Information Technology Failure and Firm Value: 
Exploring the Impact of Corporate Social Responsibility

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Research on the relationship between Corporate Social Responsibility (CSR) and firm value has revealed a strong positive correlation. Further, researchers have found that social responsibility supports crisis management of certain externally-generated negative events. While these findings have proven both interesting and useful, questions remain regarding the impact of social responsibility when an unexpected information technology (IT) failure occurs. This exploration considers the effect of CSR on the market’s response to an IT failure. Thus, we offer a theoretical framework which can be applied in future research to advance CSR and IT failure literatures.

INTRODUCTION

The concept of Corporate Social Responsibility (CSR) has advanced from its initial definition of discretionary expectations that society has of organizations (Carroll, 1979). Today, an overwhelming majority of the literature acknowledges that businesses no longer have an option of whether or not to prescribe to the notion of CSR. Firms’ failure to proactively address issues related to the planet, people, products and profits may prove costly to the business, because of the intensifying pressure for Corporate accountability and ever-increasing expectations of stakeholders; persons, groups or organizations who are affected by or can affect an organization’s actions (Shell, 1998).

As the public’s demands rise with the increasing transparency of markets, investors are not only looking at the financial performance in a corporation’s portfolio, but are also valuing the way corporations meet their social responsibilities (Barnett & Salomon, 2006). These trends shift the focus of corporate attention from a purely financial orientation to one that incorporates the business-society relationship. Corporations are likely to be judged for their actions relative to social performance (Freeman, 1994; Freeman et al., 2004), given the fact that society can hold corporations accountable for their obligations toward shareholders and non-investor entities.

Perceived attention to social issues could be advantageous, while failure to meet expectations could ultimately result in such financial repercussions as reduced profits and declines in stock price. Thus, the resource-based view (RBV) is useful in explaining the competitive advantages to be gained from CSR. The RBV argues that a good corporate social responsibility reputation can be interpreted as an intangible resource resulting from the public’s knowledge of a firm’s engagement in social responsibility activities. In this way, CSR provides strategic value and likely superior relations with stakeholders (Branco & Rodrigues, 2006).

A number of researchers conducted event studies and found that social responsibility supports crisis management during negative events such as the 1987/1989 stock market sell-off (Jones et. al, 2000) and
the 1999 Seattle World Trade Organization (WTO) meeting failure (Schnietz & Epstein, 2005). The WTO study found that investors did not penalize firms with reputations as good corporate citizens, as they did with firms not viewed as socially responsible.

While these single, system-wide findings have proven both interesting for strategy scholars and useful for managers engaged in resource deployment, questions remain due to their somewhat limited scope and external (to the firm) source. Little is known regarding the effects of CSR in the presence of an internally-generated failure such as an Information Technology (IT) failure, which occur in high frequency in firms (Bharadwaj, 2000; Bharadwaj, Keil, & Mähring, 2009). Therefore we ask, does CSR offer “insurance-like” protection in the face of the loss of a key competitive advantage? Does the market value a firm’s CSR when IT, another valuable firm resource, dissipates due to a crisis? Do different forms of CSR engagement minimize market responses to an IT crisis, differently? Are there market benefits from long-term CSR engagement, when an IT disaster occurs?

This paper explores the gaps in the literature and calls for future research to advance understanding of CSR by exploring its moderating effect on the relationship between an IT failure and the resulting firm market value. This paper briefly describes the theoretical underpinnings and summarizes prior empirical studies as articulated in the CSR, IT and resource-based view (RBV) literature, all of which form the basis for the proposition development.

LITERATURE REVIEW

CSR may be conceptualized as a broad spectrum of strategies and efforts employed by a company to facilitate firm-stakeholder relationships, address issues related to society’s ills and/or fulfill a firm’s social obligation (Carroll, 1979, 1999). Carroll defined CSR as a business organization's configuration of principles of obligation, processes of social responsiveness, and policies, programs, and observable outcomes as they relate to the firm's societal relationships (Wood, 1991). The social responsibility of firms was described as extending beyond mere economic and legal concerns and was graphically depicted in Carroll’s Pyramid of Corporate Social Responsibility (see Figure 1).

