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The Organizational Impact of Digital Natives: How Organizations are Responding to the Next Generation of Knowledge Workers

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Abstract

Knowledge work comprises—and likely will continue to comprise—most of the value creation in the developed world, and many of the next generation of knowledge workers (sometimes called "millennials") have grown up in a world surrounded by connectivity and digital tools. They are "net natives" or "digital natives." These are people who have never known a world without the Internet, instant messaging, online games, and the possibility of persistent digital presence with networks of people. They expect immediate access to information, and they interact naturally with communities that are not bound by geographic or organizational boundaries.

This is the generation who are now beginning to enter the workplace; they will become the knowledge workers of the future. Because of their growing up in a digital world, they are prepared for their careers work with a different set of skill sets than previous generations. They have developed behavioral and ethical norms in sharing and using technology that differ significantly from the previous generations. Yet as they enter the workforce, filling the the projected employment gap as millions of "baby boomers" retire over the next decade, they find themselves in organizational structures and using systems designed by and for the baby boomers. This is likely to result in tensions between the newcomers to the organizations and the structures and systems of the organizations they enter.

Conceptual Framework

The conceptual framework for this study is based on the observation that information flows are enhanced or inhibited not only by ethics and accepted norms ("it's not right to share private information" and "we don't rat on friends to the police"), but also may be enabled or constrained by information technology and systems (e.g., peer-peer networked enabled file sharing and local area networks often will block Internet access to particular web sites). In other words, "information gate keeping" can involve both human and technical actors, and these actors do not behave independently.

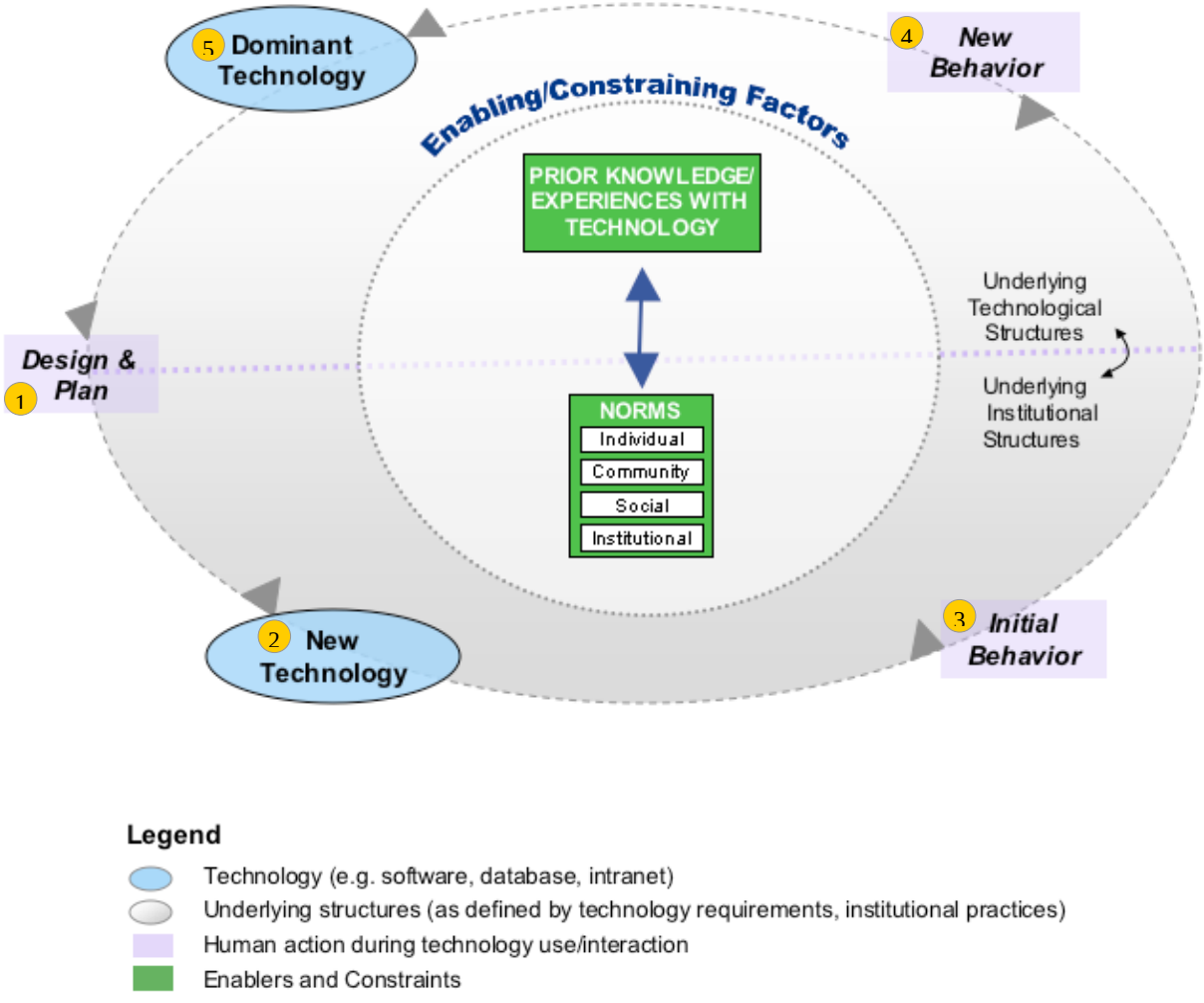
Stated differently, the conceptual framework posits that in any society or culture (or organization), the ethics (behavioral norms) regarding the perceptions and use of information technology, and the information technologies and systems used by this culture, have a recursive relationship. Changes in one can enable or inhibit changes in the other. This recursive relationship has been recognized by studies on the perception and use of management information systems (Orlikowski, 1992).

