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STEREOTYPING AND STIGMATIZING IT PROFESSIONALS: TOWARD A MODEL OF DEVALUATION

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ABSTRACT

An understanding between information technology (IT) and business units is important to information systems research in that their alignment is critical for organizational performance in the digital environment. Negative perceptions and associated behavioral outcomes can affect group cohesion and effectiveness. The present research uses the lens of stigma and stereotype to explore a notion of non-productive relationships between the IT and non-IT groups. The primary focus of this study is to analyze interviews with IT professionals to explore and identify potential antecedents to stigma. The differences between IT professionals and users are explicated, illustrating the occurrence of stereotyping among and between groups. We found that relationships between the IT and non-IT groups appear to support a notion of differentness. The support of stigmatization between these groups likely exists in interpersonal relationships during situations of stress, cultural differences, and expectations. The existence of different groups ultimately implies a difference in performance.

Keywords

Information Technology, Groups, Stigma, Stereotype, Social Psychology, Qualitative Research

INTRODUCTION

Since its inception, the power of computing has revolutionized information processing. The engineers, computer scientists, and mathematicians of this endeavor were few. The implications of Moore's Law and the adoption of computing into organizations increased the need for competent computer scientists, programmers, and system administrators to convert organizations into a digital environment. According to World Internet Statistics (2019), 58.8% of the world population have penetrated the internet. Gartner (2019) indicates that the total market space for cloud-based technologies is $214.3 billion in 2019. Cloud adoption figures are estimated at $249.8, $289.1, and $331.2 billion in 2020, 2021, and 2022 respectfully (Gartner, 2019). However, regardless of the innovativeness, pervasiveness and dependence on technology, conventional perceptions of information technology (IT) professionals that built and maintained the electronic universe, continue to be negative (Kaarst-Brown, 2005; Kendall, 2011; Mahajan, 2015; Moore & Love, 2013; Pantic et al., 2018). Cheryan, Plaut, Handron, and Hudson (2013) suggest that the association of nerds to IT discourages their entry into the field.

Research continues to examine the challenges of organizational effectiveness involving the relationship between business units and IT (Kappelman et al., 2018; Luftman, Lyytinen, & Zvi, 2017). While group alignment and synthesis contribute to operational efficiency and effectiveness, asymmetries challenge this effect. A recent survey by CIO magazine indicates that while IT/Business alignment is improving, the perception that IT departments are cost-centered and service-oriented still prevails (High, 2016; Hiner, 2014; Nash, 2014). While organization attitudes of IT value are changing, some continue to perceive IT negatively (Yamazaki, 2017). We argue that while IT/business alignment is prevalent is considered a strategic partner (CIO Staff, 2018), opposing attitudes continue to prevail. A vital component of the IT and business group dynamic is social interaction (Chan and Reich 2007).

Organizational performance relies, in part, on business-IT alignment (Chan & Reich, 2007; Kappelman, Johnson, McLean, & Torres, 2016; Schlosser, Beimborn, Weitzel, & Wagner, 2015). Critical to this are productive cross-

departmental exchanges (Bassellier & Benbasat, 2004; Roepke, Agarwal, & Ferratt, 2000), which can enhance responsiveness in uncertain environments (Xue, Gautam, & Gu, 2011), improve organizational performance (Shin, 2009) and influence co-creative value (Rai, Pavlou, Im, & Du, 2012). However, the previous two decades saw the transformation of IT towards a service-based function (Ray, Muhanna, & Barney, 2005). Recent research suggests that this new focus concentrated efforts to improve customer service (Hsieh, Rai, & Xu, 2011). The existence of stigma, actual or perceived, can disrupt relational processes and mitigate group and personal resolve (Paetzold, Dipboye, & Elsbach, 2008; Moore & Love, 2013).

The objective of our exploratory study is to examine a possible social dichotomy between IT and non-IT groups and how this division potentially influences IT effectiveness. We argue that while IT/business alignment is critical, the underlying relationship between IT and business units are somewhat tenuous. The research literature on IT professionals regarding turnover (Ahuja, Chudoba, & Kacmar, 2007; Lo, 2015; Moquin, Riemenschneider, & Wakefield, 2019), job satisfaction, emotional dissonance (Rutner, Hardgrave, & McKnight, 2008), burnout (Shih, Jiang, Klein, & Wang, 2013), and work exhaustion (Moore, 2000; Rutner P. S., Hardgrave, McKnight, & Harrison, 2011) directly address individual perceptions and behavioral outcomes regarding IT and its associated stress level. However, we found that research regarding the influence of stigmatization of IT professional nascent. However, previous research on stigma and IT involve perceptual schisms (Cheryan, Plaut, Handron, & Hudson, 2013), leadership inadequacies (Willcoxson & Chatham, 2006), reduced personal performance (Aramovich, 2014), and concerns regarding CIO value (Hirschheim, Porra, & Parks, 2003). Our research questions are: how do IT professionals perceive both IT and non-IT individuals regarding stigma? Moreover, how does stigma affect relationships between IT and non-IT groups?

To conduct this analysis, we examined pre-existing interviews and conducted additional more current interviews with IT professionals through the lens of stereotyping and stigmatization. The primary contributions of our work are twofold. First, we present the potentiality of reduced IT effectiveness based on perceptions of stigma and stereotype. Second, we offer a notion of productive relationships between IT and non-IT groups. Drawing on the theories of stigma and stereotype, and intergroup conflict, we explored the potential negative pre-conceptions that IT has on non-IT groups. We begin with the theoretical background and outline of the central arguments and disagreements apparent in the stereotype, stigma, and intergroup conflict literature. We then discuss how ineffective intergroup relationships can challenge organizational efficiency. We conclude this study by addressing implications for research and management.

THEORETICAL BACKGROUND

In the computing field, terms such as computer programmers, network engineers, computer scientists, and related terms appear to manifest in varying characterizations. Society perceives these individuals as social misfits, Star Trek aficionados, geeks, nerds, and code monkeys (Brooke, 1995; Hirschheim et al. 2013; Kendall, 2011; Scheibe, McElroy, & Morrow, 2009; Pantic, Clarke-Midura, Poole, Roller, & Allan, 2018). Evinced in social conventionalism include Weird Al Yankovic's "White and Nerdy," the super technological genius of Dennis Nedry in Universal Studios Jurrasic Park, and the members of Lamda, Lamda, Lamda Revenge of the Nerds (Kanew, 1984). The portrayal of computing professionals as counter-cultural and socially awkward geniuses is replete in present American culture. For example, The Big Bang Theory continues to perpetuate the nerd stereotype (Cendrpowski, 2007). Despite this socially unappealing descriptor, IT professionals continue to create innovative research and technology solutions for the past five decades. Further, the need for advanced technology innovation has increased the demand for skilled IT professionals. For example, IT jobs continue to grow at 13% from 2016 to 2026, which is, on average faster than all fields (Bureau of Labor Statistics, 2018).

