Senior Executives, IT Reputation Building & Market Valuation

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Abstract

The objective of this study is to identify factors that help build an IT reputation, and to evaluate whether markets value a firm’s ability to develop and sustain its IT reputation. Building on IT strategic leadership and IT business value literature, we argue that a similarity in the background and hierarchical proximity between CEO and senior IT executive increases the likelihood that the firm will develop an IT reputation, and this similarity/proximity is more important for product differentiating companies. Building on signaling theory, we argue that IT reputation matters to investors because it reduces information asymmetry. Investors interpret a firm’s sustainable IT reputation as a signal of its superior past IT strategy and future IT investment prospects thus raising its market value. The predicted relationships are validated by results from over 1300 US firms that have appeared in the Information Week 500 lists in the period from 1997 to 2009.

Keywords: IT reputation, Tobin’s Q, CEO, IT executives, expert power, structural power
1. INTRODUCTION

Researchers have observed that once a firm has achieved minimal standards in terms of the quality of its capabilities, executives continue working for the esteem of external judges such as trade associations, public interest groups, or the business press (Staw and Epstein 2000). The proliferation of IT related awards, seems to indicate that executives want their firm to be recognized as one of the ‘best and brightest technology innovators’ (Information Week 500), the ‘most effective IT users’ (Computerworld Premier 100), the firm that ‘demonstrates excellence and achievement in IT’ (CIO 100), or the ‘best place to work in IT’ (Computerworld 100 best places to work in IT). An underlying theme in numerous well-documented in media success stories, i.e., firms that have attracted public recognition for their IT related capability, seems to be the synergistic relation between the firm’s CEO and IT executive. For example R. McDonald, CEO of Procter & Gamble (P&G), has been working closely with the company’s CIO, F. Passerini, in order to project an image of P&G as the most technologically enabled business in the world. G. Loveman, CEO Harrah’s, and former CIO T. Stanley have worked together to achieve and sustain an image of superior business analytics capability for their company.

A cynic could argue that observing a synergistic relationship that aims to promote the firm’s IT reputation is not surprising as it is motivated by self-interest. Recent research has shown that pursuit of superior IT reputation is consistent with the utility maximization goals of CEOs and senior IT executives. Wang (2010) has shown that CEOs of firms that chase the hottest IT earn higher compensation, and Lim et al. (2012) has shown that senior IT executives of firms that develop and sustain a superior IT capability reputation, are more likely to be promoted. If IT reputation is self serving and of no value to external stakeholders, then firms with good IT capability reputation should not be valued higher than firms with no IT reputation. This motivates our second objective, which is to evaluate whether the market values a firm’s ability to sustain its IT reputation. We theorize that IT reputation matters, because it signals reduction in uncertainty associated with the firm’s IT strategy. Whenever the information asymmetry is high, external stakeholders routinely rely on the reputation of firms in order to make investment decisions (Fombrun and Shanley 1990). Investors are likely to rely on IT reputation because IT investments are risky (Dewan et al. 2007) and their expected benefits are ambiguous (Kohli and Grover 2008). Building on signaling theory, we argue that investors interpret a firms sustainable IT reputation as a signal of its superior past IT strategy and future IT investment prospect (Fombrun 1996; Walker 2010).

Results based on over 1300 US firms that have appeared in the Information Week 500 lists in the period from 1997 to 2009 validate the two major predicted relationships of this study. First, the congruity between CEO and IT executive is positively associated with the firm’s IT reputation and this association is stronger for firms that implement a product differentiation strategy. Second, investors value firms that develop and sustain their IT reputation higher than firms that do not have such an asset. These finding make a valuable contribution to literature on corporate reputation and have important implications CEOs, IT executives, and external stakeholders.

