Online Appendix to: A Systematic Review of Business and Information Technology Alignment

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A. LIST OF TABLES

Table I. Question Formulation

Study research questions (RQ)	Motivation
RQ1: What is the background to business/IT alignment?	Researchers and practitioners can easily find when and why the alignment concept emerged and better understand the background to alignment.
RQ2: What are the research issues of business/IT alignment?	Identification of alignment research issues so the researchers' attention can be fully focused on real problems of alignment.
RQ3: What are the top business management concerns?	Identification of the top problems in business organizations so that alignment can be achieved.
RQ4: What is the process of alignment?	Discussions on alignment use different terms such as: synchronization, fit, linkage, harmony, integration, bridge, therefore, it is important to identify the definition of alignment.
RQ5: What are the possible alignment angles?	Exploring possible alignment phases and angles.
RQ6: How can the alignment process be classified?	Alignment can be presented in several phases, each phase representing a specific part of the organization. This question incorporates the process of alignment into different phases.
RQ7: How do we measure alignment between business and IT?	Identification of trends and possible alignment measurement techniques or models.
RQ8: To what extent is alignment successful in different business industries and what is the role of the business executive in the alignment process?	Identification of business executives' roles in the process of alignment and exploring the success rate of alignment in different business industries.
RQ9: Do business goals and business process modeling help IT align with business?	Identification of the business components that help IT align with business.
RQ10: How can software engineering help enhance business/IT alignment?	Development of a successful IT system that meets business expectations is a major component of alignment. In this question, we introduced several software engineering methodologies to enhance system development.

Table II. Research Motivations and Challenges

Challenge	Description
Unknown or unclear business strategy	
Business strategy “unclear”	If the business strategy is unknown or not clear, then it is hard for managers to adapt.
Formal strategy	Business strategies written in formal language are hard for managers to understand.
Domain knowledge	Business and IT not sharing their domain knowledge. By sharing domain knowledge, the communication gap between the two groups is reduced and alignment level is high.
Value analytics	Run-time analysis of business organizational data (e.g. customer feedback, staff progress reports, etc.) helps business managers in better decision making, which is only possible by using statistical applications usually provided by IT departments.
Governance	Developing clear/appropriate IT governance between business and IT departments enhances business and IT strategies, which then positively influences credibility and trust between both.
Lack of skills	
Lack of IT awareness	IT plays a pivotal role in the success of a business but some managers believe that IT cannot solve business problems.
Lack of business awareness	IT personnel need to be well equipped in business knowledge to ensure alignment is successful.
Lack of IT alignment awareness	Most business executives are unaware of the importance of IT alignment and they do not believe that IT alignment can solve business problems.
Authority-based challenges	
Manager decision	Business managers use their own understanding to fix business problems.
IT position	Ignoring IT in business decisions causes miscommunication in the organization and negatively affects alignment.
Rapid change in business organization (Structure)	
Frequent change	Businesses change their goals frequently, but IT cannot.
Time gap	Businesses require less time to move to another goal but IT requires more time to support the new goal.
Structure and culture	There is a huge structural and cultural difference between both fields.
Business and IT infrastructure	The rapid change in business and IT infrastructure requires continual improvement in the alignment process.

Table III. Top Business Management Issues Ranking [Chen 2010; Gartlan and Shanks 2007; Luftman et al. 2009; Silvius 2007]

Top business and IT management challenges						
2005 Rank	2006 Rank	2007 Rank	Description	2008 Rank	2009 Rank	2010 Rank
1	1	1	Aligning information technology (IT) with business	1	1	1
2	3	5	IT Budget (resources allocation for IT departments)	6	3	5
2	2	2	Relationship (developing relationships between business and IT personnel)	2	5	7
4	5	3	Skills (finding the right skilled person for the job)	4	2	3
5	4	6	Managing change (business changes rapidly which is hard for IT to follow)	5	not ranked	9
6	8	7	Identification of business and IT requirements	8	not ranked	8
7	2	4	How to use IT to enhance business performance and stakeholder satisfaction.	3	4	4
7	3	8	Domain knowledge (it is common to find that people who belong to an organization do not share their knowledge with each other)	7	6	2
9	5	9	Strategy planning	9	not ranked	6
Note: The issue of alignment was ranked the number one concern in 2003, 2004, 2004, 2005, 2006, 2007, 2nd in 1985, 2008, 5th in 1986, 7th in 1983, 1990 and was ranked as number 9 in 1980, 1994.						

