlooking some required interaction with other departments.	Broader decision basis would have resulted in better understanding of real integration requirements, giving a more reliable view on outcome
2.	Programme management	S	Lean organisation.	Larger organisation, but management complexity reduced by interdependency focus.
		W	Formal management power limited to the ones involved in the limited scope.	Better and direct access to more of the involved departments.
3.	Interdependency focus	S	Low focus on interdependencies allows using previously known integration and project / programme management approaches.	Using the approach presented herein would not have diminished the ability to manage projects in the traditional way; it would only have resulted in a more suitable coordination of projects.
		W	Low focus on interdependencies resulted in problems implementing interfaces to materials management.	Interdependencies would have been clear and manageable.
4.	Tracking of outcomes	S	Focus on business goals was prevalent.	No or insignificant change to the goal definition.

The impact on integration quality can be summarized as follows:

No.	Goal	Impact of using Interdependency Focussed Integration approach
1.	Bundle purchasing capabilities	Possible with both approaches.
2.	Reduce purchasing prices	Possible with both approaches.
3.	Remain within budget	Missing links resulted in project prolongation as well as significant manual work upon go-life of JPS. Better upfront interdependency focus would have resulted in a more precise budgeting a lower total amount.

It is doubtful if the decision to just implement JPS would have been the route of choice if interdependencies had played a larger role in the assessment process. Most notably, just before JPS was implemented, the responsible managers decided to integrate the entire process and system chain and switch all purchasing, budgeting and accounting systems over to company A's system landscape. After go-life of JPS, a significant amount of manual work became necessary.

In the light of the information presented above, along with the real outcome of the JPS project, it can be assumed that using an approach as presented in this thesis would have resulted in better integration quality.

8.1.2.3 Integrating Finance Area Information Technology

Situation

Partly in the light of the JPS project, the finance area managers concluded that their inhomogeneous system map was insufficient to cope with all the requirements imposed by the integration efforts throughout the companies. Furthermore, due to repeated headcount reductions and the prevalent decision to introduce joint management functions for various financial tasks, homogenising reporting structures and the data background of the management processes seemed the logical step towards maintaining best possible ability to manage the company.

Having planned the integration involving all finance area processes and systems, a significant effort was made to encapsulate the functionalities so that the finance business area was capable of working with interfaces into both company A and company B systems of adjacent business

areas. The approach chosen by the finance business area was the only comprehensive process and IT integration at that time.

What Integration Quality Meant in this Case

The goals pursued in the full finance process and IT merger case were:

- Create homogeneity of reports throughout companies
- Ability to reduce headcount
- Smoothly running automated processes within finance, especially with regards to the Joint Purchasing System

Description of the Approach Chosen

The approach chosen by the merging companies can be characterised as follows:

No.	Item	Approach chosen
1.	General IT strategy	Take-over of one system map for an entire business area. On a group-wide perspective this was however still a cherry-picking approach, in which an entire business area was encapsulated to the point at which the processes and systems would work with surroundings from both company A and company B.
2.	Programme management	Coordination of multiple projects within the finance business area; no superordinate programme management integrating integration projects from other business areas.
3.	Interdependency focus	Interdependencies within the finance business area managed. Encapsulation strategy for finance to protect the integration from interdependencies to other business areas.
4.	Tracking of outcomes	Focus on technical goals: Ability to create homogeneous outputs and automate processes.

Impact of using the Techniques Presented Herein

Consequences of using the approach proposed in this thesis are summarised below.

No.	Item	Benefits of Interdependency Focussed Integration approach
1.	General IT strategy	The interdependencies within the finance business area have led to the decision to take over company A's system and process map; the approach presented herein therefore would have resulted in the same decision for finance. A more comprehensive process and IT integration strategy throughout the entire group would yet have led to reduced interface compatibility efforts within the finance business area.
2.	Programme management	For a wider span of the integration effort, a centralised programme management would have been indicated. The coordination approach chosen to manage the finance process and IT integration solely was however sufficient.
3.	Interdependency focus	Interdependency focus was sufficient, as the encapsulation strategy would have protected the efforts. It remains however unclear if down the road unmanaged interdependencies would have put the integration success in question.
4.	Tracking of outcomes	A wider focus of the integration programme would have enabled the finance business area to formulate real business goals, and therefore define the business benefits resulting from the integration. Limited scope of the integration effort resulted in the inability to associate the true value of the integration apart from cost reductions within finance.

Conclusion

The following table lists strengths and weaknesses of the integration strategy chosen, and lists the influence of the new approach on these strengths and weaknesses.

No.	Item	Strengths / Weaknesses of approach chosen	Approach chosen	Interdependency Focussed Integration Approach
1.	General IT strategy	S	Few issues from unmanaged interdependencies within finance business area, while enabling fast start-up of integration efforts.	Start-up would most probably not have been delayed much, while the strengths would have been preserved.
		S	Encapsulation ensured independence from other decentralised integration approaches and protected the finance integration in case other business areas decided for one of the two system maps.	By coordinating with other business areas, the efforts within the finance business area would have been lower.
		W	Unsafe route of implementation by lacking knowledge of integration strategies in adjacent business areas.	Increased safety by holistic view on integration efforts and trans-departmental interdependencies.

No.	Item	Strengths / Weaknesses of approach chosen	Approach chosen	Interdependency Focussed Integration Approach
2.	Programme management	S	Lean organisation.	Identical organisational structure within finance business area.
		W	Formal management power limited to the ones involved in the limited scope.	Better and direct access to more of the adjacent departments.
3.	Interdependency focus	S	Comparably strong interdependency focus.	Improved interdependency focus by better insight into adjacent departments.
		W	Reduced knowledge about adjacent integration strategies led to necessity for total encapsulation.	While total encapsulation might still have been the route of choice, its choice would have been built on a broader foundation.
4.	Tracking of outcomes	W	Focussing on technical goals precluded the finance business area from accounting for a large part of the business benefits it created by the integration. It therefore was difficult for the finance business area to obtain the budget required for the integration.	Central programme management would have associated the full business benefits with the costs incurred in the finance business area, and would therefore have contributed to a better project justification.