The preliminary conceptual model for this study on the relationship between the behavioral norms of digital natives and information technology is shown in Figure 1. This general

framework acknowledges that tensions may arise from multiple mismatches or incompatibilities (e.g., rate of change of technologies and norms, organizational-individual norms, individual-social norms, etc.). Recognizing and resolving these tensions present challenges for an organization's executives. The focus of this study is on net natives in knowledge work and the challenges that may be faced by CIOs and CTOs.

The remainder of the paper presents the demographics of the digital natives, the anticipated sources of tensions as they enter the workplace, and the results of an exploratory study that

Figure 1. Preliminary Recursive Model



Overview of Paper

The subsequent section discusses the values and behavioral characteristics of digital natives, especially the characteristics and behavior associated with learning and the use of information technology. As this section illustrates, the behaviors of digital natives contrast with those of the previous generation, and these behaviors are summarized in a scenario, or vignette, that highlights some of the issues that CIOs may face as they replace the current knowledge management workforce.

The next section summarizes the results of telephone interviews with CIOs and CTOs on their observations and their comments on the issues highlighted in the scenario. The final section presents a summary of the findings and conclusions from the study. Appendixes provide more detail about the context and sources of information, the research method and the conceptual model underlying the research, and the scenario used to initiate discussions with the CIOs and CTOs.

Demographic Perspective

The U.S. workforce will see many changes over the next ten years as the demographics change. Baby boomers will be entering retirement, and the next generations will be moving into new roles and entering the workforce. Baby boomers, generally taken to be those born between 1946 and 1964, comprised 82.8 million individuals in 2000 (Bureau, 2000). In 2008, this group is projected to make up 40 percent of the U.S. labor force, an increase from 33 percent in 1998 (Dohm, 2000). By the year 2018, all but the youngest baby boomers will be at retirement age. While the mean retirement age has been increasing, due to changes to Social Security benefits, pensions, and job demand (Karoly & Panis, 2004), the millions of baby boomers leaving the labor force will still leave a significant gap for companies to bridge. The problem is exacerbated by a projected 7 percent (3 million) decline in the labor force of workers aged 25 to 44 in the last ten years. Furthermore, this generation of workers, consisting mostly of those in the Generation X classification, will be taking on more middle and upper management roles, leaving it up to younger workers take on jobs in the middle half of the workforce (Baldoni, 2006).

Members of this younger generation of workers are identified as digital natives, a reference to the fact that individuals within this age group have never known a world without the Internet and associated communication technologies. This is the largest cohort since the baby boomers and while the number of young people entering the workforce is expected to increase, it will not be in tandem with the cohort that is retiring (Karoly & Panis, 2004). Thus, companies who are now facing the retirement bust of the baby boomer generation will now need to come up with ways to recruit and retain these digital natives (Raines, 2003).