Table IV. Alignment Definitions from Research Papers

Author	Concept definition	Comments
Silvius 2007	Alignment is the degree to which IT applications, IT infrastructure, business strategy and processes, are enabled and shaped.	This definition suggests strong coordination among business and IT activities in order to achieve organizational goals and objectives.
Xiang et al. 2008	Strategic alignment is the process that helps business organizations understand their goals according to the influence of technology on organizational strategy through the development of a reasonable IT strategy.	In this definition, the authors concentrate on the strategic relationships between business and IT. They recommend that for strong strategic alignment, both business and IT must understand each other's strategies.
Broadbent and Weill 1993	The process of alignment between business and IT is the degree to which it is allowed, supported and motivated by information technology strategies.	The definition is limited to the IT department, however what if the business cannot believe or trust in IT. On the other hand, business employees are unable to understand IT strategy.
Luftman et al. 1999	Alignment is the extent to which IT and business liaise when formulating their mission statements, their objectives, and their strategic plans, and whether these are supported by the information technology strategy.	The authors recommend that both the business and IT plans must be developed at the same time to achieve the best alignment, and that these plans must be supported by IT.
King and Teo 1996	Alignment is the method whereby the IT strategy is derived from the business strategy.	Both Business and IT strategies must be planned together and these strategies should not be in conflict.
Henderson and Venkatraman 1993	Alignment is the degree of fit and integration between business strategy, information technology strategy, business infrastructure, and information technology infrastructure.	The successful link between business and IT strategy, and business and IT infrastructure increases the chance of successful alignment.
Luftman and Brier 1999	Alignment focuses on different business organizational activities, that is, the activities that need to be performed to achieve the goals of the organization.	The process of alignment varies with the size of an organization. In small businesses, fewer resources are required to maintain the process of alignment compared to larger companies.
McKeen and Smith 2003	Strategic alignment exists when information systems support the business organization to achieve their goals and activities.	The definition refers to the importance of IT support to the business organization in order to effectively achieve their goals and objectives.
Campbell 2005	Alignment is the process where business and IT work together to achieve a common business goal.	The definition highlights the importance of coordination between business and IT for successful Business/IT alignment.
Sauer and Yetton 1997	The basic principle of alignment is that IT should be structured in a way that it helps to manage the process of the business more effectively.	The IT department must support the business at all levels of the organization, for example, the top level, the middle level, and the lowest level.

Table V. Strategy Alignment Direction

Strategy alignment angle	Author	Factors	Description
	King 1978	<ul style="list-style-type: none"> — Strategy alignment — Common business and IT strategy 	IT strategy should be derived from the business strategy for better business performance and alignment.
	Kearns and Lederer 2000	<ul style="list-style-type: none"> — Connection between business and IT plan — Lack of shared knowledge 	The authors define the difference between an Information System Plan with a Business Plan (ISP_BP) and a Business Plan with an Information System plan (BP-ISP), which helps in understanding business strategy at all levels of a business organization.
	Schwarz et al. 2010	<ul style="list-style-type: none"> — Business strategy — IT investment — IT resources — Business performance 	The authors identify how an understanding of IT investment results in better organizational performance. The authors present a Dynamics Capabilities Theory framework in order to identify the impact of IT investment on strategy and business performance.
	Lederer and Mendelow 1989	<ul style="list-style-type: none"> — Unclear business strategy — Unclear IT strategy 	The organization's formal business strategy is hard for IT to understand, which may result in the business strategy being unclear to the IT department. Similarly, the IT formal strategy is hard for business to understand.
	Haki and Forte 2010	<ul style="list-style-type: none"> — IT investment 	Service-oriented architecture-based methodologies for governance can help to align business strategy with IT, as well as help to align IT investments with organizational objectives.
	Yetton and Johnston 2001	<ul style="list-style-type: none"> — Organizational role — IT management 	Authors found IT management dilemmas experienced by numerous health information systems' challenging extreme budgetary pressures and conflicting priorities.
	Khanfar and Zualkernan 2010	<ul style="list-style-type: none"> — IT involvement in business strategy — IT leadership — Suitable IT system — Business and IT relationship 	The Strategic Alignment Maturity Model (SAMM) is presented in order to assess and measure alignment maturity between business and IT in the health sector. The study results show that overall IT and business are aligned.
	Yujie and Xindi 2010	<ul style="list-style-type: none"> — IT strategy planning with business strategy 	The SAM-based strategic alignment model, which is composed of IT planning assessment, analysis, design, and implementation of IT, is discussed
	Yan and Tan 2009	<ul style="list-style-type: none"> — Information system strategy — Business strategy — CIO characteristics 	The degree of match between the Chief Information Officer's (CIO) characteristics, business strategy, and information systems' strategy can influence the impact of information systems on business performance. The methodology was tested on 81 CIOs/IS managers.
	Veres et al. 2009	<ul style="list-style-type: none"> — IT strategy — Business strategy — Requirements engineering 	This study presents a requirements engineering-based model called B-SCP that enables the verification and validation of requirements in terms of Business-IT alignment and support for business strategy
	Palmer and Markus 2000	<ul style="list-style-type: none"> — Business strategy — IT usage — Firm performance 	In this paper, the authors report on the relationship between quick response (QR) technology and organizational performance from a cross-sectional survey. They found a strong association between the adoption of quick response and firm performance as well as a high level of alignment between strategic goals and IT.