The impact on integration quality can be summarized as follows:

No.	Goal	Impact of using Interdependency Focussed Integration approach
1.	Create homogeneity of reports throughout companies	Possible with both approaches.
2.	Ability to reduce headcount	Possible with both approaches.
3.	Smoothly running automated processes within finance, especially with regards to the Joint Purchasing System	Possible with both approaches, but reduced risk of failure if interdependency focus would have been stronger.

The approach presented within this thesis would have led to an earlier call for an integrated programme management, that would have enabled the finance business area to both reduce efforts for encapsulating its process and system map, and to better justify the process and IT integration budget.

With the approaches presented in this thesis, reaching the desired integration quality would have been eased. Conducting the integration project would have been safer.

8.1.2.4 Establishment of Central Programme Management

Situation

The decentralised but constant efforts to use synergy potentials by process integration led to top management recognition of information technology as bottleneck for the integration. In 1999, approximately one year before the two companies were de-merged again, a central group function with the sole task of coordinating process and IT integration throughout the company was installed.

The responsible managers conducted a thorough analysis phase that revealed many of the flaws in previously chosen island approaches to process and IT integration. Since by the time certain decisions, especially within the product design area, were already taken and new product developments were under way each using one of the system landscapes, bringing process and IT integration into the right phase with these business efforts was a very complex and difficult task.

Still, the programme management function had no power over business decisions. Its task was to boost process and IT integration only. When the programme management was installed, it took almost six months to establish a group-wide plan on a similar level of detail throughout all business units, which again revealed the differences in existing depth of mutual knowledge about processes and systems.

The budget associated with process and IT integration was very large, and the estimated time of reaching integration plateaus was very long. The mere money and time implications of enabling the merged entities to realise synergies may have been an important factor of company A's decision to sell company B and cancel the merger.

What Integration Quality Meant in this Case

The goals pursued in the establishment of a central programme management case were:

- Support free allocation of products and people across all group sites
- Integrate as fast as possible
- Remain on budget

Description of the Approach Chosen

The approach chosen by the merging companies can be characterised as follows:

No.	Item	Approach chosen
1.	General IT strategy	Take-over of one system map for an entire business company.
2.	Programme management	Programme management coordinating all process and IT integration efforts throughout the entire group. Programme management did not include any business function and had no formal influence on decisions about business models.
3.	Interdependency focus	Planning on project level resulted in view that management complexity was too high. Therefore, the focus shifted towards interdependencies; this approach was however not applied from the start and would have required another round of extracting interdependencies and project interactions.
4.	Tracking of outcomes	Focus on technical goals: Integrate processes and systems.

Impact of using the Techniques Presented Herein

Consequences of using the approach proposed in this thesis are summarised below.

No.	Item	Benefits of Interdependency Focussed Integration approach
1.	General IT strategy	The decision taken by the merging companies would most probably not have been altered by using the techniques provided in this thesis.
2.	Programme management	The approach proposed in this thesis would have spanned a wider area of the company, specifically including business owners. The fact that many of the flaws in the decentralised integration processes have been identified by the central programme management as soon as it was installed points towards the importance of centrally coordinating merger efforts.

No.	Item	Benefits of Interdependency Focussed Integration approach
3.	Interdependency focus	The large complexity that was found in the merger planning process led the merger programme managers to the insight that their management focus needs to be on context, not on content. This is what this thesis provides the tools for.
4.	Tracking of outcomes	Including business goals would have been decisive to judge if the budget that the process and IT integration planned could by any means be compensated by business benefits.

Conclusion

The following table lists strengths and weaknesses of the integration strategy chosen, and lists the influence of the new approach on these strengths and weaknesses.

No.	Item	Strengths / Weaknesses of approach chosen	Approach chosen	Interdependency Focussed Integration Approach
1.	General IT strategy	S	Reducing uncertainty resulting from unmanaged interdependencies by establishing company wide programme management.	Similar approach proposed by this thesis.
		W	Slow speed of start-up by waiting for the slowest department to close in.	Inherent to a wider management focus, and this would have been similar with the approach presented herein.
2.	Programme management	S	Comprehensive management of programme towards achieving business goals	Similar to the approach proposed herein.
		W	No formal power over any of the participating departments.	The approach proposed herein introduces such formal power by the interface contracts escalated to the central programme management.
		W	Difficult identification of interdependencies.	Interdependency model presented in this thesis would have simplified this task.
3.	Interdependency focus	S	Very strong interdependency focus.	Similar to the approach presented herein.
		W	Little input from other layers of consideration, and no formal power to request decisions.	The approach presented herein would have demanded strategic and organisational units to provide decisions, and to participate in the programme management.

No.	Item	Strengths / Weaknesses of approach chosen	Approach chosen	Interdependency Focussed Integration Approach
4.	Tracking of outcomes	W	Focussing on technical goals made the budget seem too high. The process and IT integration programme was unable to refer to business benefits, since it had no ability to look into the possible business models.	Central programme management would have associated the full business benefits with the costs incurred, and would therefore have contributed to a better project justification.

The impact on integration quality can be summarized as follows:

No.	Goal	Impact of using Interdependency Focussed Integration approach
1.	Support free allocation of products and people across all Group sites	Possible with both approaches.
2.	Integrate as fast as possible	Possible with both approaches.
3.	Remain on budget	Possible with both approaches, but reduced risk of failure if interdependency focus would have been stronger.