Table 1 shows the comparison among the three generations. Note that the digital natives generation, while not as numerous as the baby boomers, has about 36% more members than generation X. (It should also be noted that the cutoff for the upper and lower limits of the generations—determining the range—is somewhat arbitrary. The estimates in the table provide a guide to the relative sizes of the groups.)

Table 1. Population Estimates of Three Generations of Workers

Generation	Birth Year	Age in 2000 Census	Current Age in 2007	Population Estimates *
Baby Boomers	1946-1964	36-54	43-61	82.8 million
Generation X	1965-1977	20-35	27-42	50.9 million
Digital Natives	1978-1994	6-22	13-29	69.1 million

* Population estimates based on 2000 Census

While generational labeling is helpful for identifying commonalities among different age cohorts, it is important to acknowledge a few limitations of this type of assignment. Obvious differences in personalities, upbringing, and life experiences make every individual different. Thus, individuals vary across generations and may not contain the same characteristics as others in their cohort. It is also important to be cognizant of the digital divide that may exist among different individuals of a cohort, with some individuals having more access to technology while others may have limited exposure. This is particularly important for studying digital natives, as technology has played such a large role in the individual development of this generation. Thus, individuals within the cohort of digital natives, while belonging to the same generation, may not exhibit the same characteristics described in this study due to varying degrees of exposure to technology. In addition, individuals born during transitional years between cohorts may exhibit characteristics of each cohort, but may not fall neatly into either one.

Characterizing the Generation

A good deal of research already exists on this new generation as today's researchers, educators, corporations, and employers recognize the need to adapt to their learning styles and interests. In addition, the generation has been a target for research given its large population and market potential. A number of terms have been applied to this generation, generally considered to be those born between 1978 and 1994 including, just to name a few, Generation Y, Millennials, Generation Me, Net Natives, and the Net Generation. For the purposes of our research, we will identify this generation as the 'digital natives', a term coined by Marc Prensky (Prensky, 2001 Dec) who describes today's youth as "native speakers" of the digital language of computers, video games, and the Internet. This term seems to capture best the idea of one born into an information society where information and communication technologies have become central to the society's economic, social, and cultural identity.

Digital Natives' Experiences

As defined for this study, digital natives today are between the ages of 13 to 29. It is estimated that they have spent over 10,000 hours playing videogames, sent and received over 200,000 emails and instant messages, spent over 10,000 hours talking on cell phones, and over 20,000 hours watching television *before* they even graduate from college (Prensky, 2001 Dec). A large majority of teens in the United States (87%) use the Internet (Lenhart, Madden, & Hitlin, 2005), which plays a major role in their relationships with their friends, families, and schools. A 2001 study shows close to 13 million teenagers using instant messaging, with a typical IM session

lasting more than half an hour and involving three or more buddies (Lenhart, Rainie, & Lewis, 2001). These numbers have likely grown over the last six years, as Internet access in the home has grown by more than 76 percent from 2000 to 2005 (Bureau, 2006).

Although most of the estimates and studies cited in this study focus on the United States and North America, other developed nations also have high connectivity, and one may expect similar findings in other nations. Most developing nations themselves are experiencing a rapid increase in connectivity (. This indicates that the phenomena described by North American studies are being replicated in other countries, and the speed with which digital technology is being adopted around the globe suggests that the findings and conclusions of these North American observers may be generalized. (As discussed in the later section, interviews with CIOs and CTOs suggest that they have anecdotal evidence of this from their own experiences.)

The exposure to these different forms of visual and interactive media in particular poses a different type of challenge to the brain that is different from processes required for reading, or watching television (Johnson, 2005, May). Experiences with these new forms of media are more prevalent in the digital native, and those who have grown up immersed in these forms of media think and process information differently (Prensky, 2001 Oct). For example, consider the role of video games in the lives of digital natives. Video games were the first truly interactive systems that engaged participants and required their full participation. They allowed players to develop into active producers of their game world rather than passive consumers (Gee, 2003). This has carried over into new Web 2.0 applications and communication technologies where individuals respond, via synchronous and asynchronous communications, with other participants and are able to produce their own content, and have other people commenting on it. This constant query and response environment has produced individuals who expect information to be sent and received interactively, in contrast to boomers whose brains are programmed to receive information through one-way communication media such as television or the written word (Prensky, 2001 Dec).