Table VI. Structural Alignment Direction

Structure alignment angle	Author	Factors	Description
	Broadbent and Weill 1993	<ul style="list-style-type: none"> — Complexity of organization structure — Business strategy — Rapid change in structure 	Compatible organizational structure and strong strategy ownership is important for successful alignment.
	Earl 1989	<ul style="list-style-type: none"> — Centralized business units — Business project — Business competitor 	Business processes need to be decentralizing to align with the organization's units and the organization's projects.
	Pollalis 2003	<ul style="list-style-type: none"> — Lack of IT methodologies — Complex structure 	IT is more flexible with smaller organizational business units; it is more likely that smaller business units will have more success than larger business units in alignment.
	Chan 2001	<ul style="list-style-type: none"> — Lack of formal business and IT structure — Known business and IT plan 	An informal structure positively influences the process of alignment and business achievement more than a formal business structure.
	Chan 2002	<ul style="list-style-type: none"> — Structural differences between business and IT — Business and IT planning 	Aligning business and IT structure positively influences IT decision-making and relationships.
	Pyburn 1983	<ul style="list-style-type: none"> — Lack of IT support 	IT is more supportive when dealing with all organizational levels rather than at the business executive and managerial level.
	Tavakolian 1989	<ul style="list-style-type: none"> — IT structure reflects business strategy — Importance of IT structure 	Companies are more successful or achieve a greater degree of alignment if they have a centralized IT structure compared to companies that do not.
	Bergeron et al. 2004	<ul style="list-style-type: none"> — Lack of business and IT structure 	A complex and large IT structure has no impact on alignment and business performance; there is no need for a more complex IT structure.
	Saat et al. 2010	<ul style="list-style-type: none"> — IT system — IT governance 	This proposed technique presents a common model to measure alignment in all types of business organizations.
	Dongwoo et al. 2010	<ul style="list-style-type: none"> — Business resources — Business strategy — Business and IT structure 	Enterprise architecture needs to be managed in a systematic way that supports the accurate execution of business processes and business strategy. This paper presents an architecture model in order to maintain the enterprise's resources.