The approach finally implemented by the companies was a big step towards comprehensive integration, but came too late. Had the companies known the integration costs earlier, there may still have been money and time to implement the harmonised processes and systems landscape.

A wider inclusion of business functions however would have been most desirable. The extended focus of the approach chosen supports the hypothesis that central coordination of interdependencies is important, even more since the remaining problems were still attributable to the fact that interdependencies between layers of consideration were out of focus of the programme management installed.

Using the approaches presented in this thesis would have resulted in a higher integration quality.

8.1.3 Conclusions from the Case Studies

In each case study, the interdependency focussed integration approach would have resulted in increased integration quality. The only possible drain on quality can be imagined by a slower start-up phase, which is however likely to be more than outweighed by the comprehensiveness and therefore the increased safety of reaching the respective integration goals.

The case studies presented are in support of the hypothesis that focussing on interdependencies in process and IT merger integration results in increased integration quality. The techniques presented in this thesis seem suitable to fulfil this task.

8.2 *Expert Interviews*

8.2.1 Summary of Interview Results

8.2.1.1 Background of Interview Partners

Industry background of the interview partners spanned several businesses in the high-tech and manufacturing industry. Information about the issues in integrating various different business areas could be gathered in the interview process. All interview partners worked for large enterprises during their post-merger integration process, but also have experience with medium-sized companies.

Due to company-internal regulations concerning publishing information, the author of this thesis was asked by some of the interview partners not to publish the questionnaires, and by the others to keep their names as well as the names of their companies confidential. Therefore, none of the names is being stated either in this chapter or in the appendix, where three of the completed questionnaires can be found. Contact details have however been made available to the University for enabling assessors and supervisors to verify interview contents.

The following chart visualises the broadness of expertise that was made use of for the interviews. In total, five interview partners could be found who invested the time to review the results of this thesis in detail to be able to answer the interview questions. Since the interview partners were able to draw their replies from experience in various industries, company

sizes, business areas, and merger phases, the numbers in the chart below may add up to more than that in each of the categories.

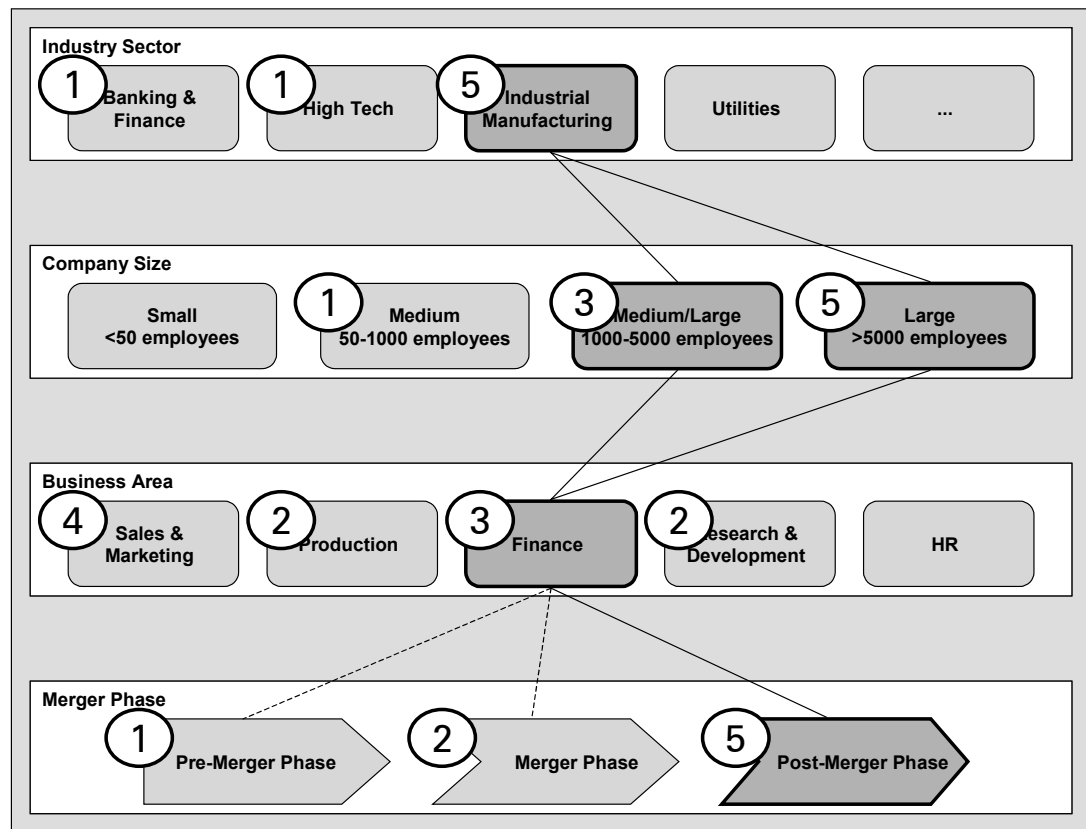


Figure 23: Expertise of interview partners

The background of the interview partners is viewed to be sufficiently broad to draw meaningful conclusions towards the hypothesis underlying this thesis.

8.2.1.2 Summary of Answers Regarding Procedural Merger Integration Approach

Programme and project management tools applied

All of the interview partners reported about the application of multiple project and programme management methodologies in a merger situation. The interview results indicate that the use of poorly integrated management methodologies, that in addition change over time during the course of a merger integration process, is sub-optimal.

It was explicitly stated, and it can be concluded from the specific merger issues that were described, that the application of integrated programme

and management methodologies as it is described in this thesis is of advantage.

Capability of the applied tools to coping with special merger requirements

The programme and project management techniques described by the interview partners have not been specifically designed to find the best level of detail on which the merger integration process can be managed, or to cope with interdependencies. Therefore, it was perceived that the special requirements in a merger were not fully met by the methodologies. In some cases, it was attempted to undertake projects outside of the merger programme organisation, or to not set up a merger programme organisation at all.

