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Joint Ownership and Organizational Role: Critical Factors of IT-Driven Value

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Abstract

The concept of psychological ownership is used to enhance our understanding of the relationship between users and information technology professionals, and to describe the IT-business process relationship. We propose that the user-IT ownership interaction determines the role that IT professionals assume in the organization: partner, order taker, advisor or technocrat. Interviews at four major organizations support the existence of these roles, and indicate that the particular role assumed by the IT professionals is likely to be related to the value generated by IT. The study suggests that the highest IT value stems from partnership between the users and the individuals in the IT function, which requires both business process ownership by IT professionals and information system ownership by users.

Introduction

In the early days of information systems development, the people in the IT community were responsible for designing and developing systems and the people in the rest of the organization ran the business. This arrangement did not work very well, particularly as systems became more tightly connected to business processes. The systems did not meet the needs of the business, and the business did not change to accommodate new systems.

Swanson (1974) recognized the need for the participation and involvement of users in IT development. Rockart (1988) went further by asking the line to take the leadership role, and Jarvenpaa & Ives (1991) showed that top management commitment is key to successful implementation of information systems. They all argued that significant business understanding is required for systems to meet the strategic objectives of the organization. As a consequence, many IT professionals were demoted from the "Ivory Tower" to the status of order takers. In response and in an attempt to regain their status, IT departments re-engineered themselves as trusted advisors and started to manage their relationships with the rest of the organization using a "supplier-customer" metaphor. Abundant research supports and often encourages IT departments to manage their "internal clients" by ensuring that expectations are carefully controlled (Ginzberg, 1981) and that trust and credibility are nurtured (Bashien & Markus 1997).

Another group of researchers stressed the importance of the IT organization and the line working together to develop high value systems. Henderson (1990) found that cooperation and mutual understanding leads to a higher likelihood of success. Nevertheless, partnership is difficult to sustain because both parties must stay committed, and both must be fully and equally responsible for the success or failure of every project or product. Furthermore, as Nelson & Cooprider (1996) argue, line managers must be actively involved in IT management, and IT managers must be actively involved in business decisions.

While there is a long stream of research supporting user participation and involvement in IT (Hartwick & Barki, 1994), the literature has very little to say about the relationship between the individuals in the IT community and business processes. If users need to feel responsibility and take action, wouldn't the same hold true for IT professionals? This question and the repercussions of IT professionals' involvement in the business process guided our study.

The *psychological ownership* construct provides convincing support for the benefit of a strong interconnection between IT professionals and business processes. Psychological ownership describes individuals who exhibit a strong sense of commitment and responsibility to their workplace. Ownership here does not connote legal property rights, but rather, it implies a sense of empowerment, personal involvement, organizational pride, and shared interests with fellow employees. It minimizes shirking and motivates people to perform at their best levels. Pierce et al. (1991) found that when people feel ownership, there is "an increase in the level of experienced meaningfulness of work, and an enhanced sense of responsibility for work and organizational outcomes" (p. 135).

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[1] Both authors contributed equally to this paper.

Psychological ownership can be used to signify both user involvement in IT and IT-professional involvement in the business process. Following both Pierce et al. (1991) and Hartwick & Barki (1994), we define ownership as a multidimensional construct comprising *orientation* and *responsibility*. *User IT ownership* consists of the users' *IT orientation* and *IT responsibility*, and *IT-professional business ownership* consists of IT-professionals' *business orientation* and *business responsibility*. As has already been pointed out by previous research, users should participate and be involved in dealing with their information systems, which in turn requires them to be familiar with the information flow and the fundamentals of the technology. We call this capacity *IT orientation*. User *IT responsibility* is as a psychological state reflecting the "importance and personal relevance" that users feel for their information system (Hartwick & Barki, 1994). In the same fashion, we define *business orientation* as the extent to which IT-professionals understand the business context and are knowledgeable about business processes (Nelson & Cooprider, 1996). The *business responsibility* dimension was taken from both the psychological ownership literature and Hartwick and Barki's participation construct: individuals must feel responsible for the business processes and outcomes beyond their day-to-day duties.

