

# Success of IT Deployment: The Role of IT Investment Consistency

*Tomi Dahlberg, School of Business, Åbo Akademi University, Turku, Finland & School of Economics, Aalto University, Helsinki, Finland*

*Hannu Kivijärvi, School of Business, Aalto University, Helsinki, Finland*

*Timo Saarinen, School of Business, Aalto University, Helsinki, Finland*

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## ABSTRACT

*IT business value (ITBV) research generally state that various “good” IT management and IT governance practices influence positively IT deployment success and organizational performance. This has proved hard to verify empirically. For this study, the authors analyzed factors that influence IT deployment success. First, the authors identified potential factors, then hypothesized about the relationships among and between the factors and finally integrated the hypotheses into a research model. The authors then empirically evaluated the hypotheses and the entire research model. Special attention was placed on the Business-IT alignment, IT management and the consistency of IT investments in relation to the cyclical behavior of the economy. The consistency of IT investment is a novel factor introduced in this study to the ITBV research. The authors used survey data of 212 responses collected from CxOs during an economic recession. Empirical results confirmed that all research model factors impacted positively on IT deployment success.*

**Keywords:** *Alignment, Importance of IT, IT Investment Consistency, IT Investments, Partial Least Squares (PLS), Structural Equations Modeling (SEM), Technology Usage*

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## 1. INTRODUCTION

The use of IT and IT-related investments accounts for a major and growing proportion of an organization's costs (e.g. Cha, Pingry, & Thatcher, 2009). Although there are arguments according to which IT does not provide value (Carr, 2003) or offer positive competitive advantages (Pollalis, 2003), most practitioners and researchers agree with the statement that, on average, IT deployment improves performance

and increases the value of an organization (e.g. Brynjolfsson & Brown, 2005).

The impacts of multiple factors have been investigated within the broad umbrella of IT business value (ITBV) research. Constructs studied include IT capabilities (e.g. Mithas, Ramasubbu, & Sambamurthy, 2011), business-IT alignment (e.g. Kearns & Sabherwal, 2007), IT management and IT governance (e.g. Drnevich & Croson, 2013), technology strategies and their deployment (e.g. Goh & Kauffman), the execu-

DOI: 10.4018/IJITBAG.2015010102

tion of IT investments and projects (e.g. Kohli, Devaraj, & Ow, 2012), data and information management (e.g. Tallon, Ramirez, & Short, 2013), and enterprise architecture including integrations (e.g. Ward & Zhou, 2012). Similarly, several measures for IT deployment success and organizational performance have been crafted (e.g. Petter, DeLone, & McLean, 2013). The generic proposition of the ITBV research is that “good” IT deployment, management and/or governance of IT capabilities, business-IT alignment etc. influence positively IT deployment success and organizational performance. This has proved hard to verify empirically, especially if the impact of several constructs should be investigated simultaneously. Our objective is to contribute to this literature by investigating how the consistency of IT investment – a new theoretical construct to the ITBV research – impacts IT deployment success and how several ITBV constructs jointly do the same.

Against the ITBV research background, we adopted a slightly different approach to many other studies. First, we raised the question: Are various constructs investigated within ITBV related to each other and, if so, do they as a whole impact the success of IT deployment? More specifically, is it possible to design a holistic model with specified relationships between several constructs and their influences and to empirically verify the influence of each construct and the entire model? Our objective is to find the answers to these questions.

Second, as seen in the formulation of the above-stated questions, through our entire research, we explored the outcomes on the level of IT deployment success. IT deployment success includes both the success of IT projects, (that is, IT development activities) and the success of IT deployment as a whole (that is, IT legacy and operations related activities and related IT development activities). There are two reasons for the adoption of this level of investigation. First, both practitioners and researchers would prefer to understand how IT impacts organizational performance rather than how IT affects IT deployment success. However, there are often significant time de-

lays between IT investments, legacy IT service developments, enterprise architecture activities and other key IT management and/or IT governance decisions, the implementation of those decisions, and the final impacts of decisions and actions on organizational performance. There are also intervening factors related to other organizational activities and changes in the organizational environment and IT during the implementation of investments and plans (e.g. Kivijärvi & Saarinen, 1995). The second reason is that the success of IT deployment is related to IT value creation and hence also to organizational performance, although the empirical proof of this statement is beyond the scope of this research. As IT has become an enabler for most organizational activities and an integral part of them, we reason it to be unlikely that IT would improve organizational performance unless it is deployed successfully. As a consequence, we argue that the constructs investigated within ITBV research can be seen as the constructs of IT deployment success, too. Our objective is to craft our research model by doing this.

Third, changes in an organization’s environment might impact how the organization deploys IT. The phase of an economic cycle is one such environmental change. For example, during a recession, there could be pressures to cut IT costs, to postpone IT investments, and to limit IT development activities in order to have cost savings and to improve efficiency in the short run. On the other hand, there could also be efforts to create new business, to consolidate IT assets, to improve data quality, or to develop IT management competencies. The motive is to be better prepared for economic recovery and for the next bull market (Cha, Pingry & Thatcher, 2009). The reactions of organizations to economic cycles probably differ. Organizations that continue to invest into IT in line to their current plans show consistency of IT investment. They may still postpone IT investments, cut costs and have more focused IT development activities but that is done in an orderly way with little ad-hoc postponement and cut down decisions on IT investments. Our objective is to examine

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