2. HYPOTHESES

2.1 Congruity of IT related expert power between CEO & IT executive, and IT image (H1)

IT related expert power is based on the executive’s relevant knowledge, expertise, and experience (Finkelstein 1992; Mintzberg 1983). IT related education provides the declarative or explicit knowledge that would allow executives to cope with complex problems as well as develop and fund technologically innovative strategic solutions (Barker and Mueller 2002; Geletkanycz and Boyd 2011; Wally and Baum 1994; Wiersema and Bantel 1992). Similarly, executives’ prior experience in the IT domain has been linked to their ability to understand IT and business problems and leverage this competency in order to implement the firm’s IT strategy and improve its competitive position (Bassellier et al. 2001, 2003; Chatterjee et al. 2001). Such resource complementarity between CEO and IT executives may increase the firm’s absorptive capacity (Boynton et al. 1994; Kearns and
Lederer 2003) and levels of shared knowledge, leading to alignment between IT and business strategy (Chan et al. 2006) and better performance (Nelson and Cooprider 1996). Given the strong positive association between a firm’s performance and external reputation (Staw and Epstein 2000), we propose that:

H1 The likelihood that the firm will project an image of superior IT capability and receive external recognition for the quality of its IT capability is positively associated to the congruity of IT related expert power between the firm’s IT executive and CEO.

2.2 Hierarchical proximity between CEO & IT executive, and IT image (H2)

The structural power of IT executives is based on their position in the organizational hierarchy (formal title), and it increases with the number of different titles accrued by him/her (Finkelstein 1992; Hambrick 1981; Mintzberg 1983; Ocasio 1994). Therefore, higher structural power of IT executives indicates a proximity/congruity between structural power of CEO and IT executives and potentially higher level of synergy between these two executives. IT executives with higher structural power are more likely to act as entrepreneurs (Grover et al. 1993), shape an organizational mission and vision geared towards a more strategic use of IT in their capacity as strategist and innovation catalyst (Raghunathan and Raghunathan 1989; Smaltz et al. 2006). These efforts of IT executives are more likely to be accepted and produce the desired performance results if the firm’s CEO sanctions them, which is more likely to happen if the CEO’s IT related expert power is high. Therefore, we postulate that:

H2 The likelihood that the firm will project an image of superior IT capability and receive external recognition for the quality of its IT capability is positively associated to the hierarchical proximity between the firm’s IT executive and CEO; given that the CEO’s IT related expert power is high.

2.3 Business strategy and IT image (H3)

Firms with a cost leadership approach are more likely to focus on IT investments that aim to automate processes and reduce costs. While the benefits are simple and well quantified this kind of investments are not likely to be a source of competitive advantage; on the other hand, firms that leverage IT for product differentiation are likely to be more profitable (Mithas et al. 2012). Given this distinction, we expect that firms that pursue product differentiation will be more inclined to project an image of superior IT capability to external stakeholders. Additionally, since there is a strong positive association between a firm’s performance and external reputation (Staw and Epstein 2000), it is likely that external stakeholders will perceive product differentiators as having a better IT capability than cost leaders. Thus we propose:

H3 The likelihood that the firm will project an image of superior IT capability and receive external recognition for the quality of its IT capability is higher for firms that implement a product differentiation strategy than in firms that implement cost leadership strategy.

2.4 Congruity/proximity between CEO & IT executive, business strategy, and IT image (H4)

The benefits of cost cutting IT investments tend to be well defined; therefore there is no need for IT executives to report to the firm’s CEO. This means that importance of synergy between CEO and IT executives of cost leaders is small. On the other hand, firms leveraging IT to support a product differentiation strategy, tend to focus on more abstract benefits such as customer satisfaction and customer loyalty. These benefits are less quantifiable and the need for interaction/synergy between CEO and IT executive is higher. By virtue of this difference we argue that the effect of congruity between CEO and IT executives on the firm’s IT reputation is contingent upon the firm’s business strategy. Therefore, we postulate that:

H4 The impact of congruity/proximity between CEO and IT executive on the likelihood that the firm will project an image of superior IT capability and receive external recognition for the quality of its IT capability is higher for firms that implement a product differentiation strategy than in firms that implement cost leadership strategy.
2.5 IT reputation and Firm Performance (H5)

A sustainable IT reputation signals to investors two things: Compared to its competitors the firm has a superior record of implementing and extracting value from its IT investments. Second, compared to its competitors the firm’s future IT investment prospect are better (Fombrun 1996; Walker 2010). Thus, we postulate that:

**H5:** Firms that develop and sustain an IT capability reputation are more likely to achieve higher market valuation than their competitors that cannot sustain their IT capability reputation.