It was the view of all interview partners that the application of the methods described herein yields significant promise to improve merger integration quality by better accommodating the specific requirements.

Focus on dependencies between layers of consideration and business areas

A significant weakness of the methods applied by the companies the interview partners worked in was the reduced focus on interdependencies compared to what is proposed in this thesis.

Appropriateness of level of detail

Finding the right level of detail was seen to be one of the main difficulties in a merger situation. The interview partners agreed that the methodology presented can be able to better determine the level of detail that is still manageable, while not omitting crucial pieces of information.

Quality impact of procedural methodology proposed in this thesis

Because of the points summarized above, applying the procedural approach developed in this thesis was seen to improve merger quality.

Feasibility of applying the procedural approach presented in this thesis

None of the interview partners has viewed the presented approach to be unfeasible in the merger integration setting the persons have worked in.

8.2.1.3 Summary of Answers Regarding the Interdependency Model

Influence from other layers of consideration

The interview partners all stated that during the mergers they have worked in, there was significant influence on their integration project or projects from other layers of consideration. It can be concluded from the interviews that managing the interaction between layers of consideration is indeed called for.

Timely and complete communication of changes in goals and approaches

Interview partners related situations, in which changes of goals and approaches were communicated in a sufficiently timely manner to the existence of a central merger programme or merger communication organisation. In turn, situations in which communication was insufficient occurred in situations, in which there was no central coordination established. The interview data therefore is in agreement with this thesis in terms of the necessity and layout of a central merger programme organisation.

Clarity of approaches in adjacent business areas before integration started

Alike communication, clarity of approaches that were used for integrating adjacent business areas was in some interview cases created by a central organisational unit that had the clearly communicated task to coordinate merger efforts. Again, the interviews collected support the methods presented in this thesis.

Quality significance of looking at dependencies between layers of consideration or between business areas compared to normal business

There was no doubt at any interview partner, that dependencies between layers of consideration play a significantly higher role in merger situations than in normal conduct of the business. Most interview partners viewed the complexity of interdependencies as the most striking difference and the main factor for issues that arise in the merger integration process.

The findings from the interviews with regards to this point are in line with this thesis.

Impact of presented approach on merger integration quality

Applying the presented approach was in all interviews seen by the interview partners to have a positive quality impact.

8.2.2 Conclusions from Interviews

The interviews have yielded insight into practical issues that arise during mergers. Two basic categories of replies were found:

1. Replies in which a totally different methodology was applied, but which was perceived by the interview partners to have resulted in inferior quality compared with the methodology presented in this thesis
2. Replies in which a methodology was applied, that was at least in part comparable with the methodology presented in this thesis. In the replies falling into this category, the superiority of the methodology presented in this thesis was however concluded by the interview partners.

The above interview results support the hypothesis that an interdependency focus yields improved quality of the merger integration process by reducing management complexity. Both research questions could be answered:

1. The presented approach can be used to obtain and steer interdependencies in a merger process. It reduces management complexity, which was viewed by the interview partners to contribute to increasing integration quality. The approach was found to be applicable throughout the various industries, company sizes, and business areas the interview partners had experience in.
2. The interdependency model for the finance business area was perceived to be helpful for the finance area itself on the one hand, and, if used as a template for other business areas, contribute to a better post-merger integration outside of the finance business area. Practicality as well as general applicability of the model was viewed to be high. The interdependency model between layers of consideration as well as between business areas was viewed by the interview partners to be widely applicable within their realm of experience.

The interviews conducted support the research hypothesis, and support the quality impact of the results presented in this thesis to answer the research questions derived from such hypothesis. The results presented herein were found to be sufficiently generic to be applicable within the defined scope of this thesis, and even beyond.

9 CONCLUSIONS

9.1 *Summary of Results*

9.1.1 Results of Background Research

Mergers have become commonplace. To realise synergies that justify the merger transaction, an integration of the merged companies is necessary. Merger relevant theories and solutions for many issues throughout the merger process exist. It can be shown that there is a lack of approaches for integrating processes and information technology in mergers, and thus achieving the desired merger success.

Since information technology is an enabler of today's business environment, and since the finance business area is subject to quick integration necessities, this thesis provides a framework that guides IT managers of the finance business area through the merger process.

Approaches for merger integration on these operational layers are rare. Currently known approaches to merger conduct do not sufficiently reflect the complexity imposed from the integration of processes and information technology.

This thesis contains a generic model to manage process and information technology issues in the finance business area throughout a merger. The techniques presented are designed for merger implementation in the post-merger phase, yet they are useful from pre-merger evaluations to post merger integration programmes.

This thesis presents:

- A procedural management approach to discover and manage interdependencies within a merger programme
- A functional approach that provides tools and starting points for finding relevant interdependencies for the integration of finance business processes and IT.

In the presented models, the following distinctions are made:

- Interdependencies are interconnections between business process steps. Two different interdependencies are looked at:
 - Vertical interdependencies are interconnections between layers of consideration
 - Horizontal interdependencies are interconnections between business areas on one layer of consideration.
- Project interactions exist if deliverables of one project are required in another merger integration project to start or continue an activity.

9.1.2 Procedural Management Approach

Three phases are proposed to be conducted for integrating processes and IT. The phases are to be managed by a programme management organisation, which can be built up as the merger efforts progress. The merger programme management fulfils several tasks aimed towards integrating merger projects and monitoring critical interdependencies and project interactions.

Phase 1, Interdependency Focussed Analysis, has the goal to determine all relevant environment variables for the process and IT integration effort, especially as pertains to business strategic premises, and currently used processes and information technology. Within Phase 1, the programme management organisation is established.

