

UNIVERSITY OF TWENTE.

Getronics
Consulting
a KPN company

THE BALANCED VIEW ON STRATEGIC BUSINESS AND IT ALIGNMENT
REVISING THE APPROACH OF GETRONICS CONSULTING

Master Thesis

Oleksandr Varlamov

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The Balanced View on Strategic Business and IT Alignment
Revising the Approach of Getronics Consulting

Unrestricted

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Management summary

The latest trends show that IT becomes more and more integrated in daily life and activities of companies. People get used to technologies, companies begin to rely on them and trust them vitally important business activities. Along with increasing importance and the role of IT, the value of technology goes down. Internet is no more a unique, innovative and fascinating media, but just “the electricity of the 21st century”. If you do not like prices, quality or conditions of your provider, you can easily switch to another one. The similar trend of commoditization comes to other, formerly unique areas of IT services, like software development, desktop management, etc.

To continue being a unique department or function within a company and keep bringing the value which is highly estimated by business, IT people should become closer to business side and pay more attention to improving Business-IT Alignment. With better understanding of technologies companies increasingly need their IT to understand the core business and its needs, the needs of customers, and opportunities on the market. Progressive CIO's and IT managers should see where opportunities for the business lie when they look at the market through the lenses of arising new technologies and upcoming innovation trends.

Changes are going on in the real world. However, for people and companies it is not always easy to keep up with the pace. Some companies already open virtual representative offices in other countries while others only start getting used to the very basic IT. Some IT providers propose companies to outsource their innovation while others still struggle with maintaining stable and secure internet connection.

Maturity is different, and the degree of integration or alignment of business with IT is different across companies as well. It is not possible – neither for businesses, nor for IT providers – to become mature in one day. But what is possible, is to assure that both partners in business-IT relations have maturity which goes in line with each other, that they have proper Business-IT Alignment.

Specialists from practice and scientific researchers have been active for the last 20 years in the areas of Business-IT Alignment and maturity assessment. Various standards and best practices have appeared on the practical front: ITIL, CobiT, CMM/CMMI, and many other. Scientists have been proposing a theory after theory, going deep into details or trying to apply insights from adjacent domains. However, we do not have a tool, framework or theory yet that would be simple and powerful enough to bring insights from practice and science together to help reach stable and efficient agreement in Business-IT relations.

Business-IT Integration Maturity Model (BITI MM) used by Getronics Consulting might prove to be a proper model for that purpose. Originally coming from the world of practice it uses and goes in line with the most influential theories from the world of science in the domains of Business-IT Alignment and Maturity Models. This report describes how BITI MM was challenged and validated during a six-month research project.

THE MAIN CONCLUSIONS ABOUT BITI MM

- BITI MM goes in line with previously done research and studies in the fields of Business-IT Alignment and Maturity Models.
- BITI MM provides an overview and perspective not given by other public models, frameworks or standards in the field.
- The main concepts of the model are recognized and easily understood by experts.
- The simple two-column representation of the model can be used from the very start of any project or initiative that involves Business and IT parties to facilitate mutual understanding.

- BITI MM can be used as a tool for initial strategic assessment to define the organizational changes necessary for proper Business and IT Alignment.

MAIN RECOMMENDATIONS ON HOW THE MODEL CAN BE FURTHER IMPROVED

- *Extend BITI MM by more detailed descriptions and guidelines for tactical and operational level.* This can be done by making thorough descriptions level by level from different perspectives (e.g. architecture, security, sourcing, roles and responsibilities, organizational culture, etc.) or by explaining how BITI MM can be best extended by already existing standards and frameworks.
- *Conduct a quantitative study to prove the most typical and commonly encountered situations by the model.* The current study has shown that the maturity of Business understanding of the need for IT is usually higher than the maturity of IT providers in the same organization. A quantitative proof would increase the credibility of the results of the qualitative approach used for the current project.

HOW TO READ THIS REPORT

We encourage the reader to read the report from the beginning to the end. However, we understand that it is quite a lengthy and elaborated piece which contains the results of a half-a-year project. There are several perspectives and storylines in it. Depending on the purpose and interests of the reader, they might want to see only some sides, i.e. some parts and chapters. Here we propose a set of alternative reading guidelines for different profiles of readers.

For a reader from the academia setting with research interests we propose the following possible reading ways:

- To get the most complete insight into the main research subject you might still want to skip [Ch.5](#), [Ch.6](#), [Ch.9](#), and [Ch.10](#).
- To get only a brief overview of the initial research questions and final results you can have a look at [Ch.2.1-2.3](#), [Ch.8.4](#) and [Ch.11](#). Maybe, starting from the end results in [Ch.8.4](#) might be a good idea. Also [Ch.11](#) can give you a fast impression about how the current report can be used as a basis for future research.
- A separate flow addresses the topics of business models and business model innovation. To readers interested in those topics we propose to read the initial Research Question 3 in the end of [Ch.2.1.3](#), then [Ch.3.5](#) as an introduction into business models topic; [Ch.6](#) gives the most part of the theoretical background; the [Ch.8.3](#) and [Ch.9](#) provide the insights from expert interviews.

For a reader from practice who is mostly interested in possible practical ways of using the model we can give the following recommendations:

- [Ch.4.1](#) gives the most complete description of the model.
- [Ch.5.3](#) will help to link BITI MM to other frameworks widely recognized by professionals in the field.
- [Ch.5.1](#) explains the main strong sides of the model and how they can be used.
- And [Ch.10.2](#) will provide detailed instructions about how BITI MM should be used in practice.

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Preface

Looking back at the last six months of the project I can finally reflect on everything done, put together all achievements and lessons learned. When a project has a well-organized busy schedule and you do it with interest and passion, you don't have much time to quietly reflect on things. Being absorbed in daily project activities, drawing summaries, adjusting the scope, your resources, and making sure that everything goes right, you rarely realize how much is already done and what it means for you. Luckily, I believe that when you do things right and with full devotion, in the end you will always benefit – from results, from experience you've got, or just from satisfaction that comes after a piece of hard work is honestly done.

If I try now to quantify the personal results during my time with Getronics Consulting, it will account to about 100 pages of the main report, 1 whitepaper, 2 final presentations, 8 initial observational interviews, and 11 structured expert interviews with experienced consultants and C-level managers from 6 companies, 2 formal independent certifications (ITIL and Prince2), 3 internal trainings, around 8 practice group meetings, around 10 internal presentations and workshops attended, and about 16 Thursday weekly drinks. In addition I have considerably improved my skills of Dutch language and of subtleties of the Dutch culture, made several new good friends, and managed to successfully coordinate and harmonize the demands, wishes and recommendations of my four critical supervisors.

Apart from quantifiable results the project was in its whole an invaluable piece of experience. It served me as a plunge introduction into IT management consulting and specifics of organizational change. Having enough experience in processing codified knowledge I value more and more the opportunities for personal sharing of tacit knowledge and experience. At Getronics Consulting and during the interviews I had a unique possibility to personally learn from the leading consultants, to discuss with them stories from their experience, and to able ask intricate directing questions trying to uncover their way of reasoning and logic behind decisions they made.

Of course, the project would not have been as successful without participation of other people who helped me, increased my inspiration, motivated me to go further, provided valuable insights and comments, and pushed me to think out of the box or reassess my approaches.

I would like to thank Pascal van Eck, my Information Systems supervisor from the university. Pascal helped me to keep the project in scope by giving the most clear and structured feedback, and always facilitated the project meetings when they threatened to drive away from the main constructive track. I would like to thank Ton Spil, my supervisor from Department of Information Systems & Change Management, for pushing me outside of the box, challenging the project with creative ideas, but helping to bring everything together in the end. I was always puzzled by Ton's seemingly "out of scope" ideas in the beginning, but could draw valuable points for the project from them after giving it some thought and understanding his logic. I want to thank Paul Leenards, my supervisor from BU Consulting and the author of the initial project idea, for bringing me in touch with some of the most experienced and enthusiastic people in the company, for coordination of the project from the company side and, maybe the most, for numerous personal examples of efficient management, leading and facilitation at multiple practice meetings and workshops. I want to thank Daan Linden, my supervisor from BU Business Solutions, where I spent most of my time at the company, who helped me to learn about the company life and activities by bringing me to various presentations and workshops and who showed me the practical side and hidden stones of consulting.

I would like to thank all people who cheered me up during days at Getronics Consulting or agreed to share their experience at the interviews for the project: Hans Vriends, Michiel Croon, Kees de Vos, Nick Bakker, Tom van Sante, Julius Duijts, Jeroen Ermers, Clements Radenborg, Hilda Folkerts, Arno Kapteyn, Rob Poels, Rob van der Made, Ruurd Reitsma, Jan-Paul Ouwerkerk, Wilco Smeets, Christiaan PauloTomé, Jörg Wesbeek, Wiebe Niehof, Nicolette Jager, Pamela Franz, Angela Woldman, Jan-Peter Alberda, Peter Bosman, Maartje Crul, Dennis Brinkhorst, Paul Wu, Wesley Bouwer, Jan Brucher, Frans Coenders, Martin de Boer, Walter Eikenboom, Jacob Miao, Louk Peters, Hans Rosenberg, Leon Schutte, Erik Sluijter, Dustin Snijders, Frank van der Heijden, Robbert Soors d'Ancona.

And finally I want to thank my sweetheart Iryna for supporting me along the project and in daily life, as she helped me in the way nobody else would be able to. Thank you for that.

Having said all that, I can only wish you pleasant reading, and hope you will find this report interesting and useful and will be able to benefit from it. If you have any questions or propositions do not hesitate to contact me.

Best regards,
Oleksandr

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PART I – INTRODUCTION

This part describes the context of the research in order to introduce to the reader the complex world of Getronics Consulting. It explores the organization in the first part. Then it explains in detail the research approach taken, what research questions are and how they are addressed.

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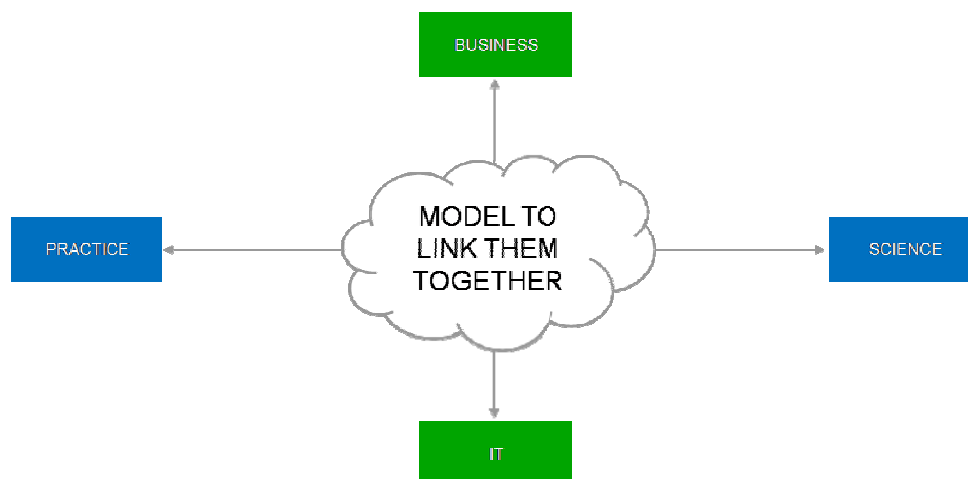
Introduction

Business-IT Alignment (BITA) was in the Top-10 IT management issues from 1980 through 1994, as reported by the Society for Information Management. In 2007 and 2008 it was the topmost important issue on the agenda of CIOs around the world (Luftman, 2008). According to McKinsey after the recession shaking the world in 2008 IT has become even more important for improving business efficiency and reducing costs across the enterprise (Kaplan, Roberts, & Sikes, 2009). One of the main conclusions from their survey of 444 executives, representing the full range of industries, regions, and company sizes around the world, was that despite the economic crisis leaders need to continue improving the alignment of their business and technology strategies.

At the same time within the scientific community the research in the BITA domain has been going on for almost 20 years already. Hundreds of publications, hundreds of methods, dozens of different aspects, viewpoints and levels of abstraction appeared. Some of the most influential theories addressed by this study include Strategic Alignment Model by Henderson & Venkatraman (1993), Drivers of Alignment by Luftman (2003), Generic IT Management Framework by Maes (1999), longitudinal BITA domain overview by Chan & Reich (2007), and many other.

Some of the models and frameworks developed have been accepted and used in practice. But, as we can see from the numbers above, the problem is far from being solved yet. What hinders BITA from coming into daily practices of managers and consultants if it is regarded as such an important issue?

One reason might be..... yes, alignment. Only this time those are scientific thought and the world of practice which are to be aligned. To become useful and adopted by both worlds, a proper tool, model or framework needs both thorough and rigorous scientific foundation on the one hand and simplicity and attractiveness of a typical practical instrument on the other hand.



Within the current project we will address a model which claims to fulfill the strict requirements stated above. Initially developed by practitioners and for practical use, Business-IT Integration Maturity Model might at the same time comply with the scientific research in BITA domain. If it appears to be true, the model can become a useful tool supported by years of rigorous scientific research and able to address the problems that make agendas of CIOs all around the globe.

1. Organization description

“In the successful organization, no detail is too small to escape close attention”

- Lou Holtz

This chapter explains the organizational context of the research. This will allow the reader to put the research into perspective. The first sub-chapter gives a high-level overview of Getronics Consulting.

The real need for and potential benefit from this research has become clear only after the initial interviews and getting to know the company where the featured model originates from. The results are presented in the [Ch.1.2](#). And in the last sub-chapters we outline the main stakeholders involved and the problem definition itself.

1.1. General Organizational Context

Getronics Consulting Nederland is an IT consulting company which designs, builds and implements solutions in the field of advanced Information and Communication Technology, Project Management, Governance & Compliance, Service Strategy & Transformation and Enterprise Architecture. Key areas are the Public, Financial, Industrial markets, Education, and Healthcare.

Getronics Consulting has a strong relation to Pink Elephant – the company which brought leading IT-management standards to the Dutch market – and is active in the field IT Service Management as founder and active contributor to the leading standards and best practices such as ITIL, PRINCE2, ASL and BiSL.

Being in size less than one tenth of Getronics, its parental company, Getronics Consulting strives to be its excellence center and also to keep the thought leadership on the external market. In 2007 KPN – one of the largest telecom providers in Benelux – bought Getronics. That provided new opportunities for Getronics, shaped its strategic vision and also was one of the main catalysts to distinguish Getronics Consulting as a separate premium label.

Getronics Consulting is divided in several business units (see Fig.1.1). Some units are devoted to specific markets, like Public, Financial or Industrial Markets. Business Units (BU) Regio Noord Oost and Zuid West are distinguished by geographical areas of operation. The business units marked violet (in the second row) aim to establish and maintain the excellence and thought leadership within the company as well as to expose it to the surrounding business environment.

The units marked dark blue (in the third row) are devoted to the internal company functioning and development. The Recruitment and Service Unit deliver the corresponding services. The Business Solutions unit defines the future portfolio of the most innovative and promising technologies and business areas to be featured by the company and can also organize pre-sale meetings with clients.

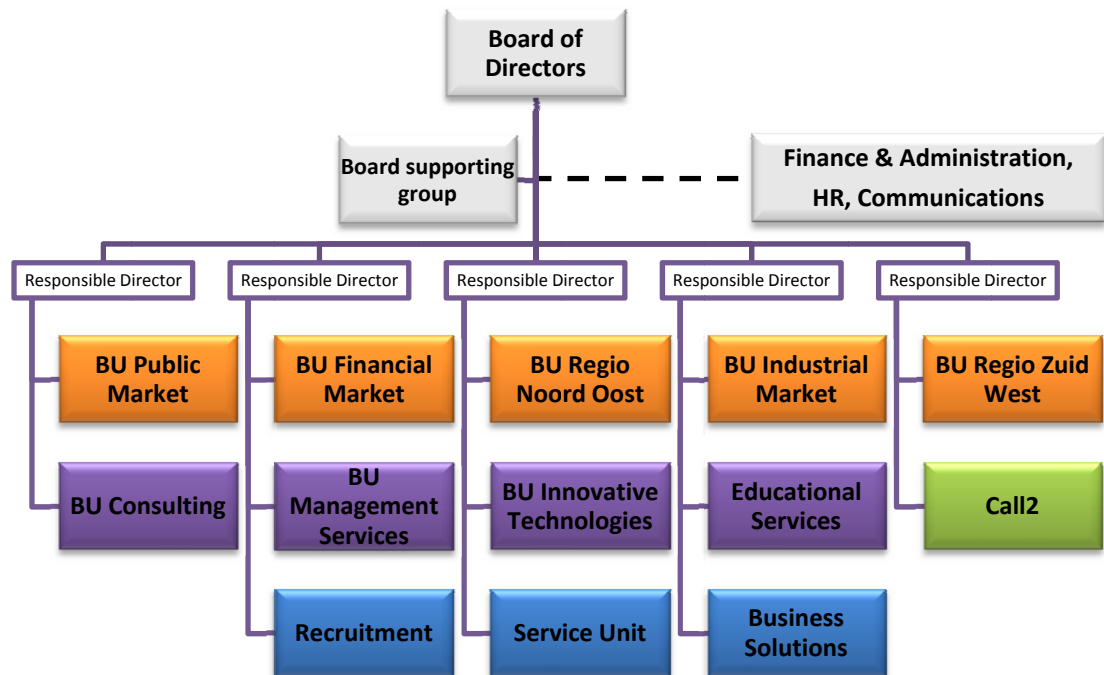


Figure 1.1 – Organizational Chart of Getronics Consulting

Most frameworks, standards and models used by the company in the fields of IT Governance, IT Service Management and Organizational Change are developed within BU Consulting by senior consultants with substantial experience. Business-IT Integration Maturity Model, featured by this project, originates from there as well.

In addition to the official organizational scheme shown above an informal division in approximately 3 parts can be observed. The first part of the company includes employees working at the client site, sometimes for long periods of time (up to 3 years). The second part includes employees who reside in the main Getronics offices. To the third part we can group the specialized and supporting services, such as Call2, Recruitment, Service Unit and Educational Services (on the figure above).

1.2. Organizational Reasons for and Benefits from this Research

Business-IT Integration Maturity Model featured by the current project might serve as an efficient means for knowledge transfer within the company. And in order to be used successfully for that purpose it needs the proper justification, foundation and description. The evidence of conducting research in the relevant area will also improve the market image of Getronics Consulting.

1.3. Problem Description

Business-IT Integration Maturity Model (BITI MM) featured by this project has to be challenged and tested in a proper scientific way from perspectives of theoretical validity and empirical soundness. Its strong and weak points have to be identified and relevant recommendations given.

BITI MM was initially developed by Paul Leenards with contributions from other consultants of the Consulting Business Unit. The detailed description of BITI MM is presented later in [Ch.4](#)

BITI MM (see Fig1.2) is a staged model that describes relations between the two parties: business and IT. Business expectations from IT are mapped against IT perception of its services and business needs. The model is used by Getronics Consulting but is described only in several presentations and was not analyzed

in a rigorous scientific way with comparison to other existing models and theories in the field or with systematic empirical proof.

Considerable part of the knowledge about BITI MM resides in the heads of consultants who have used it. Other part can be gained only by analyzing the underlying theories and the history of creation and evolution of BITI MM.

Business-IT Integration Maturity Model

Business Perception of the Need for IT	IT Service Organization
Strategic View	Strategy Focus
Enabler View	Business Focus
Commodity View	Customer Focus
Scattered View	Product Focus
No Strategic View	Technology Focus

Figure 1.2 – Business-IT Integration Maturity Model. Basic Representation.

In addition to being used at negotiations with clients, BITI MM can be seen as one of the tools for transferring the expertise of the Consulting Business Unit to the rest of the company. It is the focal point already concentrating the domain knowledge on the one hand. And it can be used as a starting point for approaching different other topics on the other hand. It is important to be sure about solid foundation and justification of BITI MM when using it as an education tool or a knowledge transfer tool.

1.4. Problem Owner and Stakeholders

This thesis is written as an assignment to become recognized as Master of Science in Business Information Technologies by the examination board of the University of Twente.

The report is written at the request of Paul Leenards, Principal Consultant at Getronics Consulting, Business Unit Consulting to investigate how Business-IT Integration Maturity Model is supported by existing theories in the field and from the empirical perspective.

The main problem stakeholders are grouped below in the Table 1.1.

Table 1.1 – Main stakeholders of the project

BU Consulting	Interested in continuous knowledge leadership within the company and sharing knowledge across the company.
BU Business Solutions	BITI MM will form a part of Innovative Portfolio and go closely in line with “IT Strategy” and “Information Management” initiatives.
Getronics Consulting Board	Interested in the expertise transfer from ‘upper’ to ‘middle’ segment employees and in supporting the knowledge leadership of the company. BITI MM can be seen as a tool for that purpose.
Educational Services	Interested in the description of BITI MM and its scientifically justified position to use it for educational purposes
Consultants of Getronics Consulting	Interested in a handy tool to use in negotiations with clients, especially the consultants involved in projects related to organizational change and implementation of best IT management practices.
Clients of Getronics Consulting	Specifically the board level managers and higher managers of IT interested in improving of common understanding of problems related to Business-IT Alignment.

2. Research approach

"If we knew what it was we were doing, it wouldn't be called research, would it?"

- Albert Einstein

This chapter helps to understand how the research problem was addressed. The Research Questions subchapter (2.1) shows the main research directions of the project. To focus on the feasible scope we have broken down the main research goal into three main research questions to be challenged. Further, within every question the hypotheses have been identified. [Ch.2.3](#) explains the main steps taken during the project. It contains two maps showing which chapter addresses which particular research question and hypothesis. The last subchapter ([2.4](#)) explains the expected theoretical and practical impact of the current research project.

The Figure 2.1 shows the research structure and the main steps along the research project needed to reach the main research goal and address the research questions. The dashed lines show the general project phases: Initial, Observational, Empirical and Reflective.

The blocks show the main processes within the project. The sequence shows the dependency of the correspondent topics and results.

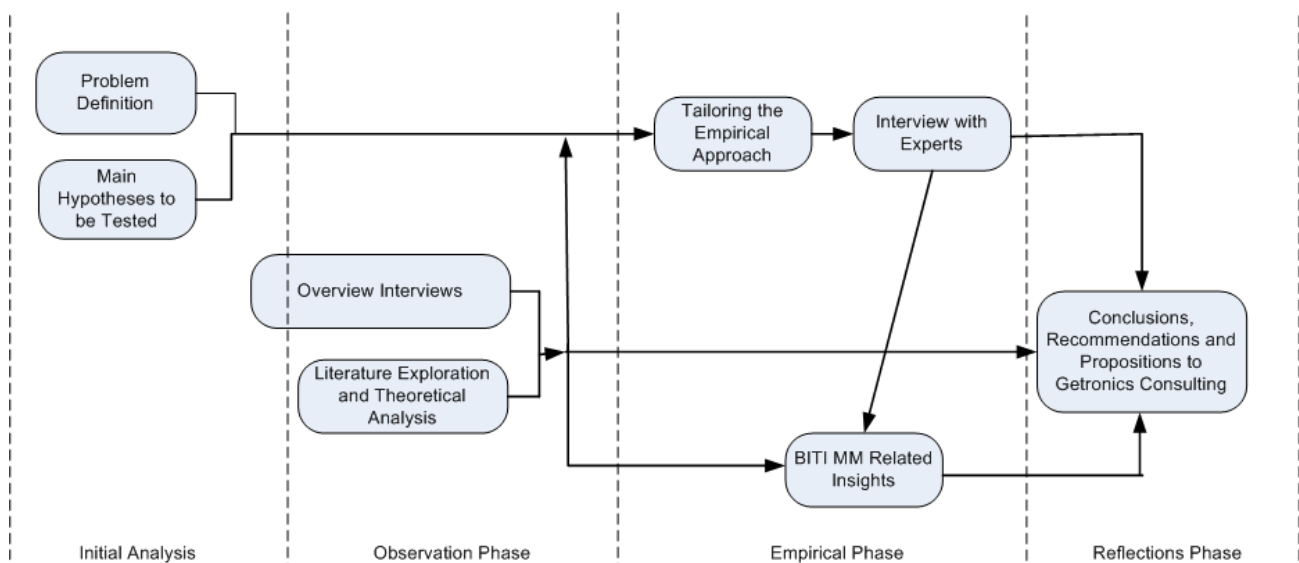


Figure 2.1 – Research Structure

2.1. Research Questions

The research goal, research questions and hypotheses are the cumulative result of the initial problem statement, study of the organizational context (see [Ch.1](#)), initial literature study done before the start of the project, and communication with the main stakeholders involved.

2.1.1. Research Goal

The goal of the research project is to conduct the scientific analysis of Business-IT Integration Maturity Model, so that Getronics Consulting employees could confidently use it for negotiations with clients and as a basis for internal expertise sharing.

2.1.2. Research Questions

After initial analysis, 3 main research questions which will further be challenged to correspondence to theory and practice, analyzed and tested to identify the validity of BITI MM.

Question 1 (Q1): Are BITI MM underlying concepts correct?

BITI MM was created using different existing theories, models and frameworks. Coupled with the practical experience, reflections and observations, they brought up the main concepts of the model. Later the initial model was evolved in discussions with other professionals and further reflections.

In an ideal case the best concepts of different theoretical models are taken, used and combined in a proper way. But because the main contributions to BITI MM were made by a small group of people based mostly on internal reflections without systematic scientific proof, possible bias and correspondingly mistakes may have place.

Question 2 (Q2): Does BITI MM have advantages compared to existing BITA models or maturity models when initiating a strategic alignment process?

In fact this question is asking whether BITI MM is useful in practice. The idea behind BITI MM (as found from the [initial interviews](#)) is that it is particularly useful when initiating the strategic alignment process. Other known models in Business-IT Alignment (BITA) domain which are proven to be useful often take different perspective or focus, or go into details too fast. While the strength of BITI MM is that it takes proper focus to quickly achieve common understanding with both business and IT managers, and helps to identify the most important issues needed to be understood and addressed from the very start. The proper positioning of BITI MM is one of the key prerequisites for its success and thus has to be tested and proved.

Question 3 (Q3): Does BITI MM use the proper focus and level of abstraction to stand the proof of time?

Technologies are changing rapidly and their perception as well. Some of the models developed 10 years ago are hopelessly outdated today. It is difficult to look another 10 years into the future. But we can see steady innovation trends gaining their ground today (like Web2.0, cloud computing, social media, and new business models based on those). What do those trends mean for the model? Will its main concepts still be valid when the current innovations become common daily routine in the future?

2.1.3. Drilling deeper. Research hypotheses.

We define the particular hypotheses within every question, because comprehensive answer on every question would require considerable research. . They will allow us to focus on real, solvable problems and keep the research within the proper scope. We acknowledge that other problems, hypotheses, and research questions might be important as well, and keep them as possible further research directions.

The criteria for the hypotheses defined were the following:

- A hypothesis has to highlight an important issue about BITI MM
- There should be a sufficient amount of existing scientific works to address the hypothesis
- It should be possible to empirically prove the hypothesis being true or false

The hypotheses proposed are grouped by the research questions mentioned above.

Question 1 (Q1): Are BITI MM underlying concepts correct?

- **H1: Low cognitive load in BITI MM is successful in facilitating user's perception.**

One of the main advantages of the BITI MM is its initial simplicity. First, it operates with commonly known concepts, such as Business & IT parties, maturity levels, 'strategy', 'technology', 'customer'. All those concepts make it easy for a person who sees the model for the first time to draw the analogies to other familiar concepts. Second, the number of elements and relations in BITI MM is relatively low. This fact lowers the cognitive load on the person using the model. Instead of trying to decipher the hidden sense, he or she can immediately focus on the problems which matter. Besides, the simplicity also makes it easy to think of analogies and explain the main idea using examples from other domains, more picturesque and even easier to grasp. All mentioned suggest that the positive relation exists between the simplicity of the model and the ease of its perception and understanding.