Table VII. Cultural Alignment Direction

Culture alignment angle	Author	Factors	Description
	Luftman et al. 1999	<ul style="list-style-type: none"> — Strong involvement of senior management — Well-managed working relationship — Strong leadership — Belief and effective communication between both groups 	The support of senior management is necessary to establish the organizational culture. The authors empirically prove that achieving alignment is evolutionary and dynamic, requiring a strong cultural relationship between all company staff and with similar firms.
	Pyburn 1983	<ul style="list-style-type: none"> — Business and IT strategy — Businesses planning at a lower level — Communication gap 	The author strongly recommends cultural fit between business and IT at the phase of business strategy planning to achieve successful alignment.
	Kantrow 1980	<ul style="list-style-type: none"> — Connection between business and IT functions — Cultural relationship at all phases of the business organization 	A well-managed organizational culture is required to develop a working relationship between business and IT functions, which leads to successful alignment.
	Van and Jong 1999	<ul style="list-style-type: none"> — Lack of domain knowledge between CEO and CIO. — Meeting of minds 	A lack of communication or differences in thinking between business and IT staff influence alignment in negative ways.
	Hunt 1993	<ul style="list-style-type: none"> — Use of IT in business decision-making — Business understanding of and belief in IT 	Business executives and managers must analyze the IT process and use IT services in a way to boost business success.
	Chan 2002	<ul style="list-style-type: none"> — Informal business structure 	A well-organized company culture is important for the informal structure of a company. Informal organizational culture positively influences the alignment process
	Burn 1993	<ul style="list-style-type: none"> — Business structure and strategy processes — IT structure and strategy 	A strong organizational culture positively influences the business structure and strategy and IT structure and strategy.
	Chen 2010	<ul style="list-style-type: none"> — Communications maturity — Governance — Partnership — IT maturity — Skill maturity 	The measurement and maintenance of alignment may result in better business performance. The paper empirically studies the issue of alignment in China. Results show that companies in China are strongly aligned with their IT departments.

Table VIII. Social Alignment Direction

Social alignment angle	Author	Factors	Description
	Reich and Benbasat 2000	<ul style="list-style-type: none"> — Shared domain knowledge between business and IT executives — Successful history of IT — Communication between business and IT executives — Connection between business and IT planning. 	The social dimension of alignment is defined as “the state in which business and IT executives understand each part of the business organization and are committed to the business and IT mission, objectives, and plans.” They found that three factors influenced short-term alignment, but only shared domain knowledge was found to influence long-term alignment.
	Kim and Park 2007	<ul style="list-style-type: none"> — Sharing knowledge between business and IT technical people — Maintaining IT belief in business executive and managers 	Social alignment can help to see how business-IT alignment is accomplished practically and effectively. The authors argue that misalignment between business and IT technical elements often leads to increased human cost—it may cause poor alignment.
	Kashanchi and Toland 2008	<ul style="list-style-type: none"> — Unclear strategy between business and IT staff — Long-term relationship between business and IT — Communication between business and IT at all levels 	The social dimension of alignment focuses on people within an organization; in particular, organizational staff who are directly involved with the needs of business and IT. They recommend that sharing knowledge between business and IT is a vital factor in achieving alignment between IT and business.
	Feeny et al. 1992	<ul style="list-style-type: none"> — Communication between business organization staff inside and outside the organization. — Relationship between CEOs and CIOs. 	To achieve the social and intellectual directions of alignment, a strong relationship between business CEOs and IT CIOs is required. The authors state that to achieve a high level of alignment, the most important step is the development of a positive relationship between CEOs and CIOs.
	Alice and Lederer 2010	<ul style="list-style-type: none"> — Relationship between business and IT executives — Alignment direction 	A strong understanding and a positive relationship between business and IT executives is important to align information technology with business planning. This empirical research investigates the relationship between the CEOs and CIOs and found that a strong relationship between them results in the success of each alignment direction.

Table IX. Alignment Techniques and Models

Authors	Alignment theory	Type of measure	Measure	Concentration
Haki and Forte 2010	SOAGM	Theoretical model	Not measured	Introduction of SOA in context with governance to improve alignment.
Khanfar and Zualkernan 2010	Assessing Business-IT alignment maturity in a hospitality and exhibition company	Alignment measurement model	Empirically supported	The model is intended to measure strategic alignment in the health sector.
Yujie and Xindi 2010	Alignment of IT strategy planning with business strategy	SAM-based model	Empirically supported	It defines a way to integrate IT strategy with business strategy.
Saat et al. 2010	Metamodel for IT/Business alignment	Questionnaire approach	Explorative study	Measuring alignment with different sized organizations is difficult.
Henderson and Venkatraman 1993	Links business strategy, IT strategy, business Infrastructure and process, IT infrastructure and process.	Hypothesis-based model	Empirically supported	Definition of the alignment concept, integration of business and IT strategy, structure and process.
Burn 1993	Examines the relationship between business and IT internal and external strategy, business and IT structure and planning	Questionnaire approach	Yes measured	The approach considers business and IT culture to measure alignment.
Luftman et al. 1993	Provides a connection between business strategy, business structure, and IT strategy structure.	Questionnaire (interview) approach	Not measured	Alignment between top business and IT management.
Yan and Tan 2009	Alignment of CIO characteristics and business strategy	Empirical investigation	Yes measured	The CIO's personality and job experience may result in better business performance
Kearns and Lederer 2003	Links information system plans and business plans; and business plans with information system plans.	Questionnaire approach	Yes measured	Results show that both business and IT executives have different viewpoints in relation to understanding business strategy.
Broadbent and Weill 1993	Provides a connection between business strategy, business structure and IT strategy structure.	Questionnaire (interview approach)	Not measured	For methods of alignment.
Brown and Magill 1994	Links IT and business structure.	Questionnaire (interview approach)	Not measured	Identification of the formal relationship between top level business and IT management.