Phase 2, Interdependency Focussed Planning, uses the insights found in phase 1 to set up a merger integration plan. This plan starts with business goals to be achieved by the integration. These goals are broken down to several levels, or "plateaus" on the way from a current state to the future process and IT maps. For reaching the integration plateaus, projects are identified. Project interactions are drawn from interface supply contracts between projects; interdependencies between business areas or layers of considerations will be mirrored in these contracts.

Phase 3, Interdependency Focussed Integration Management, contains management of the merger integration plan. Due to the size of the integration effort, flexibility of the programme management towards plan changes is crucial for the success. Several tools are mentioned. Main means is proper merger integration planning. Merger integration planning

should provide an insight to subordinate merger programmes and projects, focussing on project interaction and not on project detail.

End point of the procedural approach is delivery of integration results, namely the business outcomes identified. Successful integration enables the business models that have been envisioned in the pre-merger phase, while being on time and on budget.

9.1.3 Interdependencies in Finance Process and IT Integration

This thesis presents a model describing interdependencies of the finance business processes and IT to other layers of consideration and to other business areas.

Following the procedural approach presented, also the generic model takes a business process model as starting point to describe the interdependencies. The process model is derived from various literature sources and is described in the following figure.

No.	Process/Sub-Process Name	Process Description
1	Cash Management and Liquidity Planning	Central payment process
2	Investment Planning	Investment planning, approval and control
3	Asset Accounting	Central registration of assets, calculation of depreciations, posting to general ledgers
4	Purchase Requests and Accounts Payables	Checking of incoming invoices against order data and physical goods receipts
5	Customs Compliance and Transport Accounts	Optimisation of transport logistics, financial control of transport invoices. Financial customs handling, revaluation in case of retrospective price changes.
6	General Ledger	Posting of general ledger accounts
7	Revenue and Gross Profit Accounting	Posting of sales ledgers and accounts receivables
8	Cost Centre Accounting	Accounting and layout of cost centres, cost control
9	Product Costing	Calculation of product costs for pre-series and series products
10	Material, Work- in Progress, Inventory	Inventory valuation and posting
11	Consolidation, Group Reporting	Consolidation of intra-group profits, calculation of overall profit and reporting

Figure 24: Finance Area Process Model

To determine vertical interdependencies, the impact of decisions on other layers of consideration on the processes and IT within the above process model is assessed. While the model can be applied to cover any kind of decision on any layer of consideration and depict its effect on

finance processes and IT, this thesis presents the following decisions within the framework. These decisions have been determined as being of great importance in any merger situation, as they describe the most prevalent source of targeted merger integration benefits.

- Harmonisation of product range
- Integration of regional market presence
- Organisation of legal entities
- Organisation of research and development
- Organisation of production capabilities
- Handling of supporting processes

For assessing the impact of horizontal interdependencies, this thesis shows for each of the business process clusters, which process interactions result in interdependencies that should be considered by the central programme management as one of the points to focus on within the integration planning and management.

For each process cluster, this thesis describes:

- Inputs, Outputs and Interfaces with other Process Clusters
- Critical Integration Success Factors
- Process and IT Integration Approach and Timely Phasing
- Major tasks to be performed before starting the integration of the process cluster
- Major integration tasks for the process cluster:

In the post-merger phase, both the interdependency model and the programme management methodology can be used to define, conduct, and control the merger integration projects.

9.1.4 Results of Validation

It is inherent to the topic presented in this thesis, that the author is not in the position to validate the outcomes in a forward application. This inherent limitation of validating a management methodology resulted in the necessity of using an approach that relies on the interpretation of available data from a past merger, and on interviews. The validation approach selected is therefore a compromise between scientific

requirements of an objective validation free of personal interpretations, and the practicality of gathering the information required to validate the subject presented.

The validation therefore took place in a retrograde analysis of past mergers, on the one hand by the means of interpreting case studies made available to the author, and on the other hand by conducting interviews with managers who reflected the model presented to their personal merger integration experiences.

Within the case studies conducted, all cases revealed that an application of the proposed models would have increased the chances of higher integration quality.

Within one company, different case studies were performed:

- Development of new product for company B on company A's systems
- Bundling purchasing capabilities by implementing company A's purchasing system for the entire group
- Integrating finance area information technology to create a homogenised IT backbone
- Establishment of central programme management to coordinate efforts in different business areas

Although the case studies are limited to one company, the diversity of the approaches applied permits to conclude that the validation results would have been similar in different companies, and thus that the deliverables of this thesis are generic.

Generality as well as practical applicability of the techniques are supported by the interviews conducted. A positive impact on quality was stated to be possible by all interview partners.

9.2 *Discussion*

Goal of this thesis was to develop a management approach that reduces complexity of merger integration management by focussing on interdependencies. A programme management technique for mergers was shown, and this technique was complemented with a model of interdependencies for the finance business area.

In this thesis, it could be shown that focussing on interdependencies within the context of a complex merger situation yields strong potential for the improvement of integration quality. Especially, the impact on long-term business success can be relevant, since integrating the merging entities swiftly is critical for market success.

Existing approaches for integrating processes and information technology were found to be insufficient to yield acceptable results. Their lack of theoretical coherence and depth takes away much of the practical meaning of these approaches to a specific merger case, in which managers have to deliver their programme results fast.

The case study and interviews conducted point towards the practical necessity to reduce merger complexity. The interdependency focussed approach was seen to give a merger integration programme a good start for reducing complexity with a low risk of losing important insights into the merger programme progress.

One aim of this thesis was to develop a programme management methodology that is open to looking at interdependencies. The methodology developed and presented above was found to be suitable in practice. Its ability to reduce management complexity by focussing only on the most important integration necessities is very beneficial.