- **H2a: Different levels of business expectations for IT exist, possible to identify and distinguish between them.**

When we look at the staged structure of BITI MM we can see that it is divided in the same amount of maturity levels for the business and IT sides. The first question coming to mind is "where do they come from?" The levels of IT maturity have quite a long history and we can find them reoccurring in different works both on the academia and practical side. In early 1970s Gibson & Nolan (1974) proposed a model capturing the evolution of IS/IT in an organization with 4 (and later 6) maturity levels. Possibly the most well-known example of maturity models (MM) for IT is CMM/CMMI (CMMI, 2006). Those and some other MM have been repeatedly changed, discussed and elaborated by different authors. The maturity model in the ITIL Service Design book used to assess the evolution stage of an IT organization very closely reminds the IT side of BITI MM.

However, if we take the business side, more diversity and less coherence in thought can be seen. Even though some staged models can be reworked to describe business perception of need for IT, that does not give us grounds yet to state with absolute confidence that the same division on levels as for IT side can be still valid for business. However, this is one of the main underlying principles of BITI MM.

- **H2b: The success of alignment flow depends on how precisely business demands for IT are defined at the first place.**

Going further on the issue, even when a maturity level of business party expectations is defined, what does it mean for the Business-IT Alignment process? We assume that the more precise definition of business expectation can prove to be crucial for the success of a Business-IT Alignment initiative.

Question 2 (Q2): Does BITI MM have advantages compared to existing BITA models or maturity models when initiating a strategic alignment process?

- **H3: BITI MM helps to make an initial alignment assessment and identify problems better than other known alignment or maturity models.**

As mentioned above, many good maturity models exist for IT assessment, benchmarking and profiling. We can mention here at least CMM/CMMI (CMMI, 2006). CobIT (Cobit, 2007) has a maturity models as its tools. More specialized models address such domains as IS Architecture (e.g. by (Ross, 2003)). One frequently mentioned drawback of such models is that they are too much self-sufficient and have internal idealistic focus. Instead of delivering the best service and finding the most proper way of integration with

business, IT organizations just strive for the internal excellence forgetting why it is needed at the first place.

BITI MM on the contrary makes an accent on the relations with business party and helps from the very beginning to involve business side and its understanding of the need for IT in the core process.

- **H4: Applying BITI MM helps to bring up hidden core problems.**

Another important point is the focus and level of detailing. To grasp the attention of business managers the model should not contain many technical details and has to be at an enough high enough level of abstraction. At the same time at the start of any project it is important to be able to define current and desired situations. The initial overview of the existing alignment frameworks has shown that some of them have more operational focus (e.g. (Luftman, 2003)). This can be good as the next step, but might turn out to be too complex for initial negotiations, especially with non-IT managers. Other frameworks take abstract enough level (e.g. (Henderson & Venkatraman, 1993), (Maes, 1999b)), but focus on static structure description without providing hints concerning “to be” situation. BITI MM in this sense helps to draw the attention to the core problems which really matter.

H5: BITI MM helps to identify the difference between IT function expected by Business and IT function they have.

One of the most important questions in any business initiative is about current and desired situations. BITI MM directly addresses the problem of defining the gap. It helps to identify from the very beginning the difference between IT function expected by Business (desired situation) and IT function they have in fact (current situation).

Question 3 (Q3): Does BITI MM use the proper focus and level of abstraction to stand the proof of time?

For this question research sub-questions are more appropriate than hypotheses. The research here will have an observational high-level character. Its mission is to make a sort of strategic analysis for BITI MM, i.e. to define potential threats, opportunities and relations with “environment”. If previous two questions are aimed at validating BITI MM, the current question aims at finding new insights, recommendations for Getronics Consulting and potential directions for future research. Presenting this by means of hypotheses would either narrow down the scope too much, or would demand another fundamental research. Thus the questions to be addressed here are the following:

- What changes can we observe in IS/IT during last decades?
- Have any new relevant theories appeared since the appearance of BITI MM?
- What will the global trends and technical innovations mean for BITI MM?

The topics analyzed under the umbrella of research question 3 will include among other business model innovation, agility, current innovation trends, marketing, organizational and governance structures, all in relation to BITI MM.

2.2. Research Scope

The scope of the research is defined by the hypotheses above. However the theoretical search and interviews with specialists might bring new insights and conclusions. They will partly complement the description of Question 3, partly will be mentioned in the conclusions and recommendations, and if necessary will be described in appendices more in detail. Ch.9 is entirely devoted to the additional potentially useful insights from the interviews.

The report will give an assessment of the model and provide general recommendations about how it can be used in the most efficient way and what steps Getronics Consulting might consider to benefit most from the current research most. The report will not give detailed descriptions or guidelines about the implementation of recommendations. Those fall out of scope of the project

2.3. Research Methodology and Map of the Report

According to the research structure shown in the beginning of the chapter on the [Fig.2.1](#) the research questions and hypotheses outlined in the previous subchapters are addressed by the project in **three ways**:

- Overview interviews
- Literature exploration and theoretical analysis
- Expert interviews

Overview interviews are the interviews with managers of Getronics Consulting who either worked with BITI MM, or just have considerable experience in the problem domain. The interviews are mostly aimed at getting the general understanding of BITI MM, its use, its relation with different theories and standards, as well as the organizational context of the problem. Partly they helped to define what hypotheses are the most actual and partly provided some arguments (e.g. for H1, H4, H5, Q3). Also in part the results are used to create a method for the 2nd round of interviews. The results of the overview interviews are implicitly present in the whole report and are explicitly discussed in [Ch.5](#) and [Ch.8](#). The details of the interviewees and interview process can be found in [Appendix B](#).

Literature exploration and theoretical analysis address existing research relevant for the research questions and hypotheses. We achieve two purposes this way: some of the hypotheses are proven to be true or false from the theory viewpoint; and the foundation for the following expert interviews method is established. Essentially, [Part II](#) describes the desk study: Q1 is addressed by [Ch.4.2](#); Q2 is tackled by [Ch.5](#); and Q3 is discussed in [Ch.6](#). See the tables below for the detailed place of description for each hypothesis.

Expert interviews are the main empirical part of the project. Using the previous two methods the semi-structured interview approach is built. Those interviews are aimed directly at addressing the hypotheses and research questions. They were conducted with internal Getronics Consulting experts, clients of Getronics Consulting and external experts with much experience in relevant domains. The interviews have no statistical value, but rather serve as analytical evidence and help to create a discussion to prove or disprove hypotheses. The details of the interviews can be found in [Appendix C](#). In the report the interview setting and the results are described in [Part III](#).

The table 2.1 summarizes the methods used for each research question and places in the report where those are addressed.

Table 2.1 – Research questions addressed by the three approaches and the location within the report

Addressed by Approach Research Question	Initial observational interviews	Literature Exploration / Theoretical Proof	Expert interviews / Empirical Proof	Conclusions
Q1: Are BITI MM underlying concepts correct?	Ch.5.2	Ch.4.2	Ch.8.1	Ch.8.4
Q2: Is BITI MM useful in practice?	Ch.5	N/A	Ch.8.2	
Q3: Will BITI MM stand the proof of time?	No explicit description	Ch.6	Ch.8.3	

The following table (2.2) provides lists the research questions together with the research hypotheses and gives a more detailed mapping of where they are addressed within the report.

Table 2.2 – Detailed mapping of the research hypotheses and the corresponding report chapters

Hypothesis name	Place in the report
Q1: Are BITI MM underlying concepts correct?	• Ch. 4.2 ; 5.2 ; 8.1 ; 8.4
• H1: Low cognitive load in BITI MM is successful in facilitating user's perception	• Ch. 5.1 ; 5.2 ; 8.1
• H2a: Different levels of business expectations for IT exist, possible to identify and distinguish between them	• Ch. 4.2.1 ; 4.2.2 ; 4.2.3 ; 4.2.5 ; 8.1
• H2b: The success of alignment flow depends on how precisely business demands for IT are defined at the first place.	• Ch. 5.2 ; 8.1
Q2: Does BITI MM have advantages compared to existing BITA models or maturity models when initiating a strategic alignment process?	• Ch. 5 ; 8.2 ; 8.4
• H3: BITI MM helps to make an initial alignment assessment and identify problems better than other known alignment or maturity models	• Ch. 5.2 ; 5.3 ; 8.2
• H4: Applying BITI MM helps to bring up hidden core problems	• Ch. 5.3.2 ; 8.2
• H5: BITI MM helps to identify the difference between IT function expected by Business and IT function they have	• Ch. 5.2 ; 8.2
Q3: Does BITI MM use the proper focus and level of abstraction to stand the proof of time?	• Ch. 6 ; 8.3 ; 9 ; 8.4

2.4. Research Validity and Reliability

It is necessary to address issues of reliability and validity, because they provide some indications of the overall quality of the study. We use definitions and approached by Yin (2003) who shows how to address construct validity, internal and external validity and research reliability in case studies, which can be applied to open interviews as well.

According to (Yin, 2003) **construct validity** deals with “establishing correct operational measures for the concepts being studied”. In the current research to increase the construct validity, multiple sources of

evidence were used, for getting both theoretical and empirical data. Thorough literature review was done. During the empirical stage three groups of experts were interviewed, which allowed incorporating three different perspectives in the research. In addition, data collection and analysis were described in detail, which makes it possible to replicate this study (see [Appendices B-D](#)). However, the study deals with relatively abstract constructs, such as alignment, business or maturity which can have different definitions and are difficult to operationalize. To eliminate ambiguity we present the definitions of the main concepts we use before starting to address the hypotheses in theoretical and empirical parts (see [Ch.3](#))

Internal validity refers to “establishing a causal relationship, whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships” (Yin, 2003). To increase internal validity it is necessary to consider the causal relationships in theoretical and empirical findings. The theoretical part is in general built in a way to show the casual relations of the researched model with other theories on which it is built or to which it can be explicitly related. For the empirical part we conducted a structured qualitative analysis of the interview data which is summarized in a clustered matrix ([Appendix D](#)). During the explanation of empirical conclusions we explicitly link them to the chapters with theoretical arguments. Nevertheless, it is close to impossible to address all present relations and test their validity. As a partial solution the process was documented in detail, summaries of the interviews were sent to the interviewees for approval, and the argumentation was proof-read by the project supervisors.

External validity deals with the “establishing the domain to which a study’s findings can be generalized” (Yin, 2003). The main idea of the study is to link scientific and practical thought in the domain of Business-IT Alignment (BITA). We conducted literature review in a way structured to correspond to BITA and Maturity Models domains. In addition, other domains where the research results might be used are occasionally mentioned in the report. One of the main criteria of the selection of interviewed experts was that BITA formed an important issue on their agendas and was part of their experience. We explicitly address geographical and organizational contexts of external validity when describing conclusions and limitations.

Reliability deals with “demonstrating that the operations of a study – such as the data collection procedures - can be repeated, with the same results” (Yin, 2003). To increase the reliability of the results the interview questions guide was created and used during the interviews ([Appendix B,C](#)), the interviews were recorded and structurally processed and the process was described and explained explicitly.

2.5. Impact and Relevance

Business-IT Alignment (BITA) is repeatedly mentioned as an important issue both in scientific publications and in practitioner surveys and reports. Despite more than 20 years of research in the field BITA remains among the top 10 burning issues in agendas of CIOs around the globe.

The main impact potentially to be made by the current research is *the introduction of theory which links together the knowledge from the worlds of science and practice about Business-IT Alignment domain in a simple coherent framework.*

This can be explained by the contributions to the theoretical and practical domains.

Theoretical impact

After well scientifically grounded and related it to other proven research in the area, BITI MM can help to answer at least 3 actual problems in BITA domain, which are mentioned as not properly addressed by the research efforts (e.g Chan & Reich 2007):

- **Absence of good measurement tool for BITA initiatives.** BITI MM can be seen as a useful measurement tool at the initiation phase of BITA projects;
- **Insufficient connection of BITA theory to the practical side.** BITI MM was mostly composed from the practical experience and insights and with the help of frameworks and standards actively used by practitioners. If properly linked to the scientific research literature, BITI MM will address this gap;
- **Insufficient attention to the process perspective of BITA.** Maturity models have been a traditional way of measuring processes. If we use those as one of the basic principles for a BITA model, it will inevitably bring the attention to the process perspective of BITA.

A more detailed description of the BITA domain, existing relevant research and topical problems can be found in [Ch.3.3](#)

Practical impact

From a practical perspective this research makes a contribution in Business-IT Alignment and strategic IT planning domains. Since the Strategic Alignment Model (SAM) (Henderson & Venkatraman, 1993) several attempts have been made to improve it or present alternative frameworks. The main critique of SAM model was that it is too general and has unclear relation to practice (e.g. Avison et al. 2004). Correspondingly, researchers tried to make more detailed frameworks and add different practical tools, which often made them difficult to understand. Different companies operating in IT consulting market have developed their own frameworks. But those which we could find and access also were quite detailed and rather suitable for the elaboration phase of an IT consulting offer.

In the proposed model we strived to provide enough guidelines and relations to practice. But at the same time one of the main demands for the model was to be simple, straightforward and clear enough to be a helpful tool from the very first negotiation steps with managers, independently from their specialization area and background.

Further elaboration steps align the model with existing most well-known models, standards and best practices from business and IT domains. This makes the developed model wider applicable and easier to use in different areas.

PART II – THEORETICAL STUDY

This part establishes the theoretical foundation for the research. First, the main concepts used are explained. Then the three research questions defined in the previous part are addressed: the main underlying principles of BITI MM, its practical use, and its potential to stand the proof of time

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3. Main Project Concepts and Definitions Explained

“Everybody has a different definition of the good side”
- Will Wright

In the current chapter we explain the most important terms and concepts in the project. The terms like “business” or “alignment” have a quite high level of abstraction. They can often be understood differently by people with different experience and expertise areas. Sometimes the words get into the category of buzzwords, and then authors often misuse them, consciously or unintentionally, to make their works look more trendy and up to date. If we look in the literature, sometimes we can see essentially same definition following different terms.

That is why it is important to outline here what is meant by different terms in the current project and what the related concepts mean for the project goals, why they are important here. In the order of subchapters we explain the following concepts: Business, IT Function or IT Organization, Business-IT Alignment, Maturity Models, Business Model.

Those readers, who are not interested in the explanation of the basic concepts can jump directly to the [next chapter](#) or use the [glossary](#).

3.1. Business

“Business” is one of the most abstract concepts used almost in any way one can imagine. When talking about IT, different authors tend to write about “delivering business value”. In IT-related literature we can find such terms as “business process”, “business format”, “business service”, “business application” etc, which in fact define some purely technological phenomena.

In the current project we will use the term “Business” in the organizational context. **A business (also called a company, enterprise or firm) is a legally recognized organization designed to provide goods and/or services to consumers.** (Sullivan & Sheffrin, 2003). Correspondingly the terms ‘business’, ‘company’, ‘enterprise’, ‘organization’, or ‘firm’ will be used interchangeably in this report unless different is explicitly stated. We do not make distinction between the private and public sector here, as we see it as not critical for the research goals. In addition we will use the word “Business” (from capital) or “the Business” sometimes when referring to the business party in the BITA process.

3.2. IT Function

In organizations where IT plays some role, it can have a complex structure and internal processes. IT Function often can be regarded as a business itself. This is not always applicable. But looking from this perspective allows to assess and answer the questions like “What value does IT Function propose and what it should propose?”, “What is the goal and the strategy of IT Function, if they in fact exist and are they defined?”, etc.

But IT Function does not always have to be or to be regarded as a separate business. This is closely related to its maturity (see [Ch.3.4](#)) and other factors. A company might have IT which supports all organizational needs, but at the same time does not have a separate budget, established processes or structures. Mostly we can find the examples in small companies where a couple of FTEs are responsible for IT support.

Often IT Function is represented by a separate business unit, has a complex internal structure and multiple points and types of contact with the business which it supports. Here a “separate business” view

might be useful. IT Function can be regarded as a service provider – a separate company with one main devoted client – the main business. And yet another possibility is when IT is not only supporting business, but is an inseparable part of it. If company revenues to a large extent come from IT-related initiatives, IT Function usually can be regarded as neither a separate entity nor a business on its own.

Thus, talking about **IT Function, IT Organization or just IT, we will mean the corresponding structure, governance mechanisms and specialization topics responsible for the functioning of IT in a company.** The three main things that allow distinguishing IT Function as a separate topic are: explicit specialization, ever increasing importance of IT in the functioning of businesses, and relatively high internal complexity of the IT domain. At the same time it is important to maintain balance here. Rolling down to purely technological topics on the one hand, or becoming too abstract and seeing IT as a “black box” on the other hand, are both dangerous lures.

3.3. Business-IT Alignment

The Business-IT Alignment (BITA) domain has quite a long evolution history and at first was mostly addressed as a finite reachable state. In the recent research more attention is devoted to the process perspective. Alignment is addressed not as a destination, but as an ongoing journey. A comprehensive up-to-date analysis and overview of the BITA domain can be found in the paper by Chan & Reich (2007).

Here we define **BITA as a process of finding, retaining and constantly bettering the relation between business and IT for the benefit of the whole organization.**

We can find the attention to alignment between business and IT as early as in 70s (e.g. (Mclean & Soden, 1977). Thirty years later the alignment domain is developed much better, many different aspects have arisen. The impressive progress in the IT field has also changed the angle from which the problems can be tackled.

A notable work in BITA domain was presented by Henderson & Venkatraman (1993). A simple model proposed – Strategic Alignment Model (SAM) – gained as much questions and critique as approval. One of the main critique points against SAM model was its low operationalisation and no explicit links to practical use. Several authors (e.g. (Avison, Jones, Powell, & Wilson, 2004); (Maes, 1999b) tried to extend or improve the SAM model. And it is still one of the most recognizable by practitioners BITA model.

Alignment is not the only name in the literature. It is also known by the names of fit (Chan, 1992); (Henderson & Venkatraman, 1993), linkage (Reich, 1993), and integration (Henderson & Venkatraman, 1993), as well as bridge (Ciborra, 1997), harmony (Luftman & Brier, 1999), and fusion (Smaczny, 2001).

We can see the term “integration” used in BITI MM instead of “alignment”. The reason behind it is that alignment assumes some separation and often the idea of IT following Business, while “Integration” has a more holistic view encountered in more mature organizations. On the highest level of BITI MM – “strategy view–strategy focus” – there is no need for a distinction between Business and IT, they are integrated.

In the current project we stick to the terms “alignment” or “BITA” in order to stay in line with the previous research done.

3.4. Maturity Models

A maturity model (MM) is often defined as a framework that provides, for a specific interest area, the descriptions of a number of levels of sophistication of the possible activities in that area (Tapia, Daneva, & Eck, 2007). Different MM have been known for quite some while and can be found since early 40s in

the domains of psychology and sociology (Maslow, 1943). In the domains of organizational development and IT management we can see MM gaining popularity since 70^s-80^s (Gibson & Nolan, 1974). Due to their highly applied and measurement-oriented nature different MMs are actively used by practitioners.

One of the best-known maturity models is the capability maturity model (CMM) proposed by Carnegie Mellon University's Software Engineering Institute. This model identifies the five levels of software process management sophistication. The evolution of CMM widened it to capability maturity model integration (CMMI, 2006) which has continuous and staged representation and two dimensions. The first dimension consists of the same five levels as in CMM: initial, managed, defined, quantitatively managed, and optimizing; and the second dimension distinguishes four aspects: process management, project management, engineering, and support.

The evolution of CMMI and appearance of different views and aspects in it has shown that the principle "one size fits all" does not work for maturity models. This fact can serve as one more supporting argument that BITA needs its own maturity model specifically addressing the aspects important for BITA, and BITI MM might be a candidate for such a model.

3.5. Business Model

It is impossible to talk about Business-IT Alignment without knowing how business works, what are the business vision, strategy, resources, markets, values, etc. The combination of all those and similar factors is often described as a business model. Different businesses have different business models, and different models require different relations with IT Function. In the current report we will use a broad definition by Osterwalder, Pigneur, & Smith (2009):

*"A **business model** describes the rationale of how an organization creates, delivers, and captures value – economic, social, or other forms of value. The term business model is thus used for a broad range of informal and formal descriptions to represent core aspects of a business, including purpose, offerings, strategies, infrastructure, organizational structures, trading practices, and operational processes and policies."*

Different structures or models are used to describe how business is organized and functions. Organization charts are known to visually describe the structure, responsibilities and processes within an organization. Some known models make accent on one or another aspect of business. E.g., one of the first famous business models by Porter & Millar (1985) looks at an organization as a supply chain or as an entity operating in competitive environment.

In regard to the focus of the current research – BITI MM – we can specify two main perspectives:

- BITI MM can be looked at as a sort of a business model itself.
- Different business models can be associated with different levels of BITI MM.

Business models can change or become invalid, both as a result of independent environmental changes or influences and as a result of conscious internal efforts. Looking at such changes goes in line with the third research question ([Q3](#)) and will be addressed in [Ch.6](#)

4. Main Underlying Theoretical Concepts of Business-IT Integration Maturity Model (BITI MM) (Q1)

"There is nothing so useful as a good theory"

- Kurt Lewin

This chapter provides details to the reader about the focal point of the current research – BITI MM. The description is based on existing documentation and on the conversations with business consultants of Getronics Consulting involved in development or use of BITI MM.

The same sources provided a hint about where to look for underlying and related theories as well. In the description we combined the theories which are explicitly present in BITI MM and influenced its current shape with those which we saw as relevant and able to add more clarity to the situation.

The chapter aims to address the first of the three research questions – **Q1**: Are BITI MM underlying concepts correct? – from the point of theoretical analysis according to the research methodology described in the **Ch.2.3**. Some additional perspectives, dimensions or subtle points can be found in the chapters describing the empirical results (**Ch.8 & 9**) and in the report part describing the final conclusions and recommendations (**Part IV**).

The following subchapters provide the generic description of BITI MM (**Ch.4.1**) and the extensive description and analysis of the underlying and related theories (**Ch.4.2**).

4.1. History of Creation and the Core Idea of BITI MM

Business IT Integration Maturity Model was first introduced in the summer of 2006. It was created to be used in discussions with IT department to define the level of organizational maturity needed. The BITI Maturity Model defines the needed organizational maturity of IT Function in relation to the view of the Business on the strategic importance of IT. The basic assumption was that the maturity of IT Function should not be greater than the view of the Business on the need for IT. (<http://itmaturity.wordpress.com/>)

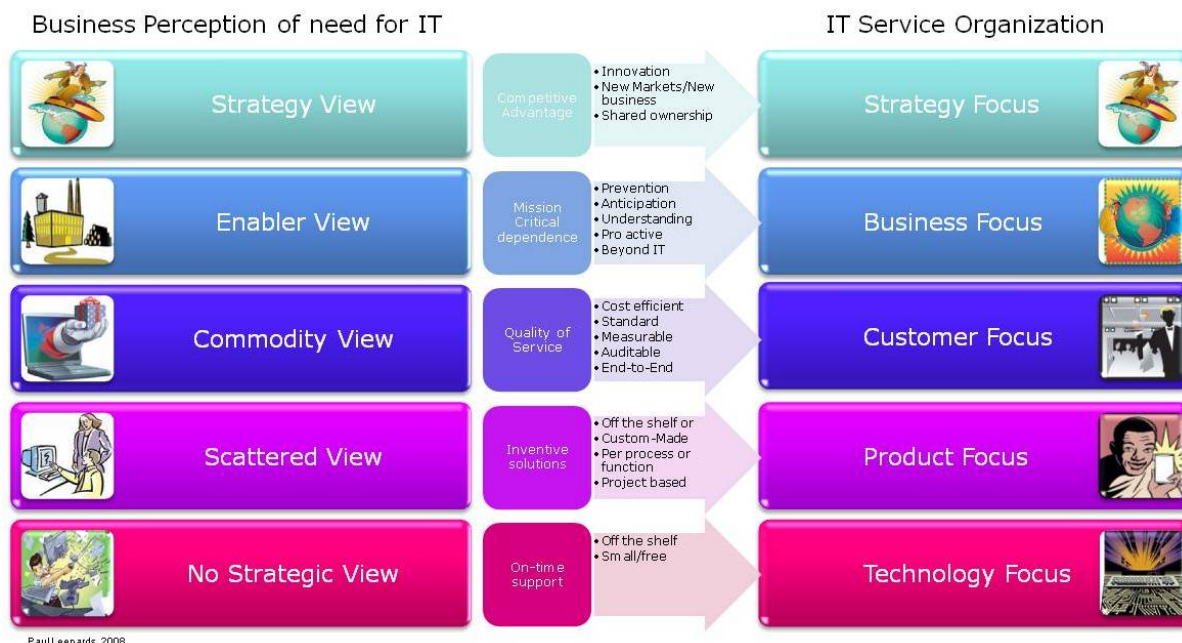


Figure 4.1 – Business-IT Integration Maturity Model. Representation with Arrows.

The model is based on several generic assumptions:

- In Business-IT Alignment process there are at least two participating parties – Business and IT. Sometimes they can be named Demand and Supply parties as well or represented by those;
- Every party can have different levels of maturity in regard to understanding and use of IT in an organization;
- For proper Business-IT Alignment the maturity of IT service organization should be in balance with the maturity of business perception of need for IT;
- If Business and IT party have different maturity levels, it means that they are not aligned and usually need help to come to consent and start efficiently support each other;
- Every maturity level on every side and the relations between the two parties can be described and recognized;
- It takes time for an IT organization to change its maturity, both in terms of self-positioning and ability to deliver solutions.

The two columns on the model describe the maturity of Business perception of need for IT and the maturity of IT Function correspondingly. The arrows show what type of services is typical and what important characteristics of supplied services are expected for the relations on every level of alignment.

Based on the division by Nolan & McFarlan (2005) the **Business perception of need for IT can be at one of the five levels**. The two lower levels correspond to the state of immaturity. It is not likely to meet any technologically advanced company being at one of those levels these days. For companies which are not very active in embracing technological change, however, the immaturity state might still be relevant. The upper level means striving for competitive technological edge and will not be met very often either. The state of being on the strategic level is mostly temporary as well. Most of businesses seek balance between exploration and exploitation and not many companies try to keep pace and repeatedly give ultimate preference to exploration of new possibilities and innovative trends.

Here we will describe the left column of BITI MM level by level.

No Strategic View. IT is not important for Business. Computers can be used for simple operations like text editing, or as an alternative communication way to the clients (e.g. e-mail). But in general, IT can be viewed at as an elevator for a healthy fit person to get one floor up, when the staircase is just beside and is used by everybody. The activity of the Business and its environment does not require active, if any, use of IT in business processes or communications.

Scattered View. Business partly understands that IT can be useful and may devote some part of local budgets on it. IT-related projects are initiated by individual employees or business units. The IT infrastructure is represented by scattered products and solutions acquired and installed for individual needs of managers or business units.

Commodity View. IT is acknowledged as being important for the Business, and perceived as commodity, just like water supply, phone, post services, or cleaning services. A limited number of business processes is usually already automated in businesses of this level. IT has to have some level of reliability and predictability, be cheap and invisible, i.e. not disturbing the main business activities. At this level, if any problem or disruption of services occurs, it is perceived as unpleasant, but causes no direct damage to the Business.

Enabler View. The main business processes in businesses of this level are automated and directly dependent on the reliability of IT and level of services it offers. This can refer to internal processes as well as to communications with external environment. Any failure of IT causes damage to the profit or image of the Business. Companies at this level often take a defensive approach to IT. Stability and reliability is more important than innovative possibilities and new opportunities.