3. METHODS

3.1 IT capability reputation

Reputation is an asset whose value is related to its level of accumulation (Dierickx and Cool 1989; Pfarrer et al. 2010). Given that [IT] reputation is likely to be developed over time and from multiple images (Rindova 1997; Walker 2010), we use the evolution of a firm’s recognition in *I/W500* over four-year rolling windows (e.g., 1997-00, 1998-01, ..., 2006-09) to classify firms in terms of their IT capability reputation. In each window we classify a firm as one that has developed and sustained its IT reputation (*SYSi*) if it has been recognized in *I/W500* all years within the four-year rolling window. We classify a firm as one that has achieved but not sustained its IT reputation (*OCCi*) if the firm has appeared less than four times in *I/W500* within the four-year rolling window. Finally, we classify a firm as having no IT capability reputation (*NONi*) if it has not been recognized in any of the four years. The choice of four years is based on prior research which has shown that firms that have been able to project such an image of superior IT capability to business press over four consecutive years are more likely to sustain this image in the future due to path dependence (Lim et al. 2011).

3.2 Congruity and Proximity for CEOs & IT executives

To identify IT expert power for CEOs and IT executives and IT structural power for IT executives in our sample firms, we searched proxy statements, such as Form 10-Ks and DEF-14A from the U.S. Securities and Exchange Commission. In order to verify and enhance the completeness and accuracy of our data, we also conducted a subsequent manual review of each CEO and senior IT executive’s biographical information via Lexis-Nexis and fifteen online information sources.

3.3 Business Strategy

Several studies (Banker et al. 2011; Dehning and Stratopoulos 2002) have used DuPont analysis in order to break down a firm’s ROA and create appropriate proxies for the firm’s primary strategic focus in either cost leadership (*CL*) or product differentiation (*PD*). Cost leaders tend to aim for economies of scale, operational efficiencies (lean operations), and leverage technologies to achieve lowest average cost per unit in their industry. This manifests in their ability to generate more sales out of their existing assets. Therefore, *CL* will achieve a higher Sales/TA. On the other hand, product differentiators tend to aim for product innovation or customer satisfaction. If they are successful, they will be able to command higher margins on their sales of products or services. Therefore, operating or gross profit margin is a reasonable performance metric for *PD*.

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1 To enhance the generalizability of our results we have replicated the empirical analysis by using three- and five-year rolling windows. Results remain unchanged.

3.4 Financial Performance

Given that typical IT benefits are intangible, Tobin’s Q ($TQ_i$) has been used as a performance proxy for examining the effect of IT investment (Bharadwaj et al. 1999; Chari et al. 2008; Ravichandran et al. 2009), IT synergies (Tanriverdi 2006), and superior IT capability (Masli et al. 2011). $TQ_i$ captures and reflects co-presence of such intangibles as good management skills (Adams et al. 2010) and capital expenditures respectively. The variable $TQ_i$ represents Tobin’s Q, $R&D$, $AD$, and $CAP$ capture research and development, advertising, and capital expenditures respectively. The variable $\alpha_t$ captures the fixed effect, $\psi_t$ the annual time effect, and $\epsilon_{it}$ the time-variant unobserved variable. It is assumed that $\epsilon_{it}$ is uncorrelated with the vector of observable firm characteristics. Alternatively, we can estimate eq. (3) and (4) with $SYS_{OCCit}$ replacing $SYS_{OCChatit}$ and estimate the resulting system of two equations by seemingly unrelated regression (SUR). However this assumes that $SYS_{OCCit}$ is exogenous with respect to $TQ_i$, which is a tenuous assumption to make; so we stick with the two-stage estimation approach, which allows $SYS_{OCCit}$ to be potentially endogenous with respect to $TQ_i$. The two-stage procedure we use is similar to two-stage least squares. In the second stage, we use predicted values from the first stage, which, by construction, has been rendered uncorrelated with $TQ$. 