The other aim of this thesis, namely the development of an interdependency model that interlinks the finance processes and information technology with other layers of consideration as well as other business areas, has been presented and found to be effective.

The approaches presented in this thesis promise to increase the quality of merger integration by providing an interdependency focus and thus reducing management complexity.

In the pre-merger phase, the techniques can support evaluation of merger candidates and the establishment of future business models. Especially in larger companies, process integration that is supposed to deliver merger success is only possible if information technology is integrated, so the techniques presented in this thesis can give valuable insights.

In the merger phase, having developed business models with a higher chance of feasibility and more realistic costs associated to them will support the price-finding process.

Finally, in the post-merger phase, applying the presented model for integrating processes and IT heighten the change of swift and successful post-merger integration.

Insofar, the goals of the thesis laid out in chapter 1 could be achieved. The following table summarizes the results, which are entirely in support of the hypothesis.

Hypothesis	Research Question	Result
Looking at interdependencies in a merger will reduce management complexity and hence increase integration quality.	Can a comprehensive approach to obtain and steer interdependencies in a merger process reduce complexity and increase integration quality?	Step-by-step model to obtain and manage interdependencies in a merger developed. Validation shows practical applicability as well as generality within the defined scope of the thesis. Main benefits found are reduction of complexity and improvement of integration quality.
	Can looking at interdependencies between layers of consideration and between business areas in the process and IT layer reduce management complexity and improve integration quality?	Interdependency model showing the interdependencies of processes and information technology to other layers of consideration developed. Validation shows generality, practical applicability as well as potential for reducing complexity and improving integration quality.

Figure 25: Discussion of Research Results

9.3 Further Work

While the approach was described in enough detail to have practical meaning to merger management, the question of its real suitability will only be answered during its subsequent application.

Thus, the author views an application of the presented approach as the main remaining area of future work. Merger managers are invited to apply the approach to see if it is suitable to improve integration quality.

In addition to such prospective application, the following four areas of further work were identified:

- The theory and the model should be extended to also cover other business areas, such as sales, service, production, and R&D
- Specific models suitable for small and medium-sized companies should be developed
- The approaches should be modified to cover other industry sectors
- It should be determined if mergers across industries require special tools similar to those presented herein

9.4 *Scientific Contributions of this Thesis*

The results presented in the previous chapters provide two benefits over existing approaches:

1. Programme management approach that provides a concept for the reduction of management complexity that is specifically helpful in merger situations, including a process and IT analysis and management methodology that is tailored to specific merger situations.
2. Generic interdependency model that allows the impact from other layers of consideration and from other business areas on the finance business area in a merger.

These results did previously not exist in literature and represent the main contributions of this thesis to science and management methodology. Their seamless combination within the thesis yields additional value resulting from the establishment of a comprehensive methodology for integrating processes and IT systems in the finance business area after mergers.

The results are generic within the scope of this thesis.

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11 APPENDIX: QUESTIONNAIRES

Questionnaire			
0	Personal info	Name	
		Company	
		Position	
		Keep confidential?	☐ no ☐ yes
1	Background	Please describe your experience with merger integration. Which industries, company sizes, and business areas were involved?	
2	Procedural merger integration approach	Which programme and project management methodologies were applied for steering the merger integration?	
3		During the merger process, did you feel that the methodologies applied were capable of coping with the special requirements imposed by the merger situation?	
4		To what extent did the methodologies look at the dependencies between layers of consideration and between business areas?	

5		Did the methodology yield management capabilities on the right level of detail? If no: Was the level of detail too high or too low?
6		Suppose you had applied the management methodology presented in the thesis, what impact on quality of the integration would this have had?
7		Would you consider the presented methodology feasible for the your specific integration task?
8	Interdependency model	Which layers of consideration influenced your process and IT integration?
9		Were changes in goals or approaches in other layers of consideration communicated to the process and IT integration in a timely and complete manner? If yes, how was this communication link established? If no, could the efficiency of the merger integration have been improved by a better communication between the layers of consideration?

10		Were the approaches chosen by other layers of consideration clear enough before you had to start process and IT integration?
11		Please rate the quality impact of looking at the dependencies between layers of consideration and between the various business areas (a) in normal business environment, (b) in a merger situation.
12		Which impact would the approach that was presented to you have had on your specific merger project, especially on the ability to deliver the desired results?

_____ Date	_____ Signature
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FROM [REDACTED]

(TUE) 7 22 2003 15:27/ST. 15:26/NO. 5623355648 P 2

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0	Personal info	Name [REDACTED]
		Company [REDACTED]
		Position CEO
		Keep confidential? ☐ no ☒ yes
1	Background	<p>Please describe your experience with merger integration. Which industries, company sizes, and business areas were involved?</p> <ul style="list-style-type: none"> High-tech: Manufacturers of computers and servers, >5,000 employees, finance business area High-tech: Service provider (not covered by this interview)
2	Procedural merger integration approach	<p>Which programme and project management methodologies were applied for steering the merger integration?</p> <ul style="list-style-type: none"> Company internal project management tools Several parts of the integration were contracted to consulting companies, who partly applied own project management methodologies Beginning of the project was mainly managed on programme level
3		<p>During the merger process, did you feel that the methodologies applied were capable of coping with the special requirements imposed by the merger situation?</p> <ul style="list-style-type: none"> Unmanaged issues were interconnected with soft factors, or with input-output relationships that were not properly regarded.
4		<p>To what extent did the methodologies look at the dependencies between layers of consideration and between business areas?</p> <ul style="list-style-type: none"> Some dependencies were regarded There has not been a systematic, overall identification of dependencies
5		<p>Did the methodology yield management capabilities on the right level of detail? If no: Was the level of detail too high or too low?</p> <ul style="list-style-type: none"> Some projects were managed on a very low level of detail. Those worked well. The majority of merger integration projects that underperformed were managed on higher level. The managers found it difficult to determine the right level of detail.