Strategic View. At this level Business regards IT as a strategic weapon to strengthen the competitive position, gain competitive advantage or open new markets. Technological innovation is considered an inevitable part of the business strategy. All emerging opportunities are considered and assessed together with IT party and also from IT viewpoint. Business managers understand the main advantages, opportunities and possibilities of IT.

For different businesses different levels might be optimal. Far not every Business should strive to be at the Strategic View level. Every level has its advantages, disadvantages and necessary requirements. One of the main requirements is that the level of service offered by IT Function and the focus of its efforts corresponds to the level of Business view.

The maturity of IT Function or IT Service Organization can also be described by five levels. Just like in case with the left column, there are levels of immaturity regarding Business-IT Alignment. While being on the lower two levels the IT organization is very self-focused. The attention to *what* is being done is much higher than the attention to understanding of *why* it is actually needed. Unlike the situation with businesses, many IT Functions are still in the state of immaturity. This is mostly the result of historical trends and more difficult process to change levels compared to the Business party. The upper level again can be rarely met. Partly it is explained by the fact that an IT Function with that level is not easily distinguished from business. Business and IT become integrated and function together without sharp difference or separation on “us” and “they”.

Here we will describe the right column of BITI MM level by level.

Technology Focus. IT Function is fascinated by technology and the possibilities it offers. This is the main focus, also in communications with Business, often using specific language full of technical terms. Very profound specialization and ability to see some innovative trends early might make this type of IT Function valuable for Business. But because of difficulties in communication IT Function of this level mainly fulfills well only purely technological tasks, like support of network connection, hardware installation and maintenance, and support of generic software infrastructure. IT people reason from the point of view of technological possibilities and technological innovation without seriously asking the question why it is needed. It is difficult or impossible to demand any guaranties of reliability or availability because technology at this level might be something new, partly undiscovered and fascinating for IT Function. And the responsibility for the services or results often comes down to a description like “best effort”. Other issues like service level agreements (SLA), financial responsibilities or ownership of applications, infrastructure or innovation are mostly not relevant at this level. The best way of communication with IT Function here is by clear detailed instructions, ideally “translated” to the IT language.

Product Focus. From the point of view of IT Function a particular product or a set of products is what is needed by Business. The line of reasoning here still comes from the perspective of technology and its possibilities. But at this level they are “wrapped” in the description of a product. One can think of any software product here: *“The program X will allow you to calculate yearly spending and put it into a nice*

report". *"Will allow you to"* in this context most likely means *"will have somewhere some functionality for"*. This is a way for IT Function to formalize the demands of Business and at the same time limit the area of own responsibility. Decisions about relevancy or ways of use of the product functionality are left to Business. Business people are still expected to understand some internal intricacies of the products or services to be able to use them. IT Function might take responsibility for a product or service, but purely within the defined IT domain. The availability of an application server and work of a financial application on it without exceptions does not guarantee the availability of related financial services expected by the client.

Customer Focus. At this level IT Function sees its activities as services provided to the customer. The proper level of services which should satisfy customer needs is the main component here. If at the lower levels the focus was dictated by the technological possibilities and limitations, here it comes from what is asked by the Business. The IT party is willing to be engaged in conversation with the Business about their requests and possible solutions. All relevant products, maintenance and support activities, internal IT operations are bundled together to comprehensively address the customer's request. And a complete solution in a form of service is proposed to Business. We can see the roles of supplier and client clearly defined here. At this level different IT service management standards and practices actively come into play, like ITIL or ISO20000. The concept of SLA becomes relevant and meaningful. The IT party can define the proposed and guaranteed quality and determine the appropriate price of services. IT Function has defined approaches and mechanisms for operational requests and changes. And Business should only articulate tactical decisions and recommendations to IT managers.

Business Focus. IT managers at this level understand the organizational business processes and shape the IT services on the basis of that understanding. If the Customer Focus could be described by a slogan *"provide what they want and do your job right"*, here it is more about *"provide what they need and help them to do their job right"*. IT managers understand some business processes so well that they can take the responsibility for reliability, stability and performance of the whole process, not only for its IT side. To be able to take such responsibilities IT Function must be able to control all internal processes, as well as behavior and mindsets of employees and reaction of IT Function to changes. At this level IT Function does not require any operational regulations from the Business side. Conversation goes about tactical (for both Business and IT) and strategic (for IT) issues. IT managers can be seen as decent partners and sometimes the division on Business and IT might be not that evident.

Strategic Focus. The distinction between Business and IT is not that relevant anymore. IT managers help Business to find new business opportunities opened by technological progress and help to improve Business activities by proper IT solutions. Innovation plays an important role for the business success here. Considerable budgets are available for IT-related changes and initiatives. And IT projects make a significant contribution to the business financial results. The vanishing of separation between Business and IT Function allows us to talk about Business-IT Integration.

Just like with "Business" side, the higher maturity of IT Function does not always have to be the goal. Having IT with strategic focus might imply higher costs and intricate governance mechanisms.

The arrows explain, like in an unfolding list, what the main demands and expectations of Business from IT Function are. The arrows and their content do not form a principal part of the model and are not touched by the main research hypotheses. Nevertheless, they raise many questions and bring some contradictions in understanding of BITI MM by the author, consultants and other experts. That is why their role and

value for BITI MM will be addressed and analyzed during the empirical part of the current project (see [Ch.9](#) & [Ch.8.4](#)).

The initial model's assumption is that the maturity of IT Function should not be greater than the view of the Business on the need for IT. In the interviews with experts (see [Ch.5.2](#) and [Part III](#)) we will find out what are the typical and probable situations according to the model that are encountered in practice, and which situations should be considered as beneficial or harmful for Business and its alignment with IT Function.

4.2. Main Underlying and Related Principles and Theories

In the same way as there are two distinct dimensions in the model – the Business-IT Alignment dimension and the Maturity dimension – the underlying theories can also be grouped according to these two perspectives.

In the current subchapter we will have maturity models scope in mind and will go from maturity of IT to business perception of IT. For every topic we will start from the analysis of the theories that were used for creating BITI MM and add the position of other existing relevant theories on the problem.

This will help to address the first research question ([Q1](#)) about the underlying theories of BITI MM and also to prepare the theoretical basis for the second question about the usefulness of BITI MM and its relation with other known models and frameworks.

4.2.1. Maturity models and staged evolution models

We have already described (in [Ch.3.4](#)) what maturity models are, what their history of appearance and important characteristics are. Another important point to note is the proximity of maturity models and staged evolution models. No doubt that those concepts are very closely related, often derived from each other and even sometimes used interchangeably in the literature. One important distinction we see is that the evolution models aim to show the process – the ideal process. According to them in order to move forward you should always aim at the next (higher) level of maturity. At the same time maturity models focus on the structural side. They just show possible levels of maturity without saying which level is best for your organization. In the ideal case the description of a maturity model should contain both positive and negative implications of being at some level.

In that sense BITI MM is a typical maturity model, not an evolution model. And it cannot be overemphasized here that some level cannot be better or worse 'in general', but only for every individual situation. It is also an important point to be mentioned explicitly while using the model.

Still, as we have already mentioned, both maturity models and evolutionary models are very close to each other. And usually an organization which has got higher in its evolution can *afford* having a higher level of maturity and benefit from it. This means in particular that both types of models can be used to build the theoretical foundation and be used as supporting material.

The right side of BITI MM has a very good connection to the existing established theories. That is why it has not become one of the points to be addressed by the hypotheses. The IT Service Organization maturity levels closely remind those of maturity model from the ITIL3 Service Design book (Fig.4.2).

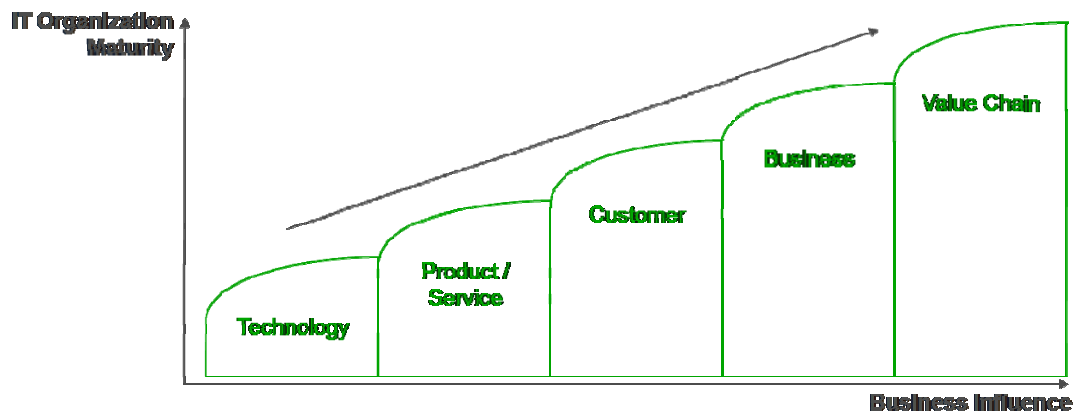


Figure 4.2 – The 5 stages of IT organizational maturity (Lloyd & Rudd, 2007)

We do not consider the similarity of names to indicate the same meaning of levels. The relation is evident, but BITI MM rather makes a step further and efficiently uses the well-turned elements. The authors (Lloyd & Rudd, 2007) use this 5-stage model for assessing maturity of the IT organization. This model is similar to the organizational evolution model by Greiner (1972) but more specific to IT. We can also trace the similar approach in the works of Gibson & Nolan (1974), (Nolan, 1979) and even earlier – Anthony (1965) described the evolution stages for a data processing organization and organizational application portfolio.

In addition we can mention very well known and widely used in practice CMM/CMMI by Carnegie Mellon University's Software Engineering Institute. This model also identifies the five levels of IT Function maturity which can be related to the five levels on the right side of BITI MM.

The situation with the maturity of Business-IT Alignment and maturity of Business perception of IT importance is less explicit and explored.

4.2.2. *Maturity models for Business-IT Alignment*

In (Tapia, Daneva, Eck, & Wieringa, 2008) the authors list and analyze the existing works in the area of BITA MM. Even though they analyze models from the perspective of collaborative network organizations, it is clear from the description in the paper that even for a single organization there is no commonly approved model yet. Some of the models mentioned, like those by Luftman (2003) and Duffy (2001) rather describe domains important for alignment than provide maturity models. Others, like in works by Federal Architecture Working Group (2000) or Raadt et al. (2005), focus on specific areas like investments or architecture.

If we do not take into account the models addressing one individual aspect of BITA broad area, it is possible to define **the two possible approaches to address BITA maturity**.

One approach is **defining and assessing the main important factors** – characteristics of alignment. For example Luftman (2003) defines six important areas in which you have to be mature in order to be well aligned. In [Ch.5.3](#) we argue that that kind of models is good for the next step – detailed assessment. For initial generic evaluation separate factors will rather distract one from the main problem.

Still, for the current research those models have additional value as they help to check whether BITI MM helps to draw attention to the core problems of BITA (Hypothesis [H4](#)).

Another approach to BITA maturity is **explicitly showing Business and IT Function** on the model, or named otherwise IT demand and IT supply. One example of such model is the IS Lite model by Gartner (2003) (Fig.4.3)

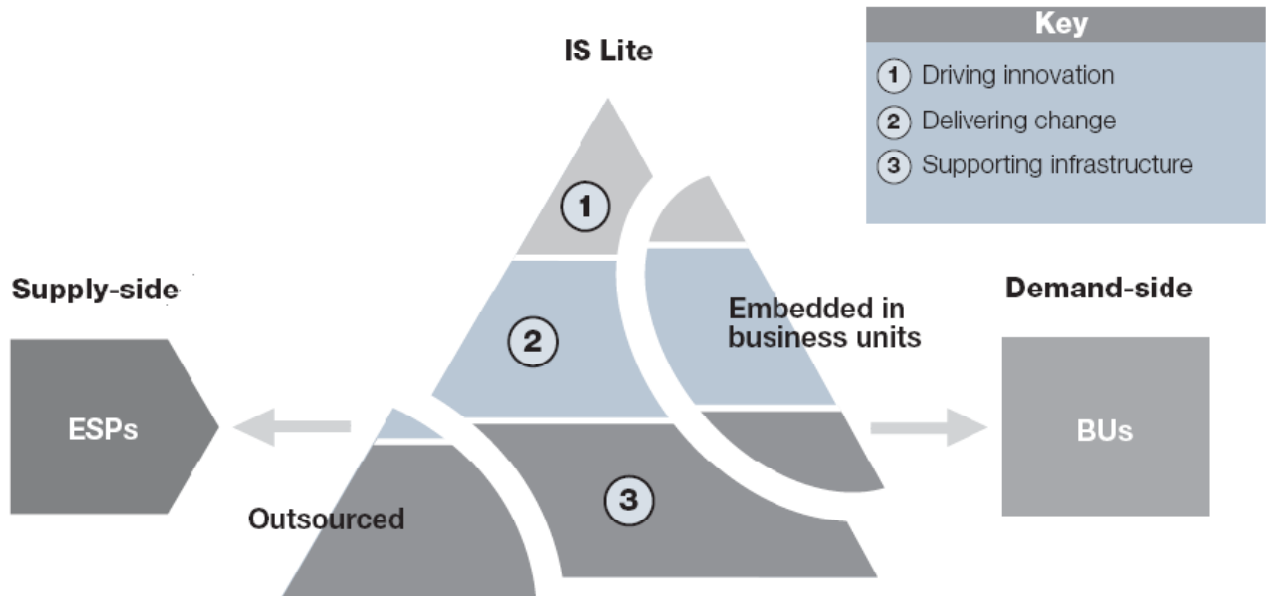


Figure 4.3 – IS Lite model shows different level of sophistication and explicit Supply and Demand sides (Gartner, 2003)

Here we see different levels of sophistication which can be also perceived as organizational levels and structural parts. In its previous edition used in (Ward & Peppard, 2002) IS Lite displays the subjects commonly addressed at different levels: IT Leadership, Architecture Development, Business Enhancement, Technology Advancement, Vendor Management. BITI MM describes in a similar way the most important typical characteristics by placing them on the arrows.

And when talking about BITA, one of the most influencing BITA models – SAM by Henderson & Venkatraman (1993) (Fig.4.4) has similar characteristics. It explicitly addresses Business side and IT side. “Functional Integration” term – similar to “integration” in the BITI MM name – is coined to describe relations between Business and IT. And the vertical division can be regarded as generalized maturity levels with strategy at the top and technological infrastructure at the bottom.

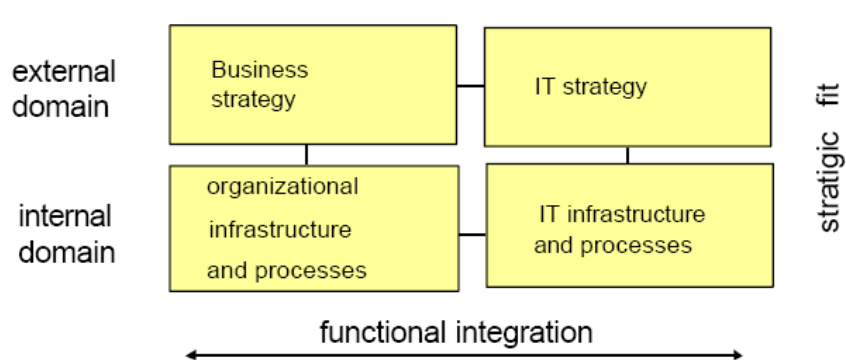


Figure 4.4 – Strategic Alignment Model has explicit Business and IT side and “maturity levels” (Henderson & Venkatraman, 1993)

BITI MM takes similar approach and follows the acknowledged models: SAM – for the general structure, ITIL3 or CMMI for the maturity levels of IT Function. The part which however has to be checked in addition is the left side of the model – maturity levels of the business perception of IT side.

4.2.3. Maturity of Business and its perception of IT

We have already mentioned the staged evolution model by Gibson & Nolan (1974). Together with McFarlan in 2005 Nolan defines the four modes of different demands for the IT organization (Nolan & McFarlan, 2005). That theory can be regarded as a combination of the staged evolution model by Nolan and theory by McFarlan, presented earlier (Fig. 4.5)



Figure 4.5 - The distribution of organizational IS portfolio (McFarlan, 1984)

In general those theories were the core part to come up with the maturity levels of the Business side of BITI MM. Providing that Nolan and McFarlan believed that their theories describe related phenomena and are possible to combine (in (Nolan & McFarlan, 2005)), it is logical to assume that the modes of IT demand can represent the levels of demand in the maturity model.

We can find a good supporting argument in the book of Ward & Peppard (2002). The authors thoroughly analyze the approach of McFarlan (Fig.4.5) from different angles and at some point come up with the framework which they call “Portfolios, planning and generic strategies evolution” (Fig.4.6)

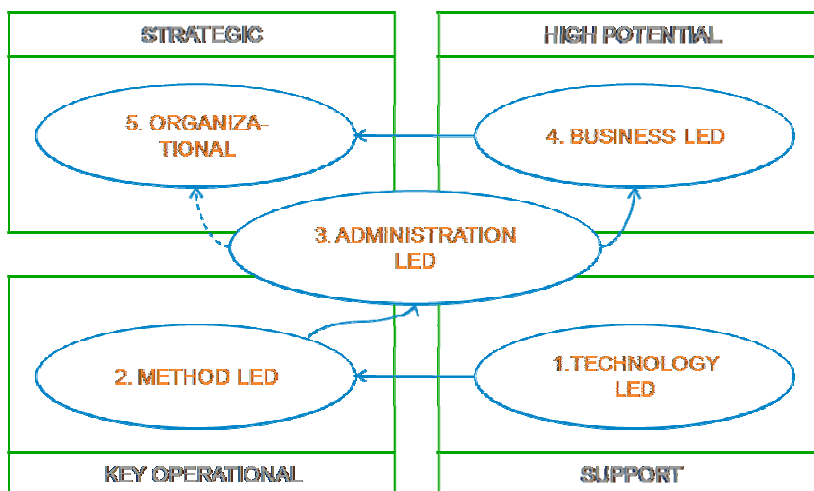


Figure 4.6 – Portfolio matrix by McFarlan represented as a strategic evolution model (Ward & Peppard, 2002)

As we can see, Ward and Peppard applied the same way of reasoning and derived 5 stages of evolution (or levels of maturity) representing the way in which Business should handle its IS portfolio. The book of Ward and Peppard provides a well-grounded explanation for this approach (see pp.299-323) and can serve as an argument that it is possible to take the similar approach for defining maturity levels in BITI MM.

An elaborate study by Grover & Segars (2005) included the theoretical domain overview as well as a well-structured survey addressing the top IS managers of 600 selected companies from Fortune 2000 firms. The main conclusions of the study were the following. There are stages of Strategic IS Planning (SISP). Firms have different processes, outcomes and context in each SISP stage. Grover & Segars used a learning model with three stages, which made it potentially easier to position different companies on different stages than if the model had five stages. But the main conclusion of the study still supports our hypothesis [H2a](#). The authors' focus is on IS planning, but they make a strong link to alignment studies and specifically mention alignment as one of the key factors for success of IS planning.

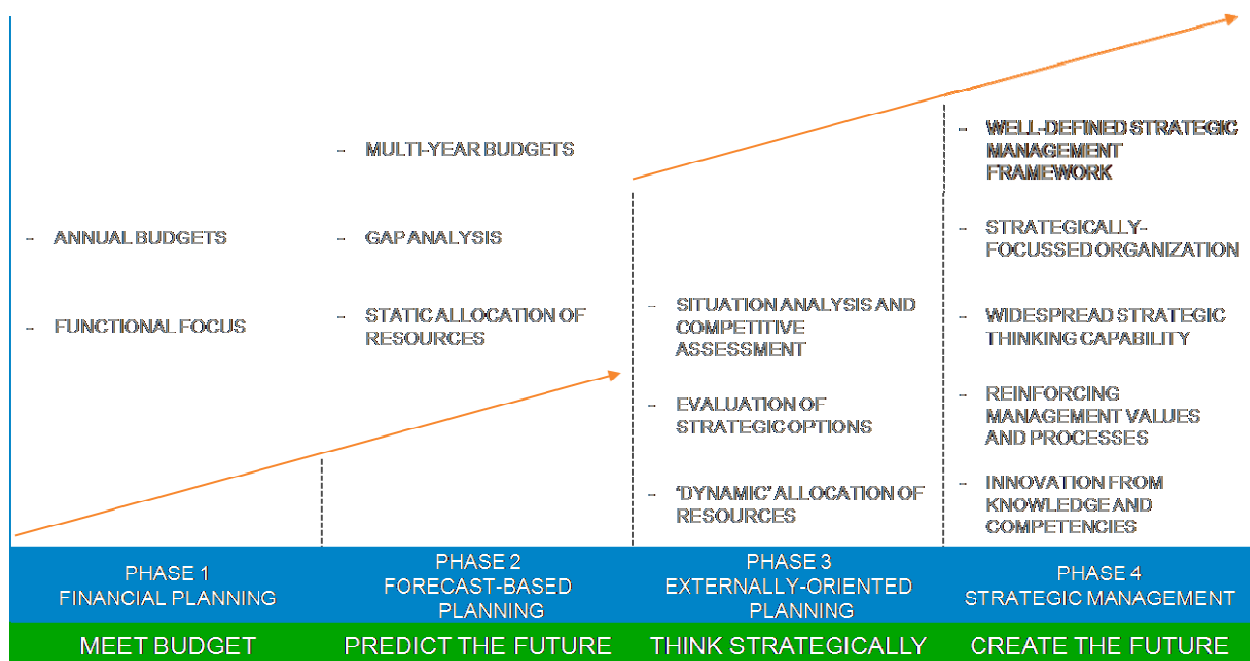


Figure 4.7 – Evolution of strategic management maturity (Gluck, Kaufmann, & Walleck, 1980)

We can relate the lowest two levels in BITI MM (No Strategy and Scattered View) to the 1st phase. Transition from the Commodity View to the Enabler View in BITI MM needs a mindset switch and might correspond to crossing the gap from phase 2 to phase 3 in the model of Gluck et.al. That transition is an important point when the Business switches from internal focus and cutting costs to external focus, searching for opportunities and considering IT as an important enabler. The “Widespread strategic thinking” of the phase 4 also goes in line with Strategy encompassing both sides in BITI MM at the top level. Innovation mentioned at the Phase 4 becomes an important activity there as well.

In general, a known approach in organizational and IS planning studies is to show the evolution or learning process in the organization. This learning process is often described by the S-shaped curve and has several stages leading an organization from initial, ad hoc state to maturity. Those stages often make a basis later for levels in maturity models. These approaches have been applied to industry growth (Porter & Millar, 1985), business growth (Greiner, 1972), IS budgets (Nolan, 1979), information centers, end-user

computing (Henderson & Treacy, 1986), and technology assimilation (Cash, McKenney, & McFarlan, 1992).

All those studies support the hypothesis **H2a** (Different levels of business expectations for IT exist, possible to identify and distinguish between them). But in addition to the theoretical validity we still have to check if it goes in line with experience in the field (see [Ch.8](#)).

4.2.4. *Danger of mixing business with business demands*

The example of staged evolution models by Gluck et al. (1980) discussed in the previous subchapter (Fig.4.6) was adapted by Ward & Peppard (2002) to be used for strategic description of IT Function. Analyzing the model Ward & Peppard (2002) give an important comment:

“The approach to IS/IT strategy development is often, despite the best of intentions, ‘behind’ the approach adopted for business strategy formulation. While the organization may well be managing overall in Phase 3 or even 4, the approach to IS/IT strategy may, in reality, still be in Phase 1 (the current project plan and annual IT budget driving the plans) or perhaps Phase 2 (IT management planning future resource requirements based on a forecast of likely needs). Where this occurs, the IT unit is often seen by the business as ‘living in a world of its own’ and unable to react to the rapidly changing environment.” (Ward & Peppard, 2002) (p.67)

This conclusion for Business-IT Alignment contradicts with the description of BITI MM which says *“The view of the Business [on the strategic importance of IT] can be seen as a level of maturity for the business itself”* (<http://itmaturity.wordpress.com/>).

We draw the attention of the reader to the fact that that the Business *itself* and its maturity should not be confused with businesses *understanding of and need for* IT. Even more, it is easier for a human to reason in more explicit categories of “Business” and “IT” than in categories of “perception”, “focus” or “need” which ultimately come to “Business perception of need for IT”. This might lead to the fact that people tend to simplify and misunderstand the model. That is why we recommend making the distinction explicit when presenting and explaining BITI MM.

4.2.5. *A brief conclusion on alignment and maturity theories*

One important point mentioned by experts is that the continuous or staged evolution models rather show an ideal process. In reality due to multiple external and internal factors the organizational evolution is more unpredictable and can go up and down instead of smoothly heading towards maturity. Another point is that the highest position on the evolution curve is not always – and should not always be – a goal for a particular business. Instead, there are different maturity levels that are characterized by different success factors. And a business can be successful even being in the beginning or middle of the learning curve.

This allows us to suggest that instead of focusing on the place of the company within a smooth ideal journey towards maturity it is more practical to focus on the current position. Going upwards on a maturity scale might be an option, but it might be more important to analyze all external and internal elements in the current state and first achieve the balance between them.

This is one of the main principles in BITI MM: there is no use in striving for excellence within IT Function or Business party if their interaction is not in balance. Instead of focusing on the journey towards maturity BITI MM places the focus on the balance of relations as a necessary precursor for continuing the journey.

4.3. Reflections and Conclusions

In this chapter we described the main idea and concepts of BITI MM and analyzed how they are supported by existing research. The main results of the analysis can be summarized in the following list:

- BITI MM can be described from the perspective of Business-IT Alignment and from the perspective of Maturity Models.
- The right column of BITI MM logically continues the existing research in the field of (IT) maturity models.
- The left column of BITI MM can be regarded as a combined result drawn from staged evolution models theory and IS portfolio matrices.
- The existing frameworks for BITA take one of the two approaches:
 - defining and assessing the main important factors;
 - explicitly showing the Business and IT parties and their relations.
- BITI MM picks up the approach of models of the second type. This supports the link between the Business and IT columns in BITI MM.
- BITI MM is a maturity model, not an evolution model, and it does not prescribe recommended change directions.
- Even though the left column of BITI MM mentions Business, the IT perspective has to be kept in mind when using BITI MM.

5. Use of BITI MM in Practice (Q2)

“In theory there is no difference between theory and practice. In practice there is”

- Yogi Berra

According to the research methodology described in the [Ch.2.3](#) this chapter is devoted to the second research question – [Q2](#): Does BITI MM have advantages compared to existing BITA models or maturity models when initiating a strategic alignment process? The hypothesis is approached from two perspectives. The **theoretical analysis** in this chapter includes theories and literature from both academic and practical worlds. And **initial observational interviews** provide additional insights into theory. This chapter is still in the theoretical part, and the main focus here is on theory. The initial interviews mostly play a supportive role. And the main empirical part of the research is described in the [Part III](#).

Here we already try to get closer to one of the main goals of the research and start addressing BITI MM as a common platform linking the scientific and practical worlds together.

In the subchapter [5.1](#) we check whether BITI MM can be considered a model suitable for active use in practice. This is done by theoretical analysis and thought experiments with other known models. The initial round of observational interviews for problem description (see [Appendix B](#) for details) has brought valuable understanding and conclusions which are discussed in [Ch.5.2](#). Also those interviews together with literature on the frameworks and standards used in practice allowed us to find the most widely used and recognized by practitioners standards and frameworks in the fields of IT management and BITA. Comparing those frameworks with BITI MM and finding the proper relation ([Ch.5.3](#)) provides new insights and helps to build the necessary theoretical foundation for the approach used in the empirical part of the project during interviews with experts.