Table IX. Contiued

Authors	Alignment theory	Type of measure	Measure	Concentration
Bergeron et al. 2004	Targets business strategy and structure and IT strategy and structure.	Questionnaire approach	Yes measured	Their measurement technique included the direction of IT environment scanning, IT planning and control, IT acquisition and implementation.
Reich and Benbasat 1996	Interaction of four different social alignment factors: relationship, IT history, communication, and planning.	Questionnaire (interview) approach	Yes measured	Define the process of alignment in the short and long term.
Alice and Lederer 2010	CEO/CIO mutual understanding for alignment	Questionnaire approach	Yes measured	A positive relationship between CEOs and CIOs is necessary for the alignment process.
Chan et al. 1997	Links business strategic Orientation with IT strategic orientation.	Matching approach	Yes measured	Proposed a model to measure alignment.
Kearns and Lederer 2000	Links organization plans with IT plans	Questionnaire approach	Yes measured	Connects IT and business plans and recommends IT needs to be advanced.
Van and Jong 1999	Provides a connection between business and IT management	Questionnaire approach	Not measured	Balanced scorecard to integrate business and IT. Alignment at a high level is defined.
Steven et al. 2006	Approach incorporates business goals in the context of requirements engineering and links high level management with low.	Empirically proved	Yes measured	Introduces the strategic-oriented alignment approach in requirements engineering, called SOARE
Maes et al. 2000	Links business and IT strategy, structure, and operations.	Questionnaire approach	Not measured	The approach is an extension of the Henderson and Venkatraman model.
Reich and Benbasat 2000	Compares the business mission and plans with the IT mission and plans	Questionnaire (case study) approach	Not measured	Social alignment factors may positively influence the process of alignment
Byrd et al. 2006	Builds a connection between business and IT strategy.	Matching approach	Yes measured	Analyzes the process of alignment.
Peak et al. 2005	Provides a connection between business strategy, units, and IT strategy.	Questionnaire (interview) approach	Not measured	Describes the IT alignment process.
Scott 1990	Communication between business and IT strategy and culture	Empirically proved	Yes measured	Very first alignment model.
Henderson and Venkatraman 1992	Strategic alignment model	Empirically proved	Yes measured	Extension of Scott's model.

Table IX. Contiued

Authors	Alignment theory	Type of measure	Measure	Concentration
Sabherwal and Chan 2001	Interaction between business strategy, business structure, and IT strategy, ICT structure.	Questionnaire (interview) approach	Yes measured	Alignment can positively influence business performance.
Cragg et al. 2002	Linking business and IT strategy.	Matching and moderation approach	Yes measured	Alignment is more successful in a small-sized business organization than a larger one.
Veres et al. 2009	Requirements engineering approach to strategic alignment	Seven Eleven Japan case study	Yes measured	The methodology allows the analysis and decomposition of business and IT strategies, identifies the system requirements, systems requirements verification and validation.
Chen 2010	Business-IT alignment maturity	Empirically proved	Yes measured	Companies with strong alignment show stronger business performance compared to those with weak alignment.
Luftman 2000	Assessing business-IT alignment maturity	Empirically proved	Yes measured	If business-IT alignment maturity is understood, relationship between business and IT can be increased.