3.5 Econometric model

To examine the effect of senior executives and business strategy on IT capability image, we propose the estimation of an indicator function similar to the one in Lim et al. (2011), using the random-effect (RE) approach proposed by Wooldridge (2005). More specifically for the testing of the effect of congruity ($CON$) and hierarchical proximity ($PRX$) we estimate (1):

\[
RITC_{it} = \beta_0 + \beta_1 \cdot RITC_{it-1} + \beta_2 \cdot CEOIT_{it-1} + \beta_3 \cdot SITE_{ITit} + \beta_4 \cdot CON_{it-1} + \beta_5 \cdot PD_{it} + \beta_6 \cdot CL_{it} + \beta_7 \cdot CONS_{it} + \beta_8 \cdot PRX_{it} \cdot PD_{it} + \beta_9 \cdot PRX_{it} \cdot CL_{it} + \gamma_0 \cdot SIZE_{it} + \gamma_1 \cdot ROA_{it} + \gamma_2 \cdot MV_{it} + \eta_i \cdot \phi_t + \upsilon_{it} 
\]

(1)

where $RITC_{it} = 1$ indicates firms that have been able to project an image of superior IT capability to external stakeholders, $CON$ is the measure of congruity between CEO and IT executives regarding their similarity in IT related expert power and $PRX$ is the measure of proximity in structural power, $PD$ and $CL$ reflect product differentiation and cost leadership respectively, and $SIZE$, $ROA$, and $MV$ are the control variables. The remaining variables $\eta_i$, $\phi_t$, and $\upsilon_{it}$ capture the fixed effects, time effects (annual), and time-variant unobserved variables, respectively. Additionally, $\upsilon_{it}$ is assumed to be uncorrelated with the vector of observable firm characteristics. All independent variables are lagged by one period.

To examine the impact of congruity and IT capability reputation on firm performance, we use the following two-stage approach. First, we estimate eq. (2).

\[
SYS_{OCCit} = \beta_0 + \beta_1 \cdot SYS_{OCCit-1} + \beta_2 \cdot CEOIT_{it-1} + \beta_3 \cdot SITE_{ITit} + \beta_4 \cdot CON_{it-1} + \beta_5 \cdot PD_{it} + \beta_6 \cdot CL_{it} + \beta_7 \cdot CONS_{it} + \beta_8 \cdot PRX_{it} \cdot PD_{it} + \beta_9 \cdot PRX_{it} \cdot CL_{it} + \gamma_0 \cdot SIZE_{it} + \gamma_1 \cdot ROA_{it} + \gamma_2 \cdot MV_{it} + \eta_i \cdot \phi_t + \upsilon_{it} 
\]

(2)

With the exception of $SYS_{OCCit}$, which contrasts firms that can build and sustain their IT reputation ($SYS_{OCC}$) versus firms that build but cannot sustain their IT reputation ($OCC_{it}$), all other variables are the same as in eq. (1). We use the predicted values from eq. (2), i.e. $SYS_{OCChatit}$, to estimate eq. (3):

\[
TQ_{it} = \alpha_0 + \gamma_1 \cdot TQ_{it-1} + \gamma_2 \cdot R&D_{it} + \gamma_3 \cdot AD_{it} + \gamma_4 \cdot CAP_{it} + \gamma_5 \cdot SYS_{OCChatit} + \delta_1 \cdot TQ_{it-1} + \delta_2 \cdot R&D_{it} + \delta_3 \cdot AD_{it} + \delta_4 \cdot CAP_{it} + \delta_5 \cdot SYS_{OCChatit} + \alpha_t \cdot \psi_t + \epsilon_{it} 
\]

(3)

where $TQ_{it}$ represents Tobin’s Q, $R&D$, $AD$, and $CAP$ capture research and development, advertising, and capital expenditures respectively. The variable $\alpha_t$ captures the fixed effect, $\psi_t$ the annual time effect, and $\epsilon_{it}$ the time-variant unobserved variable. It is assumed that $\epsilon_{it}$ is uncorrelated with the vector of observable firm characteristics. Alternatively, we can estimate eq. (3) and (4) with $SYS_{OCCit}$ replacing $SYS_{OCChatit}$ and estimate the resulting system of two equations by seemingly unrelated regression (SUR). However this assumes that $SYS_{OCCit}$ is exogenous with respect to $TQ_i$, which is a tenuous assumption to make; so we stick with the two-stage estimation approach, which allows $SYS_{OCCit}$ to be potentially endogenous with respect to $TQ_i$. The two-stage procedure we use is similar to two-stage least squares. In the second stage, we use predicted values from the first stage, which, by construction, has been rendered uncorrelated with $TQ$. 