5.1. Can BITI MM be Considered a Simple and Easily Understood Model

One of the main goals of BITI MM can be defined as “To facilitate discussions related to Business-IT Alignment problems”. In order to be successful for that purpose it is vitally important for BITI MM to be easily understood and allow its users to focus on the main problem instead of deciphering the model itself. In this subchapter we will analyze the characteristics inherent for easily understood successful models. And then we will check if BITI MM complies with those characteristics.

General limitations of human perception

The human perception is not perfect and has its limitations. That is why models are needed in general – to simplify the complex world for human possibilities. Multiple studies have been done in this field, which at the bottom line come to the set of simple principles.

The mind can operate with 7±2 chunks of information simultaneously. A good example from the real world can be found in the phone numbers (Ehrenberg, 1959). The phone base is 7 digits and the full number is 3 chunks of three or four digits. BITI MM has more elements, but it uses grouping and focusing approach. When the user has to define the maturity level for either Business or IT side only 5 levels have to be considered. When the attention is already focused at some levels it is easier to find out what is meant by connecting arrows. Another rule we can derive from this one is the following.

Group important elements and explanation hierarchically. The main representing model should be simple and easy to remember. Details can be explained in the underlying layers. A good example is the evolution

of the Prince2 standard by OCG. After several enhancements the standard came from a complicated long list of processes and necessary products to simple three groups out of seven elements each. This is enough to represent the standard. All details are explained in the more detailed documentation.

Limit comparisons to 4 chunks (6 paired connections) (Kosslyn, 1975). In BITI MM the level comparison is ordered, which means two or three consequent elements to compare. And horizontal comparison (Business and IT sides) has only two “chunks”.

Layer the information to different visual units (Kosslyn, 1975),(Tufte, 1997). Here the approaches can be mentioned like “foreground versus background and more” or “creating small perceptual groups”. In BITI MM it has to deal with explicit grouping: Business, IT, Links; and also with hierarchical structuring: Names of parts => names of the elements (layers) => information inside the elements.

Show differences and summaries explicitly (Cleveland & McGill, 1985). BITI MM is in general about making differences explicit, so this statement applies to it as well.

The secrets of successful models in the relevant domains

Another check we will conduct is a thought experiment (inspired by (Sarasvathy, 2001)) with two successful models in related domains: Strategic Alignment Model (SAM) by (Henderson & Venkatraman, 1993) from BITA domain and Enterprise Architecture Framework by (Zachman, 1999).

We have already shown SAM on Fig.4.4. The model is widely recognized and used by both experts from academia and professionals from practice. Some of the factors of its success are recognizable from the argumentation above while some are new.

- *Simplicity* – the model is just 2 by 2 elements
 - *Hierarchical structure* – each of 4 elements has 3 sub-elements, those are similar in every element
 - *Two dimensions* – all links presented are sequential and do not use complex routes like bent curves or crossing borders, only verticals and horizontals
- *Recognizable categories*
 - *Names that ‘ring a bell’* – the names do not have to be clearly defined, but they must be in use by people applying the model
 - *No invented names* – all terms are taken from practice. It is much more difficult to get new buzzwords acknowledged than to benefit from using existing ones

Zachman Framework is used to address issues related to Enterprise Architecture. In addition to mentioned above simplicity, number of elements, etc, the description of Zachman Framework can give us more valuable hints.

- *Analogies to well-recognized phenomena.* Zachman uses analogies to known ideas, like construction, building, city-plan, etc. If a model can be easily linked to analogies or those are already present in the descriptions, the model becomes much easier to explain.
- *Good intermediary summarizing of the framework concepts.* The author does not let the number of constructs get too large and uses ‘hierarchical reasoning’ by drawing a summary at proper points.
- *Repetitions.* Repeating main ideas during explanation is important for proper understanding of a model.

The last two points do not address BITI MM itself, but they are important for its description and presentation by consultants.

Summarizing, we can state that the most elements and rules typical for an easily perceived successful model can be found in BITI MM. This supports the first hypothesis, [H1](#) (Low cognitive load in BITI MM is successful in facilitating user's perception). However, while some requirements are clearly satisfied (e.g. number of elements and grouping), other can be stated as true or false for BITI MM only after empirical validation (e.g. recognizable categories or possibility to build analogies). The corresponding questions will be included into the empirical approach in order to get necessary insights from practice.

5.2. Use of BITI MM as Perceived by Practitioners

During the initial round of observational Interviews for problem description the experts were directly asked if they can pinpoint advantages, disadvantages of BITI MM and the most probable use and audience for the model (see [Appendix B](#) for a detailed description of the interviews).

While describing the most probable use of BITI MM, different characterizing names or phrases were coined, like *"Awareness increasing tool"*, *"Expectation Management"*, *"Starting point for a further communication"*, *"General BITA problems"*, *"Assess the situation and define a roadmap"*. Those phrases cannot serve as a direct argument for or against hypotheses under the Research question 2 (**Q2: Does BITI MM have advantages compared to existing BITA models or maturity models when initiating a strategic alignment process?**). But they are good evidence that the focus of the hypotheses is chosen correctly and BITI MM should be addressed as an instrument for initiating BITI-related project and for initial general assessment and reaching an agreement.

During the interviews the experts familiar with BITI MM (e.g. Julius Duijts and Tom van Sante) used analogies extensively to describe the model. They used analogies with an evolving bakery, catering industry and auto resellers. This goes in line with the theory discussed in [Ch.5.1](#), that a good model has to allow drawing analogies, and supports the Hypothesis 1 ([H1](#)). This has also shown that BITI MM is good as a tool allowing initiating a discussion and smoothly directing it to the needed focus area. Experts not familiar with BITI MM however tended to apply BITI MM directly – to determine where the assessed company was on the both sides.

Everybody agreed that possible differences in the focus of Business and IT Function become evident when applying BITI MM, which can be considered a good preliminary support for Hypothesis 5 ([H5](#)). E.g. reflecting on the use of BITI MM one expert says: *"Some standards are mostly used by IT and are not much interesting for business side."*, and another mentions that Business often has "competition" focus. Keeping up with "Johnsons" instead of doing things in a well thought, through manner prevents Business from getting the maximum value from IT party. This serves as a support for Hypothesis 3 ([H3](#)) (comparison to other frameworks and standards), and helps to define proper position for BITI MM.

However, when directly asked to compare BITI MM with other frameworks and standards, experts seemed to be puzzled. The answer message mostly was: *"I cannot judge or compare, I just looked at BITI MM (and used it) as a tool"*. One expert says: *"I cannot say that BITI MM is worse, but rather those [e.g.*

SAM¹] are worse. They have been here for quite a while and have their (known) drawbacks and stable associations.” Another expert adds: “Compared to SAM¹ or Maes² model just gives another perspective which might prove to be more suitable for particular cases”.

The more detailed discussion based on the experts’ opinions and empirical results will be conducted after the second round of interviews. We will describe it in [Ch.8](#) and [Ch.9](#)

5.3. BITI MM Compared to the Most Recognized in Practice BITA Frameworks and Maturity Models

One of the activities within the current research project was the overview of the standards and best practices from IT management and IT governance related domains. Partly this has been done by asking questions at the initial overview interviews. Another approach assumed the analysis of books that contained the lists and overviews of the most popular best practices and standards used in practice. If some of the listed standards were close enough to the topics addressed by BITI MM, we studied them more in detail.

The initial assumption was that the existing bodies of knowledge from academia and practitioners domains are not well aligned (e.g. (Ridley, Young, & Carroll, 2004)) and to understand the practical value of BITI MM the analysis of non-scientific sources is essential.

The analysis of books (e.g. (Rozemeijer, 2007), (Publishing, 2008)) has supported the assumption. While Business-IT Alignment (BITA) is an extensive research topic, there is no framework or standard on the practical side specifically devoted to BITA. Some standards though mention BITA among other important activities and attention points or actively address BITA-related topics in an implicit way. We can see the trend within some frameworks to gradually raise attention to the BITA topics, e.g. when we look at the changes made from ITILv2 to ITILv3.

At the same time we have noticed that some frameworks from research papers are quite well known to experts. For example, such frameworks as SAM model (Henderson & Venkatraman, 1993), generic IT management framework by (Maes, 1999a), BITA success factors and assessments by (Luftman, 2003), Enterprise architecture framework by (Zachman, 1999), and some others are well known to most of the IT management consultants.

5.3.1. BITI MM compared to maturity models

BITI MM has a unique position on the crossroads of theoretical and practical domain. We have already discussed (in [Ch.4.2](#)) the main underlying theories and have seen that BITI MM has elements, important points, and relations to BITA domain and maturity models domain.

Naturally, a framework uniting different domains and having a relatively high level of abstraction has certain advantages and certain drawbacks. Or, if said in other words, it has certain properties, which allow position BITI MM and describe for which purposes it is the most useful.

Similar to most of the maturity models, BITI MM has levels allowing assess the existing situation and give the main directions for process improvements.

A known drawback of the existing most used maturity models – like CMM/CMMI, ISO/IEC 15504, maturity models of CobiT, Prince2, etc – is that they are too much self-focused. Or, said otherwise, they narrow the

¹ Strategic Alignment Model by (Henderson & Venkatraman 1993)

² Generic IT Management Framework by (Maes 1999)

focus to only one domain. Relations to other domains are sometimes mentioned, but the message rarely gets across. When looking at IT-related domains, the main known maturity models focus on purely IT issues and rarely actively involve Business, its position and actual needs. The main focus is on the internal optimization and perfection.

BITI MM at the same time explicitly addresses two parties. The main focus is not on striving for perfection (higher levels), but on the balance and correspondence of expectations.

There are maturity models (or staged evolution models) describing the business attitude and approaches to IT (see [Ch.4.2.2](#)), but they are too focused as well. They describe the evolution way of the company and show where to go. BITI MM at the same time does not necessarily have the evolution dimension and uses the maturity levels mostly as a means to assess the situation.

5.3.2. BITI MM Compared to SAM and Generic IT Management Framework

Above we mentioned several models from the BITA domain as easily recognized by practitioners. The SAM model by Henderson & Venkatraman (1993) is very popular (see fig.5.1), but it has been criticized for not having explicit practical application (e.g Avison et al. 2004). The SAM framework is very high-level. The main focus in it is not on elements, but on *distinguishing* between Business and IT parties as one dimension. This important quality was taken to BITI MM. Another dimension in SAM framework is internal operations versus external, market positioning, strategy. The authors approach their model as a generalized landscape, portfolio matrix. Every element has to be addressed here and the dynamics of information flows can be shown. This serves as an important reminder, but does not give hints for the next steps. Being a maturity model, BITI MM allows to assess the existing situation and to define the direction for desired improvements or next steps.

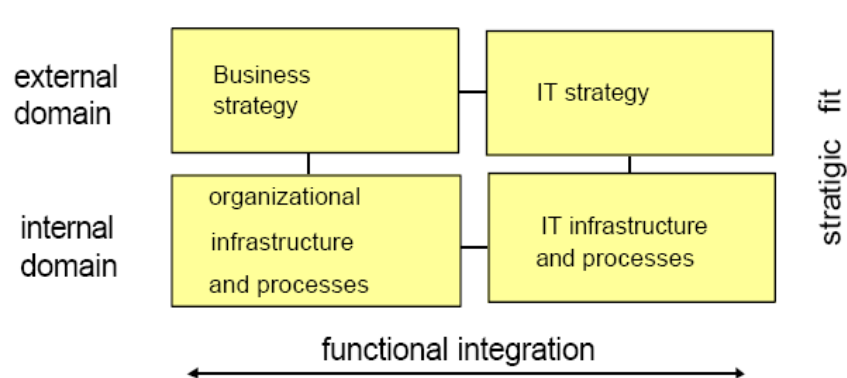


Figure 5.1 – Strategic Alignment Model (Henderson & Venkatraman, 1993)

The generic IT management framework by Maes (1999) (Fig.5.2) takes an “inside out” perspective. Initially the framework is based on the blocks of the model by Henderson & Venkatraman.

The author however explicitly mentions that he distances his research from BITA problems. As a result, the framework is a good overview of IT management segments, but without a clear connection to the Business and dynamics of alignment connections present in SAM model. Thus, it might help to assess the situation in IT Function but does not involve Business to a proper extent. The business strategy is more like one of 9 black boxes here, and Business itself is some external abstraction. The focus stays within the IT domain in the similar way to the mechanism of the IT maturity models.

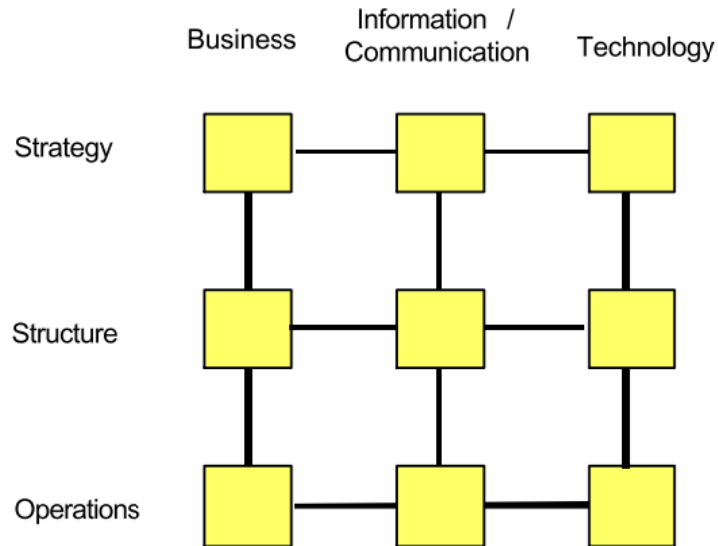


Figure 5.2 – Generic IT Management Framework (Maes, 1999a)

Now let's take these two frameworks recognized and used by managers and consultants and try to combine them with the theory discussed in [Ch.4.2](#). The SAM framework is the most generic, so we will take it as a basis. We want to keep the most attractive factors here: explicit distinction between Business and IT parties and inherent dynamics. On the right side (IT) we will apply the 5-stage model of Lloyd & Rudd (2007) to add the practical and assessment nature (see [Ch.4.2.1](#) Fig.4.2). We will apply the 5-step mapping by Ward & Peppard (2002) of the organizational IS portfolio by McFarlan (1984) to represent the business side.

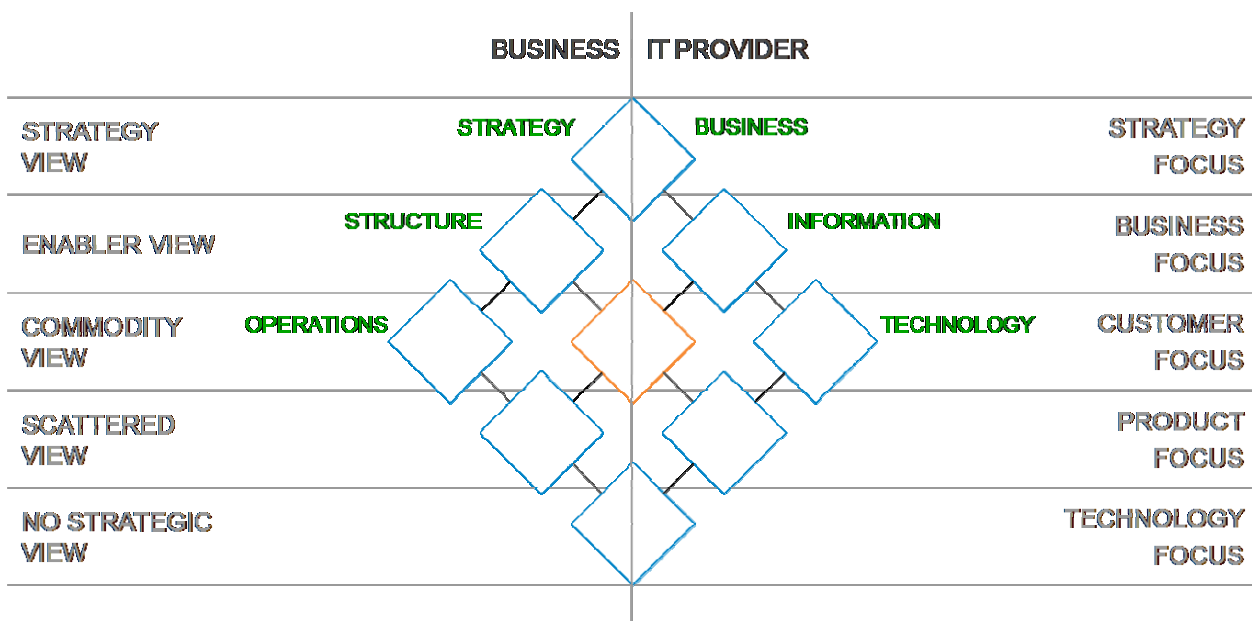


Figure 5.3 – Strategic Portfolio Alignment Model – The result of a thought experiment with the most recognized alignment and maturity models

Now we have explicit Business and IT parties, 5 levels to measure, assess and position each of them. And with a little turn the generic IT management framework by Maes (1999) can be mapped on the resulting model to add the benefits of the IT portfolio matrix (see Fig.5.3)

As the reader can see the resulting Strategic Portfolio Alignment Model (SPAM) reminds BITI MM. Actually, SPAM can be now used as an extension of BITI MM. It lacks the simplicity of BITI MM. But it

serves as a good illustration of the fact that BITI MM is inherently connected and goes in line with the most recognized by experts from practice theories in alignment and maturity models domains. Moreover, as we have shown during the thought experiment, SPAM takes the most expressive and arguably the best characteristics from all models used. This fact, after mapping SPAM and BITI MM, can serve as an evidence of potential superiority of BITI MM to other relevant models (Hypothesis H3). In fact, it rather helps to identify the strategic position of BITI MM as a tool and the perspectives from which BITI MM can be applied.

As a part of the experiment we discussed SPAM with experts. It received a positive feedback in general. But, of course, further research and a more thorough examination of SPAM is needed to be able to make final conclusions about its validity and practical applicability. We use it here as a supporting argument in the research about BITI MM and leave the validation of SPAM as one of possible following research directions.

5.3.3. BITI MM and the drivers of alignment by Luftman

The drivers of alignment by Luftman (2003) have a long track of success in practical application. The method has been successfully tested at more than 50 Global 2000 companies and is used by IT management consultants around the world. The approach has a very applied nature. There are detailed questionnaires, assessment tables, precise scales, etc. The generic framework by Luftman is shown on the Fig.5.4.

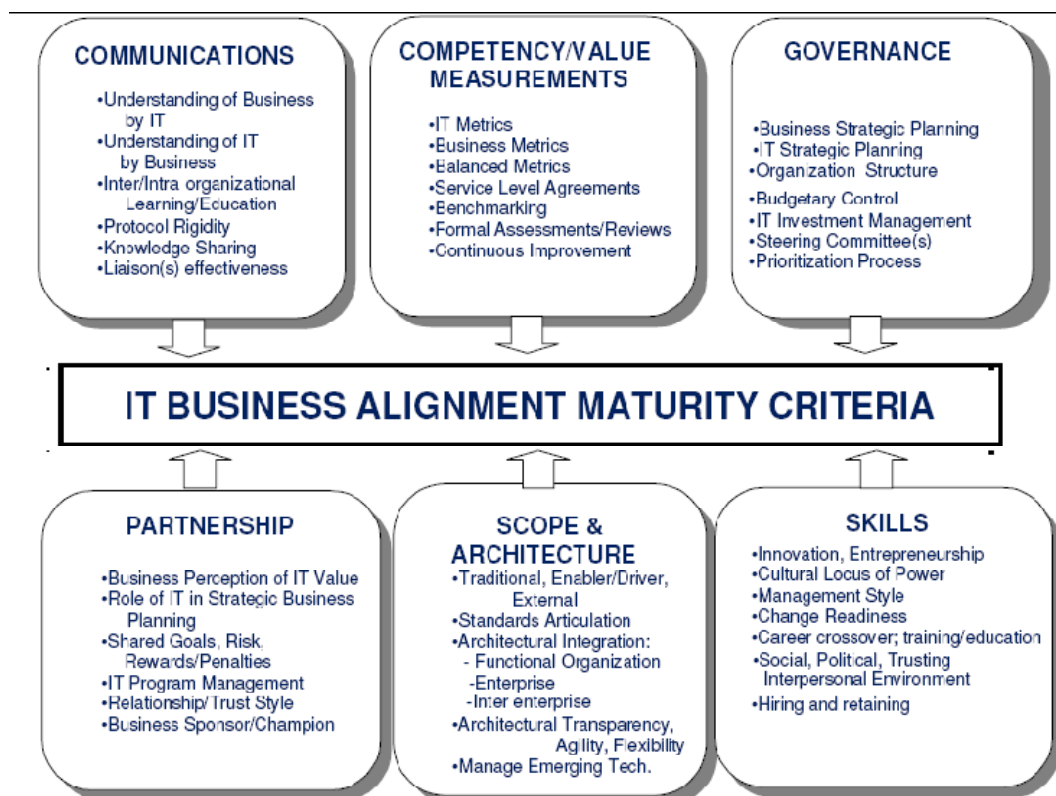


Figure 5.4 – The Drivers of Alignment (Luftman, 2008)

Compared to BITI MM the approach of Luftman takes a different perspective. We believe that the two approaches – methods of Luftman and BITI MM – can be used together and complement each other. The assessment by Luftman can be used as a next step in the assessment of the alignment situation in a company. An important quality of the Luftman’s drivers of alignment is that they address the problem from multiple angles. The alignment problem here includes “hard” side like IT metrics or Architecture,

“soft” competencies like Trust Style or Social Environment, factors from different disciplines composing any business, like finances, management, HR, etc. In this sense the approach by Luftman – just like BITI MM – can be distinguished from other approaches (e.g. CMMI, ITIL) that focus too much on IT Function and IT side of the issue.

One important difference from BITI MM is that Luftman takes the situation for granted and immediately proposes a solution. If we look at the Fig.5.4 it gives a feeling that there is no doubt that the problem with alignment is there and the only question is how to address it, what factors to consider, and what parameters to measure. The method avoids “why?” and “what?” questions and almost immediately goes to “how?”

At the same time BITI MM takes a more generic approach. It rather helps to explain what alignment, or non-alignment, or integration actually is and why it might be a problem and something has to be done about it. The model leaves more applied operational detailed measurements and reactive actions to other methods. The issue of alignment is quite often not recognized by business managers and attributed only to IT people (also according to the interviews). Before tackling the problem it might be important to come to agreement about its existence and its essence. For such initial steps a detailed questionnaire is often too complex. And the success factors may distract the focus away from the main problem too fast.

The applied methods, like the one by Luftman, create a perception of a well-grounded and serious approach, but they might not help in bringing the message across and coming to a common understanding at the first place. BITI MM concentrates here on the main problems in a simple, focused, understandable way.

5.4. Reflections and Conclusions

In the current chapter we analyzed whether BITI MM can be considered useful in real life situations from the theoretical point of view. Besides, we made the first links to the world of practice by using the results of initial observational interviews and taking into account literature from practice.

On its own BITI MM goes in line with the theoretical requirements to be easily perceived and used in practice. The initial interviews have shown that the model can be used as a basis for a conversation and help create a perspective different from what can be achieved by using other known models in the area.

The direct analysis and comparison of BITI MM with other models and frameworks helped to find its proper position. BITI MM combines several fundamental concepts and ideas, like maturity levels and Business-IT interaction, to address a specific goal – facilitate the discussion with business and IT executives and managers while initiating an alignment project. This can be a position where BITI MM proves more effective than other related frameworks.

6. Will BITI MM Stand the Proof of Time? (Q3)

“It only takes 20 years for a liberal to become a conservative without changing a single idea”

- Robert Anton Wilson

This chapter takes a look at what important changes in Business-IT relations took place during the last decades, what important and observable future trends are and what they mean for BITI MM. In [Ch.6.1](#) we discuss the important changes which have been happening during the last 3 decades in business in general and in IT-related areas like strategic information system planning. Chapter [6.2](#) looks into the most recent success stories. It addresses innovative successful business models which can become the mainstream only in future, and what they might mean for BITI MM.

BITI MM itself reminds to some extent a business model and contains many relevant concepts and components in it. In [Ch.6.3](#) we look whether this similarity is really justified and if this perspective can be used and can provide new useful insights.

All these subjects aim to address the third research question – [Q3](#): Does BITI MM use the proper focus and level of abstraction to stand the proof of time? – from the point of theoretical analysis according to the research methodology described in the [Ch.2.3](#).

6.1. A Brief Longitudinal Analysis of Macro-Trends

6.1.1. Changes in business

Everything in the world is connected. Political, technological, social and economic trends influence each other. Before discussing how technology supports business let's have a look at the global trends beginning from the years when IT started to play active role in our lives and till the future forecasts.

In her report Kjaer (2007) distinguishes two sides of global trends: individual and corporate. On the individual side the focus is changing from mass consumption in 70-80s to self-realization and self-actualization now and to what she calls “emotional consumption” in the future. On the corporate side the change in focus goes from product, to brand, and to social responsibility.

Kumpe & Bolwijn (1994) describe how the focus of main global players switched from efficiency in 60^s, to quality in 70^s, to flexibility in 80^s, and to innovativeness in 90^s. The markets correspondingly were ruled first by supply and prices, then by demand and quality, then by leadership through flexibility, and finally by uniqueness and ability to innovate.

Before embracing every stage most of the companies pass through 3 stages: denial, bottom-up attempts, top-down acknowledgement (Kumpe & Bolwijn 1994). The main challenges for R&D named by authors in this perspective are the changing customer demands, the increasing pace of technological development, and the intensified international competition.

We can conclude from the overviews three main trends remaining valid today and for the near future: globalization, individualization and increasingly rapid changes. People want more flexible, individual approach, want to be empowered to shape their lives and have emotional as well as rational components in what they receive and consume. For businesses it means that in line with the global reach and global exposure they must assure sufficient flexibility, to be able to satisfy changing customer needs, and proper balance between control and openness. And in terms of information technologies this might also mean

the increasing need for tools and systems which allow empowering people, taking their desires into account, and being able to rapidly include changes into the solutions proposed.

It is not in vain that IT is often compared to construction industry (e.g. Zachman 1999). Just like in construction, when you build a solid foundation for corporate IT, it is close to impossible to change and twist it according to changing business wishes. The technical possibilities of IT were quite limited in the beginning. And this was one of the important factors which put many IT organizations at lower maturity level. You cannot discuss strategic choices and opportunities when technological limitations do not give you much space for choice.

This, however, is changing. Already today we can see IT becoming more flexible and agile, providing better and more prompt answers to changes in business. The trend has been here for a while and can be traced to the future. In the next chapter we will have a brief overview of the main eras in the evolution of IT possibilities and approaches.

6.1.2. Progress in information technologies

In their book Ward & Peppard (2002) analyze how technological progress and change in approaches resulted in major changes regarding the role of IT/IS for business. According to Ward & Peppard those changes can be grouped in three eras.

- **data processing** – 60-80s and onwards; the goal is to improve operational efficiency by automating information-based processes;
- **management information systems** – 80-90s and onwards; the goal is to increase management effectiveness by satisfying their information requirements for decision making;
- **strategic information systems (SIS)** – 90-2000s and onwards; the goal here is to improve competitiveness by changing the nature or conduct of business (i.e. IS/IT investments can be a source of competitive advantage).

What was meant by the third, SIS era, was mostly embodied by integrated systems appearing those years, like Enterprise Resource Planning systems (ERP), Customer Relationship Management systems (CRM), Human Resource Management systems (HRM), etc. Usually quite large-scale systems, built by giant companies like Oracle, SAP or IBM, they required considerable changes in business processes and often proved to be too bulky to bring all the benefits they promised. Strategic information systems are still actively used by many companies (as well as the systems inherent to the previous two eras), but approximately after 2000 the focus has changed again.