Negative perceptions of IT professionals potentially solidify the ideas that those in the non-IT group maintain, thus diminishing collaborative performance. Strained relationships between these groups can have detrimental effects on organizational productivity. In the following section, we introduce the concept of stigma.

Stigma

Stigma refers to a negative connotation with no reasonable inverse and the pre-processing actions of organizing individuals and groups "in effect" into categories based on rumors, or unsupported assessments, including

substantial oversimplifications (Goffman, 1963; Link & Phelan, 2001). Stigma has been used to study the association of socially adverse characteristics such as ethnicity (Brunson, 2007; Howarth, 2006), mental health (Harrison & Gill, 2010), physical aberrations (Goffman, 1963; Varni, Miller, McCuin, & Solomon, 2012), discrimination (Madera & Hebl, 2012), and social class (Williams, 2009). Equally important are its profound adverse effects on self-esteem and self-efficacy (Corrigan et al., 2010), unemployment (Roepke, Agarwal, & Ferratt, 2000), and the reduction of life chances (Schafer & Ferraro, 2011). The foundational concept of stigma derives from the association of an ostensible and socially unacceptable mark, aberration, or other non-normal manifestation (Goffman, 1963). Early uses of this concept included the separation of individuals into normal and non-normal groups (Goffman, 1963). The hegemony determines the members of each group by attributional assessment. Those that are deemed non-normal are "reduced in our minds from a whole and usual person to a tainted, discounted one" (Goffman, 1963). Research suggests that while some attributes are socially less relevant such as race, skin color, sexual preference, gender, and occupation, behavioral outcomes are highly salient, suggesting a degree of differentness (Goffman, 1963). An awareness of such attribute dispersals can result in cognitive oversimplification on pre-existing cognitions (Link & Phelan, 2001). Other deeply discrediting attributes are considered stigmatizable by the dominant social group and manifest in such conditions as impaired social interactions (Taub, Blinde, & Greer, 1999).

Social constructivism suggests that individuals need to understand and interact with reality (Berger & Luckman, 1966; Heider, 1958; Kelly, 1967; Kruglanski, 1989). The result of an ostensible attributional assessment appears as an accurate characterization (Ashforth & Mael, 1989). This oversimplification of individual and group evaluation can be easily falsifiable. For example, society commonly respects sports athletes more for their talent and less for their mental perspicacity. Simmons and Bosworth (2007) examined the perception of individuals on sports athletes and found that 61 percent maintained negative perceptions of their mental ability. In another study, Johnson, Richeson, & Finkel (2011) found that low-income university students attending an expensive private university felt incompatible with other students. Brunson (2007) examined the adverse behavior patterns that arise between ethnicity and authoritative groups, such as low-income neighborhoods and police officers. In densely populated areas, individuals in low socioeconomic areas perceive police officers to maintain a dual standard of the law (e.g., racial profiling). For example, in Los Angeles, unfairly detain, search and arrest young African American citizens and in the case of Rodney King, brutally attacked (Brunson, 2007).

The stigma concept contains two additional ideas: the discredited and the discreditable. A discredited individual is perceptually distal from the social hegemony; a non-conformist (Goffman, 1963). The awareness of a trait interpreted as socially undesirable may influence conceal behaviors, albeit at the cost of personal turmoil (Goffman, 1963; Miller & Major, 2000; Smart & Wegner, 2000). Thus, a discreditable person is aware of the potentially undesirable characteristic, is unsure of its visibility by others, and potentially elects to conceal the attribute from view (Smart & Wegner, 2000). Research suggests that persons with discreditable characteristics recognize that their differentness determines how others interact with them (Pinel, 1999).

Research has extended Goffman's seminal work on stigma to encompass a complete definition. The most important of these is the relationship between stigma and stereotype. This relationship suggests that the emergence of stigma occurs when perceptions of an undesirable attribute enable the categorization and labeling of differences by others with social, economic, and political power (Link & Phelan, 2001; Jones et al., 1984). Further, research has included instances of stigmatization and stereotyping in occupations such as Information Technology. For example, Moore and Love's (2013) seminal paper on prestigious stigma suggests that the stigmatized IT professional embraces the negative connotation. However, through the attainment of higher levels of technical skills and knowledge, he/she is perceived by others as prestigious and highly valued. Thus, to them, social interaction is less of a concern than building technical skills (Moore & Love 2013).

Stereotype

A *stereotype* is heavily rooted in social identity and social categorization (Tajfel, 1974), and refers to the linkage of perception to a preexisting cognitive representation (Stangor & Schaller, 1996). Human interaction with reality relies on cognitive schema formulations of understanding (Hamilton, 1981). These schemas originate early in life as the collection of experiences that develop perceptions and opinions of reality (Beck, 1967). Moreover, life

experiences can be positive or negative, resulting in the formation of potentially harmful associations of unpopular mental representations. Knowledge and experience can influence perceptions of what is real to an individual (Berger & Luckman, 1966). Levels of expertise and knowledge are unique to individuals resulting in interpretive subjectivity. The interpretation of an event by multiple people likely generates various unique perceptions (Lippmann, 1922). Therefore, stereotypes can act as the sense-making methodology of classifying events into a socially shared transformative framework to achieve a standard interpretation of events.

Conceptually, the interrelatedness of stereotype and stigma exists through the assessment of events and objects as either socially desirable or undesirable (Goffman 1963; Link & Phelan 2001). For our research, a stereotype refers to the proclivity of individuals to attribute oversimplified and potentially adverse characteristics to groups and individuals through perception and labeling (Stangor & Shallor, 1996). An essential aspect of a stereotype is its application to an object such as the IT professional. Society has characterized computer programmers and IT workers on his/her eccentricity (Scheibe, McElroy, & Morrow, 2009). However, stereotypes can manifest both positive and negative labels. For example, Remedios et al. (2010) found that young adults rely on positive stereotypes when developing their future selves. Social desirability bias suggests that individuals rely on positive attributes when presenting themselves socially (Wasylkiw, 2007). Stigma, however, is wholly negative, classifying objects and events into socially undesirable categories such as a drifter, drunk, and prostitute. Thus, the differences between stigma and stereotype help to explain why stereotypes are a necessary element in this study.

