



# The impact of IT news on hospitality firm value using cumulative abnormal returns (CARs)

Seoki Lee <sup>a,\*</sup>, Daniel J. Connolly <sup>b,1</sup>

<sup>a</sup> School of Tourism and Hospitality Management, Temple University, 1700 North Broad St., Suite 201-F, Philadelphia, PA 19122, United States

<sup>b</sup> School of Hotel, Restaurant, and Tourism Management, University of Denver, Denver, CO 80208, United States

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## ABSTRACT

The impact of information technology (IT) news on firm value have been investigated and discussed in various industry settings. Some reports indicate positive impacts while others find negative or no significant impact at all. The purpose of this event study is to examine how financial markets perceive various types of IT news regarding hospitality companies. Nine categories of IT news are created for investigation and the study estimates cumulative abnormal returns (CARs) to determine the impacts of such news on stock price movements. The findings suggest no significant impact from IT news on firm value, supporting the IT paradox theory.

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## 1. Introduction

At the heart of any successful hospitality company is a complex portfolio of required IT applications which influence operation of every facet of the business and support a firm's competitiveness in the marketplace. Information technology (IT) is changing the intensity of competition within the hospitality industry. For many business executives, IT is a necessary evil, but to McAfee and Brynjolfsson (2008), IT is the engine behind hyper-competition, an accelerated and intensified rate of competition due to the digitization of the various processes comprising and supporting firms' value chains. Positive results from firm performance require strong alignment between IT and business strategy (Olsen et al., 2007; Byrd et al., 2006; Rai et al., 1997). Although considering the operation of any business of size without the use of IT is incomprehensible, attempts to conclusively link investment in IT to firm performance provide mixed results (Chou et al., 2006; Gunasekaran et al., 2006; Lee and Kim, 2006; Rai et al., 1997).

Much has been written in the contemporary press about value creation. According to Slywotzky (1996, p. 4), value stems from a company's business design: "the entire system for delivering utility to customers and earning a profit from that activity." As IT continues to pervade the hospitality industry, attention must be given to the role it plays in shaping a firm's business design, strategy, and service delivery in order to create firm value. This value creation must be

addressed from two perspectives: that of the guest and that of the investor (shareholder). The challenge, however, is that the tools to assess IT's contribution to a firm's value are limited, and the tools that do exist tend to be imprecise or difficult to apply in a hospitality context due to the unique attributes of that particular business (i.e., intangibility, perishability, heterogeneity, etc.). Increasingly, especially in a difficult economy, hospitality owners, investors, and executives are demanding more rigor in analyzing business expenditures, including those involving IT, to ensure funds are being used appropriately and in responsible ways. Thus, the perennial question for any hospitality business is, "How does the organization add value?"

This study attempts to find an empirical link between IT related announcements/news and firm value as measured by an event study approach that estimates cumulative abnormal returns (CARs) by using stock prices. This technique, widely used in accounting, finance, and strategic planning, measures an abnormal effect of a particular event on the value of a firm, assuming that stock prices instantly reflect the impact of such an event.

Value can be defined from many different perspectives and may result from tangible and intangible factors (Chou et al., 2006). Principal stakeholders include shareholders (investors), customers, and employees. Shareholders typically measure value in terms of economic return on their investment based upon some level of perceived risk. For customers, assessment of value is in terms of a price–value relationship; that is, how much customers receive in terms of products and services for the price they pay. For employees, measurement of value is according to salary and the intrinsic rewards of employment. Yet, one of the most elusive questions with respect to IT is, "How can value be measured?" The answer to this question has been elusive, which troubles

\* Corresponding author. Tel.: +1 215 204 0543; fax: +1 215 204 8705.  
E-mail addresses: [seokilee@temple.edu](mailto:seokilee@temple.edu) (S. Lee), [connolly@du.edu](mailto:connolly@du.edu) (D.J. Connolly).

<sup>1</sup> Tel.: +1 303 871 4278; fax: +1 303 871 4260.

hospitality executives who are under constant pressure to invest more in their IT portfolios to remain competitive. Making matters worse, the editor-at-large of the *Harvard Business Review*, Carr (2003, 2004), in his article, “IT Doesn’t Matter,” (later, a book with a similar title) launched a debate which questioned the value of IT. Piccoli (2004) attempted to refute Carr’s debate in the context of the hospitality industry with many illustrative examples, but his position was based upon descriptive or qualitative evidence, not concrete measures. For hospitality executives faced with growing IT budgets, aging systems, and spotty track records for developing and deploying IT, a natural hesitancy or cautious approach towards technology is inevitable. Moreover, the lack of clear-cut, quantitative connections between IT and firm performance cast further doubts on the returns expected from the large sums requests for investment in IT demand (Chou et al., 2006).

The impacts of IT investments on firm performance, productivity, or value have been examined in the IT literature under various contexts. Some researchers conclude positive impacts from IT investments while others reveal negative or no significant impacts. Those who find favorable results consider IT investment to be a tool to enhance productivity or to save costs (McAfee and Brynjolfsson, 2008; Alpar and Kim, 1990; Bharadwaj et al., 1999; Cho and Olsen, 1998; David et al., 1996; Ham et al., 2005; Huo, 1998; Mahmood and Mann, 1993; Piccoli, 2004; Rai et al., 1997; Siguaw et al., 2000). Those studies failing to show a correlation between IT investment and firm performance fall within what has become known as “IT paradox literature” (Aral et al., 2006; Barua et al., 1995; Carr, 2003; Thorp, 1998; Hitt and Brynjolfsson, 1996; Roach, 1991; Strassmann, 1990; Willcocks and Lester, 1999).