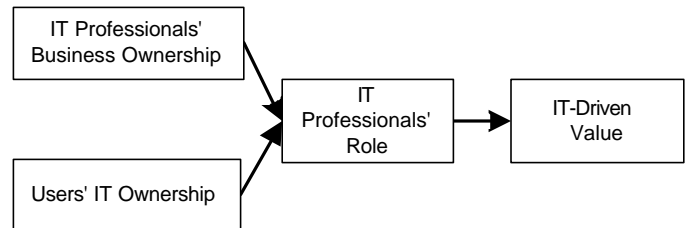## The Relationships Among Ownership, the Role of IT-Professionals, and IT-Driven Value

We propose that the nature of the relationship that IT professionals have with their organization is a function of both their degree of business ownership and the users' degree of IT ownership. Four archetypes of IT-professionals' organizational roles: *partner, advisor, order-taker,* and *technocrat* are linked to the degree of ownership and listed in Table-1 below. It would seem that for a partnership to emerge, both users and IT-professionals must feel and take ownership. If users participate and feel involved in IT, but the IT folks do not take ownership for business outcomes, the line will take leadership and IT professionals become order takers. On the other hand, if the users do not take ownership of IT outcomes, but IT professionals take ownership of the business, then they assume the role of advisors. Even when the IT professionals would prefer to be partners, if the users do not comply, there is very little the IT people can do about it, at least in the short term. Finally, if no one has a sense of ownership, members of the IT community take on the role of technocrat; they focus on following protocol and procedures, and minimize personal contacts and relationships with the user community.

The importance of the IT-professional role stems from its direct effect on IT value (Figure-1). While there has been no research to test the degree of IT-driven value added when these roles are employed, it seems quite clear that IT initiatives are unlikely to result in much value from the technocrat role. Based on the power of the ownership construct and the findings from the involvement and participation literature, we hypothesize that IT initiatives have a substantially greater potential to derive high value when the IT-professionals assume and retain the partner role.

Table 1. Ownership Configuration Drives the Organizational Role of IT Professionals

Users' IT Ownership		IT Professionals' Business Ownership	
	High	Order-Taker	Partner
	Low	Technocrat	Advisor
		Low	High

Figure 1. The Organizational Role of IT-Professionals Drives IT Value

Research Design

Our study explored the relationships among ownership, IT-professionals' organizational role, and IT-driven value. We applied an extreme case methodology (Boyatzis, 1982) to examine ownership and its relationship to IT performance. Theory-driven thematic analysis (Boyatzis, 1998) was used to identify and code the components of ownership and the organizational roles assumed by the IT-professionals.

The instrument was developed based on previous research on ownership in the organizational context (e.g., Pierce et al, 1991) and on user-IT relationships (e.g., Hartwick & Barki, 1994), as well as our own extensive IT experience in organizations. Table-2 exhibits a condensed version of our instrument and outlines the dimensions of the constructs.

Through discussions with experts and reviews of practitioner literature, we identified two organizations that consistently provided high value through IT and two that were considered average or below average in delivering value. All are large-scale organizations, with significant ongoing investments in IT. They operate in the pharmaceutical, insurance, banking, and automotive industries.

Data were collected through a series of semi-structured critical incident interviews (Flanagan, 1954) that investigated the extent to which IT added value in the organization along with the nature of the relationships between the users and the IT professionals. In all, we conducted 18 interviews–ten at the top performing organizations, and eight at the average performers. Each lasted approximately one hour and was recorded and transcribed for subsequent analysis. We interview IT and business people at various levels in each organization. By interviewing a broad cross-section of individuals, we hoped to uncover any significant differences relating to responsibility or position as well as differences in perceptions between users and IT professionals.

Analysis and Findings

Guided by the instrument outlined in Table-2, judges examined the interviews for indications of *business orientation* and *business responsibility* among the IT professionals; *IT orientation* and *IT responsibility* among the users; and indications of the four IT roles: *partner, advisor, order-taker* and *technocrat*. Any indication of either *business orientation* or *business responsibility* among the IT professionals was deemed as an indication of *IT-ownership*. Respectively, any indication of *IT orientation* and *IT responsibility* among the users was coded as an indication of *user-ownership*.

In order to assure sufficient reliability, we applied the double coding technique (Miles & Huberman, 1984) in which two qualified judges, or coders, independently applied the instrument to the interview transcripts. The nominal inter-rater reliability, which indicates consistency of judgements, was 82%. The judges achieved 100% agreement after a discussion in which they compared and reconciled their assessments. The final assessment is presented in Table-3 below.

It was clear when IT-professionals felt a personal responsibility for business performance. Two of them said:

> "The point is to develop a cohesive understanding of the business, to really understand what the issues and problems and situations are that are being dealt

with by the business and to see what you can contribute and add.... To be able to operate and to successfully have an impact on the business in a global environment requires that the business technology manager has a much broader perspective of the business unit. And that means much broader that just where they sit."

> "I spent a significant amount of time going to sales planning meetings, being involved in strategy meetings with the sales force, dealing with various admin functions and helping them support the needs of their constituency"

Both IT and user orientation are illustrated by the following quote:

> "I mean, it really requires constant day to day interaction. And it requires me as a technology process leader knowing a lot about the business process. And it requires the business process leader and the rest of his team members knowing a lot about the technology."