Table X. CIO and CIO Survey Results

Business Organizational Issues	CEOs and CIOs										Mean	Rank
	1	2	3	4	5	6	7	8	9	10		
Aligning information technology (IT) with business	5	5	5	5	5	5	5	5	4	4	4.8	1
IT Budget (resource allocation for IT department)	4	2	5	5	5	3	5	3	3	4	3.9	5
Relationship (developing relationship between business and IT people)	4	3	4	4	4	4	5	4	2	3	3.7	7
Skills (finding the right skilled person for the job)	4	4	4	4	4	5	5	5	4	2	4.1	3
Managing change (business changes rapidly which is hard for IT to follow)	3	2	3	4	1	3	4	5	4	3	2.9	9
Identification of business and IT requirements	3	5	5		4	4	2	2	3	4	3.0	8
How to use IT to enhance business performance and stakeholder satisfaction.	4	5	4	3	3	4	4	4	4	5	4.0	4
Domain knowledge (normally, people who belong to an organization do not share their knowledge with each other)	5	4	5	4	5	5	3	4	3	4	4.2	2
Strategy planning	2	3	5	3	4	5	5	2	4	5	3.8	6

Table XI. Business Goal-Based Requirements Engineering Methodologies for Alignment

Authors	Approach	Motivation	Description
Ullah and Lai 2011a	Business goal modeling using requirements engineering.	Requirements elicitations for the development of a suitable IT system	This methodology aims to help IT developers better understand the business goals.
Gordijn et al. 2006	<i>I*</i>	Clarification of business goals	The framework is based on a business goal concept that allows IT analysts to observe the requirements at an early stage of system development.
Card and Moran 1983	Goal-based workflow	Requirements elicitation	Analysis of business goals in order to manage change in organizational goals in context with business-IT alignment.
Ellis and Wainer 1994	GOMS	System requirements (all phases)	This approach suggests a business goal-based infrastructure in order to understanding the current organizational circumstances
Bubenko et al. 2000	EKD	System requirements	Model the business goals in regard to obtaining complete system requirements.
Dardenne et al. 1993	KAOS	System requirements identification	Analyze the business goals in order to identify the system requirements and enable developers to develop the system according to business expectations.
Zowghi and Jin 2010	Framework for elicitations and analysis of system requirements	Identification, elicitation and analysis of system requirements	This methodology defines a way to derive the identification, elicitation, and analysis of system requirements from the business goals in a systematic manner.
Soonhwa et al. 2010	Requirements elicitation framework for alignment	Alignment of IT with business	The framework is based on the decomposition of the business strategy into tactical and operational IT objectives by espousing multiple perspectives of system requirement elicitations. The approach facilitates alignment between business and IT.

Table XII. Business Process-Driven Requirements Engineering Methodologies for Alignment

Authors	Approach	Motivation	Description
Ullah and Lai 2010	Approach to improving Business-IT alignment	Requirements elicitations+ process modeling	The business process-driven requirements engineering approach enables IT to better understand system requirements, as requirements are generated from the business process automatically and provide assistance in obtaining the system requirements quickly.
Tomoyuki et al. 2005	Process-driven system requirements	Requirements elicitations and process verification	Presents a business process-oriented RE model to understand the relationship between business processes and software systems.
Cardoso et al. 2009	Process modeling for system requirements	Modeling process	Process-based model for system requirements that found modeling process is a conventional practice, which facilitates problem comprehension, helps the customer to understand their own business process, and reveals how the system will support the business process.
Lind and Seigerroth 2010	Multi-Layered Process Modeling	Modeling process	Multi-layered thinking throughout business process modeling can be useful for the measurement of business-IT alignment during process modeling.
Elvesæter et al. 2010	SoaML	Modeling business and IT environments	This presents the service-oriented architecture modeling language called SoaML to model and align business and IT infrastructure. Business process modeling notation (BPMN) is used to map the specification of the SoaML.
Aversano et al. 2010	Measuring the alignment between business processes and software systems	Measurement and detection of misalignment	Alignment between business processes and software systems positively affects the performance of the business. The approach introduces a set of codifying metrics in regard to measurement and misalignment between business processes and systems.
Yujong et al. 2010	Understanding information behavior and the relationship to job performance	Measurement of information behavior in order to find the relationship between employee job performance and the future of information systems	Managing information behavior and ways of using the information system, is an important area for the future development of information systems. This paper is based on the examination of two factors of information behavior: the motivation to use the system, and the capability of the system. The factors have been studied in regard to the individual's job performance and the future of information systems.

B. LIST OF FIGURES

Fig. 1. Phases of alignment.

Fig. 2. Alignment model [Reich and Benbasat 2000].

Fig. 3. Strategic Alignment Model (SAM) [Henderson and Venkatraman 1992].

Fig. 4. Business goal modeling versus requirements engineering.