The generation of socially undesirable associations occurs through perception and labeling (Link & Phelan, 2001). Labeling potentially influences associative behavioral actions toward individuals and members of the target group (Vinacke, 1949). It can also affect the target to behave in a confirmatory manner (i.e., self-fulfilling Prophecy) (Eccleston, 2007). The development of stereotypes held in common with an individual and group refers to a form of ethnocentrism (Vinacke, 1949). For example, Pettigrew (1973) suggests that a significant cultural divide exists between IT and non-IT groups, vastly askew from others as to be confined in their area. Leidner and Kayworth (2006) suggest the exitance of a cultural disparity between IT and other groups. Cultures function according to an established belief system and associated behavioral manifestations, which may appear askew in different cultures (Leidner & Kayworth, 2006). IT and business groups may maintain divergent views regarding a specific technology solution. Potentially harmful attributions such as anger, recklessness, and aloofness can identify people and groups as undesirable. Thus, those affixing this judgment would believe individuals and groups exhibiting a different trait to exist outside the social norm. It is also crucial to note the possible coexistence of a stereotype and stigma as associated constructs. Stereotyping can be bidirectional, where the hegemony is perceived as deviant by the inferior group. Thus, non-normals can view themselves as the normal group (Vinacke, 1949).

In this study, we utilize stigma and stereotype research as a lens to understand how stigma and stereotypes of IT professionals affect the relationship between IT and non-IT groups, and ultimately, the possible outcomes of identified stereotypes.

METHODOLOGY

Study Design

A graphical structure for our study appears in Figure 1 and was adopted with minor modifications from Link and Phelan (2001). The structure contains two primary components, perception and identification, and stigmatization. The concepts of perception and identification address differences between the peer and non-IT groups. Stigma exists as a relationship between observable negative attributes and an associated stereotype (Goffman, 1963; Schafer & Ferraro, 2011). Characteristics such as skin color, height, weight, and gender are readily assessable, whereas religion, education, and constitutional affiliations are challenging to assess and burdensome to categorize affording individuals to characterize others based on perception and experience (Zebrowitz, 1996). This cognitive sense-making process superimposes impression on the pre-existing mental schema to identify, label, and interact with the subject. The attachment of a label to a mental representation generates the stereotype association. The formation of one or more negative stereotypes can result in stigma. We use Crocker (1998), and Link and Phelan's (2001) discourses on attributes and labels that signal the devaluation of one's social identity in the context of IT workers and users. The second component of our model addresses these conditions that influence IT professionals to refer

to peer and non-IT groups with negative terms. The buildup of adverse conditions can generate undesirable outcomes, such as status loss and discrimination (Link & Phelan, 2001).
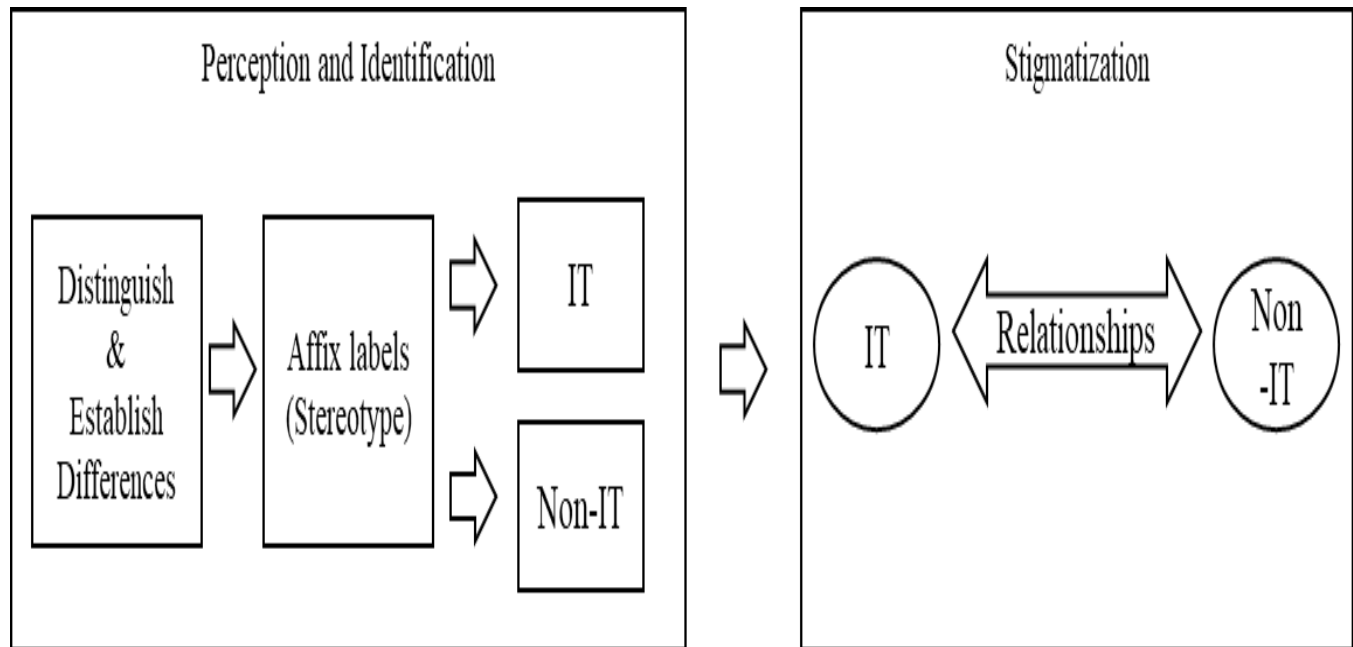

Figure 1. Technology Stigma Conceptualization

Data source and analysis

The data for our study is composed of fifteen interviews. Ten interviews came from earlier research by Rutner, Hardgrave, McKnight, & Harrison (2011) on IT professionals and emotional dissonance. These interviews were the basis for our study. The remaining five interviews were recently conducted to determine the relevance of the phenomenon. All interviews were conducted with working IT professionals in various organizations using a series of semi-structured questions to ascertain the concept of emotional dissonance on work exhaustion (c.f. Appendix A). The interviews ranged from 45 to 90 minutes. Subjects were asked to describe interpersonal interactions on the job and their perceptions of work-related emotional display expectations. While the original study examined emotional exhaustion, a review of the data by the primary author uncovered instances of a secondary phenomenon, stigmatization. Manifested in the interviews were derogatory references from IT workers on users, customers, managers, and co-workers. While the foundation of the responses was on emotional dissonance, the use of negative terms and turbulent relationships were of particular interest. Additional, more recent interviews were then conducted to verify the existence of the phenomenon in a contemporary setting. We followed the same interview guide, interview length, and subject selection criteria to retain consistency with the original study. The scope of our study resides with the perceptions of IT professionals within (IT) and non-IT groups.