Next, **fourth generation** comes to be more open, connected, flexible, agile. The enabling technologies and ideas include Service-Oriented Architecture, Cloud Computing, Virtualization, Social IT (Web2.0, Enterprise2.0...). The description and justification of existence of the fourth era might take a whole book and falls outside the scope of this research.

The main conclusion from the existence of different eras or evolutionary stages for our research is that the understanding of maturity can also change with time and technological progress. Some changes and trends are traceable and predictable. We can see the gradual increase in technology possibilities and transition from technology push to business pull and maybe even to empowered mix of both. Other changes are much more difficult to predict. But the certain fact is that they have been occurring and will

occur in the future. And for models describing the situation at any point of time it means that the description might become invalid or receive new limits of applicability.

Wiseman (1985) in his book about Strategy and Computers blames the Nolan's staged model (Nolan, 1979) for being clearly incomplete and inapplicable already in the era of strategic information systems (SIS). He states that the model does not offer guidelines to grasp opportunities offered by SIS. "Friedman (1994) in analyzing critiques of the Nolan model, suggested that, while evolution through the first four stages of the model was generally observable, the arrival in the 1980s of 'strategic systems' introduced a new stage that changed quite fundamentally the concept of how IS/IT evolves to 'maturity' in organizations and industries." (Ward & Peppard, 2002). These two statements and other similar cast doubt on the durability of maturity models in IT-related domains.

There are at least **three possible counter-arguments**. First, those opinions are not widely accepted by the scientific or practitioner communities. The Nolan's model is still widely used to give grounds in research and helps practitioners. Second, the opinions mentioned refer to the hype of the SIS era. The researchers might have been overly enthusiastic about the potential and role of SIS which diminished the value of previous research. And finally, the focus of BITI MM is different from the focus of the Nolan's model.

Our suggestion is that with time the concepts and understanding will move "down" the BITI MM. What is considered as strategic today might be perceived as just an enabler or even commodity tomorrow. Innovation is always temporary. This fact can be seen from the evolution of previous models. In the original Nolan's model Maturity comes right after the Data Administration level.

In BITI MM the names of the levels are more abstract, all-encompassing, formulated without specific technical terms, and, what is even more important, address less technical or specific problem. In this sense the condition for BITI MM to become outdated is that all distinction between Business and IT should disappear and they become fully integrated – what is now shown as the highest level of maturity in BITI MM. This is possible, but providing that Business-IT Alignment still remains one of the top concerns of CIOs around the world, we would not predict it happen anywhere within the next ten years.

6.2. Challenges of New Business Models

Analyzing the most successful companies of the last decade or so we can come to the conclusion that their business models do not follow the traditional approaches described in the scientific and practical literature. An example can be taken from the Google company. Before the launch of their first public physical product in 2010 – the Nexus smartphone – the company did not have the traditional hotline or service desk. Google could be contacted by their clients only via e-mail or web-forms. Normally Google just analyzed the feedback of its customers in the web and consequently integrated it in the products. At the same time the service desk is described as one of the best practices and the main front-end contact point for any company by ITIL. Not having those "best practices" in their arsenal did not prevent Google from becoming globally recognized successful company and the leader in many IT-related domains.

BITI MM is built on the traditional proven approaches. In the light of the success of the new business models this might have the following two implications.

- **The first one** is if BITI MM has the focus high and abstract enough not to be affected by differences in the business models used. In this case no changes to BITI MM will be needed in the future. And different business models can be addressed by different elements or levels in BITI MM or just will not be connected to BITI MM at all.

- **The second one** is if a new business model can make BITI MM invalid. In this case the possible consequences are the following. Specific 'area of validity' should be specified for BITI MM. The fact that a hammer is not good at opening bottles does not make it a bad tool. But the person applying it has to know what the tool should be used for. Another possibility is to review BITI MM and integrate new approaches in it. This approach has many potential traps and should be taken with great care and attention.

In the next chapter we will analyze how some of existing business model innovation theories go in line with BITI MM. Besides, we will address this issue during the interviews with experts. However, the results and conclusions should not to be accepted without consideration. The use of an unproven business model can add new additional risk to the risks already incurred in the technological and economic domains (Chesbrough & Rosenbloom, 2002). Therefore, the perspective described requires a separate thorough investigation, and we suggest it as a perspective direction for the future research.

6.3. BITI MM as a Springboard for Business Model Innovation

In [Ch.3.5](#) we mentioned two main possible ways to address BITI MM from the business model perspective:

- BITI MM can be looked at as a sort of a business model itself;
- Different business models can be associated with different levels of BITI MM.

We will address the latter after the empirical part of the project (see [Ch.9](#)). And in the current chapter we will analyze what elements of a business model BITI MM has, and what opportunities this perspective can bring. Here we will regard IT Function as a business itself and actual business as a strategic partner and the principal client.

Business models describe how available resources can be converted to values. There are multiple theories, models and ideas describing what a proper business model should address. A good list of the principal elements can be found in (Chesbrough & Rosenbloom, 2002).

- **Value proposition** – a description of the customer problem, the product that addresses that problem, and the value of the product from the customer perspective. In BITI MM this element is addressed by the arrows and descriptions within the arrows, which mean delivered services and their characteristics.
- **Market segment** – the group of customers to target, recognizing that different market segments have different market needs. Sometimes the potential for an innovation is unlocked only when a different market segment is targeted. In BITI MM different market segments are represented by different levels of IT perception by Business. Because mostly the business party is the only customer for IT Function, it is important to assure that the customer is in the market segment which IT Function can serve and help. If that is not the case, however, one possible solution is to involve third-party intermediaries. Within the unique relationship the chance of losing the market to that party is lower than for an open market case.
- **Value chain structure** – the company's position and activities in the value chain and how the company will capture the part of the value that it creates in the chain. We see no direct and dominant link to BITI MM here. Multiple interpretations and perspectives are possible. E.g. IT Function position in the value chain might depend on its maturity level.
- **Revenue generation and margins** – how revenue is generated (sales, leasing, subscription, support, etc.), the cost structure, the target profit margin. This is one of the most painful

problems and main goals of BITA: how to make IT be perceived as a profit bringer instead of a cost center. However, when looking from IT perspective it is more proper to talk about value than about revenue. Because IT does not bring revenue on its own, even though the costs can be calculated. Thus, no direct relation with BITI MM.

- **Position in the value network** – identification of competitors, complementors, and any network effects that can be utilized to deliver more value to the customer. In BITI MM this can be related to external partnerships and outsourcing. Some levels can be facilitated or provided by external parties.
- **Competitive strategy** – how a company will attempt to develop a sustainable competitive advantage, for example, by means of cost, differentiation or niche strategy. The strategic plans can be attributed to moving upwards in BITI MM, but a more proper definition would be to maintaining the balance and staying in line with changes of the other party.

In general, we can see that BITI MM can be called a business model, though with some reservations. And this perspective might be useful to take. The unique partnership position and the specifics of the market make some aspects here more valuable and protruding than others.

One of the main benefits of knowing and understanding your business model is business model innovation, i.e. possibility to rationalize, optimize and in other ways improve structure, processes, links and operation of your business. In this respect BITI MM has a similar goal. It allows analyze and understand the interactions between Business and IT parties in order to be able to define which elements within the parties or within the interaction itself can be improved.

The concept of innovation in general is an important element of the work by Schumpeter (1934), who argued that innovation serves to create wealth through fulfillment of customer needs with five different types of innovation: new products, new methods of production, new sources of supply, exploration of new markets and new ways to organize business. The concept of business model innovation mostly refers to the last one, but touches on the four previous types as well. A good definition of business model innovation can be found on Wikipedia:

*“**Business Model Innovation (BMI)** refers to the creation, or reinvention, of a business itself. Whereas innovation is more typically seen in the form of a new product or service offering, a **business model innovation** results in an entirely different type of company that competes not only on the value proposition of its offerings, but aligns its profit formula, resources and processes to enhance that value proposition, capture new market segments and alienate competitors.”* (Wikipedia, 2010)

There are several interesting points in this definition. First, it says about “*reinvention of a business itself*” and “*different type of company*”. In the IT perspective it closely corresponds to the change of the focus of IT Function. Next this definition says about aligning the company’s profit formula, resources and processes to enhance its value proposition. This is precisely what we see if we take the ideal situation according to BITI MM. When IT Function is in balance with Business perception, it means that it is aligned to Business and provides the most appropriate value proposition. And getting to that aligned state reminds business model innovation and implies the similar activities regarding people, processes, structure, and partner relations.

6.4. Reflections and Conclusions

The main important conclusions of the current chapter can be summarized in the following list.

- With time the concepts and their understanding will move "down" the BITI MM. What is considered as strategic today might be perceived as just an enabler or even commodity tomorrow.
- The condition for BITI MM to become outdated is that all distinction between Business and IT should disappear and they become fully integrated. We would not predict it happen anywhere within the next ten years.
- New innovative business models often do not follow traditional proven patterns. For BITI MM it means that its scope of applicability should be reviewed some day when some of those models become widely present on the market.
- BITI MM has several characteristics of a business model and this way of applying it might bring useful insights. Necessary changes unveiled by using BITI MM can be regarded as business model innovation.

PART III – EMPIRICAL PROOF

This part describes the empirical investigation and links the results to the theoretical conclusions of the previous part. The first chapter in this part gives an extensive description and explanation of the research approach chosen. Then we show how the empirical results addressed the research hypotheses of the current project and summarize the research results related to the hypotheses.

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7. Expert Interviews – The Approach Explained

“An expert knows all the answers - if you ask the right questions”

- Levi Strauss

The current chapter describes the approach used for the empirical part of the research. We used the expert interviews method. The interviews conducted were semi-structured interviews on the basis of open-ended questions. The additional details on the interview approach and methodology can be found in [Appendix C](#).

7.1. General Description of the Approach

Expert interview is a method that involves obtaining data for the research directly from experts in the relevant domain who can provide detailed information and opinion based on their knowledge and experience.

In the literature the method is mostly referred to as “Qualitative research” or “Key Informant interviews”. The methodological literature describing expert interviews is scarce but the research reports where this method was used can also serve as a good methodological source. A study by Audenhove (2007) contains a good summary of the important points.

In general, expert interviews are mostly not very much systematized or methodologically grounded. Instead they are aimed at gathering and using personal experience of experts in the most effective way possible.

The qualitative approach of expert interviews (instead of quantitative) was the most appropriate for the current study because of the vague research domain definition (or its understanding by practitioners), close links and overlapping with other domains, and the variety of human and contextual factors that may affect alignment in practice. In order to get some clarity concerning the understanding of the main ideas of alignment by experts we started every interview from the relevant general question (see [Ch.8.1](#) for details).

The basis for the interview was a script of well-defined, open-ended questions which during the interviews were supplemented with extemporaneous ones (see [Appendix C](#)). Most of the questions were the result of the analysis of initial interviews and literature study. The hypotheses cover an area too broad to be addressed by any single existing method. For some hypotheses the theory served as a direct basis for the questions. For others the theoretical and empirical proving was conducted in parallel. For example, the theoretical proof of simplicity of perception and cognitive load ([Ch.5.1](#)) was not directly related to the empirical part ([Ch.8](#)). It is possible to conclude from the theory what an easy-perceived model should look like. But during an experiment it is better to ask direct questions about the perception of the model than about related theory.

Additional analysis of literature describing research with the similar setting, in related areas was done. It has shown that the approach taken for the current study is a typical scientific approach for the subject (e.g. Bush et. al. 2009, Grover & Segars 2005) and can provide sufficient empirical proof, ground for the discussion, and additional insights.

Huber & Power (1985) proposed several guidelines for improving the accuracy of reports gathered from key respondents. Those tactics were considered in the development of our interview approach, its

administration, and selection of respondents. This included among other careful internal preliminary testing of the approach, targeting senior consultants, managers and executives emotionally involved in Business-IT Alignment issues, provision of the interview summary and final research report.

7.2. Selection of Interviewees and Expected Outcomes

The purposive sampling was employed to select the experts. For this approach we defined an overall frame of potential respondents first. And then using the results of literature study and preliminary interviews we crystallized a sub-frame of respondents with desired characteristics. Such designs are considered entirely appropriate in explanatory studies that examine unique or complex phenomena (Pinsonneault & Kraemer, 1993).

The previously done theoretical research and first round of interviews allowed to determine the proper niche for BITI MM. BITI MM seems to be the most useful when applied during the initial negotiations about IT-related initiatives at the strategic level.

Taking this into account we determined the **three necessary groups of experts to be interviewed**:

- **Business consultants of Getronics Consulting.** This group of 6 consultants represented the main stakeholders interested in use of BITI MM. First, some consultants had experience and examples of using BITI MM. At the same time to avoid potential bias the main focus in these interviews was on real projects and experience, not directly on the model. Besides, all experts in this group were asked to position their own company on the model. Potential variations here would allow making conclusions about the simplicity and unambiguous interpretation of BITI MM.
- **IT management consultants from other companies.** To reduce the potential bias caused by the feeling of ownership, specific company culture and commonly used approaches, practices, and models, we interviewed 3 consultants from external consulting companies.
- **Managers of internal IT organizations.** Looking at IT and alignment from inside of organizations might differ again from the perspective of external consultants. We had to make sure that the understanding, use and value of BITI MM does not depend on the position taken. 2 experts were interviewed within this group.

All interviewees were carefully selected. All of them had 10 to 20 years of practical experience in the relevant areas. During the first contact the experts were asked about their interest in the topic and they indicated that alignment is an important issue for them and that dealing with it is a part of their expertise.

The more detailed description of the interviewees and the approach can be found in the [Appendix C](#).

The main outcomes expected from the interviews included:

- **Strong explicit positions** about concepts/statements/questions/model elements – those allow creating a discussion and pinpointing the main controversial items.
- **Examples from experience** – good illustrations bring up important issues in implicit way, are easy for interviewees to refer to and to link to the specific questions about BITI MM.
- **Similar positions** of most of the interviewees give a foundation for conclusions, advice and for challenging or proving the theoretical findings.

Even though the expert interviews are not aimed at receiving an objective or statistically valid results, **the main important limitations** have to be named here. The main limitation comes from the definition of the method. It implies asking the opinions of experts in the domain, while at the same time not only experts

might be involved in the actual alignment process. Another important limitation that might have influenced the results is the geography of the interviews. All interviews were conducted in The Netherlands, and most of the examples given by experts relate to the Benelux market. The conclusions made can be considered representative for countries with high levels of economical and technological progress in general. The author's knowledge of the situation in Eastern Europe allows us to suppose that the answers and conclusions related to the hypotheses would stay valid there. However, some additional points of the resulting discussion like specific examples and conclusions about position of different industries on BITI MM might be slightly different.

7.3. Processing of Results

All of the interviews were tape-recorded and during the interviews extensive notes were taken. In order to make it not obliging we did not use any direct citations. Instead, after processing and analyzing the results of the interviews we made a short summary for every interview. The summaries were approved by experts via e-mail, sometimes with corrections or additions. And already those approved summaries were used in the empirical part. The general description of the interview approach, questions and interviewees can be found in [Appendix C](#) (C.2). In [Appendix D](#) (D.1) the reader will find the scheme and tables describing the consequent steps linking the initial hypotheses, interview questions, interview data and results presented in the following chapters.

During the processing the results formed two large groups. In the first group the opinions and examples were gathered which directly or indirectly addressed the research hypotheses. The second group represented additional important findings. Those findings were mostly not addressed by the hypotheses or by the theoretical review, but appeared to be the evident important attention points mentioned by the experts. We address them in the report in [Part IV](#) while discussing reflections and recommendations.

7.4. General Understanding of Business-IT Alignment by Experts

As was mentioned before, Business-IT Alignment is not a strictly defined concept, and can be understood differently by people with different expertise areas and backgrounds. The idea of alignment is often mixed with other related concepts, like IT Strategy or IT Governance. At the same time this concept defined the main context and scope of the interviews. And it was important to make sure that there are no radical differences in experts' perception.

In the [Ch.3.3](#) we explained what is understood by BITA within the current research. In the beginning of every interview the experts were asked to explain their understanding of BITA as well. Sometimes it was difficult for experts to separate BITA from the context, and often they gave quite elaborate explanations. We consider it useful for the reader to see how the BITA topic is perceived by experts in general before we address the individual questions.

Paul Leenards (2010) explained that in his view it would be more proper to talk about non-alignment, "why it isn't there", which comes from the difference in views of business and IT organization on the need for and value of IT. Non-Alignment is a more appropriate item on the CIO/IT director agenda than BITA. BITA is more a "dissatisfier", a hygiene factor rather than it is a strategic one.

The terms like "awareness", "communication", "understanding" were coined quite often during explanations of experts. Typical alignment problems are problems of lack of awareness, difference in language, and the lack of higher level overview of the processes involved (Kapteyn, 2010). And alignment is about common understanding and sharing (Folkerts, 2010).

Some experts (Kapteyn, 2010), (Reitsma, 2010) related alignment to IT Governance. They mentioned that alignment is a broad term closely related to governance and that you can approach BITA as a part of IT Governance. At the same time they agreed that alignment is also an important topic in general (Kapteyn, 2010) and in practice BITA usually means IT doing right things (Reitsma, 2010).

Rob van der Made (2010) explained that BITA has to do with matching wishes of the business with the possibilities of IT infrastructure. Business people usually want immediate change and you must explain why particular solution requires long time to make, what are the alternatives and where the compromise can be reached.

A historical perspective touched explained why BITA is especially relevant these days. IT traditionally operated on its own, not linked to actual business needs, which is nowadays no longer possible (Sluijter, 2010). All business activity becomes increasingly dependent on IT possibilities.

Hans Vriends (2010) approached alignment from the perspective of organizational structures. He explained the two kinds of alignment which have much in common and which have to do with the tasks of demand and supply bundling.

In general it was possible to see many common points in understanding of the concept of alignment and it gave the similar atmosphere and the direction of the interviews. But the term itself remained a vague concept, difficult (and maybe not reasonable) to put in one short definition.

8. Empirical Results Addressing the Research Questions

This chapter provides the analysis of expert interview results addressing the research hypotheses. The analysis integrates the previous conclusions from the theoretical part, as well as brings the reader to the answers about the hypotheses being supported or rejected.

We already briefly explained the interview approach in [Ch.7](#). In addition in [Appendix C](#) the reader can find the scheme of the interview approach, more detailed description of the three logical parts of the interviews, the questions and details about interviewees. Here it might be important to mention that every interview had three logical parts: examples by experts, general theory discussion, questions specific to BITI MM.

[Appendix D](#) can help to understand what steps were taken to process the initial “raw” interview data and to link it to the initial hypotheses. We used a multistep contextual and semantic analysis (see [D.1](#) for the scheme). The ideas coined by experts were logically grouped by hypotheses and additional insights and further served as a basis for the current chapter. The parts [D.2](#) and [D.3](#) in [Appendix D](#) group the most important data of the processing steps into conceptually clustered matrices and provide the explanation of the main analysis points.

We group the main conclusions from the interviews addressing every hypothesis in the beginning of corresponding subchapters and further *highlight them italic* in the text. The names of interviewees mentioned as references serve as an indication who of experts addressed one or another point.

Almost every hypothesis has received both positive and negative arguments. This is exactly what was expected. Such situation allows us to create a discussion, come to conclusions about hypotheses being true or false, and bring up possible new insights, improvement possibilities, and future research questions. In this chapter we repeat the same structure as we used for the rest of the report and group the results by the research questions and hypotheses.

8.1. Results for Research Question 1 – Is BITI MM Supported by Theory?

The question definition was “**Q1**: Are BITI MM underlying concepts correct?”. According to the research methodology described in [Ch.2.3](#) this subchapter will deal with the results of empirical approach addressing the hypotheses under the Research question 1. The subchapters will address all three underlying hypotheses one by one.

8.1.1. *H1: Low cognitive load in BITI MM is successful in facilitating user's perception*

The theoretical analysis in [Ch.5.1](#) has shown that most elements and rules typical for an easily perceived successful model can be found in BITI MM. Here we will see if the empirical validation has supported that conclusion. The main points addressed by experts and observed during the interviews can be grouped in the following list:

- Most of the experts easily understood BITI MM and could immediately use it.
- There are two possible levels of using the model:
 - Direct use to pinpoint your position on BITI MM;
 - As a basis for a conversation and discussion.
- “No Strategic View” and “Scattered View” are not the best names and can be confusing.
- The main representation of BITI MM is too simple if used without further elaboration.
- The maturity concept is misleading as it assumes the need to go up.
- Arrows of BITI MM, if paid attention, become the main point of confusion.

In general, most of the experts *easily understood the model concept and could immediately use BITI MM* to position the companies from the examples from their experience. It worked equally well for consultants familiar with BITI MM and for experts who saw the model for the first time.

As we already mentioned in [Ch.5.2](#), those consultants familiar with the model (e.g. Julius Duijts or Tom van Sante) actively used analogies and repetitions during the description of possible situations according to BITI MM. This goes in line with our previous theoretical findings (see [Ch.5.1](#)). This also shows that BITI MM is good as a tool for initiating a discussion and smoothly guiding it to the needed focus area.

It also allows us to indicate the *two possible levels of using the model*. One level is just about applying BITI MM *to directly pinpoint your positions* on the model. This should be available to any person after a brief explanation of BITI MM. And the second is about using BITI MM *as a basis for a conversation* by drawing analogies, explaining the concepts and smoothly coming to recommending following actions. This approach requires a good understanding of BITI MM and underlying concepts and can be attributed to consultants who, ideally, can also cite examples from their experience and link the BITI MM concepts to other more operational methods and approaches. In this second meaning BITI MM becomes “a tool for an experienced user” (Kapteyn, 2010).

During the expert interviews all experts had no difficulties in understanding BITI MM, its goal and potential utility. They agreed that the concepts look familiar and clear (Folkerts, 2010), in general the idea is understandable, and the names are clear (Linden, 2010), (Radenborg, 2010). For some experts the message brought by BITI MM was similar to common sense: “It is easy to understand. I don’t think anybody could radically disagree with this model” (Poels, 2010).

Naturally, some misunderstandings and criticism were present as well. “*No Strategic View*” and “*Scattered View*” were said to be *not the best names*, not feeling self-explanatory and demanding some thought (Kapteyn, 2010), (Reitsma, 2010), (Radenborg, 2010). This can be partly explained by the local macro-situation. All interviews were conducted in The Netherlands. The country is relatively developed in terms of information technologies, and it is difficult to find a company in a “green field” situation, i.e. corresponding to “No Strategic View” or even “Scattered View” levels (Croon, 2010a). (See the explanation of Q3 in this chapter and the experiment description in [Appendix D, D.4](#) for more details).

For most experts BITI MM was a *too simple* nut to crack and they wondered about more details, descriptions, guidelines, and next steps. Some experts wanted to see the metrics (Poels, 2010). They said that it is not clear how to measure the position and whether one should have all lower levels to be on higher levels (Linden, 2010). Others immediately wanted to go further and wondered what is next (Linden, 2010), (Poels, 2010). Some experts wanted to see different aspects and perspectives explicitly on the model, like governance, architecture, solution and service delivery, resource management, etc. (Reitsma, 2010), or the softer part like skills of IT people, social skills (Poels, 2010).

On the one hand the fact that BITI MM was grasped immediately by experts and became not sufficient for their curiosity proves the intended simplicity of BITI MM. On the other hand we agree that “A more detailed description of levels and what happens in between is needed” (Reitsma, 2010).

There were two more important observations repeatedly mentioned by interviewees. The *maturity concept* was easily accepted by experts but proved to be misleading. “Maturity” gives an impression that you should aim for the Strategic levels, “the higher – the better” (Kapteyn, 2010) which is not the initial intention of BITI MM.

And the second observation was *about the arrows*. We did not accentuate the attention or asked related questions. But if experts paid attention to this element, it became one of the major points of criticism.

The main contradiction was that alignment should go both ways (Kapteyn, 2010), and the arrows make it feel not about alignment, but like business telling IT what to do (Reitsma, 2010).

Summarizing, the interviews have shown sufficient support for the hypothesis and at the same time clearly indicated points for further improvement and extension of BITI MM.

8.1.2. H2a: Different levels of business expectations for IT exist, possible to identify and distinguish between them

As we showed in [Ch.4.2.3](#) a number of studies support the existence of different maturity levels or different types of business. The maturity model as a tool and a conceptual instrument can be found not only in IT-related research, but in general organizational, business and financial studies.

In two parts of the interviews – general and BITI MM-related – we asked the relevant questions. Experts said that IT intensity differs among industries. It depends on how a company can see and use IT (Reitsma, 2010). We will elaborate this more in the description of the experiment (see Fig.8.1 in [Ch.8.3.3](#)). But it is not only about industries. Different businesses have different business models and IT has to be tailored for those models as well (Linden, 2010).

When asked about different business expectations as shown by BITI MM, the interviewees agreed that those different types can be met in practice (Folkerts, 2010), said that they recognize the different levels of Business (Poels, 2010), and have the feeling for all of them (Kapteyn, 2010). However, as mentioned in the discussion about H1, “No Strategic View” and “Scattered View” sometimes required additional explanation. A brief explanation usually was enough to reach understanding of those levels and agreement about their meaning. But, as one expert explicitly mentioned, the upper levels were perceived better (Reitsma, 2010).

Summarizing, none of the experts explicitly denied the existing of different maturity levels of business expectations for IT in general, or of those levels shown by BITI MM. Most experts explicitly indicated the existence of differences among businesses. Several experts had doubts about the (names of the) lower two levels on BITI MM.

8.1.3. H2b: The success of alignment flow depends on how precisely Business demands for IT are defined at the first place.

For this hypothesis the expert interviews were the main validation method. We asked experts questions about the necessity of precise definition of business demands, wondered if the representatives of the business interests should actively participate during whole project lifecycle. We also asked opinions on what might the consequences be if business is not interested enough and does not participate in the process. The main points underlined by experts can be grouped in the following list:

- The participation in any project should be from the both sides, Business and IT.
- The responsibility for the end results and delivered value should be mutual.
- No good results are likely to come when business interests are not clear.
- Insufficient understanding of business demands almost always means a problem.

In general almost all experts mentioned that for proper alignment you need partners *from the both sides* (Kapteyn, 2010), that alignment should go both ways (Reitsma, 2010), and that to get the value and innovation from IT the ideas should come from both sides (Radenborg, 2010).

The topic of *responsibility* was coined not once. Not only the understanding must be mutual, but the responsibility and acceptance of consequences should be mutual as well (Kapteyn, 2010), (Radenborg, 2010).

Another keyword was “*value*”. Business party should be able to assess what is reasonable value for money. Their participation is crucial as the final value is created by business people and they know best how the provided IT solutions might affect the business value (Kapteyn, 2010). Correspondingly, the communication, collaboration and discussions should be also based on value (Reitsma, 2010).

Then, if it happens and business and IT parties collaborate efficiently, the total benefit becomes more than a sum of parts (Folkerts, 2010).

And vice versa, for the situations *when business interests are not clear* and business representatives do not contribute to the process sufficiently, the experts predicted *no good outcomes*. The degree of seriousness of the consequences varied, but everybody agreed that *that would be a problem*. Without business participation and appreciation you cannot leverage on IT and on early adoptions (Radenborg, 2010). Sure, every business unit can live “on an island”, but there are also common global corporate goals. And to reach those it is important to involve everybody in the conversation (Folkerts, 2010). The examples which experts could remember from their experience were even more tragic. One possible scenario meant the situations when IT dictates business possibilities, “*we provide you services and you can receive only those*”, or when new technology is introduced just because of the fashion (Sluijter, 2010). Another possible consequence is that the business party does not get what they need. Even if they say about high priority but then do not participate in meetings, there is chance that the money for their project will be devoted to other projects (van der Made, 2010).

Concluding, we can state that according to the opinion of experts, the precise definition of business demands in the beginning and during a project are crucial for its success. The project should not necessarily be purely about an alignment problem. Alignment is implicitly present in almost any IT-related initiative, and to deliver proper business value the understanding of business and its active participation has to be ensured.