Given that typical IT benefits are intangible, Tobin’s Q ($TQ_i$) has been used as a performance proxy for examining the effect of IT investment (Bharadwaj et al. 1999; Chari et al. 2008; Ravichandran et al. 2009), IT synergies (Tanriverdi 2006), and superior IT capability (Masli et al. 2011). $TQ_i$ captures and reflects co-presence of such intangibles as good management skills (Adams et al. 2010) and superior IT capability (Masli et al. 2011). Given the intangible nature of IT reputation related benefits, Tobin’s Q is the most suitable measure of firm performance/market valuation.
4. RESULTS

4.1 Descriptive Statistics

The main premise of this study is that if the firm’s CEO and IT executive share an IT related background (prior job experience or education) or there is a hierarchical proximity between these two executives the likelihood that the firm will project successfully an image of IT capability is higher compared to firms that do not experience this kind of congruity or proximity between their executives. Contrasting the distribution of CEOs and IT executives IT related background seems to provide an initial support for our argument. Percentage of CEOs with an IT related expert power is approximately 23% and in an upward trend in RITC firms versus approximately 17% and with a slight negative trend among Non-RITC firms. When contrasting RITC and Non-RITC firms in terms of the IT related expert power of their IT executives, we observe a positive trend for both firms, however the percentage among RITC firms is higher (approximately 55%) compared to Non-RITC firms (approximately 34%). Naturally, this pattern translates into higher level of congruity between CEOs and IT executives in terms of IT related expert power among RITC firms than in Non-RITC firms. The average level of congruity among RITC firms is approximately 15% versus 8% for Non-RITC firms.

4.2 Results of congruity, proximity, and business strategy on IT capability image

Table 1 reports results of the RE estimation of the RITC as a function of $CON$ or $PRX$ in equation (1) using Dynamic Logit models with Wooldridge-type correlated RE specification. To mitigate the possibility of endogeneity bias in the RE estimation due to the contemporaneous inclusion of RITC and firm-specific time-varying exogenous variables, we add the time-varying exogenous variables with a one-period lag. The RE estimation of (1) based on $CON$ or $PRX$ are shown in the restricted (Col. 1 and 3) and unrestricted (Col. 2 and 4) respectively. The unrestricted models show that two of the time-varying exogenous covariates, $CEO_{ITt-1}$ and $SITE_{ITt-1}$ in ($CON$ specification) and $CEO_{ITt-1}$ and $SITE_{it-1}$ in ($PRX$ specification) appear to be statistically insignificant and these variables were excluded from the restricted versions of the models (p-value of the Wald test for the joint exclusion of these variables is 0.182 and 0.151 respectively).

Consistent with H1 and H2, the results of the restricted model show that that the estimated effect of congruity in IT expert power ($CON$) shown in Col. 2 or hierarchical proximity between CEO and IT executives ($PRX$) shown in Col. 4 on the firm’s ability to project successfully an image of superior IT capability is positive (coefficients are 0.141 and 0.126 respectively) and statistically significant (p-value<0.01). This means that the probability that a firm will be recognized for its IT capability is 14.1% (12.6%) higher if there is congruity of IT expert power (hierarchical proximity) between their CEO and IT executives, than firms that do not enjoy this kind of congruity (proximity). It should be noted, that while prior literature does not seems to indicate that either $CON$ or $PRX$ seems to offer better results than the other one, it is of interest to determine which measure is the "best" in terms of being able to explain the corresponding regression equation. The econometric results based on a non-nested test ($J_{mn}$) proposed by Davidson and MacKinnon (1981) indicate the $CON$ (p-value of is $J_{12}$ is 0.022) is better fit compared to $PRX$ (p-value of is $J_{21}$ is 0.166).