Data analysis was conducted using template analysis to build the appropriate qualitative taxonomy. This method is one of several qualitative coding techniques where textual data (interviews) are examined, and thematic codes are created (Brooks & King, 2012). It is flexible in that a priori codes serve as a guidepost for subsequent analysis (Brooks & King, 2012). Each thematic code is associated with a unique attribute serving as a hierarchical identifier for similar occurrences (Miles & Huberman, 1994). We engaged in the constant comparative process serving as the method for creating, refining, and removing codes. The primary author initiated the initial coding scheme by reviewing the stereotype and stigma literature. The codes were sent to a secondary author. The codebase was refined through a process of deliberation and agreement, generating a distilled taxonomy. After agreeing on the coding

method and thematic taxonomy, the remaining uncoded interviews were coded. We then met to discuss the overall accuracy of the coding making modifications where appropriate.

FINDINGS

Fifteen IT professionals participated in in-depth semi-structured interviews. Table 1 below presents the descriptive statistics.

Job Type	Freq
V.P. of IT	1
CIO	1
IT Director	1
Systems Analyst	3
Support	3
Manager	4
Database Admin	1
Scrum Team Leader	1

Table 1. Respondent Demographics

Thematic Categories

During the coding process, we uncovered eight themes, five of which appeared to be more prevalent among all interviews. We, therefore, focus salient themes that were highly referenced by the interviewees and that closely aligned with the theoretical foundations of stereotype and stigma. Table 2 presents the themes we observed. We then offer the terms used to refer to these other groups. Where appropriate, we give the relationship between the differences and labels forming the negative stereotype. In the most current interview dataset, we found instances of stigmatizing events that appeared to mirror the original interview set. These instances further exhibit group polarization. We included excerpts from the new interviews into the existing categories.

Concept Label	Description	Example
Relationships	The perceived productive or non-productive interactions between IT professionals and non-IT users.	They call me…they call the analysts; they don't have such a good relationship with them as they have with me
Attitude	The perceived emotional disposition of a non-IT user when dealing with technology.	I can't get this to do so and so, and I'm frustrated, and I've finally reached the end of my rope, so I'm calling you and, number one I'm going to yell at you for a little while because it doesn't work, and then I expect you to come fix it. And then I also expect you to calm me down
Personal Characteristics	Ostensible traits of others (including both IT and non-IT) that are potentially stigmatizable to IT professionals.	A paper tiger is somebody that sits out there and reads all the Microsoft books and call them an MCSE. Does well on taking a test but you set them up in a server environment, and the first time they see a blue screen on a box they freak out.
Incompetence	The perceived inability of non-IT personnel to understand and effectively work with technology.	You know you did something, but they won't tell you. So, you go "OK, let's play this game," about an hour and a half in the process, you're like "oh, we did this." "Yeah, you did"
Discounted Expertise	The perception that an IT professional's knowledge, expertise, or recommendations are being ignored or overridden.	it was almost comical because we would be trying to come up with a solution and I might say, well, why don't we use white envelopes and they'd talk over me and go around and finally, an hour later, Fred would say, why don't we use white envelopes. Oh, that's fantastic. That's a great idea.

Table 2. Codes

Differences and Labels

A fundamental element between IT and non-IT groups appeared in the form of the awareness and assessment of occupational differences. A taxonomy of three unique subcategories addresses the critical differences between these two groups: incompetence, attitude, and communication.

Incompetence. The IT professionals in our study perceived that users were somewhat ignorant of the fundamental purpose and use of technology. IT professionals are typically highly skilled in their field, affording them a more in-depth insight into technical issues. Likewise, users are experts in their functional areas, such as accounting and marketing, where specific knowledge of technical problems is less important. When a typical user experiences a technical issue that suspends their daily work, the impending interaction with IT personnel is likely challenging. Management appears to be distal from the realities of system technicalities. The functional power distance between management and IT is sufficient to create communication barriers between these two groups. Also, an IT professional's reaction to continual "simple" issues can influence their perception of users as incompetent. These stressful situations can intensify negative behavioral actions resulting in emotional coping mechanisms. The following excerpts illustrate how IT perceives non-IT regarding technology. Specifically, based on the emotionally infused situations that generated these excerpts, a noticeable dichotomy resulted that may likely exist in the IT professionals' image of clueless users.

> *the higher up you go on the food chain of a company, the more **illiterate** the computer user* (Interviews 1 & 2).

> *you go a couple levels up in an organization, and almost invariably people at that level **do not have a fundamental understanding** of the operational realities of the teams that work for them* (Interview 7).

> *And I do find myself feeling like I'm speaking to a **kindergarten or first-grade level person** on a computer* (Interview 9).

> *Because you will get the **stupid** user* (Interviews 1 & 2).

> *one example, I was fixing this guy's computer this one time. And there was, like, some registry key permissions that we were dealing with. And, like, he understood all that stuff. But there were other users who sometimes would be like…they knew Word and a web browser, and that was kind of it. So, like, if I were to use, you know, a registry key with them, they would be like, "What are you talking about?" Um, so I think it was mostly just between the inept users and the very proficient users. You know, some of them would get exactly what we were doing, and they would kinda ask questions on that while others were like, "I don't know how it works. Just make it… Just fix it for me"* (Interview 14).

In each of these situations, the IT professionals perceive users as less competent with technology than the IT professionals are. Some IT professionals tend to regard computing as self-evident because of their constant exposure to technology. However, users accept technology to complete job-related tasks and are thus less likely to understand technological nuances such as error messages, memory usage, and performance latency. Indeed, IT professionals spend most of their time in the field much the same as the plumber, mechanic, lawyer, and physician. The field-specific knowledge is less noticeable and, in some cases, irrelevant for some users. The excerpts suggest how IT professionals negatively perceive non-IT users' inability to understand technology. Evident are terms such as *illiterate*, *simple-mindedness*, and the ostensible "*stupid user*." A potentially representative stereotypical label is *ignorance*.

While some users are likely technically proficient, many broad IT issues are beyond his/her experience. The following situation exemplifies a difference in opinion regarding the reality of system change. IT notes management's system expectations and his/her associated implied knowledge, which appear to misalign with IT's assessment.