8.2. Results for Research Question 2 – Is BITI MM Useful in Practice?

The question definition was “**Q2**: Does BITI MM have advantages compared to existing BITA models or maturity models when initiating a strategic alignment process?”. According to the research methodology described in [Ch.2.3](#) this subchapter will describe the results of empirical approach addressing the hypotheses under the research question 2. The subchapters will address all three underlying hypotheses one by one.

8.2.1. *H3: BITI MM helps to make an initial alignment assessment and identify problems better than other known alignment or maturity models*

This hypothesis was already supported by the initial interviews (see [Ch.5.2](#)). In the [Ch.5.3](#) we compared BITI MM to the known maturity models and BITA models. That comparison has shown that on the one hand BITI MM goes in line with the proven theories, but on the other hand it takes a different perspective which distinguishes the model from other frameworks. That allowed us to identify the best niche for BITI MM. It was described by the model purpose: to facilitate the discussion with business and IT executives and managers while initiating a BITA-related project. During the expert interviews we tried to verify whether the conclusion made was correct. The main points addressed by experts can be grouped in the following list:

- The existing assessment methods are too complex for the initial phase of a project.
- BITI MM implies a more generic, strategic viewpoint than other known public models.
- BITI MM is the most useful for initial project discussions and communications.
- Negative points of reaction on BITI MM help to improve and properly position the model.

The first supporting argument was that *existing assessment methods are too complex for the initial phase* of any alignment initiative or project. The most common approach for the initial phase and strategic assessment of the situation and possibilities is just talking with people, basic communications (Kapteyn, 2010). People at the board level are usually too busy and it is not possible to spend their time on detailed questionnaires or complex models. Some experts while describing relevant examples or general experience mentioned that for the board level they use just general questions and no tools, or models (Radenborg, 2010), (Poels, 2010), (Folkerts, 2010). At the same time this does not mean that no model can be used for this purpose, just that publicly available models known to experts do not help here. E.g. in the portfolio of Accenture there are relevant internal methods and models reminding BITI MM which can be used at the board level as well (Reitsma, 2010). But those are not open to public.

From scientific methods experts mentioned the method and questionnaire by Luftman (2005) which they used to assess the situation, mostly on the tactical level (Poels, 2010), (Radenborg, 2010). Different best practices, standards and models were mentioned as well. But once again, the focus of CMMI and related models, ITSM standards is on the tactical and operational levels. And *BITI MM implies a more generic, strategic viewpoint* (Folkerts, 2010). This goes in line with our previous conclusion about the possibility to complement the use of BITI MM on the strategic level with more detailed approaches, methods and frameworks like the one by Luftman (2005) on the tactical and operational levels (see [Ch.5.3.3](#) for more details).

Experts explicitly and independently mentioned *the most suitable and natural use of BITI MM*. BITI MM might be good as a discussion starter (Reitsma, 2010), make it easy to explain, pinpoint your position, focus, view and capabilities, and to give ground for common understanding and communications (Sluijter, 2010). Interviewees agreed that BITI MM might be really useful for generic conversations at the board level (Radenborg, 2010), where it is not aimed to precisely describe the situation, but rather as an introduction, basis for a conversation (Croon 2010). Those opinions partly go in line with the initial idea of BITI MM. The fact has to be taken into account that most of the experts saw the model for the first time and were given only a brief explanation.

Negative reaction on BITI MM can help to position the model as well. Some experts wanted to see topics like governance, architecture, solution and service delivery, resource management, etc. articulated more explicitly (Reitsma, 2010), mentioned other points like skills of IT people needed, governance, metrics, social skills, etc. (Poels, 2010), (Linden, 2010). Those examples show where BITI MM (or its representation used during the interviews) is not strong enough and can be either improved or complimented by other methods, frameworks and approaches. This observation goes in line with the previous conclusions.

8.2.2. H4: Applying BITI MM helps to bring up hidden core problems

The main points about this hypothesis addressed by experts and observed during the interviews can be grouped in the following list:

- The main situations where BITI MM can be helpful are:
 - Understanding facilitation;
 - Forming a common vision;
 - Creation of a discussion picture.
- The presence of two explicit parties shapes the conversation accordingly.
- BITI MM helps to keep the conversation focus at generic and strategic level.

First of all, it is important to define *what the core problems are*. The experts mostly were not explicit on this question. And the answer depends on the specifics of every individual project, on the circumstances and main goals. One possible definition was that those are problems of awareness lack, difference in language, and the lack of higher level overview of the processes involved (Kapteyn, 2010). As we described above BITI MM can offer help in those areas. But we consider this support insufficient.

In order to address this hypothesis we applied the similar approach as for H3. Instead of defining the core problems first and then mapping BITI MM on them we asked experts to describe how they see the main goal of BITI MM, where it might be the most useful, and which issues it brings to the top.

In line with the position for BITI MM described in the discussion about H3 experts mentioned that BITI MM is a good model to increase or facilitate *understanding*, for sharing thoughts and understanding of the situation, and to come to *common vision* (Folkerts, 2010). The model can help to create a *discussion picture*, be the basis for further discussion (Linden, 2010). The arranging of business views in a maturity sequence might bring new insights, viewpoints and understanding (Folkerts, 2010).

An important issue was brought up by *the presence of two explicit parties* in the model. Experts noticed that it illustrates well that alignment should go both ways and the both sides should be involved (Kapteyn, 2010). A possible interpretation was that this allows one to see the explicit difference between demand and supply parties, and this provides more insight, brings that important issue to the top (Folkerts, 2010).

The most part of the thoughts, reactions and ideas of experts were at the same level with the model focus: *generic and strategic*. One possible description of the model goal said that it is aimed at explaining what you have to do and how to shape your IT organization depending on how you regard the business party, what to do on the right side to satisfy business (Poels, 2010).

One more core issue that BITI MM brings to the top is addressed by the next hypothesis. Some important questions and considerations might not be attributed to the BITI MM representation but popped up as a result of the following analysis and considerations. For example the explicit presence of two parties and focus on the importance of the “horizontal” relation between them provoked some experts to think whether “vertical” relations might be as much important for proper alignment.

In general, the issues brought up by using BITI MM and reflecting on it have been acknowledged as important by experts. We cannot precisely define and prove, however, which of them can be named as “core” ones. We consider this a drawback of the initial hypothesis phrasing. And the hypothesis itself is considered conditionally proven.

8.2.3. H5: BITI MM helps to identify the difference between IT function expected by Business and IT function they have

This hypothesis was already supported by the initial interviews (see [Ch.5.2](#)). The description of the previous hypothesis contains the presence of and explicit difference between demand and supply parties as well. The ability to show the possible mismatch in understanding by parties was mentioned among the main values brought by BITI MM (Radenborg, 2010).

Two points explicitly and repeatedly showing up in the interviews address this hypothesis:

- The possibility to pinpoint the position on the model.
- A solution in a form of outsourcing or involving third party partners to address IT-related problems at different levels.

It was mentioned by several experts that *BITI MM allows easily pinpoint your position* on the model and see differences and potential problems with your IT Function. You can easily pinpoint “*your business perception is here, and IT is here*” and base the following discussion on that (Kapteyn, 2010). After you find proper positions on the both sides of BITI MM if those are not in balance, it immediately provokes questions about possible reasons and consequences of that.

Besides, the positioning itself can be made from different perspectives. Not only reasoning or perception can be discussed, but roles or actual capabilities as well. It is easy to explain, to pinpoint your position, focus, view and capabilities. That gives the ground for common understanding and communications (Sluijter, 2010).

If we look at the IT side from the point of view of present and absent capabilities, *the distribution of functions and possibilities for outsourcing becomes evident*. Experts mentioned outsourcing as a possible solution to the level mismatch problem. Outsourcing makes it cheaper and allows you to focus on the proper level of activities. It also means that you have to manage smaller team (van der Made, 2010).

Talking about outsourcing experts mentioned different levels: both lower and upper ones. Normally outsourcing starts from obvious things, which are close to commodity. This has to do with the difficulty and risk involved. But on the other hand there are also companies nowadays which outsource parts of their innovation (Vriends, 2010).

But usually the term “outsourcing” was mentioned in relation to the lower levels. Higher levels vision can be supported by hired external consultants and some lower-level services can be outsourced (Kapteyn, 2010). In part this has to do with the meaning and understanding of the term. And in part the involved costs play an important role. The higher maturity levels usually mean more costs involved. And bringing your internal IT Function up might be a more reasonable solution to the problem of mismatch in some cases than paying external consultants for their high level services. As possible alternatives to outsourcing encountered in their experience experts mentioned finding new people with more strategic focus (Poels, 2010) or providing proper training to existing employees (van der Made, 2010).

The active discussion of outsourcing by experts as a possible solution met in practice confirms the existence and acknowledgement of the problem. The presence of several levels in BITI MM stimulated experts to discuss what the situation was in the examples they mentioned, which level IT Function had, which level it should have had, what were the resulting measures, and which levels were facilitated by external parties. This supports the current hypothesis and shows that BITI MM is successful in one of its main intended goals – showing the difference between existing and expected by business IT Function.

8.3. Results for Research Question 3 – Can BITI MM Withstand the Proof of Time?

The question definition was “**Q3:** Does BITI MM use the proper focus and level of abstraction to stand the proof of time?”. According to the research methodology described in [Ch.2.3](#) this subchapter will describe the results of empirical approach addressing the research question 3.

In order to properly address this research question we first asked experts about the general situation in the IT sector and about the perception of information technologies by non-IT people. The experts shared their opinion on what had changed from the past and sometimes tried to give predictions for the future. The subchapters will address most important insights answering the research question 3.

8.3.1. What has been changing in business attitude towards importance of IT?

From the multiple insights and meanings that came up during the interviews we can distinguish the three main trends:

- The growth of maturity of IT and its closer integration with business.
- The increasing importance of technologies combined with their decreasing value.
- Integration of information across large organizations.

Information technologies have been here for quite a while already. They have been penetrating into various business activities and becoming indispensable critical component sometimes. The first trend noticed by experts is *the growth of maturity of IT and its closer integration with business*. The changes can be described as the growth of maturity, from living apart from business, being some separate specific facility, to supporting some secondary processes, to being an integral part of the primary business processes, and to the situations where difference between business and IT has disappeared (Croon, 2010a). Those changes can be traced from both *technological and human sides*. Technologies become more mature and people change. Younger executives are more used to IT (Reitsma, 2010).

An interesting consequence of those changes is *increased importance combined with decreased value* of IT services. The importance of IT has risen but at the same time the attitude to it and perceived value of IT has decreased from exclusivity to commodity (van der Made, 2010). This sounds reasonable. The increased demand has brought more suppliers to the market offering competing propositions and diminishing the “aura” of exclusivity and high value.

The changes can also be traced in the way of communication and specific language used by IT people. The language also has changed: earlier it was a secret language of “bits, bytes and protocols”, and now as an IT service provider you have to talk business language and make all translations internally (van der Made, 2010).

From the interview with Hilda Folkerts (2010) we see that *integration of information across large organizations* is one of the clearly traceable trends that have direct consequences for the role of IT. Some 15 years ago the situation with detached islands of business units might have been possible, but not today. Then business was not so much driven by IT. IT mostly meant specific tools, databases, etc. Then came the era when we needed connection and the application integration era started. IT could bring more value to business. Today it’s virtually impossible to find a big company which is not dependent on IT.

8.3.2. *What will be changing in the future?*

In addition to observing the changes in the past we tried to ask experts to reflect on the past changes and current trends and make assumptions about the future. Again, three main trends became apparent here:

- IT becoming closer to business.
- Explicit differentiation of the attitude to IT among companies and industries.
- Growing complexity and dynamics.

After the world economic crisis of 2008-2009 the concept of “*New Normal*” appeared. The origin of the term can be found much earlier in the book by McNamee (2004) “*The New Normal: Great Opportunities in a Time of Great Risk*”. But after the crisis the ideas really gained ground and were further discussed by media, professional community and global consulting companies. In short, the idea is that after the crisis of 2008-2009 the society is gradually recovering and returning to the normal life. But at the same time many things have changed, many conclusions are made, and “normal” life is not the same as it was before the crisis; hence the idea of “*New Normal*”. IT played an important role in withstanding the impacts of the crisis. Optimization of business processes, more efficient use of information, rethinking the value of complex corporate information systems and related organizational structures are but a few examples of where IT was involved in anti-crisis initiatives started by different companies around the world. In their global survey Kaplan et al. (2009) show that the historical IT trends that we described above continued and were stimulated by the world economic crisis. *IT has become closer to business, got more understanding and perceived value.*

When asked about current and future trends, experts mentioned issues similar to those described in the survey (Kaplan, Roberts, & Sikes, 2009). The previously existing trends continue to play their role. IT is still young, but it is becoming more mature and getting more trust (Reitsma, 2010). The role of new technologies continues to increase. The main value they bring is the increasing understanding, connection and sharing. All this contributes to better alignment and makes technology something less specific, more a part of our daily life and business (Folkerts, 2010).

Independent of closeness of IT and business, the *attitude to IT seems to be really different*, which fact goes in line with different maturity levels in BITI MM. On the one hand, smart use of a new technology can be a real game changer, and appearing technologies are often very disruptive (Linden, 2010). On the other hand IT becomes more like facility, commodity, with wide market proposition, and many operations get outsourced (Sluijter, 2010).

Some experts suggested that in the far future much of the IT knowledge and possibilities are going to be handled over to the business (van der Made, 2010), or even could recall the examples of companies where that has already happened in one or another way (Croon, 2010a).

An important trend for the future is *growing complexity and dynamics*. Businesses and the IT support react to that in two explicit ways. Centralized organizational structure and network types of business become more common. It is a normal trend these days to centralize and unify the commodities at the corporate level (Vriends, 2010). Rob Poels (2010) mentioned that applications, solutions are getting more complicated. Business structures develop as well. You can see more of network types of business. So the general domain is getting more complex, and the complexity of IT domain overlaps with it. Hans Vriends (2010) describes the tendencies towards demand and supply bundling that can be seen not only at the company level, but also at the industry level.

8.3.3. Where BITI MM fits in the picture

During questions about the general situation and trends in business and IT we made no direct links to BITI MM. However some experts found it handy to use the model for explanations. From those situations we can conclude that in general the maturity gradually goes up the model with the time. Just like it is described by the staged evolutionary models. However, this depends not only on time, but on culture and geographical region as well.

In addition we have mapped the position of different industries or sectors as perceived by the experts on BITI MM. As was written before, in the beginning of every interview we asked experts to give a couple of examples from their experience to be used as a basis for conversation. Later we asked to position those examples on the BITI MM. After putting every mentioned example on BITI MM we received a picture that helped us to assess trends and draw conclusions. The generalized mapping is shown on the Fig.8.1. By requests from some of interviewed experts we have not included the detailed mapping (D.4) with names of people and companies into the public report.

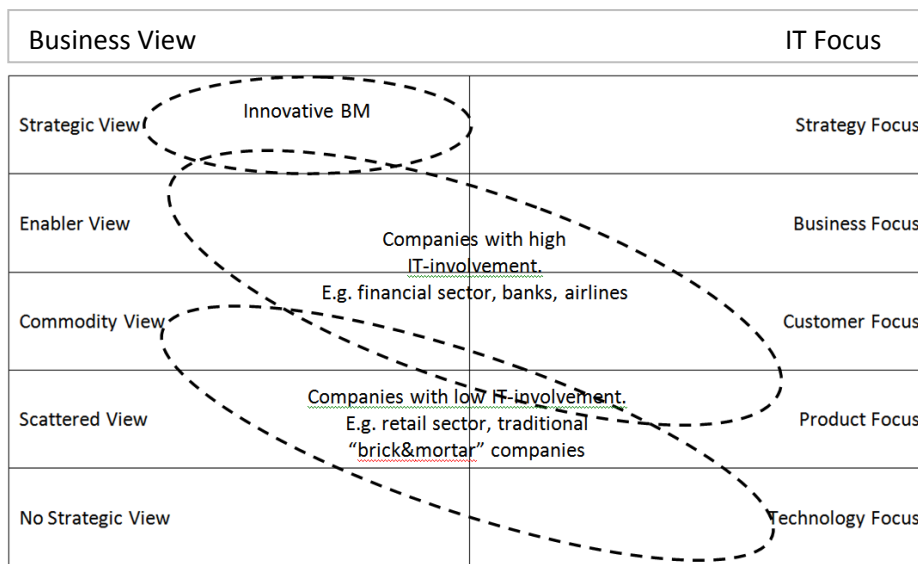


Figure 8.1 – The perceived general situation among industries mapped on BITI MM

The angle of the ellipses is derived from the analysis of examples mentioned by experts. Almost in every example the position on the left (Business) side was higher than the position on the right (IT) side. This correlates with existence of problems in the examples provided by experts, which had to be solved in one or another way. We can see on the figure the companies with high IT-involvement being relatively high. Here one can think of the industries with traditionally high attention to IT: finance, banking, airlines or companies providing IT-services. At the same time the position on the left side is not stable and varies up and down. We will pay this dynamics more attention in [Ch.8.3.5](#).

Companies with more traditional, “brick & mortar” business are usually slower in adopting new technologies and benefiting from them. The examples of companies with innovative business models fall apart from the general trend and we will describe those a bit more in detail.

8.3.4. *Innovative business models.*

In [Ch.4](#) we described that many modern innovative companies do not follow the traditional patterns and do not precisely fit classical models theories and approaches. The expert opinions supported this theoretical conclusion. Even though not being asked any direct relevant questions, the interviewees explicitly mentioned the names of such companies. They provided those as examples of companies having the strategic understanding and use of information technologies (e.g. Folkerts 2010; Kapteyn 2010).

This implies the limited practical applicability of BITI MM for the companies with non-standard innovative business models. From the practical point of view those companies can be used as a reference point and example for the upper maturity levels. And for BITI MM this might mean that the main underlying principles should be reviewed some day and the model might benefit from including new theories and elements of other successful models.

8.3.5. *Dynamics addressed by BITI MM*

The situation is constantly changing and this is relevant to both Business environment and technological capabilities. Earlier we addressed the macro changes, long-term evolution. But what about the more short-term dynamics? Is it addressed by BITI MM? And if yes, in what way?

BITI MM is mostly relevant for strategic, long-term positioning. But the long-term position might depend on more frequent changes as well, on how volatile and changing environment a company has. In relation to BITI MM this refers to the fact that the best position does not depend on the level and should not necessary go up. Already during the first round of interviews some experts touched upon this issue. If your company is actively involved in mergers, acquisitions and further selling of departments, there is no sense in standardizing and streamlining your IT across the whole company. For that situation the Scattered view might work best (van Sante, 2010), (Vriends, 2010).

From the following interviews we can see another trend. When a company is stable and comfortable on some level, the higher levels still matter. Business might not consider IT-enabled opportunities on daily basis but every now and then choices related to IT have to be made. Innovation is often addressed in the same way. *“Innovation is often only temporary”* – say C.Radenborg and A. Kapteyn (2010) – *“What is seen as innovative and high priority today can be looked at as a prim in some time and priority might switch from the need for innovative solutions to the need for cheap and efficient ones”* (Kapteyn, 2010). A possible decision to this situation is outsourcing, seeking help and facilitation from external consultants. This idea was independently coined by several interviewed experts (Folkerts, 2010), (Kapteyn, 2010), (van der Made, 2010).

Here comes up one of the possible uses of BITI MM. By defining the most natural level for your company in the long-term perspective you can see when external help can be involved for more frequent and dynamic changes. At the same time, when some changes in the macro-environment in relation to a company occur, reviewing your internal IT Function might be a better solution. In the example by Folkerts (2010) the changes in legislation led to intensified competition. This brought the need for major changes in internal IT including introduction of a new information architecture paradigm. Outsourcing is relevant for levels which are lower than the level of internal IT Function as well. But in this case it usually means long-term stable relations to substitute internal resources rather than occasional changes or decisions.

8.4. Formal Research Results. Theory and Practice Coming Together.

In general, the hypotheses proved to be a good set to analyze and challenge the model and supporting theories. In the current chapter we were able to combine the theoretical findings of [Part II](#) with the empirical results and answer the three main questions related to BITI MM study: “Is it theoretically justified?”, “Can it be useful for practical situations?”, and “Can it withstand the proof of time?”. Now we can state that the answer to those three questions is positive, even though with certain reservations. Below the reader will find the formal result of challenging every individual hypothesis.

- **H1: Low cognitive load in BITI MM is successful in facilitating user's perception.**

Supported by both theoretical and empirical research. Important strong and weak points of the current main BITI MM representation are noted and possible improvements suggested (see the [Ch.10](#)).

- **H2a: Different levels of business expectations for IT exist, possible to identify and distinguish between them.**

Supported by both theoretical and empirical research. In relation to BITI MM, the three upper levels are better observable in practice. The two lower ones are not as much descriptive and representative. This might be the specific result for the local environment and, maybe, for the leading countries in economical and IT perspective. In areas with the lower general maturity and the level of technological and economic situation the two lower levels of BITI MM might be wider present.

- **H2b: The success of alignment flow depends on how precisely business demands for IT are defined at the first place.**

Supported by empirical research. The understanding of business needs and the active participation of business representatives (to ensure that understanding) was repeatedly agreed upon, named and explained by all experts during the interviews.

- **H3: BITI MM helps to make an initial alignment assessment and identify problems better than other known alignment or maturity models.**

Partially supported by theoretical and empirical research. The research has allowed us to identify the niche where this hypothesis is valid. BITI MM is the most helpful during initial alignment assessments at strategic level, during establishing of common understanding of general situation, and as a preliminary step before applying more detailed and operational methods, approaches and standards. BITI MM might be helpful at initial situation analysis – the phase which is mostly done by general unstructured conversations and where the known assessment tools and methods are not considered to be suitable.

- **H4: Applying BITI MM helps to bring up hidden core problems.**

Supported by empirical research. Issues like common awareness, communication, making differences in understanding explicit, and others were explicitly mentioned and addressed by experts.

- **H5: BITI MM helps to identify the difference between IT function expected by Business and IT function they have.**

Partially supported by empirical research. Some experts explicitly mentioned this. Others mentioned the possibility to pinpoint the position of IT function and business expectations and to think what can be done about the differences afterwards. Some experts already reasoned in terms of solutions. E.g. sometimes

the corresponding levels on IT side were not present in the internal IT function, and as a result those were outsourced or external consultants were invited to help at lacking levels.

As a counter-argument, several experts named BITI MM as oversimplified, not providing measuring guidelines, and leaving unclear “what is next”. Thus, the words “identify the difference” here should be understood in the context of the general area of applicability of BITI MM.

- **Q3: Does BITI MM use the proper focus and level of abstraction to stand the proof of time?**

Addressed. BITI MM has limits in its possible future validity. It is appropriate for traditional business models and structures. It is also useful for any individual organizational relation including IT demand and IT supply party. At the same time BITI MM does not provide any additional insights in cases with companies having innovative business models. Though, those can be positioned on BITI MM.

BITI MM might benefit from being revised in the future. The described levels might “move down” with time. At the same time it is not expected within the next ten years.

PART IV – REFLECTIONS AND RECOMMENDATIONS

This part provides the main conclusions and recommendations of the research project.

In addition to the formal answers this study resulted in a number of general insights and important observations specific to BITI MM. In chapter 9 we initiate a discussion to address them. Chapter 10 gives recommendations about BITI MM and its practical application. The last chapter summarizes the research results, indicates limitations and gives possible directions for further research.

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9. Discussion

"If you freeze to an idea too quickly, you fall in love with it. If you refine it too quickly, you become attached to it and it becomes very hard to keep exploring, to keep looking for better"

- Jim Glymph

In addition to the points about BITI MM and BITA explicitly addressed by the hypotheses the interviews have provided new insights. Some of those insights add new dimension to the theory discussed in Part II ([Ch.9.1](#)). Even though we explicitly mentioned that we do not address the “soft” factors of alignment in this research, the interview results have proven that this perspective cannot be neglected ([Ch.9.1.1](#)). The idea of “vertical” alignment can be met in the literature, but it is not paid enough attention. The example in [Ch.9.1.2](#) illustrates that it might be an important point and should be given more attention in future research.

Other insights help to make the whole picture about BITI MM more complete and sometimes provide a missing link to the explanations ([Ch.9.2](#)). In [Ch.9.2.1](#) experts argue that it is not always possible to talk about Business or IT Function in general. Sometimes you can only address individuals or individual business units. [Ch.9.2.2](#) helps to understand how the model should be read, how its levels and indicated maturity can be interpreted. And the last two subchapters address the issues of positioning in terms of business type and complexity ([Ch.9.2.3](#)) and in terms of possible target group of BITI MM ([Ch.9.2.4](#)).

9.1. Discussion about General Points of Business-IT Alignment

9.1.1. *The “soft” aspects of alignment matter*

For the ease of reading we will summarize the most important aspects in the beginning and further highlight them italic in the main text. These are the main aspects indicated by experts:

- Trust versus threat dominating in attitude towards IT Function plays a role.
- The blaming culture can be a strong inhibitor of the alignment process.
- Politics and real distribution of power has to be always taken into account.
- Innovation and technology is perceived differently by different generations.
- Simple communication activities can drastically facilitate the alignment process.

In their thorough overview of the alignment domain (Chan & Reich, 2007) indicate several possible dimensions of alignment: strategic/intellectual, structural, social, and cultural. While elements from, for example, structural dimension can be easily integrated in a model, it is more difficult to give sufficient attention to and accent on softer dimensions. Social and cultural subtle points are not easily formalized or described in an explicit way. At the same time the latter might be the most critical ones and should not be omitted. In the current study the softer side of alignment was not our specific point of attention. However, the experts addressed it not once loud and clear, and we cannot avoid mentioning the relevant points in the current report.

The first point mentioned was *trust versus threat* in the relations of business and IT parties. Arno Kapteyn (2010) mentions that the type of relationship matters much: whether it is based on trust or on threats and defending. Within such disturbed relations it is difficult to communicate and align. Rob Poels (2010)

agrees as well that the notion of alignment is broader than it is often taken. Alignment is not only about structure, but about communication, trust, etc.

The next point closely related to the previous one is the *blaming culture* which can be often formed towards IT Function. Arno Kapteyn (2010) elaborates on this point and says that the blaming culture might contribute to misalignment much. Formal structure and rules are important, but purely following the formalities is not enough if intention is not there. The benefit from meetings will be low, if for example, business directors only attend those just as a formality without real will. Describing one of the examples from his experience, Clements Radenborg (2010) mentions that blaming was seen there from the both sides. Business blamed IT for not being able to deliver even the basic service, and IT blamed Business for changing thoughts too often. Rob van der Made (2010) mentions that blaming can be a result of problems which often arise in any complex project. Initial requirements are often miscommunicated and have to be changed later, new requests appear. This all involves costs and time, and different parties got blamed.

Another important factor here is *politics* which often plays a role as well. The real power distribution is often not the same as the formal organizational scheme (Sluijter, 2010). When working on reaching alignment one should consider both public and hidden parts of relations.

Different perception of innovation and technology by *different generations* can be mentioned here as well. As one of the possible reasons for misalignment Erik Sluijter (2010) mentions legacy, both in technology used and in management rules, culture, people habits. Technology is more appealing to younger generations, and older ones often do not wish to change. Ruurd Reitsma (2010) also noted that when younger professionals more familiar with technologies take the CEO position it can boost the relations between Business and IT.