Econometric results show that there is a positive and significant association between business strategy and the firm’s ability to project successfully an image of IT capability. Estimated coefficients of PD and CL in Col. 2 are $\beta_5=0.118$ and $\beta_6=0.145$. Corresponding estimates in Col. 4 are $\beta_5=0.123$ and $\beta_6=0.131$. All of them are significant (p-value<0.01). However, contrary to our expectation (H3), the effect of PD on IT reputation is lower than the effect of CL and the difference is statistically significant in both model specifications. The results of the asymptotic t-test for the testing of $H_0$: $\beta_5 = \beta_6$ lead to the rejection of $H_0$. The p-values are 0.041 in the congruity specification of the model (Col. 2) and .043 in the proximity-based specification of the model (Col. 4). The rejection of H3 ($\beta_5 \neq \beta_6$) points to a possible inconsistency between empirical evidence and perception of external stakeholders, i.e., business press. It seems that the business press does not value a firm’s ability to leverage its IT
resources for product differentiation as much as it values a firm’s ability to leverage IT for containing cost. Recall that empirical analysis has found that IT investments that aim to automate processes and reduce costs are not likely to be a source of competitive advantage (Mithas et al. 2012). We speculate that external stakeholders such as the business press seem to process better and value more benefits associated with cost savings, which tend to be more tangible and easier to quantify, compared to benefits leading to product differentiation, which tend to be more abstract and less quantifiable.

\[
RITC_t = \beta_0 + \beta_1 RITC_{t-1} + \beta_2 CEO_{IT it-1} + \beta_3 SITE_{IT it-1} + \beta_4 CON_{it-1} (or \beta_4 PRX_{it-1}) + \beta_5 PD_{it-1} + \beta_6 CL_{it-1} + \eta_t + \phi_t + u_t
\]

(1)

\[
RITC = f(CON)
\]

(2)

\[
RITC = f(PRX)
\]

(3)

Table 1. Dynamic Logit Models with Wooldridge-type Correlated RE Specification

<table>
<thead>
<tr>
<th>Variables</th>
<th>(1) Unrestricted Estimates (SE)</th>
<th>(2) Restricted Estimates (SE)</th>
<th>(3) Unrestricted Estimates (SE)</th>
<th>(4) Restricted Estimates (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>0.053(0.027)</td>
<td>*</td>
<td>0.061(0.031)</td>
<td>*</td>
</tr>
<tr>
<td>RITC_{t-1}</td>
<td>0.252(0.110)</td>
<td>**</td>
<td>0.256(0.101)</td>
<td>**</td>
</tr>
<tr>
<td>CEO_{IT it-1}</td>
<td>0.107(0.064)</td>
<td>*</td>
<td>0.115(0.069)</td>
<td>*</td>
</tr>
<tr>
<td>SITE_{IT it-1}</td>
<td>0.025(0.016)</td>
<td>*</td>
<td>0.031(0.019)</td>
<td>*</td>
</tr>
<tr>
<td>CON_{it-1}</td>
<td>0.137(0.053)</td>
<td>***</td>
<td>0.141(0.051)</td>
<td>***</td>
</tr>
<tr>
<td>PRX_{it-1}</td>
<td>0.110(0.042)</td>
<td>***</td>
<td>0.118(0.040)</td>
<td>***</td>
</tr>
<tr>
<td>PD_{it-1}</td>
<td>0.136(0.052)</td>
<td>***</td>
<td>0.145(0.049)</td>
<td>***</td>
</tr>
<tr>
<td>CON_{it-1}*PD_{it-1}</td>
<td>0.012(0.005)</td>
<td>**</td>
<td>0.014(0.063)</td>
<td>**</td>
</tr>
<tr>
<td>PRX_{it-1}*PD_{it-1}</td>
<td>0.006(0.003)</td>
<td>*</td>
<td>0.008(0.004)</td>
<td>*</td>
</tr>
<tr>
<td>SIZE_{it-1}</td>
<td>0.092(0.046)</td>
<td>**</td>
<td>0.083(0.044)</td>
<td>**</td>
</tr>
<tr>
<td>ROA_{it-1}</td>
<td>0.086(0.045)</td>
<td>*</td>
<td>0.097(0.038)</td>
<td>*</td>
</tr>
<tr>
<td>CL_{it-1}</td>
<td>0.000(0.000)</td>
<td>*</td>
<td>0.010(0.005)</td>
<td>*</td>
</tr>
<tr>
<td>Industry</td>
<td>Included</td>
<td>Included</td>
<td>Included</td>
<td>Included</td>
</tr>
<tr>
<td>Year</td>
<td>Included</td>
<td>Included</td>
<td>Included</td>
<td>Included</td>
</tr>
<tr>
<td>Ln L</td>
<td>-811.27</td>
<td>-1058.94</td>
<td>-905.63</td>
<td>-1023.77</td>
</tr>
<tr>
<td>Wald1</td>
<td>0.182</td>
<td></td>
<td>0.005(0.026)</td>
<td>*</td>
</tr>
<tr>
<td>Wald2</td>
<td>0.041</td>
<td>**</td>
<td>0.037</td>
<td>**</td>
</tr>
<tr>
<td>Wald3</td>
<td>0.036</td>
<td>**</td>
<td>0.029</td>
<td>**</td>
</tr>
<tr>
<td>Wald4</td>
<td>0.040</td>
<td>**</td>
<td>0.043</td>
<td>**</td>
</tr>
<tr>
<td>(t_1) H_0: \beta_7 = \beta_8</td>
<td>0.047</td>
<td>**</td>
<td>0.041</td>
<td>**</td>
</tr>
<tr>
<td>(t_2) H_0: \beta_7 = \beta_8</td>
<td>0.033</td>
<td>**</td>
<td>0.028</td>
<td>**</td>
</tr>
<tr>
<td>Wald5</td>
<td>0.028</td>
<td>**</td>
<td>0.039</td>
<td>**</td>
</tr>
<tr>
<td>Wald6</td>
<td>0.000</td>
<td>**</td>
<td>0.000</td>
<td>**</td>
</tr>
</tbody>
</table>