> *When we bought the system, management said we're making no changes to it. But that's unrealistic. We have to make changes every day* (Interview 6).

IT's perception of management's expectations appears one-sided. The IT professional understands the nature of system composition, implementation, and boundaries. Software applications address a wide array of cognitions and orientations to problem commonalities. The solution's fit is not absolute and therefore undergoes alterations that are necessary to fit the specific and concrete representation of an organization's reality. IT may be mostly unaware of the factors such as cost, return on investment, longevity, and effectiveness that influence management's decision of one solution over another.

> *it may be literally they're **afraid to look stupid**…But other people may have an actual fear of consequences to the job* (Interview 7).

In the above response, a participant recalls an event where a user unknowingly caused data integrity issues. The user was unsure how to resolve a data entry issue and attempted to enact what was believed to be the correct fix but caused a significant problem. The interviewee attributes this lack of ability to inadequate training, while others

attribute poor communications between users and IT. Some IT professionals communicate using complicated technical terms. Users may avoid asking questions for fear of appearing unintelligent. As such, poor communication and incorrect interpretation can result. A possible label for the above instance may be *discreditable*, referring to the perception of a potentially atypical and ostensible characteristic that is socially undesirable (Goffman, 1963). In some situations, an individual will conceal this attribute (stereotype threat). In the following case, one respondent assesses the user as purposively hiding information, when, various other factors may be more appropriate. However, the assumption is that users are somewhat purposely deviant, purposely withholding information.

> *You know you did something, but they won't tell you. So, you go "OK, let's play this game," about an hour and a half in the process, you're like "oh, we did this." "Yeah, you did"* (Interview 1 & 2).

> *When it's not plugged into the wall, and you come in and go, "here's a clue." You can't say that. You can't say to them "you see that plug over there? It needs to be plugged in." You just go "well I don't know who unplugged it" and "that's not something you'd normally check" or something along those lines. You sometimes do wonder* (Interview 3).

The respondent may have previous experience with users revealing the details surrounding the issue. It is possible that a user does not know, recalls only portions of the circumstances, or is exhibiting impression management or controlling self-presentation. However, to the user, the size and function of a network can be quite daunting and complicated. Juxtaposed with continual security and system improvement updates, it becomes difficult to know what has changed ex-ante. Therefore, even though the respondent may have experienced many similar occurrences, the response appears as if the customer fits the cognitive stereotype of an inept user. Potential labels used to describe users in this situation may be *stupid* and *ignorant*.

In sum, participants interpreted the behavior of non-IT individuals negatively. Harmful labels such as "stupid," idiot," and "illiterate" were expressed overtly and covertly as a difference between IT and non-IT. In other words, IT likely perceives that users should know more about the technology than they do. Non-IT individuals potentially resort to self-enhancement to avoid being perceived negatively and may explain the behavioral outcomes associated with these stereotypical labels. Exacerbating negative perceptions is the temperament of non-IT individuals during stressful situations.

Further, relationships between groups are in some regards built on respect. Each group maintains a level of expertise than other functional groups. For example, accountants are experts in the educational, regulatory, cultural, and organizational specifics of their function. The sales departments' role is directed at customers and product and does not necessarily involve the specifics of accounting. IT professionals maintain expertise in technology and maintain certifications. While IT professionals may have experience in accounting, it is neither their focus nor role to practice in this area. Therefore, when other functional groups request advise from IT professionals, which is perceived to be summarily negative affect. The cognitive aspects of intention as to why expert opinion is circumvented belies accurate perception. In other words, if the physician recommends that the patient quiet smoking, it is likely that a percentage of patients will not comply. However, ambiguity likely clouds the issue forcing the observer to formulate alternate reasoning. In the next section, we examine how non-IT attitudes toward technology challenges relationship stasis.

Attitude. Another dominant category of differences that IT professionals perceive of users is their attitude. In stressful situations, IT can perceive its users as apathetic, belligerent, malevolent, and dismissive. Several of the interviews uncover an "us versus them" dynamic (Tajfel, 1974). For example,

> *I can't get this to do so and so, and I'm frustrated, and I've finally reached the end of my rope, so I'm calling you and, number one I'm going to yell at you for a little while because it doesn't work, and then I expect you to come fix it. And then I also expect you to calm me down* (Interview 3).

In the above quote, IT professional discusses what users expect of them in the area of support. By the time users reach out to IT, they are typically frustrated and take out frustrations on the IT professional. Thus, IT is expected to address the technical issue and provide emotional support for the user. These inflated expectations can prove to be

overwhelming for the IT professional. Further, some users will user IT failure as an excuse for issues that arise at work.

> *IT can be a convenient place to hang excuses. If systems can be argued to be an impediment to getting the actual work done, then, you know, that can be one of the reasons that people list as not getting their work done* (Interview 7).

The above excerpts appear to capture instances of the *whiny* user. First, emotion regulation involves the user's ability to manage stress when faced with failing technology. Contextually, a technological failure may affect a critical process, which likely exacerbates pressure, potentially creating volatile social interaction between users and IT. Further, technology failures appear to shift the responsibility for incomplete work to IT. Blaming suggests that users responsible for missed deadlines may target IT. Therefore, likely representative labels that the IT group may use to describe demanding users are *needy or whiney.*

In sum, while perceiving the differences and labeling of non-IT individuals as "incompetent," interpersonal interactions during stressful situation further drives a wedge between the two groups. This division can reduce relational effectiveness in that further interactions are guided by the established template IT maintains of the non-IT individual (stereotype). In the next section, we discuss the perception of participants that his/her technical expertise is not respected by others.

Discounted Expertise. Our analysis found that 56% of our participants felt that IT was not respected for their expertise. For example, IT is often asked to provide expertise regarding technical matters, and many appear to ignore it. One participant discussed management requests for Smart Phones (e.g., BlackBerry) more as a status symbol than for any value-adding benefit. The IT group believed the value-adding potential of the Smartphone was not proven and was, therefore, risky. IT perceived management's request to satisfy personal agendas rather than a legitimate business reason. It is possible that IT incorrectly assumed that Smartphones were "playing to the egos of people" (Interview 3). Management decided to adopt the Blackberry solution and enforcing the perception that technical expertise was nonessential, resulting in frustration. An interesting term used in this interview was ego. While this term only appears in this interview, it lends some credence to a notion of labeling such that management seems stereotypically self-centered and egotistical.