And finally, the principal contributor to the success of projects mentioned by experts was *simple communication*. Often the half of the alignment problems can be solved just by letting people talk, communicate, and it is about simple, common sense solutions (Croon, 2010a). The problem is more on a social level, and a solution also might be as simple as meeting once in a while and discuss problems at a cup of coffee, it goes about simple common understanding (Poels, 2010). In one of his examples Ruurd Reitsma (2010) says that one of the two main challenges of a project he took part in was to change the mindset of people involved. Defining proper IT strategy in that case was more about communication and stimulation. Michiel Croon (2010) also mentions a case when after a possibility to see each other in person, look in the eyes and get to know each other, the tension in relations eased and cooperation between teams went better. In general, alignment is often mostly about soft factors, like culture, people or even just knowing each other (Croon, 2010a).

9.1.2. Alignment (or balance) between levels often matters as much as between Business and IT

In the SAM model Henderson & Venkatraman (1993) mention two principal parts of alignment: strategic fit and functional integration. Even though it is not the same as the dimensions in BITI MM, the relevant thoughts appeared during the interviews. BITI MM has an explicit accent on the horizontal links and correspondence of the level of IT Function to the expectations of business. Maybe, triggered by this several experts asked themselves a question whether the vertical dimension of alignment – the one within the organizational hierarchy – is not as much important.

A very illustrative example was given by Arno Kapteyn (2010). A consulting company received the initial complaint from a client “my IT department is unresponsive”. The first communications with business showed that the business environment was very volatile and the IT department was not flexible enough

and did not support necessary changes in time. Then the consultants talked to IT people, asked about their timeframes and saw that yes, they worked in terms of weeks, not days as it was seen necessary by the business side. Next, the consultants analyzed the processes, and it appeared that there actually was a decision by higher management that the common meetings of business and IT representatives to decide on “go/no go” about changes to information systems should be conducted not more often than once a month. Thus, the consciously taken decision was just not properly communicated to the lower levels of management. But as a result the IT department was blamed. And after the further analysis it even became clear that the environment is not that volatile, but the requirements are communicated by business managers to IT at the last moment.

From this example we can see that communication on one level of understanding and organizational hierarchy might not be sufficient without well established vertical communication lines and procedures. Other experts mentioned similar ideas or gave relevant examples here as well.

9.2. Discussion Points Related to BITI MM

If the previous two attention points were about the alignment in general, the following four mentioned in this subchapter are related directly to BITI MM.

9.2.1. *Sometimes it is difficult to generalize. It is better to position individuals or separate BU on BITI MM*

For all examples given by experts we asked them to position relevant parties on BITI MM. Sometimes experts could not generalize and take IT Function as a single entity. That situation appeared for both large companies and smaller ones. In those cases the experts preferred to focus on individual business units or even managers. They could indicate the three main reasons explaining this phenomenon:

- The complexity of organizational structures combined with inherent complexity of IT domain.
- Differences among business units and lines require extra flexibility and agility of IT Function.
- The role of CEO is crucial for alignment and should be addressed separately.

Different business lines or business units have different expectations from and understanding of IT, it is not often homogeneous for the whole company (Radenborg, 2010). In large companies the organization of IT can be quite intricate. There are often different IT departments per every business unit and the central IT support as well. The *complexity* of IT domain itself is added with the complexity of organizational structure, different priorities and conflicting interests (Folkerts, 2010).

This complexity makes it necessary for IT Function to be *flexible and agile* in order to be able to support multiple aspects of business. According to Arno Kapteyn (2010) there is no “The Business”. Different business units usually require different maturity of IT support. And IT as a service provider must be adjustable, agile enough to satisfy different needs. Erik Sluijter (2010) provided here a complementing observation that IT departments usually have things of all levels, some level might be prevalent, but usually several are present.

Several experts independently noted the high importance of the role of CEO for proper Business-IT Alignment. From the experience of Rob Poels (2010) the business party sometimes has a CEO who can really make a difference. *The role of CEO is crucial for alignment*. One example here is a “king” role, when a CEO states that IT is of strategic importance but in fact only delegates all decisions and responsibilities for it to the CIO and doesn’t go further than words. In an example from Clements Radenborg (2010) the CEO had a good understanding and vision of the role of IT, but it was not the same for the rest of business management. For instance, CFO looked at IT as guys already doing a good job by just providing the infrastructure facilities and did not see real opportunities in IT to build upon. Often the change of

generations (in the board) and the technological progress considerably contribute to alignment and can in part explain this phenomenon. Technologies become more mature and people change, and you can see younger executives who are more used to IT (Reitsma, 2010).

9.2.2. *Nature of the model: selective vs. additive, focus vs. capabilities*

A knowledgeable reader might have been asking themselves from the very beginning what is the best interpretation of the levels in BITI MM. One can say that you have to *select* which level describes your organization best. The words like “perception”, “view”, or “focus” stimulate to make that conclusion. At the same time many maturity models, e.g. CMMI, state that you cannot reach higher level before you master and comply *with the lower ones*. Another question here is whether corresponding to some level means *focus*, mindset, ability to think and communicate or it also should imply some *capabilities*, ability to deliver solutions on that level. We wondered about those questions as well and during the interviews tried to watch the expert’s perception of the issue. Sometimes we asked experts direct questions on how they understand BITI MM in this respect and what is the corresponding situation in the real world.

The general conclusion is that on the business side BITI MM has only one position for every case or the state in progress from one level to the next one. Other levels are usually not relevant then. It goes in line with the “perception” focus of that side. The IT side has proved to have more dimensions. You still can choose the focus of IT Function: what language they speak, how they understand the business needs. But it can be approached and used to assess and address capabilities as well. You rather select here on what level is your focus, but also can assess if you have means to provide the services and capabilities required from the lower levels (Sluijter, 2010). It is important to think, to reason, to have a proper mindset, but also to be able to deliver what you promise and talk about (Kapteyn, 2010). The examples of outsourcing support the capabilities view on the right side as well.

This difference can also explain why most companies have lower position on the right than on the left side of BITI MM. It is often that business goes faster through these levels than IT or operations department, because it is much easier to think than to act in many different ways (van der Made, 2010).

9.2.3. *Where BITI MM should be applied: positioning in terms of business type, complexity, specific relations point*

From the previous two subchapters naturally comes the following question. There are differences about applicability of BITI MM for different organizations. And BITI MM itself can have multiple perspectives, ways of understanding and use. Then one might wonder what the best situation to use BITI MM is and what the differences for different situations are. From the study we can accent two important points here:

- After additional research and improvement BITI MM can become an effective tool for initial benchmarking.
- BITI MM can be applied for every single point of relations between Business and IT parties.

Earlier on the Fig.8.1 we noted that different industries can be positioned differently on BITI MM. E.g., Ruurd Reitsma (2010) explicitly noted that the IT intensity differs among industries. For example, financial services are much more mature in this sense, and the construction Industry has a lower IT maturity. It depends on how a company can see and use IT, if they believe that IT might be a strategic differentiator for them or it is just necessary evil costing money. We believe that after the additional more extensive research BITI MM can be used for *initial benchmarking*. And in addition to the analysis from the point of

view of balance and alignment the companies can be benchmarked against the general situation in the relevant industry or on the relevant market.

We have seen that sometimes it is difficult to define a single IT Function or single business party. In addition to the initial intention of BITI MM, i.e. assessment and positioning of IT Function and business perception in general, BITI MM can be applied *for every single point of relations*. Hans Vriends (2010) proposed that one can plot BITI MM on any relation between two organizations if they are seen like the two parties. And one should not aim to have all relations on one, e.g. Enabler, level. If you want somebody as a commodity supplier, you don't want them to ask you questions about strategy. This goes in line with the outsourcing examples. During outsourcing some routine operational activities IT Function can be positioned on the business side, the supplying party on the IT side, and the resulting maturity will most likely be on the lower level than between actual business and IT Function. Clements Radenborg (2010) noted as well that the model can be in fact "continued", i.e. business can also be looked at as a service provider, and its clients need proper maturity to be aligned with business. We see that this can bring a possible sequence of application of capability and focus perspectives. First one can assess what is the subject of the relation, what is actually delivered, and starting from that, make assumptions about the needed focus and mindset of the parties.

In the conversation with Hans Vriends (2010) two large types of companies were discussed: more traditional large companies with the centralized structure and more recent large network-type structures. Arguably, the former are more easily analyzed and described with the help of BITI MM than latter. Hans Vriends (2010) mentioned that the strategic choices for IT often depend on the type of company, how it is organized. Traditional business tended to go more complex and more strategic with time. For modern, more flat and networked models, the IT maturity areas and growth in them are more distributed, less tangible.

9.2.4. External target group of BITI MM

In this subchapter the experts help us to define whether *BITI MM is equally applicable and helpful in communication with representatives of Business domain and IT domain*.

The idea of expert interviews implies interviewing experts, i.e. professionals who possess extensive knowledge, experience and understanding within the researched domain. For the domain of BITA all of the experts identified and all of the finally interviewed experts were to some extent representing the IT party. We could find no experts among business managers who are not actively involved in IT domain. At the same time the alignment process assumes the participation of both parties – Business and IT.

Some experts expressed the opinion that the topic of alignment is only interesting for IT folks. Correspondingly, some experts had doubts concerning applicability of BITI MM for communications with business managers. For example Ruurd Reitsma (2010) noted that some names in the BITI MM representation used during the interviews, like "IT Service Organization" caption, have too narrow focus and remind of ITIL with its focus on services. Rob Poels (2010) suggested that BITI MM looks like it is not made by people working in business, rather like it is made by an IT consultancy. He used the bottom-up and then right-to-left direction to describe how BITI MM seems to be built. He said that very often the alignment is a problem of IT in the eyes of business and they do not want any model that might say that they have no strategic view. We agree that such situations happen. However, than the main problem is deeper. Both parties, business and IT representatives, have to be ready and willing to work towards alignment. Otherwise it does not matter what model or approach to use – the desired situation will not be fully reached. No model solves problems. Any model is used only to describe the reality and

facilitate its understanding and communication. To use a model for problem solving the will and intention to solve those problems has to be there at the first place.

Most of the examples of the experts who used the model were about IT management target group. E.g. Erik Sluijter (2010) described that he used BITI MM in practice to let the IT department describe their activity and how they see it perceived by business clients. At the same time there were examples of use for mixed audiences (e.g. Croon, 2010). And Michiel Croon (2010) also noted when asked that the usability of the model partly depends on the interests of a person. If somebody is not interested in IT-related issues, they won't benefit from using the model.

10. Recommendations about BITI MM

"To make something simple is a thousand times harder than making it complex"

- Mikchail Kalashnikov (the inventor of AK-47)

"In the information age, you don't teach philosophy as they did after feudalism. You perform it. If Aristotle were alive today he'd have a talk show."

- Timothy Leary

BITI MM implies the model representation as the focal point and a number of underlying theories, ideas and principles supporting it at the background. In this chapter we will provide the conclusions and practical recommendations about those issues which became clear after doing the current research project.

The [Ch.10.1](#) will analyze the nuances of the different representations of BITI MM and provide advice on the recommended representation. In [Ch.10.2](#) we go a bit deeper and analyze different points aimed at providing the most efficient and appropriate use of BITI MM.

10.1. The Recommended Representation of the Model

In general BITI MM as it was shown to experts during the interviews was perceived good (the representation on the Fig.4.1). There is, nevertheless, a number of points of confusion and misunderstanding which can be removed or improved. Here we will list the main changes recommended and show the representation which should be perceived best according to the current study.

The main points of attention are highlighted on the Fig.10.1

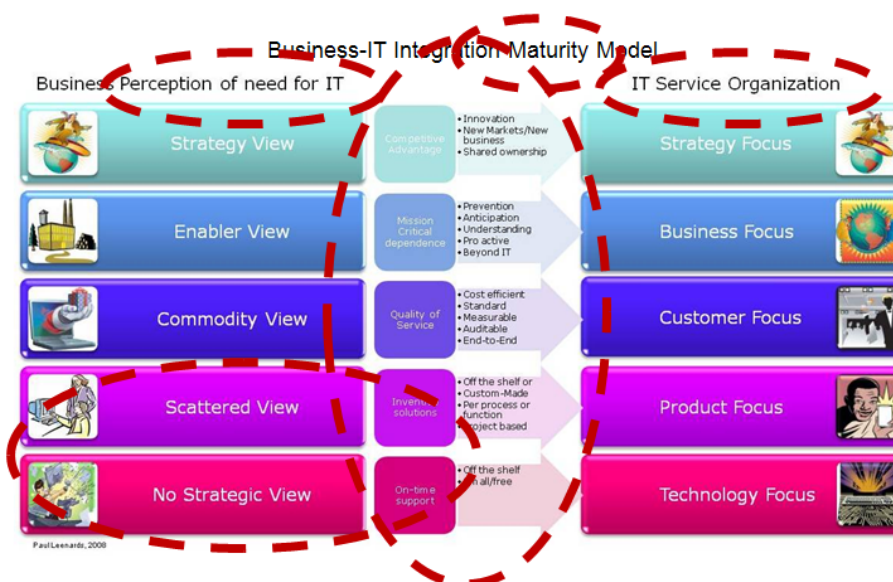


Figure 10.1 – The elements of BITI MM that may cause confusion

The detailed arrows part should be removed and replaced with the two-sided empty arrows. The arrows were not an attention point during the expert interviews. However, if experts paid attention to the central part, it brought many questions and misunderstanding. The interviewees noticed that BITI MM

accents the point that alignment should go both ways. The one-way arrows become really contradicting to that idea. If the experts read the descriptions within the arrows, it brought even more questions, objections and discussion. This discussion might be useful, but it should be brought to the table in a proper moment by a professional thoroughly understanding and applying the model, not because of an occasionally noticed word.

The simplified model representation of a table 2 x 5 (see Fig.1.2 in [Ch.1.3](#)) may be better. But it does not convey the idea of balance between the maturity of business and IT parties and the idea that alignment should be a mutual both way process. That is why empty two-sided arrows will transfer the underlying idea in the best way. This decision can be also backed up by the similar two-sided arrows explaining “Functional Integration” in SAM framework (Henderson & Venkatraman, 1993) (see Fig.4.4 in [Ch.4.2.2](#)).

The caption of the right column should be changed from “IT Service Organization” to “IT Function”. The current name brought to the table the comments about too narrow ITIL-like view and doubts concerning the applicability of the model with business managers. We agree that the name “IT Service Organization” might be illustrative only for the lower three levels. When IT people start to talk business language and the organization comes to integration of functions (upper two levels) the better name will be “IT Function”. We use it throughout the current report and believe that it is more generic, descriptive and universal.

The next confusion point is **the word “Maturity” in the name which we propose to change to “Balance”.** The concept of maturity has very strong associations in a human mind. People believe that being more mature is always better and in the case with the model set striving for higher levels of maturity as the main goal. Most of the experts in the field associate the “Maturity Model” concept with CMM/CMMI. During the interviews (after seeing the combination “Maturity Model”) experts asked several times if striving for the higher levels is the main goal. They proposed to add numbers to the levels from 1 to 5 and to add the arrows going upwards. And every time we had to explain that reaching the balance of maturity on the two sides is a more important goal here than growing up. The idea of maturity is on the one hand obvious in the model and does not have to be additionally stressed. And on the other hand the maturity perspective can be any time explicitly addressed by a professional explaining the model.

The word “Integration” in the name is not well recognized and should be replaced by “Alignment”. In the existing body of knowledge in the domain “integration” is just one of several alternative spin-off names of “alignment” along with “fit”, “fusion”, “linkage” and other. The idea of functional integration as a part of strategic alignment was coined by Henderson & Venkatraman (1993), but it has a different idea from integration in BITI MM. In BITI MM the word “Integration” describes only one possible situation – when the two parties are on the strategic level there is not that much difference between business and IT and they become integrated. This situation is applicable or desired not for every company. The name “Alignment” is recognized by the scientific and professional community much better and is more applicable to all of the layers in BITI MM.

The level names “Scattered View” and “No Strategic View” on the business side should be renamed or at least paid lower attention during the explanation of the model. We already discussed above that in the countries with developed information technologies it is virtually impossible to find these days a company corresponding to those levels. In addition the name “No Strategic View” has an explicit negative shade and might sound provocative to managers who do not like to talk about their business in a negative way.

The name “Business Perception of the Need for IT” has to be paid special attention when presenting and explaining the model. We have already discussed in [Ch.4.2.4](#) more in detail that this name is relatively difficult for the human perception, and people tend to reduce the meaning to a simpler name and concept, e.g. to a noun “business”. We believe that the current name describes the implied idea well, but needs to be explained additionally.

After accepting the proposed changes the model will look like it is represented on the Fig.10.2. There is no striking difference with the previous representations. And the underlying concepts supported by the related theories and by opinions of experts are kept in place. At the same time the little, seemingly cosmetic changes address the elements of the model which cause doubts, questions and can at the bottom line define the success of the model.

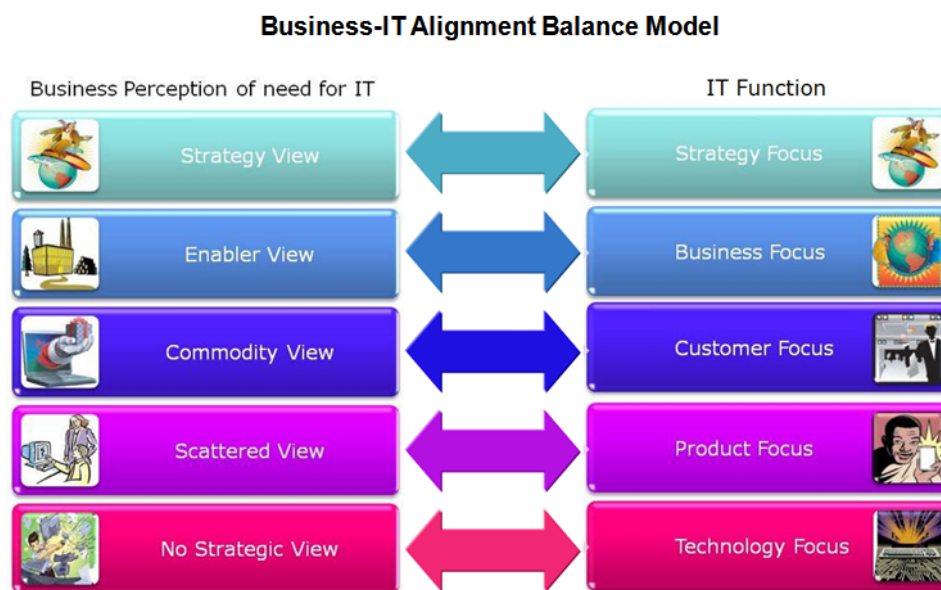


Figure 10.2 – Proposed best representation of the model

Despite the fact that results of this sub-chapter imply a new name for the model – “BITA BM” (Business-IT Alignment Balance Model) – we will stick to the initial “BITI MM” in order to keep the story consistent and not confuse the reader.

10.2. Using BITI MM in Practice

The results of this research and conclusions made allow us to give a number of descriptions and recommendations related to the use of BITI MM in real life situations.

10.2.1. Situations of the most beneficial BITI MM use

Here we can define three possible situations where BITI MM might be the most useful.

Client engagement meetings. Using BITI MM in a simplest straightforward way without going in depth might be a useful illustration during initial presentations or engagement conversations. Many interviewed experts mentioned that for initial communication they do not use tools and just talk. BITI MM seems to be simple and understandable enough to add another foundation or anchor point without going into complicated explanations and spoiling the conversation atmosphere.

Only the simplest explanations of the main idea of the model should be used here. And the model has to be presented as proven truth. Then instead of going into explaining and justifying individual underlying points one can immediately use BITI MM for the conversation facilitation.

“Where we are” meetings and workshops. At the meetings with the representatives of organization, ideally from both business and IT organization parts, BITI MM can facilitate the analysis of the organization, existing internal relations and expectations, and help reaching agreement and common understanding. For this type of application it might be useful to elaborate on the main principles of BITI MM and on every level. We advise to involve the audience in a dialog, create discussions on particular points and use arising questions to explain the model and the situation better and to ensure going towards agreement and common understanding. Naturally, the person using BITI MM here should have a thorough knowledge of all principles and underlying theories of BITI MM. Besides, he or she should be experienced enough to give examples, draw analogies and lead the discussion in general.

High-level roadmap defining the scope for more detailed approaches. Once the actual and desired positions on BITI MM are defined it is possible to dig deeper and define how to address the difference or/and maintain the desired situation. First, every level and combination of levels of BITI MM implies a certain number of competencies, abilities and responsibilities. Those can help to define critical success factors and key performance indicators. And second, different existing proven approaches and best practices can be applied here as a next step while the position on BITI MM defined before will serve as a scope for those more operational applied approaches.

10.2.2. Materials needed to facilitate the use of and knowledge sharing about BITI MM

Different materials, descriptions and representations might be needed for different situations where BITI MM can be applied. Here we define three levels of sophistication and three sets of relevant materials correspondingly.

Only a model representation. This is the main explicit part of BITI MM, its focal point, the simplest and the most powerful. The simplest representation (like it is shown on the Fig.1.2 in [Ch.1.3](#)) can be drawn just with a pencil on a piece of paper. A printed or shown on a slide colorful illustrated representation might have better appeal to the audience. We explained and justified the advantages of such representation above in [Ch.10.1](#) (Fig.10.1). The view with the one-way filled arrows (like on the Fig.4.1 in [Ch.4.1](#)) might be used with pure IT audiences but is not recommended.

This “set” of materials might be sufficient for two extreme categories. The first one is experienced senior consultants who know different related theories, can make analogies, cite examples and improvise along the way. And the second is those who just want to apply BITI MM in the most straightforward, direct manner, to simply say “we are here and you (they) are here”.

Brief explanations and check-lists for every level. Every level in BITI MM and maybe even every combination of levels on the left and right sides can be characterized by a number of description points. Those can be looked at as the second level after the BITI MM representation itself in the hierarchy describing the ideas and theory composing BITI MM. We recommend creating a brief summary of points which will help consultants to apply the model:

- How to recognize every level? – what are the typical points for every level and how to recognize whether the asked party describe their organization in objective way or if they just want to look better than they actually are. In the shortest view these might be similar to the content of the arrows on the current BITI MM representation (Fig.4.1 in [Ch.4.1](#)).
- What are the real world examples for every level? – a company might have case studies or success stories about helping their clients. It is useful if those are documented and mapped on BITI MM.

- What are the types of services and activities that might be and should be present on a certain level? – here the descriptions of services, rules, products, financial regulation, responsibilities and governance structures can be described.
- How to manage and improve every level? – every level implies a different set of approaches and interventions.
- What are the optimal financial relations and responsibilities for every level? – depending on the maturity level the IT organization can gain more trust and responsibilities. Financial aspect is always present in any part of an organization and deserves separate attention.
- What known standards and best practices are typical for every level? – here one can use the mapping we proposed in [Ch.5.3.2](#) or create a separate mapping better describing individual local situation or company preferences.
- What “soft” factors of BITA do matter most on every level? – the type of relations and necessary soft skills will be different for Technology Focus and Strategy Focus level . The importance of the soft side of alignment has been proven by the current study and cannot be just omitted.

Extensive description of BITI MM with relevant theories, tools and relations. In order to be able to confidently use BITI MM in any relevant situation, an extensive fully-fledged description is needed. Experts should be familiar not only with the idea of BITI MM but also with all underlying and relevant theories and implicit points of attention. The current report in part can serve as such a description providing that the main references are taken into account and studied as well. We recommend creating a topical knowledge base which would contain all relevant descriptions, articles and other materials. We also encourage keeping practical examples and lessons learned there.

Somewhere between the second and the third set of material we can also position a **public easy-read description**. It can be made in a form of a whitepaper and should serve to give the “clients” of BITI MM the general overview of the main ideas. After reading such a description it will be possible to skip the explanation part and quickly pass to the subject discussion. It might be useful for awareness workshops or brainstorming sessions.

10.2.3. General guidelines

Just like with the factors influencing actual alignment process, the most important guidelines about applying BITI MM might look a common sense or a “soft” side. Those simple rules usually come into use with experience, are used implicitly, and are not given enough attention early enough. The list of recommendations we will present here might be not of use for experienced consultants, but might help people without substantial experience in use of generic models to avoid typical mistakes. The current list is the result of the theoretical study in the [Ch.5.1](#) devoted to human perception theories and of the interview results analysis.

- *Start from explaining the main ideas* – the ideas like possible different viewpoints of business and IT parties (or demand and supply), existing of different maturity levels for both parties, balance and non-balance situations have to be explained in the very beginning.
- *Explain the levels one by one* – even if the model seems to be clear to everybody it might be useful to briefly go through levels on both sides one by one in order to ensure early understanding.
- *Explain the “Perception” perspective of the left column explicitly* – otherwise you might end up assessing the general maturity of business which is not the intention of BITI MM.

- *Group important elements and explanation hierarchically* – first explain the levels and general concepts and only then turn to deeper discussion of a specific situation.
- *Use analogies to well-recognized phenomena* – analogies facilitate perception and acceptance. If a model can be easily linked to analogies or those are already present in the descriptions, the model becomes much easier to explain.
- *Make good intermediary summarizing of the framework concepts* – do not let the number of constructs get too large and use ‘hierarchical reasoning’ by drawing summaries at proper points.
- *Extensively use repetitions* – do not hesitate to additionally stress the main points of the message. Repeating the main ideas during explanation is important for proper understanding and coming to agreement.
- *Use a point of doubt as a starting point for a new discussion turn* – do not defend the model, use it as a platform for a fruitful conversation.

In the current chapter we provided the general recommendations and conclusions about the practical use of BITI MM. The next chapter contains the recommendations specifically addressing the situation in Getronics Consulting.

11. Conclusions, Limitations and Further Research

“A conclusion is the place where you get tired of thinking”

- Arthur Bloch

In this chapter we will make a brief summary of the main research results, limitations and possible directions of future research.

11.1. The Main Conclusions about the Project Results

In the beginning of the report we made several statements about the research idea, main goal and main research questions. The main aspiration was to contribute to the alignment of scientific and practical worlds in the questions related to Business-IT Alignment. We used BITI MM as a tool accumulating something from both worlds to conduct a thorough overview of theories, practical literature and expert opinions. We will not make any general conclusions about the results here, because bridging the worlds of theory and practice is not a task to be accomplished by one paper or one report. But in the scope of the current project we consider the problem to be sufficiently addressed, examined and covered. BITI MM has been proved to be a tool able to combine the credibility of decent scientific theories with the simplicity of a typical practical instrument.

The main goal of the research project was to conduct the scientific analysis of Business-IT Integration Maturity Model, so that Getronics Consulting employees could confidently use it at negotiations with clients and as a basis for internal expertise sharing. We can state here that it was fully met. Using clearly defined discrete research questions and hypotheses, BITI MM and all underlying and relevant theories were addressed from multiple viewpoints. The descriptions and considerations described in the current report form a basis sufficient for consultants to get an understanding of BITI MM or for Educational Services to justify and back-up related educational courses. The recommendations about possible following improvements show how to extend that basis.

11.2. Project Limitations

The research project had the defined and limited topic and scope. We tried to ensure that the results obtained in the process were objective and representative to the best of our knowledge as well as the conclusions we made based on those. But we realize that the possibilities and resources for that were limited. Here we will list the main limitations which, in our opinion, might have in one or another way influenced the research.

The theoretical domains addressed. The two main flows of the research directions analyzed were Business-IT Alignment and Maturity Models. We tried to link adjacent theories whenever it was possible but did not go very deep in order to stay focused. At the same time alignment is a topic actively present in research coming under other names. In particular, IT Governance is often claimed to have many similarities with BITA, but was not widely addressed by the project. Analysis of theoretical domains like that might bring new perspectives and insights.

Number of interviewed experts. Due to the time and resource limitations and specifics of the method we conducted only a relatively small number of interviews. It was justified and it is sufficient for a study like this. But at the same time another set of interviews or a quantitative study could extend the received results and bring more clarity.