Partnership was clearly evident in the interviews conducted in the top performing organizations. As one IT person said, they are "*part and parcel of what the business does*." The critical contribution of partnership to value creation is illustrated in the following quotes, the first from an IT person and the second from a line manager:

> "We *(the IT people)* actually do the same things. The real strength of this organization is the fact that it *(the information technology)* is closely coupled with the business function that it works with-- coupled in terms of we live with the business function."

> "The difference is the partnering. I mean, it's good communication, everybody understands what they're bringing to the table. First of all there's the agreement on what it is you're trying to do. There's senior level involvement and all the people are talking and working together. And every time we've done that we've had terrific success, and if one of those pieces is missing we have a tendency of being more disappointed in the results....at the end of the day it's a people game."

In contrast, the IT people at the average performing organizations assumed the advisor or the order-taker role. The clearly defined boundary between the IT function and the line did not imply a lack of a genuine good will from either; it just set them apart as illustrated in the following quotes:

Table 2. Dimensions of IT Ownership, User Ownership, and IT-Professionals' Role

Dimensions	Ownership	IT-Professionals' Role
	IT-Professionals' Business Ownership	**Partner:** The individuals in the IT function work together with the line as credible and equal team members who share common goals.
	Business Orientation: The individuals in the IT function understand the business context and appear knowledgeable about the business process.	
	Business Responsibility: The individuals in the IT function feel responsible for business processes and outcomes beyond their duties concerning the direct performance of information systems.	**Advisor:** The individuals in the IT function feel responsible for leading and directing the users in the application of information technology to support the business.
	Users' IT Ownership	**Order taker:** The individuals in the IT function assume the role of information system professionals whose main concern is to consult and assist the organization only with IT related issues as the users see fit.
	IT Orientation: The users understand the technological context and appear knowledgeable about the information flow.	
	IT Responsibility: The users are concerned with IT, believe that it has a pivotal role in business outcomes, and feel responsible for IT performance beyond their duties.	**Technocrat:** The individuals in the IT function focus on protocol and procedure.

Table 3. Indications of Ownership and Role of IT Professionals

Respondents:	Top Performers										Average Performers							
	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	B1	B2	B3	B4	B5	B6	B7	B8
Business Orientation	V	V	V	V	V	V	V	V	V	V	V	V	V		V			
Business Responsibility		V	V	V	V	V	V	V	V	V					V			V
IT-Ownership	V	V	V	V	V	V	V	V	V	V	V	V	V		V			V
IT Orientation	V		V	V	V	V	V	V	V	V							V	V
IT Responsibility	V	V			V		V	V	V	V								
User-Ownership	V	V	V	V	V	V	V	V	V	V							V	V
Partner	V*	V*	V*	V*	V*	V*	V*	V*	V*	V*		V						
Advisor		V				V				V	V*	V*	V*		V*			V*
Order Taker															V	V*	V*	
Technocrat														V*		V		

V- Positive indication   * Indicates predicted role

Table 4. IT-Professionals' Role: Model Prediction vs. Actual Findings in Data

	Partner	Advisor	Order-Taker	Technocrat
Predicted by Model	10	5	2	1
Found in Data	11	8	3	2

"We pick the value with our alignment with our internal customers. We expect that we need to understand more about how they do their jobs, so that we can help <u>them</u> apply technology successfully....I have the technology; how do I take that technology and implement it into the business?"

"I depend very much on the CIO and his staff to do that and trust them. What I don't want to do, as a manager, is to manage his business. I've got enough things to worry about. I can't be managing technology projects too."

Nevertheless, the good intentions on the part of the IT-professionals were not much help without business orientation and true partnership with the line. The following quote illustrates what one line manager said about the IT function:

"Sometimes the IT people will have ideas that they'll bring...and they'll look at us and we'll say, 'why would you ever do that.' And that happens occasionally.... There's no accountability for them. Quite frankly, I think there needs to be accountability when people spend money foolishly..."

The technocrat role is likely to be ubiquitous in very hierarchical or low tech organizations, and is likely to yield low to average IT value. Given our choice of organizations, we did not expect to find many technocrats. One of the two technocrats we encountered, an engineer by profession, said:

"I don't get directly involved in the information systems or their implementations, so basically the role that I have with George *(from the IT department)* is more to facilitate when he has issues with the engineering community."