> *the Blackberry caught on simply because they were very smart in marketing and they marketed it to the presidents of universities, and they marketed to high executives who said: "oh, look what I've got." So, they appealed to the ego of all of those people instead of ... and none of those people listened to their IT people... So, you get to laugh at other peoples' egos* (Interview 3).

> *none of those people listened to their IT people* (Interview 3).

> *every now and then you get somebody that…just seems to have some agenda that seems to be about making themselves look as good as possible by making other people look bad* (Interview 5).

> *...it was almost comical because we would be trying to come up with a solution and I might say, well, why don't we use white envelopes and they'd talk over me and go around and finally, an hour later, Fred would say, why don't we use white envelopes. Oh, that's fantastic. That's a great idea* (Interview 13).

In the following situation, management appears to usurp others by making decisions regarding preference to specific technology without the knowledge of the experienced technical staff. The second except highlights management perceived circumvention of technical advice.

> *there was a conflict because you come to me, and you kinda made a decision for my department…and now you're telling me kinda how to run my department and it's kinda undermining…hey, you did hire me to make these decisions. And even though that, there's a good way to implement Apple, maybe it should have been brought, you know, to my attention first and we coulda discussed it better and maybe have found a better option* (Interview 11).

we had an incident happen with a... with a deployment and I said, hey, should we do a post-mortem and... let's us learn and figure out how did this happen? And he said, oh, no, yeah, which is okay. And so, I scheduled it and he blew it off (Interview 13).

Relationships non-IT

The interviews dealt explicitly with social interactions between IT and non-IT groups from the perspective of the IT professional. An aspect of this theme suggests that IT professors perceived that in some way, they must defend their jobs to non-IT individuals. Significant among these interactions was the level of perceived emotional energy expended during stressful situations. Rutner et al. (2011) addressed the level of emotional dissonance that IT professionals experience as an influence on turnover. We examined professed ostensible and surreptitious behavioral responses from IT professionals regarding non-IT group interactions. For this section, we refer to these interactions as Relationships-Non-IT. A notion of stigma was apparent in many interviews via behavioral actions. We discovered situations where IT professionals experienced negative interactions with management, business groups, and customers. First, our participants perceived that, in some cases, the administration appears ineffective. For example, a technical account manager debates his performance with upper management. The concern is that metrics do not fully reveal performance effectiveness. Management assesses remunerations commensurate with performance. Don feels that administration is not considering is concern and indirectly disparages management.

> *I've become apathetic. Apathy kicks in. Because having been a manager, having been a business analyst, having, understanding the financial aspect of it, I know that two-grand for a laptop, I know where it all comes from. And the biggest thing is, I am responding, you know VP's are coming down and saying, "you're responsible for this" and "oh, it all washes in the end." No, it doesn't. It shouldn't have ever got dirty in the first place in order to have to clean it. So, what it comes down to is it doesn't change. I become apathetic (Interview 1&2).*

In a second example, an agile programmer attends a meeting that she perceives as costly and useless. Indirect in the following excerpt is the potential mitigation of management's intent on the meeting.

> *I remember one time the boss pulled us all in for a meeting and we sat there and said, this meeting has cost $3,000 if you add each person's hourly and...and there's six into 12 people. That's two man-hours. And that's how we were looking at the meeting. It's like, how much did you just charge the government to have this stupid meeting? You could have sent an e[mail]. ...it's almost like your time doesn't matter. that's what I walked away from. It's like, you pulled me into this stupid meeting when I think we...we didn't need to have it (Interview 13).*

In a third example, management in educational systems determines the allocation of resources for each college. In one situation, the university IT department perceived management to allocating resources poorly. IT resources are considered critical for completing committed projects.

> *"you really don't have a way to know that you're going to get what you feel like you really, really need to do business"* (Interview 5).

Finally, the data suggested that IT professionals also view management as technologically unskilled. IT professionals work with a divert set of users. Potential misconceptions that IT professionals maintain are assumed causal effects that the level of occupational status and compensation have on technology acumen. Another fallacy is that all users have a basic understanding of technology, as appears in the following exhibits.

> *So, I went over there and literally this guy was non-technical just because he took the attitude that I'm at such a high-level position I've hired and fired people that can do this type of deal. And I was the only person that could work with him. But literally I had to show him how to turn his laptop on out of power save mode. So, it was just little small stuff like that. It was just like anything that he ran into a frustration like he couldn't save something in Word or something, I would get a phone call. It was like "oh my fricking.... idiot, you are making 6 figures. 10 times more than I could ever possibly dream of. You'd think that you would a little*

bit of computer knowledge being that you are Chief Financial Officer for one of the biggest technology companies" (Interview 1&2).

when I was IT over in the library many, many years ago. And the overhead projectors fit on the overhead projector screen…There was an LCD panel that you actually put on the overhead projector. And in the library, you have all of those librarians who have master's degrees in library and as part of their masters, they have to take how to fix those overhead projectors and fix general library equipment. More than once, I've walked into a classroom, full of students, and just flipped the mirror up so it would shine on the screen because that's what was wrong. And I had this librarian that was trained in all this stuff say "well, it's got a computer attached, I don't know what to do." And you want to say 'there's nothing about the computer that's doing this. It's because you don't have to have the little mirror flipped up, so it'll show on the screen." I mean how do you, I mean the students, when you walk in and you can't be flippant about that either. Because if you walk in and flip it up and the student's just kind of look at their professor and go "what an idiot!" (Interview 3).

one of the things that I have found disheartening is, you know, my managers, as old as I've been in the business and I...I try to...now, I wouldn't say mentor but suggest things that I learned from the school of hard knocks and it totally either intimidates him or he just poopoos it (Interview 13).

Relationships IT

Similar to analyzing the interview data for differences between the IT professional and user was the process of extracting the differences with their peers. The goal of this section is to present results that exemplify how one's peers can make negative assessments. The principal differences that emerged in this analysis were relationships and personal characteristics.

Relationships. Most interviews addressed notable differences between IT professionals that reduced the effectiveness of this group toward the firm and its users. The comment below suggests a conflict with a teammate and manager. It may be commonplace for others to desire positions higher in the hierarchy. However, the relationship between the manager and the IT subordinate is strained, possibly by the perception of a broken psychological contract.

he thought he should have my position, frankly (Interview 5).

A specific example of relationships between IT members exists in how they are each perceived by their customers. The following comment explains how the participant appears to have a better relationship with users than his peers. Users seem hesitant to relay issues except to him. The result could potentially separate group members, reducing effectiveness.