Carroll identified four areas comprising CSR; economic, legal, ethical and discretionary responsibilities in the Pyramid of Corporate Social Responsibility. Each category of responsibilities is an integral part of a corporation's total social responsibility, however, the model is flexible in allowing variation in the weighting of each of its categories (i.e. economic responsibility may carry more weight than ethical responsibility). The model offers a platform for formulation of various strategic responses to social issues (Wood & Jones, 1995). Freeman (1984) constructed a unique and comprehensive theory of stakeholder management, which helped close a gap in CSR theory. He argued that managers have a fiduciary responsibility to all stakeholders and not just to shareholders. Stakeholders include all that could affect a corporation, including employees, governments, customers, communities and shareholders. Stakeholder Theory crossed into the territory of CSR because the definition of “interested parties” to be considered in business decisions was expanded. Freeman’s statements that social performance is needed to attain business legitimacy, anticipated later research on the link between social responsibility and financial performance, given the changing business climate.

Practitioners are employing good stakeholder relations as a corporate-level strategy. Stakeholder cooperation can contribute to the integration of internal and external resources needed to sustain performance and/or recover from poor performance (Wang et al., 2008). Examples of such CSR benefits have been demonstrated in the case of Chrysler Corporation and Malden Mills. Chrysler Corporation’s recovery during the 1990/91 recession can be attributed, in part, to their close relationship with a diverse set of stakeholders. In particular, Chrysler’s suppliers suggested various ways to cut costs, which enabled Chrysler to substantially improve efficiency. As a result, Chrysler was able to use its “improved cash flows to invest in new product development improve quality and speed (Rigby et al., 2001).
Another recipient of the tangible benefits offered by CSR through good stakeholder relations is Malden Mills, a textile manufacturer located in Massachusetts. They experienced a serious financial crisis in 1995 as a result of an industrial accident. However, the company was able to recover from the crisis within less than one year because its employees, suppliers, customers, and community supported them in a variety of ways. Ulmer (2001) has documented that the firm’s employees and many of its customers showed loyalty and strong support for the firm’s recovery efforts. The community raised donations for the firm and the media publicized the company as an example of corporate responsibility.

Numerous academics, in various disciplines have contributed to the CSR literature by finding a positive relationship between Corporate Financial Performance (CFP) and CSR (Frooman, 1997). Frooman’s results suggested that firms that act in a socially irresponsible or illegal way have decreasing shareholder wealth. This implies that acting socially responsible and law abiding is necessary to increase shareholder wealth. CSR was also found to be positively associated with future financial performance, based on a study by Waddock and Graves (1997).

Ruf et al. (2001) acknowledged that changes in economic development and society’s expectations influence the definition of social performance, and therefore the performance of corporations. Previous studies may have resulted in mixed results regarding the relationship between CSR and financial performance, however, numerous recent studies have revealed that the benefits of CSR are tangible and can be quantified. Orlitzky et al. (2003) analyzed 52 prior studies, 18 of them where published after 1989, and found support for a positive relationship between CSR and CFP. These findings were supported by Margolis and Walsh (2003), who primarily describe a positive relationship between CSR and CFP. Goll and Rasheed (2004) also suggest a positive picture of the CSP–CFP link. Allouche and Laroche (2005) investigated the relationship between CSP and CFP using a meta-analysis. The results are conclusive and show that CSP has a positive impact on CFP. Moreover, they argue that, despite publication biases within the field, it is possible to show a positive CSP–CFP relation. A recent study by Van Beurden and Gossling (2008) firmly opposes the view that the CSP-CFP relationship is inconclusive, instead firmly proposing that the effect of CSP on CFP is solely a positive one.

Additional studies have further explained the influence of CSR on financial performance based on its analysis as a strategic intangible resource offering competitive advantage through reputation enhancement. Notable scholars have suggested that CSR is an area of study in which resource-based theory has important implications (Barney et al, 2001). The fundamental principle of the RBV is that the basis for a firm’s competitive advantage is in the application of the bundle of valuable resources at the firm’s disposal (Wernerfelt, 1984; Rumelt, 1984). Transforming a short-run competitive advantage into a sustained competitive advantage requires that these resources be heterogeneous in nature and not perfectly mobile (Barney, 1991; Peteraf, 1993). Essentially, this translates into valuable resources that are
not perfectly imitable or easily substitutable (Hoopes et al., 2003, p891; Barney, 1991, p117). The criteria for a “valuable” resource includes: 1) must enable a firm to employ a value-creating strategy by either outperforming its competitors or reducing its own weaknesses, 2) must be rare, 3) not perfectly imitable and 3) must not be easily countered with a substitute by competitors. Given certain conditions, the firm’s resource bundles can assist the firm in sustaining above average returns and accumulation of non-tradable asset stocks over time (Barney, 1991).

Hart (1995) offered the first theoretical paper to apply the RBV framework to corporate social responsibility. His arguments offered support for the notion that CSR can constitute a resource or capability that leads to a sustained competitive advantage, although the focus of the study was exclusively on natural resources (or the environment) as one aspect of CSR. Firms engaging in CSR are likely to create such a long-term strategic advantage because corporate reputation is difficult to create. The development of a good reputation occurs over a period of time and is based on consistency (Roberts & Dowling, 2002).