Geographical limitations. Again, due to the specifics of the expert interviews method and time limits we were able to gather expert opinions only on the territory of The Netherlands, and most of the examples given by experts related only to the Benelux market. As we already mentioned in [Ch.7.2](#) the situation in The Netherlands can be considered representative for Western Europe, but might be slightly different in other parts of the world.

11.3. Possible Directions of Future Research

During the project several insights and ideas came up which were not fully unveiled in the current report but which might deserve additional investigation. We assume it useful to mention those here in order to facilitate the task of selection for anybody who might consider putting their effort into the following research in the future.

The general possibilities of improving and extending the research naturally come from the current research limitations: check of validity in other geographical regions, with other groups of experts, eventual quantitative study, etc. The more independent full-fledged topics coming out of the current research include the following:

Specific areas of BITI MM application. There are different areas where Business-IT Alignment plays an important role, for example, management of outsourcing relations or IT Governance. In the current research we paid most attention to the general context. Applicability of BITI MM to more specific situations and areas can make a topic for a separate research.

Soft factors of BITA. We did not address them much in the current research. At the same time the expert interview results have shown that the “soft” side is a crucial dimension of BITA. This topic is addressed in some research papers, but is not explicitly unveiled in the world of practice. Conducting a research in this area would improve the link between the world of science and world of practice in their BITA efforts.

A more thorough **examination of the ideas contained in Strategic Portfolio Alignment Model (SPAM)**. In [Ch.5.3.2](#) we introduced SPAM as a result of a thought experiment on combining ideas of several most recognized models and frameworks in the domains of alignment and maturity models. In the context of the current research project that experiment was only one of supporting arguments describing BITI MM. But SPAM seems to be a more serious discovery and can become a subject of a separate research project.

In [Ch.6.2](#) and [6.3](#) we touched upon the **business models perspective for BITI MM**, the topic of business model innovation and what new business models might mean for BITI MM. It was not possible to fully uncover this topic within the scope of the current project. We suggest it to be a full-fledged topic for separate future research and the results and assumption from the current project can be used there as a starting point.

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PART V - APPENDICES

Appendix A – Definitions and Abbreviations

- **Business** - a wide concept with multiple possible meanings. In the current report used as one of two parties in Business-IT Alignment or in an organizational context. A business (also called a company, enterprise or firm) is a legally recognized organization designed to provide goods and/or services to consumers. (Sullivan & Sheffrin 2003). (see Ch.3.1 for more details)
- **Business Model** – A business model describes the rationale of how an organization creates, delivers, and captures value - economic, social, or other forms of value.
- **BITA – Business-IT Alignment** – within the current report we define BITA as a process of finding, retaining and constantly bettering the relation between business and IT for the benefit of the whole organization (see Ch.3.3 for more details)
- **BITI MM – Business-IT Integration Maturity Model** – the focal model of the current report. Combining the characteristics of maturity models and strategic alignment frameworks BITI MM aims to facilitate communication and understanding in projects and initiatives where Business-IT Alignment plays an important role.
- **FTE – Full-Time Equivalent** - A unit that represents one full-time state employee. FTE expresses the number of positions an agency may have.
- **Integration, Fit, Fusion, Linkage, Bridge, Harmony** – names synonyms of Alignment encountered in the literature. Sometimes used to underline a specific perspective of Alignment. See the paper by Chan & Reich (2007) for more details.
- **IS – Information System(s)**
- **IT – Information Technologies**
- **IT Governance** – an umbrella-term encompassing roles, rules, structures and actions to manage IT at a strategic level.
- **IT Function** (also IT Organization, IT department, IT provider or just IT) – a term describing the corresponding structure, governance mechanisms and specialization topics related to presence and role of IT in an organization (see Ch.3.2 for more details).
- **IT Strategy** – a particular generation of an organization's overall objective(s), principles and tactics relating to the technologies that the organization uses.
- **Maturity Model (MM)** – a framework that provides, for a specific interest area, the descriptions of a number of levels of sophistication of the possible activities in that area (Tapia et al. 2007)(see Ch.3.4 for more details).
- **Staged evolution model (evolution model)** – a model describing evolution of an organization or other entity as a sequence of stages with increasing maturity or other characteristics. Closely related with maturity models.
- **SISP – Strategic Information System Planning** – a flow in research thought appeared in the era of raising popularity of large information systems but usually applied in a context wider than just IS. Possible definition is – the process of identifying a portfolio of computer-based applications that will assist an organization in executing its business plans and realizing its business goals. (Lederer & Sethi, 1996)

Appendix B – Interviews for Problem Description

This appendix contains the details of the first round of interviews. Those were aimed at gaining a better insight into the problem definition, potential directions of the current research, and on shaping the empirical approach for the second round. By describing the methodology, approach, questions, interviewees and findings, we tend to give insight in the methodological value of the interviews and make them repeatable.

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B1. Interview goals

The goal of this round of interviews was to get insight into:

- The current situation in Getronics Consulting related to activities in domains of Business-IT Alignment, strategic planning
- The use of the BITI MM, its utility, strong and weak sides, potentially useful directions of improvement
- Insight into the problem from different angles and areas of expertise
- Define the best scenario and questions for the empirical approach (second round)

These interviews helped very much during the problem analysis, definition of the research question and formulation of solution requirements. They also have provided valuable data for composing a more structured interview approach (second round) and gave initial insight into the practical side of the problem.

B2. Interview methodology

We distinguished two categories of interviewees. The first category included experienced managers and consultants of Getronics Consulting who were likely to be familiar with BITI MM, contributed to it in some way, or might have influenced its creation. Most of the interviewees had large experience in related domains (e.g. strategic IS planning, IT governance, IT service management, strategic alignment, etc.) and in addition to insights in practice, were likely to contribute the comments from theoretical and methodological perspectives.

The second category included the professionals mostly focused on the applied side of consulting. They were not much or not at all familiar with BITI MM. Mostly, those people had experience with different company-specific practical models in the relevant domains. This fact shaped the focus of their perception of BITI MM and resulted in different creative feedback, suggestions and hints on the important research directions or elements not to be forgotten.

The interviewees were selected on the bases of their primary area of expertise, experience with different frameworks, IT and Business management standards.

The interviews were conducted in two stages. The first stage included 5 interviewees and took part during the first 1.5 months of the project (Dec,2009-mid Jan,2010). The questions were general and the main aim was to define the most perspective scope and direction of the research, and to help to come up with the research hypotheses.

During the second stage the hypotheses were already defined, and some insight into the theory and practice gained. Those interviews included additional questions aimed at helping to make a proper empirical approach for the second round of interviews. This stage included 3 interviewees and took part during the second 1.5 months of the project (mid Jan,2010 – end Feb,2010). In addition to general overview and insights, useful discussion points were received already during this round.

B3. Interview approach

When agreeing about the interview the interviewees were informed about the interview subject and the general research aim.

The both types and stages of interviews had the similar approach, namely:

- Brief introduction
- General questions
- Model-related questions
- Elaborating on insights appearing
- Wrap up
 - Asking for availability for a more detailed and structured interview
 - Future contact to validate understanding or ask for corrections

B4. Interview questions

(Questions with “(H1)” to “(H5)” in the end indicate the link to corresponding hypotheses (see Ch.2.2) and were used during the second stage interviews, after the hypotheses had been already formulated.)

- Name, Main area of expertise, relation to Paul Leenards as the author of initial model
- What are your general thoughts of BITA, its importance?
 - Who (at what level) can and should deal with BITA?
 - How (from your thoughts, experience) it happens in fact?
- Are you familiar with BITI MM?
- Did you make any contribution to it? What?
- Did you use it? How?
- What were the positions at the client side?
- Your thoughts in general about BITI MM
 - Advantages
 - Drawbacks
 - Which perspectives do you see in it?

- Possible aim/use of the model? What is the ideal situation according to the model?
- How would you improve it?
- How would you describe (tackle) the model from the perspective your main expertise area?
- From your practical experience where do most of the companies are in the model? Examples?
- What other BITA or IT Governance models are you familiar with? (SAM, MAS, Nolan, Cobit)
 - How according to you can they be mapped with BITI MM? (which, which not, why?) (H3)

Questions related to hypotheses

- From your experience how would you distinguish and group business expectations from IT? (H2a)
- It's clear that both parties have to be involved in BITA project, but are the possible consequences if B is not collaborating enough, if the demands of B are not precisely identified? (H2b)
- What are the main (core) problems to be touched upon when you start a talk (project) about BITA? (H4)
 - What are maybe not that evident and get lost sometimes?
- By what means would you usually define "as is" and "to be" situations for a BITA project? (H5)
- Can we say that we need a really simple tool to gain initial mutual understanding and initiate the process? (H1)

B5. Details of interviewees

First stage interviews for the general project scope definition

Hans Vriends, managing consultant at Getronics PinkRoccade. As a manager responsible for the team of senior consultants in service management. Hans has experience as program manager for large implementations and changes. The main area of expertise went gradually from IT Service Management to IT Architecture, to IT Governance, and . now lies in the fields of engagement consulting and Business-IT Alignment in financial sector.

Tom van Sante, PinkRoccade IT management portfolio-manager. Has been one of the co-authors of the official ASL publications, has much experience with different standards, author of a book about IT standards on the Dutch market, board member of the Open Group.

Daan Linden, Business Unit director Business Solutions at Getronics Consulting. More than 10 years of management consulting experience in KPMG, Atos Consulting, Getronics Consulting with the main focus is on IT management practices including areas like IT architecture, IT governance, sourcing and procurement improvement.

Paul Leenards, Principal Consultant at Getronics Consulting. Over 15 years in IT business starting from the practical problems, to project management, implementations, interim management, procurement, outsourcing, realizations, etc. which led to the current business IT management and consulting. Paul has experience as program manager for large implementations and changes.

Julius Duijts, principal consultant at Getronics PinkRoccade, has many years of experience in auditing and implementing IT-based solutions and organizational change. One of the model co-authors together with Paul Leenards wrote the operationalization part.

Second stage interviews to support the creation of the structured empirical approach for the second round of interviews.

Nick Bakker, Senior Business Consultant at Getronics Consulting. The main area of expertise is in IT Service Management . After study in business administration (with focus on IT), 8 years worked as IT manager in a small company (<=200FTE), since 1997 in Pink Elephant, till nowadays.

Kees de Vos, Portfolio Manager Workspace Optimization at Getronics Consulting. The main area of expertise is in project management of innovation, information management and knowledge management. After study in Business Economics (with IT focus), since graduation (1995) works at consulting positions at in Pink Elephant, till nowadays.

Jeroen Ermers, Senior Business Consultant at Getronics Consulting. The main area of expertise: IT management in broad: ITSM, IT Governance, Compliance, Organizational design/development. Education in Law, from 1994 in Pink Elephant, till nowadays.

B6. Findings

Different insights popped up during the interviews and following analysis and played an active role in the shaping current report. Some points were mentioned explicitly (e.g. in Ch.5.2). Other implicitly present in other chapters.

The main findings can be summarized in the following list:

- BITI MM should be best positioned for the ‘initiating’ negotiations. It does not have enough details and precision for an elaborate assessment. For this purpose it might best be complemented by more detailed approaches, like the questionnaire of Luftman, or by more domain-specific solutions, like ITIL, ASL, and other standards and approaches. BITI MM is good as a basis for a conversation. Providing that you know and understand the model, it is easy to draw analogies and direct the conversation based on BITI MM.
- Some elements of BITI MM are ambiguous. Even when explicitly asked and shown the difference, some interviewees talked about IT value for business while other meant business as a separate entity. Some interviewees (Tom van Sante and Julius Duijts) explicitly mentioned that the left column of the model does not repeat knowledge from any other theory they know and thus can be interpreted differently by different people.
- BITI MM makes possible differences in the focus of Business and IT Function explicit. The potential imbalance is the focal point of the model and it stays in focus of the people using BITI MM.
- Alignment might be different. The perception of IT differs by industry and by vertical. It is important to understand and align all those differences.
- All interviewees had no problems understanding elements and relations in BITI MM and could position the projects from their experience on the model. Everybody agreed that balance is the optimal situation, and most interviewees associated imbalance with potential problems.

Appendix C – Interviews With Experts

This appendix contains the details of the second round of interviews – Expert Interviews.

By describing the methodology, approach, questions, interviewees and findings, we tend to give insight in the methodological value of the interviews and make them repeatable.

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C1. Interview goals

The goal of this round of interviews was to provide from empirical perspective the answers to the hypotheses and related questions. We aimed at getting a number of real-life examples which could further illustrate the situation about BITI MM. The experts expressed their opinion on general BITA issues and on the specific questions related to BITI MM.

C2. Interview approach

The approach of Expert Interviews was described and explained in Ch.7. Here we will summarize the main important points.

When agreeing about the interview the interviewees were informed about the interview subject and the general research aim.

The general scheme of the empirical phase activities is shown on the Fig.C.1

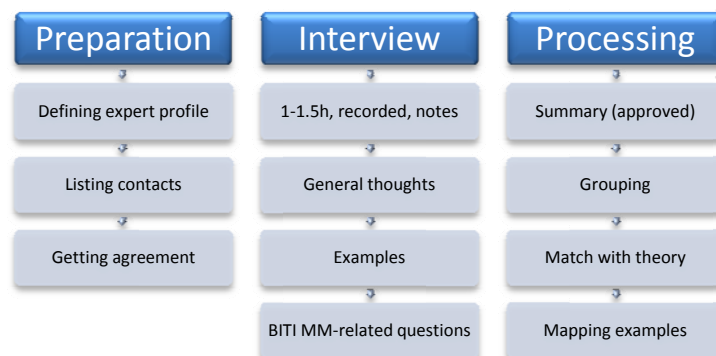


Figure C.1 – Empirical phase activities

The actual interview process can be described more in detail by the following list:

- Brief introduction
- Examples from experience
- General questions
- Model-related questions
- Elaborating on insights appearing
- Wrapping up
 - Asking to send a summary for a proof-reading
 - Proposing to send a copy of the final thesis report

Every interview had **3 important logical parts**:

- Practical examples related to BITA – after initial introduction and formalities we asked experts to start from giving a couple of examples from their experience which they believed were relevant for the BITA topic. During the interview we returned to the examples mentioned to verify and illustrate the questions, answers and statements. The examples were mostly about the projects from the past experience of experts. Sometimes experts also explained the internal situation at their current workplace.
- General questions related to the BITA topic – we tried to get the general insight into the topic, understand the reasoning of experts and relate the expressed opinions to the way in which BITI MM describes the reality
- Direct questions about BITI MM or using it – here we asked experts direct questions about BITI MM, its perceived use and applicability. We also asked experts to position on the model the examples they mentioned.

C3. Interview questions

The questions shown here did not serve as a strict interview structure. Rather they provided a desired scenario of an interview and served as a check-list to make sure that the main topics are addressed before ending the interview. In addition the list with the research questions and hypotheses was used for the same purpose. You can find the questions mapping on the hypotheses in the [Appendix D](#).

- Q1. What projects related to Business-IT Alignment from your experience can you recall (best of all)?
- Q2. Why do you think that (or all those) project was about alignment? What was typical about it? What specific points did you touch upon?
- Q3. Are there any important points that typically do not get enough attention? What are the consequences?
- Q4. Let's take the project X for example – what was the initial problem there – the reason for the project to start?
- Q5. In Business-IT Alignment there are at least two explicit parties: Business and IT. How and when do you identify the main interests, position and understanding of each of them? Is it important?
- Q6. Can you usually identify the desired “to be” situation from the beginning of a project? Why/How? For alignment projects is it in any way different than for other projects?
- Q7. How much is your company dependent on IT in general? What are the implications for the decisions you make (which involve IT) or policies you have? Is the situation at your competitors/customers different in any way?
- Q8. If you look back at the first day your company started to introduce some information technologies. What has changed since? Were there any remarkable moments? Any opportunities or problems that stimulated you to review the importance of IT in your organization?
- Q9. If you look at the new technological trends, such as Cloud Computing (Virtualization, SaaS), Social Media (Enterprise2.0), etc, do you think they can change the attitude to the IT role?

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- Q10. Let me briefly introduce the BITI MM to you.
- Q11. What is your general impression? Can you understand all of the names used? (captions of columns, levels...) Is there anything you disagree with or feel unsure about?
- Q12. How would you describe what BITI MM should be used for? Do you think the model might be really helpful for that goal?
- Q13. Let's try to assess the situation from the project X you mentioned. Looking at BITI MM, can you say it was different in the beginning and the end of the project? Which tools would you usually use to see and assess that difference?
- Q14. Can you position your company on the BITI MM now? And your competitors/customers? Do you know any company with radically different situation?

C4. Details of interviewees

Daan Linden, Business Unit director Business Solutions at Getronics Consulting. More than 10 years of management consulting experience in KPMG, Atos Consulting, Getronics Consulting with the main focus is on IT management practices including areas like IT architecture, IT governance, sourcing and procurement improvement.

Paul Leenards, Principal Consultant at Getronics Consulting. Over 15 years in IT business starting from the practical problems, to project management, implementations, interim management, procurement, outsourcing, realizations, etc. which led to the current business IT management and consulting. Paul has experience as program manager for large implementations and changes.

Clements Radenborg, Managing Consultant at Getronics Consulting, has more than 10 years of experience in IT consulting. Main area of expertise: MS infrastructure optimization (storages, virtualization, and related processes) at BU Innovative Technologies; also Green IT and IT Strategy at BU Business Solutions

Hans Vriends, managing consultant at Getronics PinkRocade. As a manager responsible for the team of senior consultants in service management. Hans has experience as program manager for large implementations and changes. The main area of expertise went gradually from IT Service Management to IT Architecture, to IT Governance, and now lies in the fields of engagement consulting and Business-IT Alignment in financial sector.

Erik Sluijter, Business Consultant at Getronics Consulting. Around 15 years of experience in IT management consulting. Main area of expertise: organizational change, human resources, service and performance management; advising on changes within companies related to IT.

Michiel Croon, Business Consultant at Getronics Consulting. Over 15 years of experience in IT management consulting. Main area of expertise: Service & Performance management, helping organizations measure their achievements and keep the momentum going.

Rob Poels, Partner at Twynstra Gudde. Main area of expertise: IT strategy and architecture. Did a PhD research about BITA and for more than 13 years constantly works with alignment projects as an intermediary between business and IT.

Arno Kapteyn, Management Consultant for the IT Domain. Main areas of expertise: IT Governance, Risk and Compliance and the integration with IT Security and IT Service Management. More than 10 years in IT consulting following 5 years in sales and business development.

Hilda Folkerts, Head of IT Governance at ING, Lector ICT Management at University of Twente. Main expertise areas: IT Governance, P&L/General management, IT investment, Enterprise Architecture. Business-IT Alignment plays an important role as well.

Rob van der Made, Manager Network Operations Centre at Ericsson. Formerly Director Operations at T-Mobile Netherlands (responsible for telecommunication and IT infrastructure). Expertise: Operations in telecommunications (data, fixed and mobile networks), post-development IT operations (availability, reliability etc.)

Ruurd Reitsma, Manager IT Strategy & Transformation at Accenture, lead of IT Strategy practice group in Benelux. Main area of expertise: Strategy and IT organization design

C5. Findings

The findings are discussed in the main body of the thesis report. Some details are described in Appendix D

C6. Additional materials

The additional materials include the interview summaries approved by the experts and the audio recordings of certain interviews.

The interview summaries are available by request.

The audio recordings are considered confidential and can be shared only after approval from the interviewed expert of the corresponding audio record.

Appendix D – Detailed Data Sheets and Mapping Tables from the Expert Interviews

This appendix contains a number of tables and otherwise grouped data from expert interviews. It might be of interest to those readers who want to know the detailed underlying logic of the empirical part process: what data was present and how it was processed.

D1. Scheme explaining the interview data analysis process

The data analysis and interpretation process for the expert interviews is explained on the Fig.D1

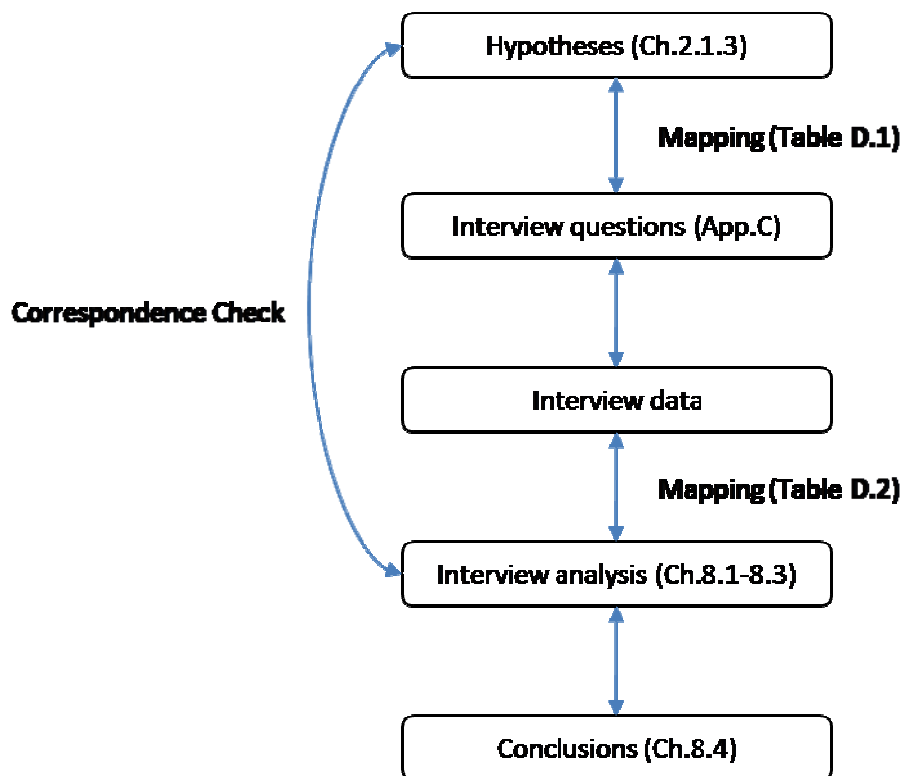


Figure D1 – From hypotheses through interviews to conclusions

D2. Mapping of the interview questions on the research hypotheses

The research hypotheses and research questions correspond to the columns. The hypotheses can be found in Ch.3 of the main report. One column corresponds to the general context questions. Those questions usually did not address any particular hypothesis but at the same time helped to give a general direction, perspective and context to the interviews.

The interview questions that correspond to the lines of the table can be found in [Appendix C](#).

The values in the cells mean:

‘+’ – the hypothesis or question is partly or indirectly addressed by this question

‘++’ – this question has a strong link to the corresponding hypothesis or question

‘-’ – the hypothesis or question is not addressed by this question

Table D.1 – Mapping of questions for Expert Interview on the research hypotheses

	Gen	H1	H2a	H2b	H3	H4	H5	Q3
Q1	++	-	-	-	-	-	-	-
Q2	++	-	-	+	-	+	+	+
Q3	+	-	-	++	++	++	-	-
Q4	++	-	-	++	-	+	-	-
Q5	+	-	-	++	-	-	+	-
Q6	+	-	-	++	-	-	++	-
Q7	++	-	++	-	-	-	-	+
Q8	++	-	+	-	-	+	-	++
Q9	++	-	-	-	-	-	-	++
Q10	-	-	-	-	-	-	-	-
Q11	-	++	-	-	-	+	-	+
Q12	-	++	-	-	++	++	++	-
Q13	-	++	-	-	++	-	+	-
Q14	+	++	++	-	-	-	+	-

Looking at the table D.1 we can notice that H2a and H3 addressed the least by the interview questions. It is normal as those hypotheses received the most attention during the theoretical overview phase of the project.

Another interesting point is the high number of questions devoted to creation of the general context. This point reflects the fact that the interviews were semi-structured, most of the questions were open, and the experts had considerable freedom to express their opinions and coin new ideas. This fact also resulted in the new insights discussed in [Ch.9](#).

D3. Research questions and hypotheses addressed by the points expressed by experts

After the initial processing of the raw data from interviews (notes, memories and tape-recordings), making summaries and having them approved, we used commonality and variability analysis to find how the research hypotheses were addressed. All statements and opinions repeatedly appearing in several interviews and all explicitly strong and confident statements by experts were grouped and linked to the corresponding hypothesis or research question they supported. For those points which had no explicit link to any of hypothesis the same grouping was still applied. Later they formed the basis for the Ch.9 with additional insights. The measurement of “support” was mostly based on personal perception and interpretation of what was mentioned by the experts. In order to be more objective we have put in the list of results only explicitly mentioned phrases, which were further approved by experts as a part of summaries. Sometimes it was evident from the expert’s words and general attitude what was their position on one or another point. But unless explicitly expressed it was not counted and might have only influenced our understanding of the subject and, possibly, final conclusions and recommendations to some extent.

The table D.2 shows what were the grouping statements supporting the research hypotheses and who of the experts expressed his or her support for every statement. The rows of the table correspond to the statements grouped by the research hypotheses. The statements are mentioned in the row headers without coding or abbreviations. The columns correspond to the interviewed experts. We use the first letters of name and surname to represent experts. The colored parts separate internal experts of

Getronics Consulting, external consultants and representatives of internal IT organizations. Summary columns complete the table. We use the following code for the cells:

'++' and '+' – (explicit) positive opinion supporting the statement

'-' – negative opinion about the statement

Negative opinions were relevant only for the general statements about hypotheses. Otherwise it was mostly reasonable to make a new (negative) point which can be recognized by letter R (for rejecting) in the last column.

The Research question 3 ([Q3](#)) should have been addressed instead of supported or rejected. This explains absence of minuses in the relevant cells.

A brief analysis of the table. In general we can see that all of the hypotheses were relevantly equally addressed by the interviews. There are mixed elements in the table ('n/a', cells covering multiple columns, etc.) which fact reflects that the interviews were open, allowed for much freedom to the interviewed experts, and did not have precise statistical data for their main goal. The lowest values in the "Total statements addressed by experts" correspond to the experts already interviewed before (Paul Leenards & Hans Vriends) and to the experts who paid more attention to the additional points described in [Ch.9](#) (Hans Vriends & Michiel Croon). On the average, every opinion put in the table was addressed by 4-5 experts.

Table D.2 – Correspondence matrix of hypotheses and expert opinions

	Expert's Opinion	CR	DL	ES	HV	MC	PL	RP	AK	RR	HF	RM	Total +/-	Supports/ Rejects/ Addresses Hypothesis (S,R,A)	
H1	In general	++	++	-		+		++	+	-		++	6/2	S	
	Model is too simple		+						+	++			3	R	
	“Maturity” is misleading								++	+			2	R	
	Arrows are misleading								+	++			2	R	
H2a	In general	-	++					++	++	-	++	-	++	5/3	S
	Support by examples (signs not applicable. See D.4 for more details)												n/a	S	
H2b	Business should participate in IT initiatives	++	+						++	++	+		5	S	
	And if not that leads to problems	++		++							++	++	4	S	
H3	In general	+		++		+				+	++		5	S	
	See also “too simple” in H1 as a counter-argument												n/a	R	
	Existing assessment methods are too complex for the initial phase	+						++	+	+	+		5	S	
H4	In general		+					+	++		++	+	5	S	
	See also negative for H1 as a counter-argument												n/a	R	
H5	In general	++									++		2	S	
	Ability to pinpoint your position			++					++			++	3	S	
	Mentioning outsourcing as a solution		++		++		++	+	++			++	6	S	
	See also “too simple” and “what is next?” in H1 as a counter-argument												n/a	R	
Q3	What has been changing in business attitude towards importance of IT?					+				+	+	+	4	A	
	What will be changing?		+	+	+			+		+	+	+	7	A	
	Dynamics addressed by BITI MM	+			+		+		+		+	+	6	A	
Total statements explicitly addressed:		8	7	4	3	3	2	6	11	9	11	7			

D4. Practical examples mapping experiment

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