They call me…they call the analysts, they don't have such a good relationship with them as they have with me (Interview 6).

because they kind of think, I'm bucking the system, I'm not going along with what they want to do (Interview 3).

Personal Characteristics. Another category between the IT professional and their peers is personal features. IT professionals note differences in gender, competence, and ego. Some women feel that they need to change their demeanor when interacting with males in their field. For some, confidence is key to presenting legitimacy.

being a female in a predominantly male role, if I were male, it would be "ok" for me to cuss and vent some anger. But being a female in the IT environment, it's not acceptable ... (Interview 9)

it was typically with the guys who didn't think you knew what you were talking about, and I have a reason behind that, that I think is a little bit beyond just gender. There were somewhere it was absolute gender discrimination ... (Interview 15) .

> *the other aspect was, you don't write code, and so, you aren't. Your opinion isn't valuable. And so,*
> *you have to be really competent in what you know, and not be afraid to say it. Heh!* (Interview 15).

In this situation, the respondent is not only aware of the stigmatizing characteristic but knows her gender pushes its awareness past irrelevancy into active processing and categorization. External research supports the issue of gender in a male-dominated male field (Reid, Allen, Armstrong, & Riemenschneider, 2010). Thus, a potentially representative negative label used to describe this occurrence may be *discriminatory*.

Another potentially discreditable characteristic exists in mental ability. The comment below suggests a façade in one's achievement against aptitude. In the early days of technology certifications, some IT professionals that received their network certifications, such as Novell's Certified Novell Engineer (CNE) and Microsoft's Certified Systems Engineer (MCSE) were unable to apply their knowledge effectively. When asked to perform basic network troubleshooting and implementations, they were often ineffective. This perceived incompetence generated the perception that IT certifications were ineffective, using labels as "Paper CNE" or "Paper MCSE."

> *A paper tiger is somebody that sits out there and reads all the Microsoft books and call them an*
> *MCSE...does well on taking a test but you set them up in a server environment, and the first time*
> *they see a blue screen on a box they freak out* (Interviews 1 & 2).

The final except below suggests an internal power play from an IT professional at the *corporate* level with one at the local level. In this instance, the perception of the *corporate* IT professional is a disregard of their mission: to assist their customers and business units in being more efficient. In this case, the peer is conflicted with the principles of the IT role as in the following comment. A likely representative label for customer apathy may be *egotism*.

> *We don't give a damn what the faculty want, we're going to do it this way, and they are going to*
> *conform* (Interview 3).

In sum, we found that relationships with non-IT-based groups, whether formal or informal, potentially promote productive and non-productive outcomes. These outcomes can affect between-group productivity and, ultimately, the organization (Moore & Love, 2013). The most significant contributor to the dystopia between groups stems from communication. Anchors of productive between-group interaction hinges on accurate and frequent contact, especially in critical situations. In this regard, the IT professional is commonly stereotyped as focused, principled, and introverted (García-Crespo, Colomo-Palacios, Miguel-Gómez, & Tovar-Caro, 2008). Thus, it is likely that this profile introduces social complexities between groups. What is critical is the observation of nascent direct indications (labels) of stigma, but more on the hidden interplay between perceptions and situations. The data appears to suggest that during stressful situations such as access to critical technology and data, or when an individual's technical competence is in question, responses tended to be non-productive.

DISCUSSION

The primary objective of our research was to explore the notion of perceived stigma on IT professionals. Stigmatization implies a division between social entities suggesting a preference for the hegemony than other groups (Goffman, 1963). These "lesser" groups contain an attribute or mark, whether overt or covert, that is deemed by the hegemony as undesirable (Goffman, 1963; Link & Phelan 2001). For example, some workers are a universal necessity, but are often socially accepted as a lower-order group of individuals such as city utility workers as "garbage men," accountants as "bean counters," construction laborers as "blue-collar workers," and IT professionals as "nerds/geeks." The awareness of a double-standard attributed to stigmatization can damage personal and group relationships (Moore & Love, 2013). Current research on stigma relating to IT professionals lacks in ways that encourage concern regarding the realities of intergroup relations and performance. First, the push for IT/Business alignment, digital innovation, and e-commerce performance necessitates productive employee relationships. In the present study, we applied Goffman's (1963) and Link & Phelan's (2001) stigma concept to IT professionals to explore the perception of devalued interactions. Second, we addressed the notion of stigma as a phenomenon that appears to exist covertly. By analyzing participant responses on several different occupational experiences, a picture

began to emerge. This image, while incomplete, provides detail into the types of relationships IT professionals believe they have with his/her peer group and customers. This representation also leads us to conclude that while some stigmatizing outcomes are evident, a covert level of disenfranchisement exists.

Results from our research suggest that, overall, relationships, attitude, personal characteristics, incompetence, and discounted expertise were salient among our participants. First, relationships between individuals and groups appear to exist on mutual understanding and respect. For some participants, interactions with non-IT groups were challenging during stressful situations such as angry customers, ambivalent management, communication, training, and unreasonable expectations. For example, in some interviews, our participants perceived that while management wants technical advice, he/she rarely takes it. In diagnostic situations, customers appear to knowingly or unknowingly conceal the true nature of the issue. For example, one participant recalled an event where a customer blamed him for their problems. In reality, the customer had caused the issue – as one quipped "IT can be a convenient place to hang excuses." During the interview process, these types of events were recalled quickly and often generated additional memory of unproductive situations between groups. Second, embedded in relational issues were negative attitudes. A collective experience in IT is the blame game. When technology fails, IT is the reason. The criticality of a function appeared to influence the hostility level toward IT, in some cases making assistance efforts difficult. Some of our participants remarked that when technology fails, some users tend to respond aggressively. Constant negativity can weaken the expectations of civility resulting in reduced intergroup cohesion and overall productivity. Third, during stressful situations, our participants perceived others with negative stereotypes such as *"idiot," "Stupid," "kindergartner," and "paper tiger."* Factors such as personality, emotional disposition, and previous interactions could bolster or mitigate such negative attributions. Forth, eight of our participants referred to 34 instances of incompetence of peer groups and non-IT groups. Perceptions are that peers and users should be able to work with technology at a basic level. In essence, one's title, education, and pay should require a level of technological proficiency. As evinced in the results, the level of technical acumen appeared to raise the level of friction between IT and user groups. These instances tended to result in frustration and stress with some participants. Finally, in eight interviews, we found 17 situational instances where participants felt circumvented. As evinced in the current research, IT is asked to provide suggestions and expert opinions on technology. IT is often left to deal with consequences from a decision he/she does not support. Continual instances of these situations can affect team relationships.