Several hospitality studies examined impacts of IT investment (Cho and Olsen, 1998; David et al., 1996; Ham et al., 2005; Huo, 1998; Siguaw et al., 2000); most of them do so in terms of firm performance and productivity, but little study has been conducted to empirically investigate impacts of IT news/announcements on firm value by estimating and examining CARs in a hospitality setting, which comprehensively includes hotel, casino and restaurant industries.

Under the assumption of market efficiency, reactions (or perceptions) of financial markets to certain events including various news releases, provide a view of the degree to which added or reduced value accrues to the events. By performing an event study, reactions of a financial market to an event can be measured in terms of CARs. In this case, CARs are an unbiased assessment of the impact that the event has on a firm’s market value (Brown and Warner, 1985; Fama et al., 1969; MacKinlay, 1997; McWilliams and Siegel, 1997).

The purpose of this study, therefore, is to examine impacts of IT news on firm value in a hospitality setting by measuring reactions (or perceptions) of the financial market to IT news releases in terms of CARs. Specifically, this analysis seeks to determine if such IT news impacts CARs, positively, negatively or not at all. The study includes three sub-sectors of the hospitality industry: hotels, restaurants, and casinos. It also considers nine categories of IT news: (1) Guest Services/Amenities, (2) IT Infrastructure, (3) Distribution/e-Commerce, (4) Sales and Marketing, (5) Recognition/Awards, (6) Personnel, (7) Environmental, (8) Supply Chain Management, and (9) Others. The study also tests for varying impacts of IT news during different time periods. This study differs from previous IT event studies, and the impact on firm value in that this study specifically deals with the hospitality industry, an industry that tends to be more people focused with lower IT expenditures as compared to other industries such as financial services, banking, airlines, and insurance (Connolly and Ivey, 2004). Because of the unique characteristics of the hospitality industry, an uncertainty exists as to whether or not IT event studies from other industries could be generalized to the hospitality industry. Perhaps, the financial markets may not react to

the hospitality industry’s IT related news to the degree that it does to the industries with heavy IT investments. However, this is an empirical question that needs to be answered in the hospitality setting.

Examples of previous studies are Dos Santos et al. (1993) examined 97 financial services and manufacturing industries; Im et al. (2001) used 238 firms in addition to 97 firms that were examined by Dos Santos et al. (1993) none of which include a hospitality firm, Chatterjee et al. (2002) collected data from 112 firms from electrical, communications, utilities, general merchandise stores and financial institutions; Dehning et al. (2003) replicated Dos Santos et al. (1993), Chatterjee et al. (2002), and Im et al. (2001) in that none of the studies examined a hospitality firm. Ferguson et al. (2005) used 232 listed Australian firms including 8 tourism and leisure firms. To add a dimension to the previous research, the current study developed more detailed categories of IT news, as compared to previous studies, through adopting a semi-grounded theory approach.

This study’s structure includes a second section which is a literature review of various IT impact research. Methodology and data sections precede the results of the analysis. The final two sections present implications and discussions of the results, limitations, and suggestions for future research.

## 2. Literature review

The strategic importance of IT to a firm and the resultant added-value are important study subjects because of the large sums expended on IT (Gunasekaran et al., 2006). Companies continue to invest significantly and advance their reliance on IT for operational assistance and to transact business. IT can no longer be treated as organizational overhead but instead must be viewed as a strategic resource capable of altering competitive and industry structures (Segars and Grover, 1995; Clemons and Row, 1991; Porter, 1980, 1985; Porter and Millar, 1985). In many companies, IT has moved from a back-office support function to a visible, strategic, and structural role in an organization. This transformation requires chief executives to become “IT-enlightened” (Bresnahan, 1998; Caldwell, 1998) and to treat IT just as one would treat any financial investment portfolio: that is, a collection of assets, that when managed well, will generate suitable returns on investment (Weill and Broadbent, 1998; Weill, 1991; Weill and Olson, 1989).

With the role of IT changing from one of support or utility to one of strategic importance, the evaluation and decision-making process regarding which projects to accept and which ones to reject become more perplexing and must be based upon multiple criteria (Gunasekaran et al., 2006). No uniform definition exists for what constitutes an IT investment and whether or not a project is of a capital nature (Weill and Olson, 1989; Weill, 1991). Lack of a common definition has contributed to the difficulties prior research has had in addressing IT investment and its impact on firm performance. Carr (2003) argued that IT has become more of a necessity rather than something that provides a company with a competitive advantage. He further argued that over-investment in IT has become more pervasive and management’s approach to IT investment should change. His proposed strategies are “spend less,” “follow, don’t lead,” and “focus on vulnerabilities, not opportunities.” He asserted that the key to success of investing in IT is not to seek direct competitive advantage but to better control costs and reduce risks.

Economic advantages accrue to those organizations that can leverage today’s IT and redefine their business practices (Tapscott, 1996). IT holds great promise and potential for any business, but recognizing the significant changes required throughout an organization to realize the full value of the new technology is necessary. These changes include structural, procedural (i.e., task), and personnel changes (i.e., new job descriptions, new skill sets,

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