Potential benefits may result from CSR acting as a “valuable” resource and providing insulation from a hostile financial environment. One particular study (Jones et. al., 2000) tested the event-specific crisis value of CSR and found that firms ranked high on ‘Fortune’s Most Admired Firms in America’ suffered lower market valuation losses in the October 13, 1989 stock market plunge, than firms with lower reputation ratings. Investors were found not to penalize firms with reputations as good corporate citizens, as they did with firms not viewed as socially responsible, in response to the 1999 Seattle World Trade Organization failure (Schnietz & Epstein, 2005). Godfrey et al. (2009) tested the risk-reducing benefits of CSR by demonstrated that certain types of CSR activities offer the firm greater benefit during times of negative firm events. Based on an event study of 178 negative legal/regulatory sanctions against firms from 1993-2003, they found that firms engaged CSR activities specifically targeting secondary stakeholders (those that are not able to directly influence the firm) provide an ‘insurance-like’ benefit. This paper attempts to extend the CSR crisis-management literature stream by investigating the insurance-like benefit of CSR for IT failures.

Context

Little is known regarding the interacting effects of CSR and the loss of certain complimentary intangible firm resources. Information Technology (IT) is one such valuable resource that, like CSR, may be viewed as an organizational capability that takes time to acquire and build. IT capabilities have been described as valuable business resources that support its competitive position by improving operational efficiency (Litan & Rivlin, 2001) and enabling key strategic initiatives such as customer relationship management, and supply chain and business process integration (Ray et al., 2004). It is well accepted that IT applications provide value only when they are successfully implemented, adopted and used in daily operations and incorporated into decision-making (Markus and Keil, 1994).

Although IT systems may differ in their strategic value to the organization, they nevertheless cause significant disruptions to a firm’s business operations when they fail. Beyond the direct costs associated with fixing the crashed system and losses due to lower productivity, IT failures can result in significant indirect costs as well. As firms continue to digitize their supplier and customer interfaces, the consequences and visibility of IT failure can be great. Failures adversely impact not only the firm’s operations but also its external reputation and can result in investors questioning the capability of the firm to achieve growth and revenue targets. IT failures can raise significant doubts about the quality of the underlying organizational processes that are enabled by these IT systems.

Relatively recent research on information technology (IT) failure has been motivated by its resulting financial costs as well as the loss in effectiveness and competitiveness resulting from failures (Keil, 1995; Lee & Myers, 2004; Lyytinen & Hirschheim, 1988). The financial burdens caused by IT failures have been well documented in both industry reports and research studies (Goldfinch, 2007; The Standish Group, 2004). An important study by Bharadwaj, Keil and Mahrings (2009) examined the value loss associated with IT failures that become known to the public-at-large, and investors in particular. Using the resource-based view of the firm and event study methodology, their study analyzed how firms are
penalized by the market when they experience unforeseen operating or implementation-related IT failures. Their sample consisted of 213 newspaper reports of IT failures by publicly traded firms, which occurred during a 10-year period. The findings demonstrated that IT failures result in a 2% average cumulative abnormal drop in stock prices over a 2-day event window. The study presented evidence that investors do care about IT failures. According to the authors, the loss in value and reputation can be attributed to a perceived deficit in organizational capabilities: ability to manage IT-related change, practices and capabilities for information processing, ability to experiment with new technologies and conduct technical innovation, and ability to assimilate IT resources into organizational processes (Wade and Hulland, 2004). Investors, as owners, are a key stakeholder group whose reaction to IT failures is both a measure of the importance assigned to an IT failure as well as a measure of the value loss from the failure.

**Proposition Development**

A good CSR reputation may serve to stabilize firm performance during IT failures. A CSR culture has been shown to lead to organizational commitment and learning, cross-functional integration across the organization, highly qualified employees, and a culture of innovation and collaborative relationships (Surroca, Tribo, and Waddock, 2010). These benefits may result from CSR acting as a “valuable” resource and providing insulation from negative press from their IT crisis. Based on a sample comprised of 599 industrial firms included in at least one year of the 2002–2004 Sustainalytics Platform database, Surroca, Tribo, and Waddock (2010) found that social responsibility stimulates the development of intangibles related to innovation, human capital, reputation, and culture, which lead to improved financial outcomes. Their results help to explain the way in which intangibles (such as IT capability) are created and developed. Investing in socially responsible activities develops a capability for generating new products and improved processes, which has important consequences for employee motivation and morale, and is instrumental in creating high-commitment and participative cultures. Such CSR-based capabilities may be valued by stakeholders and serve to minimize the negative effect on the firm following an IT failure.