Overall, we found numerous examples of overt and covert perceptions between IT and non-IT groups. Goffman's (1963) discussion on stigmatization links to an observable and socially undesirable manifestation such that in conditions where few visible attributes are present, individuals tend to rely on inferential processes. For example, not all IT professionals are "fat." However, research suggests that they are arrogant, unfriendly, and tacky. These characteristics are covert until interpreted by others as good or bad. Thus, some in IT who are fit, well-educated, and maintain no undesirable physical manifestations may maintain poor social skills. From a theoretical perspective, the present study suggests the likelihood that despite perceptions that IT is a desirable field, the present study suggests an undertow of cultural differences between the IT and non-IT groups exists. A crucial aspect of IT stigma that is important to understand is that some prefer job autonomy and limited social requirements. In some interviews, managers and team leaders continue to provide the interface between the coders and the customer. Thus, in some cases, the stigma of an IT professional as introverted continued to exist and tagged as a challenge to overcome (Robert Half Technology, 2013). The structure of the IT persona potentially regards working individually with technology such that his/her best work is in isolation, free of interpersonal interactions. Thus, Moore and Love's (2013) research on prestigious stigma can apply such that IT professionals may care less about societal labels and more about technology.

The results of the present research revealed an unexpected outcome. The initial assumption focused on the devaluing of the IT professional to the firm and associated business units. As evidenced in the analysis, there are multiple relationships between IT and non-IT groups, and IT and their peers. IT appears to maintain negative labels on their customers and their peers; IT peers maintain negative labels on each other, and customers manage negative labels on IT. Thus, some groups potentially engage in diminishing the contributions of the other, thereby reducing the efficiency and effectiveness each can have on each other and the firm. This paper has highlighted how the IT

professional and their associated customers and business units can access and differentiate undesirable characteristics from each other. The interview responses, at face value, paint a picture of how IT professionals perceive themselves and their peers as devalued. However, a deeper understanding of devaluation is incomplete until further research examines the customer/business unit perspective. What is evident in our study are the potentially inaccurate assessments of differences and labeling (Goffman, 1963; Jones et al., 1984). This outcome strengthens our belief in stigma development.

LIMITATIONS AND FUTURE RESEARCH

Our study of IT stigma is not without limitations. First, our research is mainly exploratory. The authors sought to establish the existence of adverse stereotypes applied to IT professionals, and the possibility of forming the notion of stigma based on appropriate and logical antecedents to its development. Admittedly, the exploratory nature of this study does not provide an exhaustive list of potential precursors. However, future research may validate and expand the antecedents found in this study. Many other possibilities could exist to begin the formation of such an opportunity of stigma on IT. The included antecedents were pervasive in the literature review. Second, we made no propositions as to the structure of the included precursors on stigma. Since the development of this research relies on the perception of the IT professional, we feel it is essential to extend this study to incorporate a pair-wise study that includes non-IT impressions. Future research should focus on additional elements exist to define the negative aspect of stereotypes and stigma on IT. Finally, the sample size used in this analysis is small and only contains the perceptions of the IT group. However, this limitation is tempered by the consistency of outcomes as presented by several different interviewees working in various geographically dispersed organizations. Even though the study is exploratory, the occurrence of recurrent themes regarding stereotypes offers an initial foundation to extend future research. Finally, future research should focus on forming additional constructs to the IT stigma to determine if (1) a real relationship exists, (2) the relationship influences IT and non-IT relationships, and (3) the link does exist, does it affect overall organizational performance.

CONCLUSION

The IT industry has undergone a clear predominant pattern of acceptance and circumvention. Twenty-five years ago, mainstream computing included many visionaries assisting the scientific and business community with this new technology. As early as 1972, many could not see a future for computing, subsequently marking an end to the innovation. However, computing has seen the emergence of the internet, Enterprise Resource Planning systems, artificial intelligence, Amazon, Google, and Microsoft. Organizations like Microsoft offer certification tracks for IT professionals providing organizations potentially tech-smart employees capable of pushing technology forward. The pervasiveness of computing is apparent and decisively embedded in our culture. As such, the technology field, like many other areas, evolves, learning from past mistakes, increasing capacity and functionality, and providing multiple solutions. However, contemporary times have seen a stark change in IT. The once-dominant group for innovativeness is now struggling to legitimize their existence. More importantly, are our visionaries now stigmatized because of negative impressions on previous exclusivity or poor service are possible next research streams. There are potentially multiple paths to stigma through the stereotyping process. Possibly, some groups engage in diminishing the contributions of the other, thereby reducing the efficiency and effectiveness each can have on each other and the organization.

ACKNOWLEDGMENTS

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APPENDIX A

Interview guide

1. What is your job title?
2. What are your responsibilities in IT?
3. How long have you been in this job?
4. How long have you been in IT?
5. What other IT jobs have you had?
6. Give me an overview of your typical workday.
7. What is the most stressful part of your job?
8. What is the most rewarding part of your job?
9. In your typical day, who do you talk to? Are they in your workgroup, department, and organization?
10. Do you normally work independently or as part of a group or department?
11. In your typical day, about what percentages of time do you spend with people in your department, outside your department, outside your organization?

12. In comparison to other work activities, how would you rate the importance of your work interaction with people in your department, outside your department, outside your organization?
13. Describe your interactions with others outside your department or workgroup (internal customers, external customers, other IT workers)? What is the purpose of the interaction?
14. What are some of the obstacles or challenges you face when working with others outside your department or workgroup?
15. How do you overcome those challenges?
16. For the following activities, are these activities a part of your job? If so, how important are they to your job? Can you give me an example?
    a. Changing your terminology or presentation style to communicate effectively with others outside your department or workgroup.
    b. Gathering information or resources from outside your department or workgroup either for your own use or to share with colleagues.
    c. Representing the interests or viewpoints of your department or workgroup to external parties.
    d. Protecting or buffering your department or workgroup from external influences.
    e. Negotiating with parties outside your department or workgroup.
    f. Training parties outside your department or workgroup, either formally or informally.
    g. Dealing with conflict situations with parties outside your department or workgroup.
    h. Presenting a particular demeanor when you're dealing with others outside your department or workgroup.
    i. Covering up or hiding emotions when you're dealing with others outside your department.
    j. Project emotions you don't feel when you are dealing with others outside your department.
17. In comparison with other work activities, how stressful are your interactions with those outside your department or workgroup? More, less, about the same? Why?
18. How do you cope with those stresses?
19. What advice would you give to an IT person starting in a position like yours?