Business-IT Alignment Literature Review: A Bibliometric Analysis

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ABSTRACT

The purpose of this article is to portray the knowledge evolution paths of business-IT alignment (BITA) research and identify a set of important papers in the development of BITA, and elucidate the intellectual structure of this field. This study collected 309 papers published during the period 1983-2015 from the Web of Science (WOS) database. Using a variety of bibliometric and visualization analytic techniques such as citation analysis, co-citation analysis and main path analysis, this article (1) delineates the significant knowledge flows of BITA research and identifies 15 important papers in this field; (2) graphically maps the influential countries, institutions, and journals of BITA research; (3) identifies four major research themes: BITA model, measurement, antecedents, and dynamics, and visualizing the relationships among them. Based on these findings, recommendations for the future research directions have suggested. This article provides IT practitioners, executives, and scholars with a new perspective to get a better understanding of BITA.

KEYWORDS
Bibliometric Analysis, Business-IT Alignment (BITA), Citation Analysis, Co-Citation Analysis, Intellectual Structure, Main Path Analysis, Visualization Analysis

INTRODUCTION

For three decades, business-IT alignment (BITA) has consistently rated as one of the top three challenges facing scholars, IT practitioners, and company executives (Luftman et al., 2013). BITA defined as the extent of alignment between information technology and business strategy. Valuable theoretical and empirical studies evidence that reveal positive effects of alignment on business performance (Gerow, Thatcher, & Grover, 2015; Oh & Pinsonneault, 2007; Sabherwal & Chan, 2001; Yayla & Hu, 2012). The central argument of these studies is that organizations will perform well when key IT resources are aligned with business strategy and when appropriate structures are used to supervise the deployment and effective management of these resources (Coltman, Tallon, Sharma, & Queiroz, 2015). Around these topics, scholars have identified several antecedents that influence strategic BITA such as shared understanding between business and IT (Preston & Karahanna, 2009), governance mechanisms for IT (Wu, Straub, & Liang, 2015), enterprise architecture maturity (Bradley, Pratt, Byrd, Outlay, & Wynn, Jr, 2012), and strategic direction (Sabherwal & Chan, 2001). Theoretical and practical models of BITA have been proposed and extended to achieve alignment for organizations (Avison, Jones, Powell, & Wilson, 2004; Sabherwal, Hirschheim, & Gole, 2001).
However, several studies also indicate that organizations can fall into a rigidity trap where tight or inflexible links between business and IT can delay or impede an organization’s ability to respond quickly to environmental change (Benya & McKelvey, 2006; Tallon & Pinsonneault, 2011). In contemporary hypercompetition environments, it is difficult for organizations to achieve sustained BITA (Baets, 1992; Ravishankar, Pan, & Leidner, 2011; Reich & Benbasat, 1996). Achieving mature BITA is difficult due to uncertainty in the competitive environment (Ullah & Lai, 2013), particularly facing the changes in IT, volatile customer services, and rapid product lifecycles. For researchers and practitioners alike, how to achieve sustained BITA in the organizations remains to be a confused problem.

In recent years, an increasing number of descriptive literature reviews attempted to systematically analyze the research of BITA and indicate better directions for the future (Chan & Reich, 2007; Coltman, Tallon, Sharma, & Queiroz, 2015; Ullah & Lai, 2013). However, these reviews are mainly based on subjective analysis of experienced scholars in the research field. This could be potentially explained with the limited time, energy, and cognitive capacity of those authors, as well as that the interpretation of the literature is inevitably influenced by their personal perspectives (Raghuram, Tuertscher, & Garud, 2010). To supplement the existing research deficiencies, this study conducted a comprehensive search of BITA papers and used bibliometric analysis to reduce the impact of human factors. This is the first study to examine the knowledge structure of BITA research by using bibliometric methods.

There are two goals for this study. The first is to identify the evolution path and important papers of BITA research, and the second is to delineate the influential countries, institutions, and journals of BITA research, and distinguish the research themes that constitute the intellectual structure of BITA. Furthermore, provide recommendations for future research based on these findings.

**METHODOLOGY**

**Citation/Co-Citation Analysis**

Citation analysis is a major bibliometric approach that can be used to identify underlying patterns of relationships between papers based on the references cited (Osareh, 1996). As shown in Figure 1, a citation relationship occurs when one paper refers to another paper, known as the source paper (Wang et al., 2016). Citation analysis is not merely aimed at assessing the significance of papers or authors, it is more focused on the evolution of research traditions and directions. Scholars within similar sub-discipline specialty tend to cite each other and previous pivotal papers.

Small (1973) first introduced co-citation analysis and defined as the frequency with which two papers are cited together by other papers, as Figure 1 shows. The more co-citations two papers receive, the higher their co-citation index is, and the more likely it is that they conduct similar research or adopt same methodologies. Co-citation analysis provides a new perspective for scholars to explore the inherent intellectual structure of papers.

**Main Path Analysis**

Main path analysis is a special method to reveal the significant knowledge flows in the citation network. If one paper that integrated important ideas with previous research will receive many citations by the following papers. Consequently, this article will be an important node for transporting scientific knowledge and a lot of information will flow from it. Without this article, the circulation within the citation network will be greatly affected. These important nodes constitute one or more paths in the citation network, which are the main paths of a research field.

Hummon and Dereian (1989) first introduced the basic concept of main path and provided a method to identify it by measuring the traversal counts. Up to now, there exist numerous ways to measure the traversal counts, including Search Path Link Count (SPLC), Search Path Node Pair
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