Generally, CSR firms may benefit from the ability to attract and retain quality employees, reduce operating costs, increase sales and customer loyalty and acquire resources at lower costs, all resulting from an enhanced public image (or reputation) from good works. As an example, CSR firms may be able to recruit and retain more highly motivated, productive employees that shirk less (Brekke, Nyborg, 2008). Empirical evidence has also demonstrated that both job satisfaction and the acceptance of lower wages tend to be higher for employees that value their socially responsible employer (Vitell & Davis, 2004). CSR firms also experience higher revenues, less upstream and downstream costs and enjoy a lower cost of debt and equity capital (Blazovich & Smith, 2008).

Further, theorists argue that CSR engagement generates economic value because the moral capital derived from CSR provides a mitigating factor (Fombrun, Gardberg & Barnett, 2000; Godfrey, 2005); the goodwill generated should reduce the overall severity of sanctions by encouraging stakeholders to give the firm ‘the benefit of the doubt’ (Uzzi, 1997). Thus, CSR may influence the market’s reaction to IT failures, such that:

**Proposition 1:** CSR will minimize the negative impact of an IT failure on the firm’s market value.

CSR reputations will signal to investors a greater potential for future value and mitigate the effects of negative IT circumstances. The good reputation offered by CSR can benefit the firm within the business community by improving its ability to attract capital (Branco & Rodrigues, 2006). A study conducted by Klassen and McLaughlin (1996), also demonstrated that public announcement of a form of CSR engagement has a positive impact on market valuation. A reputation for CSR allows stakeholders to assess the firm’s long-term abilities, despite asymmetry of information (Fombrun, 2000). We posit that an enduring reputation for CSR acts as a “valuable resource” with long-term firm performance implications.
during an IT failure. Because market prices are based on expectations relating to the future, rather than current, we hypothesize that:

Wang et al. (2009) examine the effect of a firm’s relations with nonfinancial stakeholders on the persistence of both superior and inferior financial performance. The stakeholders included employees, suppliers, customers, and communities. Utilizing the resource-based view of the firm and stakeholder management as theoretical lenses, they argued that good stakeholder relations enable a firm with superior financial performance to sustain its competitive advantage for a longer period of time and helps poorly performing firms to recover more quickly. CSR was found to be the only firm resource examined that helped a firm recover from inferior performance. Thus, a good CSR reputation may permit a firm to develop a “reservoir of goodwill” (Fombrun, 2000). Therefore we posit:

**Proposition 2**: CSR engagement will have a pronounced long-term effect on the relationship between IT failure and market value

Freeman (1984) built upon the CSR theory by offering stakeholder classifications; primary (essential to the operation of the business) and secondary (influential to the firm’s primary stakeholders). Primary stakeholders are said to make legitimate claims on the firm and have both urgency and power to enforce those claims. Such CSR activities or initiatives that would impact primary stakeholders include Diversity; activities of the company in such areas as providing employment opportunities for minorities and providing working conditions that meet the special needs of minorities, Employee Relations; positive employee relations as indicated by such practices as strong worker involvement within the company, generous profit sharing across the majority of employees, good retirement benefits and/or a good safety record; and Product Responsibility such as high product quality, high innovation and the development of products to meet the special needs of the disadvantaged.

Secondary stakeholders have legitimate claims on the firm, but lack both urgency and power to enforce those claims (Mitchell et. al., 1997). Examples of activities targeting secondary stakeholders include contributions that the company makes to the community such as charitable donations, and support for the disadvantaged and environmentally sound practices such as pollution prevention, and recycling. CSR activities directed toward secondary stakeholders may be viewed as more socially responsible than those directed toward primary stakeholder. A firm’s investment in causes addressing the needs of stakeholders that lack direct influence are likely to be “credited” with voluntarily doing a good deed for others without the perception of having ulterior motives (Godfrey et al., 2009). These arguments lead to the following prediction:

**Proposition 3a**: The impact of CSR programs targeting secondary (vs. primary) stakeholders will have a more pronounced minimizing effect on market value, following an IT failure.