**Notes:** (1) Specifications of restricted models are driven by results of Wald tests. (2) Wald1, … Wald4 report p-values of Wald test for the joint exclusion of CEO_{IT it-1} & SITE_{IT it-1}, CEO_{IT it-1} & (CON_{it-1} or PRX_{it-1}), SITE_{IT it-1} & (CON_{it-1} or PRX_{it-1}), and CEO_{IT it-1}, SITE_{IT it-1}, & (CON_{it-1} or PRX_{it-1}) respectively. Wald5 and Wald6 report p-value for the joint exclusion of year- and industry-effects respectively. (3) \(t_1\) records the p-value of the asymptotic t-test for H_0: \beta_7 = \beta_8 and \(t_2\) records the p-value of the asymptotic t-test for H_0: \beta_7 = \beta_8. (4) Standard errors of coefficient estimates are adjusted for heteroskedasticity and autocorrelation using the Newey-West (1987) procedure with lags determined by a data-dependent rule. (5) Variables for PD and CL have been standardized prior to estimation. (6) The asterisks *, **, and *** respectively denote significance at the 10, 5 and 1% levels for two-sided alternatives. (7).
$\beta_8$ is 0.044, thus we conclude that consistent with our proposition, hierarchical proximity between CEO and IT executives seems to matter more for product differentiators than cost leaders.

### 4.3 Results of sustainable IT capability reputation on firm performance

For the testing of H4, we contrast firms that develop and sustain an IT capability reputation (SYS) versus firms that develop but cannot sustain their IT reputation (OCC). Results based on estimation of equation (2) using CON or PRX—indicate that our propositions hold when we focus on IT reputation rather than IT image. In other words CON and PRX are positively associated with the firm’s ability to sustain its IT reputation, and congruity or hierarchical proximity between CEO and IT executives seems to matter more for product differentiators than cost leaders. Finally, the Davidson and MacKinnon (1981) J-test indicate that $CON$ (p-value of $J_{12}$ is 0.033) is a better fit than $PRX$ (p-value of is $J_{21}$ is 0.172). This is similar to the results in Table 1.