Questionnaire

FROM

(TUE) 7 22 2003 15:27/ST. 15:26/NO. 5623355648 P 3

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6		<p>Suppose you had applied the management methodology presented in the thesis, what impact on quality of the integration would this have had?</p> <ul style="list-style-type: none"> ▪ Difficult to tell. The integration quality that was desired was reached. However it might have been easier to identify crucial points with respect to the connecting pins between projects, and these connections may have been easier to manage. ▪ The overall approach presented in the thesis would have fit well, however it might have been tough to sell due to its larger scale and therefore higher consumption of resources for programme management.
7		<p>Would you consider the presented methodology feasible for the your specific integration task?</p> <ul style="list-style-type: none"> ▪ Yes, see above.
8	Interdependency model	<p>Which layers of consideration influenced your process and IT integration?</p> <ul style="list-style-type: none"> ▪ In a merger case, the issues that arise can come from any of these layers, anytime. Everything is changing, therefore doing a merger right requires to take care about as many of these layers as possible.
9		<p>Were changes in goals or approaches in other layers of consideration communicated to the process and IT integration in a timely and complete manner? If yes, how was this communication link established? If no, could the efficiency of the merger integration have been improved by a better communication between the layers of consideration?</p> <ul style="list-style-type: none"> ▪ Most of the goals were communicated across the managers. Informal channels were used, and also the central merger communication department distributed the goals.
10		<p>Were the approaches chosen by other layers of consideration clear enough before you had to start process and IT integration?</p> <ul style="list-style-type: none"> ▪ My work was on higher level, at which the approaches were clear.
11		<p>Please rate the quality impact of looking at the dependencies between layers of consideration (a) in normal business environment, (b) in a merger situation.</p> <ul style="list-style-type: none"> ▪ Normal business conduct requires limited attention to dependencies, both between layers and between business areas. ▪ In mergers the standard lines of communication become unreliable and there needs to be more communication between project and programme managers. This requires greater attention to these dependencies by everybody involved.

Questionnaire

FROM [REDACTED] (TUE) 7 22 2003 15:28/ST. 15:26/NO. 5623355648 P 4

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12		Which impact would the approach that was presented to you have had on your specific merger project, especially on the ability to deliver the desired results? <ul style="list-style-type: none">A positive impact. I think delivery of results would have been more secure.
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22.07.2003	[REDACTED]
Date	Signature

Questionnaire

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Questionnaire										
0	Personal info	<table border="1"> <tr> <td>Name</td> <td>[REDACTED] MBA</td> </tr> <tr> <td>Company</td> <td>[REDACTED]</td> </tr> <tr> <td>Position</td> <td>Senior Analyst</td> </tr> <tr> <td>Keep confidential?</td> <td>☐ no ☒ yes</td> </tr> </table>	Name	[REDACTED] MBA	Company	[REDACTED]	Position	Senior Analyst	Keep confidential?	☐ no ☒ yes
Name	[REDACTED] MBA									
Company	[REDACTED]									
Position	Senior Analyst									
Keep confidential?	☐ no ☒ yes									
1	Background	<p>Please describe your experience with merger integration. Which industries, company sizes, and business areas were involved?</p> <ul style="list-style-type: none"> Manufacturing: The company I worked in during a merger designs, produces and markets products for individual transportation. I worked in the marketing and customer relations department. 								
2	Procedural merger integration approach	<p>Which programme and project management methodologies were applied for steering the merger integration?</p> <ul style="list-style-type: none"> There was a merger programme management set up for the merger conduct, which had own methodologies for management, reporting and the like. Projects were managed according to the pre-existing methods, but were obliged to fulfil additional reporting requirements. 								
3		<p>During the merger process, did you feel that the methodologies applied were capable of coping with the special requirements imposed by the merger situation?</p> <ul style="list-style-type: none"> The methodologies themselves were not bad, but they were not fully applied and thus did not yield the results they could have yielded. With not fully applied, I mean that there were still things that slipped the central programme management, and also that central coordination was ended too short after the merger, and half-way into the integration. 								
4		<p>To what extent did the methodologies look at the dependencies between layers of consideration and between business areas?</p> <ul style="list-style-type: none"> The central management attempted to coordinate the dependencies - this was their main task. 								
5		<p>Did the methodology yield management capabilities on the right level of detail? If no: Was the level of detail too high or too low?</p> <ul style="list-style-type: none"> For the central unit, the amount of information that ended up with them was large. There was a lot of filtering necessary to extract what was really important, which sometimes led to re-interpretation of information that was provided by projects. 								

THE PEOPLE AT THE
"TOP" DO NOT KNOW
HOW TO INTERPRET.
NO SKILLSET FOR INT. MGMT.