Our model predicts that if both users and IT professionals take ownership, they are likely to interact as partners. As predicted, all ten interviewees from the top performing companies indicated both ownership and partnership. However, three of the ten also indicated that the IT professionals sometimes assume the advisor role. Of the eight interviewees from the average performing companies, ownership coding predicted that there would be five advisors, two order-takers, and one technocrat. While the data did support these predictions, as with the high performers, the double coding of some roles muddied the outcome. Table-4 summarizes the results.

In conclusion, our research reveals a relationship between ownership and the role that IT professionals play in an organization. It also supports the superiority of *partnership* as an organizing mechanism.

Discussion

Much of the previous research in the IT-user relationship focuses on the actions that IT professionals should take in order to enhance the value of IT to the organization. Our findings raise the question of whether or not it is possible for IT to become successful in this way. Partnership seems to be most likely when IT professionals take ownership for the business <u>and</u> when users take ownership for IT. However, it is not clear that IT people can induce ownership in users, just as it is not likely that users can convince IT personnel to take ownership of the business. It seems to us that ownership can be inhibited, but not easily ensured. Similarly, partnership cannot be forced, but only encouraged. Both sides have to want to partner–the marriage analogy seems an appropriate one.

The immediate and direct utility of ownership draws our attention to the tangible value of collaboration and cooperation, which are often ignored or at best marginalized. Shifting the focus of an inquiry into the determinants or consequences of IT from, for example, the efficiency of value chains to the extent of ownership among the players may result in interesting new insights. This observation is in line with Kumar & Dissel (1998) who demonstrated that in some instances the technical-economic and the socio-political perspectives are insufficient to provide an explanation regarding the underlying processes that lead to IT success or failure, and that a third rationality, which focuses on collaboration and cooperation is the key to understanding information technology utilization.

We identified four archetypes, or roles, assumed by IT-professionals in organizations: *partner, advisor, order-taker,* and *technocrat*. Aside for the *technocrat* role, which is an artifact of bureaucratic organizations, the other three roles tap into two primal forms of relationship which underlie any form of social arrangement including organizational life. The *partner* role taps into a sense of mutual relationship that is translated into shared responsibility, shared objectives, shared values, shared passions, and the like. The emphasis here is on sharing. In contrast, *advisor* and *order-taker* can be linked to a sense of a reciprocal or symbiotic relationship in which each party has a designated role and function. The emphasis here is on specializing in a particular task which contributes to an overall effort. Both modes of relationship are essential. While the organizations that consistently added value through IT appeared to balance these two modes of relationship, it seems that the others tended to overemphasize specialization and dependence at the expense of cooperation and collaboration.

We submit that the ubiquitous focus on personal accountability for deliverables irks not only the IT-organization relationship, but also has a detrimental effect on the entire business process and organizational life. Alternatively, we suggest that we might view organizational life through a metaphor of "personal ownership," where responsibility is beyond the boundary of the working unit and where accountability is focused on that responsibility rather than on specific deliverables. Being responsible goes beyond delivering to the letter of the contract. It implies that we re-focus attention from the myopia of the bottom line to positive attitude and intention. It also implies that incentive systems would be more effective if they were based on both personal intention and holistic criteria rather than on bottom line performance alone.

The ownership-focused organization enables a "redundancy of responsibility" that can be best understood as a subclass or an instance of Ashby's requisite variety. Redundancy of responsibility is likely to ensure that fewer (if any) issues fall between the cracks. People cover for each other's lapses rather than find fault and point fingers. Redundancy of responsibility does not imply a waste of resources, but rather a second line of defense that jumps into action when the designated unit fails. Yet, an ownership-focused organization is not merely about solving problems. Ownership is the key for partnership, consensus building, open communication, self-managed dispute settlement mechanisms, team work, learning, innovation, and synergy.

Finally, with the increased fusion of IT and business along with the current pace of technological change, a tight partnership between the line and the IT professionals seems to be an indispensable necessity, not only at the dot-coms but also at almost any brick and mortar company.

Conclusion and Future Research

Through a theory-driven thematic analysis, we identified four roles assumed by IT-professionals in organizations and demonstrated how these roles mediate between ownership and IT-driven value. Our exploratory study suggests that ownership by both IT and users determines, at least to some extent, which role will emerge. We are encouraged by these results and believe that the gap in the literature deserves further empirical investigation. The first step will be to develop a survey that investigates these constructs across a wider sample. Further research is also required to understand the factors that are antecedent to the ownership construct. Possible candidates might include the reward system,

senior management focus, organizational culture and individual characteristics.

By investigating ownership and its effect on IT roles and ultimately the value organizations derive from IT, we expect to put to rest a prevalent notion that either users or IT professionals alone have the ability to unilaterally determine outcomes.

Acknowledgment

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