In order to explore the financial performance implications of sustainable IT reputation, we started by estimating the first-order panel-data autoregressive process – panel-data AR(1) - of $TQ_t$. The results are: $TQ_t = 0.172 (0.058) + 0.353 (0.115) TQ_{t-1}$, where the numbers in the parentheses are panel-data Newey-West (1987) asymptotic standard errors of parameter estimates. While the $\alpha_0=0.172$ and $\gamma_1=0.353$ are statistically different than zero (asymptotic t-tests were 2.965 and 3.069) the values of $\alpha_0$ (the unconditional sample mean) and $\gamma_1$ (measure of persistence) are not high enough to indicate sustainable superior performance for the average firm in the sample.

\[
TQ_t = \alpha_0 + \gamma_1 TQ_{t-1} + \gamma_2 R&D_{t-1} + \gamma_3 AD_{t-1} + \gamma_4 CAP_{t-1} + \gamma_5 SYSvOCC_{hat} + \delta_1 TQ_{t-1} * R&D_{t-1} + \delta_2 TQ_{t-1} * AD_{t-1} + \delta_3 TQ_{t-1} * CAP_{t-1} + \delta_4 TQ_{t-1} * SYSvOCC_{hat} + \alpha_i + \psi_t + \epsilon_{it} \tag{3}
\]

**Notes.** (1) Standard errors of coefficient estimates are adjusted for heteroskedasticity and autocorrelation using the Newey-West (1987) procedure with lags determined by a data-dependent rule. (2) The asterisks *, **, and *** respectively denote significance at the 10, 5 and 1% levels for two-sided alternatives. (3)

**Table 2.** Second-Stage Panel-Data OLS Models of IT Reputation on Firm Performance

Using the predicted values from equation (2), i.e., $SYSvOCC_{hat}$, as independent variables we estimated equation (3) and the results are shown in Table 2. The results from $SYSvOCC_{hat}$, which are based on the effect of congruity in IT expert power between CEO and IT executive on the firm’s ability to sustain its IT reputation (Col. 1 of Table 2), show that the market seems to value firms that develop and sustain their IT reputation more than their competitors who do not possess such asset. The coefficient for the $SYSvOCC_{hat}$ variable is positive ($\gamma_5=0.132$) and statistically significant (p-values <0.05). This means that the mean value of Tobin’s q for firms with a sustainable IT capability reputation is 0.132 higher than firms that can develop but not sustain their IT reputation. Similarly, a firm’s ability to develop and sustain its IT reputation makes a positive ($\delta_4=0.013$) and statistically significant contribution (p-value<0.05) to its ability to sustain its superior valuation. Similarly the results from $SYSvOCC_{hat}$, which are based on the effect of hierarchical proximity between CEO and IT executive on the firm’s ability to sustain its IT reputation (Col. 2 of Table 2), show that the
market seems to value firms that develop and sustain their IT reputation more than their competitors who do not possess such asset. The coefficient for the $SYSvsOCC_{hat}$ variable is positive ($\gamma_5=0.119$) and statistically significant (p-values <0.05) and the firm’s ability to sustain its IT reputation makes a positive ($\delta_4=0.014$) and statistically significant contribution (p-value<0.05) to its ability to sustain its superior valuation. The results of the Davidson and MacKinnon (1981) J-test indicate that the $SYSvsOCC_{hat}$ which was based on CON (p-value of $J_{12}$ is 0.019) is a better fit than the $SYSvsOCC_{hat}$ which was based on PRX (p-value of is $J_{21}$ is 0.144).

5. CONCLUDING REMARKS

The study contributes to the literature on strategic leadership and in particular to the role of background of senior executives. Prior research has looked at the functional background and functional area of senior executives and found that while the former matters in shaping the perception of senior executives the second one does not matter (Waller et al. 1995). This study expands this literature by looking at the congruity of CEO and IT executives and finds evidence that congruity in IT related expertise as well as hierarchical proximity increase the likelihood that both executives will share and pursue a common IT vision. While prior research has focused on organizational environment (e.g., customers and competitors) and organizational effectiveness (Waller et al. 1995), we choose to concentrate on IT reputation because it is a reflection of shared vision and alignment between these two executives. After all, the IT reputation is the results of efforts by executives to project and image of [IT] superiority to external stakeholders (Fombrun and Rindova 2001).

References


CIO (2007). The ROI of Alignment. in CIO.