Questionnaire

18/07/2003 10:35

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6		<p>Suppose you had applied the management methodology presented in the thesis, what impact on quality of the integration would this have had?</p> <ul style="list-style-type: none"> I think the methodology that was applied went to some extent into the same direction as this thesis. So the usefulness of doing what is proposed here, namely looking at the interdependencies, is unquestioned. Some of the problems that the central unit in my merger case had was associated with filtering information and extracting the right and good core from it. The tools presented seem to be suitable to do this, and it would definitely be worth a try.
7		<p>Would you consider the presented methodology feasible for the your specific integration task?</p> <ul style="list-style-type: none"> Yes, I would.
8	Interdependency model	<p>Which layers of consideration influenced your process and IT integration?</p> <ul style="list-style-type: none"> The basic strategic decisions were been made early on at the strategy level, and these decisions remained unchanged in their core. Many other things were done that could be contributed to all layers of consideration – so I would say that everything started hanging together quickly.
9		<p>Were changes in goals or approaches in other layers of consideration communicated to the process and IT integration in a timely and complete manner? If yes, how was this communication link established? If no, could the efficiency of the merger integration have been improved by a better communication between the layers of consideration?</p> <ul style="list-style-type: none"> The most important decisions and routes of merger implementation were centrally communicated. Smaller things – or better: things that seemed small at first glance – were not well communicated, and sometimes even the central unit did not know a thing about them.
10		<p>Were the approaches chosen by other layers of consideration clear enough before you had to start process and IT integration?</p> <ul style="list-style-type: none"> No. We had high pressures from the marketing departments, and therefore were forced to run before we could walk, and long before the others could.
11		<p>Please rate the quality impact of looking at the dependencies between layers of consideration (a) in normal business environment, (b) in a merger situation.</p> <ul style="list-style-type: none"> Both mergers and normal business conduct require caring for interdependencies. The difference between these two situations is not the importance of interdependencies per se, but it is the question if the responsible people know all of the relevant inputs and outputs on a broader scale in the complex merger situation. The latter, at least in my experience, should not be taken for granted.

Questionnaire

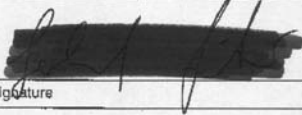
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12	Which impact would the approach that was presented to you have had on your specific merger project, especially on the ability to deliver the desired results?
	<ul style="list-style-type: none">Although the methods that were applied were targeted to the same direction, I believe that the approach presented here would have helped.

10/07/03 Date	 Signature
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- Also: ESTIMATED MERGE
SYSTEMS WERE READY
REALIZED.
- System integration problem:
 - Which system to use
 - Very complicated

Questionnaire

17-JUL-2003 09:46 UDN: [REDACTED]

AN: 109

S. 002

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Questionnaire		
0	Personal info	<p>Name [REDACTED] Dipl.-Wirtsch.-Ing.</p> <p>Company [REDACTED]</p> <p>Position <i>Manager, Location Business Strategy</i></p> <p>Keep confidential? ☐ no ☒ yes</p>
1	Background	<p>Please describe your experience with merger integration. Which industries, company sizes, and business areas were involved?</p> <ul style="list-style-type: none"> Consumer product manufacturing: Supplier of transportation equipment
2	Procedural merger integration approach	<p>Which programme and project management methodologies were applied for steering the merger integration?</p> <ul style="list-style-type: none"> There was a merger programme management installed with direct access to the managing board. This unit had especially developed procedures and tools that they applied. The project level below the merger programme management used the normal project management tools, which were enhanced by some special reporting requirements. Routes of reporting were doubled, since line and project managers had now to also report to central programme management.
3		<p>During the merger process, did you feel that the methodologies applied were capable of coping with the special requirements imposed by the merger situation?</p> <ul style="list-style-type: none"> The methodologies applied were in fact designed for coping with the special requirements in the merger situation, and to a great extent they did.
4		<p>To what extent did the methodologies look at the dependencies between layers of consideration and between business areas?</p> <ul style="list-style-type: none"> This is maybe the only point of possible criticism with the applied methods. They added reporting and other duties to projects, but these reports did not seem to be too well used for extracting the really meaningful connections between the things that had to be done. These connections are, by the way, the most difficult part in post-merger-integration.

Questionnaire

17-JUL-2003 09:46

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S.003

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5		<p>Did the methodology yield management capabilities on the right level of detail? If no: Was the level of detail too high or too low?</p> <ul style="list-style-type: none"> For making decisions, it was not always clear which adjacent decisions and other developments had been taken. So if I may put this differently, each level of management had its level of detail, but this information could have been used better across the management levels.
6		<p>Suppose you had applied the management methodology presented in the thesis, what impact on quality of the integration would this have had?</p> <ul style="list-style-type: none"> More knowledge about important dependencies is good by definition. So supposed the proposed methods to come up with these interdependencies work, it will improve the ability to delivery merger results.
7		<p>Would you consider the presented methodology feasible for the your specific integration task?</p> <ul style="list-style-type: none"> To my mind it would have been applicable.
8	Interdependency model	<p>Which layers of consideration influenced your process and IT integration?</p> <ul style="list-style-type: none"> The largest issues arose from things that were done or omitted at other layers of consideration, or other business areas, and remained undiscovered until the last moment. So from my personal experience, I cannot overemphasize the importance of looking at these interdependencies. The influences came from all layers presented in the thesis, but especially from the organization and from the strategy layer.
9		<p>Were changes in goals or approaches in other layers of consideration communicated to the process and IT integration in a timely and complete manner? If yes, how was this communication link established? If no, could the efficiency of the merger integration have been improved by a better communication between the layers of consideration?</p> <ul style="list-style-type: none"> The majority of such goals and approaches were communicated in time. Responsible unit for this was the central programme management. Some things seemingly went by them, which sometimes led to difficult situations.

Questionnaire

17-JUL-2003 09:46

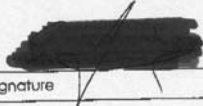
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10		Were the approaches chosen by other layers of consideration clear enough before you had to start process and IT integration? <ul style="list-style-type: none">▪ Mostly yes. The few things that were missing when we launched the larger scale integration project were mitigated by allowing enough flexibility in the projects.
11		Please rate the quality impact of looking at the dependencies between layers of consideration (a) in normal business environment, (b) in a merger situation. <ul style="list-style-type: none">▪ Clearly the interdependencies are of great importance in a merger. They are usually well managed in the normal business environment, but extreme volatility along with sometimes ambiguous routes of communication make looking at interdependencies crucial for succeeding in a merger.
12		Which impact would the approach that was presented to you have had on your specific merger project, especially on the ability to deliver the desired results? <ul style="list-style-type: none">▪ It would have made things even better.

17.4.03 Date	 Signature
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Questionnaire