In stark contrast to Freeman’s work, a study by Bird, Hall, Momente and Reggiani (2007) found evidence of market’s discriminating view of CSR activities, actually favoring CSR investment in the issues most affecting primary stakeholders. They found that company valuation was positively impacted if they were not proactive in the area of industrial relations. An area in which good CSR practice was rewarded is in the diversity area where the evidence suggests a negative relationship exists between diversity concerns and excess returns. The area of community issues would seem to be where there is the greatest potential conflict between CSR activities and market valuation. Surprisingly, the market appears to punish companies with a high environment investment. They found no benefit to a firm for philanthropic activities nor was the market too concerned in instances where a company’s actions publicly conflicted with the community. These findings are very much in-line with the neo-classical economists’ view of the role of a firm, which offers that their initiatives should be based solely on the objective of maximizing the corporation’s long-term market value, and therefore the wealth of the company’s owners.
Therefore we alternatively posit that:

**Proposition 3b**: The impact of CSR programs targeting primary (vs. secondary) stakeholders will have a more pronounced minimizing effect on market value, following an IT failure.

The resulting proposed model is shown in Figure 2.

![Proposed Model](image)

**CONCLUSION & FUTURE RESEARCH**

This paper is a call for future research to address the gaps in both the CSR and IT literatures and to advance understanding of CSR by exploring its moderating effect on the relationship between a significant firm failure; IT, and the resulting firm market value. CSR reputations serve to signal a greater potential for future value to the market and provides “good will” on behalf of stakeholders. A socially responsible business culture helps to generate a common language among the organizational parties trying to communicate about social issues, leads members to share routines to develop and implement innovative solutions, and creates formal and informal channels of interaction among stakeholder groups (Howard-Grenville & Hoffman, 2003). Thus, by incorporating social considerations into business activities, a firm can develop a culture of innovation and collaborative relationships and mutual trust among stakeholder groups (Russo and Fouts, 1997; Sharma & Vredenburg, 1998). Thus, it is reasonable to expect CSR-based capability to be valued by stakeholders, in the presence of an IT failure.

Future research might employ empirical data to study the merits of the propositions advanced. Specifically, secondary data from KLD Research & Analytics, Inc. (KLD) social issue ratings may be useful in testing our proposition regarding the direct moderating effect of CSR on an IT failure-financial performance relationship. KLD provides both a positive (“strengths”) and negative (“concerns”) scores for the following activities:

1. **Community** - on the positive side measures various contributions that the company makes to the community such as charitable contributions and support for the disadvantaged; while on the
negative side, it measures activities that are judged to have had a negative economic impact on the community and/or possibly mobilized community opposition.

2. **Diversity** - on the positive side measures the activities of the company in such areas as providing employment opportunities for minorities and providing working conditions that meet the special needs of minorities; while on the negative side it measures such things as the non-representation of minorities in senior positions within the company and major controversies on affirmative action issues.

3. **Employee Relations** - positive employee relations are indicated by such practices as strong worker involvement within the company, generous profit sharing across the majority of employees, good retirement benefits and/or a good safety record; while on the negative side the company might have bad union relations, a poor safety record and/or a poorly funded pension plan.

4. **Environment** - where a company obtains a positive score as a result of environmentally sound practices such as pollution prevention, and recycling; while the company will obtain a negative score for practices such as producing hazardous waste and/or environmentally unfriendly products.

5. **Product** - on the positive side measures activities such as high product quality, high innovation and the development of products to meet the special needs of the disadvantaged; while on the negative side, the company will be graded for practices as low product safety, controversies over how it advertises its products and other product-related community concerns.

In addition, future research might subject IT failure events to thorough content analysis using the LexisNexis data files, following the methods employed by Bharadwaj et al. (2009) and McWilliams and Siegel (1997, 2004). Failures may include hardware, software, implementation and or existing systems. An event study methodology is recommended to estimate the abnormal stock price effects associated with IT failures. This methodology is based on the market model of daily stock price returns, which is used to estimate the abnormal stock return (AR). Well established methodological rules exist for event studies (Godfrey et al., 2008). First, the IT event, along with its timing should be documented. Next, there should be a control for other announcements or events that may have caused investors to change their valuations of the firm, in addition to the IT failure. The stock return could then be predicted, in the absence of the IT failure and compared to the actual return. Lastly, multivariate regression analysis could be employed to test the propositions (P1–P3b) pertaining to interaction of CSR, long-terms CSR and CSR type with IT failure.

In addition to the value to be gained by scholars, practitioners may also find value in such future studies, as they strive to understand the relationship between firm social engagement and firm performance. Firms may choose to implement CSR through a number of different channels, notably employees, monetary contribution and/or product donation. The level of “good-will” or reputational capital may vary based on the form of CSR or channel of implementation. This variation may therefore affect the relationship between IT failure and firm performance, differently. In addition, the firm’s history of IT failures may contribute to the impact of CSR. Future research in this area would also contribute to the IT and CSR literatures.

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