Exposure to the Internet itself provides a means for exploration of different ideas, cultures, and opinions at just a few mouse-clicks away. This exposure to more of the world is reflected by the open-mindedness of the digital native, as well as their strong feelings on social issues and resulting active participation in civic duty. In fact, online communities are becoming more of an outlet for young people to participate in their communities by providing connections to people of different backgrounds (Horrigan, 2001). Knowledge also means that they may have higher expectation for things because they know what the possibilities are. These values may be reflected in individuals who demand more out of the organizations they support and work for, so that actions match their own value systems (Abram & Luther, 2004).

While technology certainly plays a major role in the digital native, the environment and culture in which they were raised also defines them. They are commonly defined as being independent, open-minded, outspoken, and highly confident. These attributes are a result of their baby boomer upbringing, which placed an emphasis on valuing the self and on being open and honest about one's values and beliefs (Twenge, 2006). This approach was not only reflected in home life but in school and extra-curricular activities as well, where a "self-esteem curriculum" placed less emphasis on academic performance, and more on participation and "doing your best."

(Twenge, 2006) argues that this has resulted in a generation that is less prepared to face the harsh realities of the real-world, where competition and self-control are necessary to succeed. While it is arguable whether this generation actually faces a disadvantage from this, it is clear that the emphasis of the self has resulted in a generation that is more independent and outspoken with their ideas.

Another common observation about the behavior of digital natives is their persistent tendency to multitask. While multitasking is certainly a common behavior among many people, multitasking in the digital native consists of not only doing a few tasks at once, but carrying the concept to new levels. A digital native may be observed doing multiple work tasks while communicating via Instant Messenger with five different people, listening to music on one's iPod, text messaging one or more friends over the phone. Some observers (Abram & Luther, 2004) describe this as a key skill of this generation as they are able to combine multiple applications simultaneously into a single environment. The role of communication technologies in digital natives' lives clearly shows in this behavior. One can argue that this began in the early days where adaptation to new forms of media began through video games and has progressed to the current role of new Web 2.0 applications and communication technologies that are a foundational part of the digital native's environment and an instrumental part in their daily activities. This constant query and response environment has produced individuals who are now accustomed to responding to multiple requests at once. Furthermore, these interactive technologies allow individuals to be self-reliant, as well as collaborative, as they are the active participants in a game or conversation which depends on their actions to continue, and often involve other participants who communicate together to form the basis of a online community or gaming network. This collaborative nature is a reflection of how online communications promote social support and expanded social interaction.

Summary: Characteristics and Values

In the workplace and in interactions with others, the behavioral characteristics of digital natives are exhibited in ways that often may be in contrast with other generations. Table 2 compares the set of values, attitudes, and styles of digital natives with those of baby boomers. Many of the differences highlighted in this table illustrate the potential tensions that might arise as the digital natives join organizations that have structures and norms that were designed (or evolved over time) to serve the needs and behavioral norms for earlier generations.

The independent and highly collaborative nature of digital natives contrasts with those of boomers who may be more task-oriented and independent in working style. This influence may be reflected as organizations begin to move away from hierarchical, command based work towards more collaborative, networked infrastructures (Tapscott, 1998). In addition, digital natives may better respond to experiential learning, while most organizations may still rely on more (passive) lecture-based training. Digital natives may find themselves at odds with more experienced staff persons who expect to be respected, but may not automatically get this from their younger counterparts.

Table 2: A Comparison of Working Styles of Digital Natives and Baby Boomers

Values, Attitudes, and Styles	*Digital Natives*	*Baby Boomers*
Work Style	Multitasking	Time management
Learning Style	Learn from experience	Learn from instruction
Collaboration	Collaborative	Independent
Motivations	Positive reinforcement	Competition
View on Authority	Respect for others is earned	Respect for authority
Structure	Decentralized, non-hierarchical, inclusive	Centralized, hierarchical, exclusive
Information Access	Access for all	Access to those in power

Organizational Reactions: An Exploratory Study

Developing a Scenario

The research team developed a narrative (scenario) as a succinct way to identify a set of issues that might face Chief Information Officers (CIOs), Chief Technical Officers, and other executives who might be hiring digital natives for their organization. This narrative provided a way to communicate the decision challenges that might face executives in knowledge-based operations or other organizations that may be hiring new employees who will be expected to use information and communications technologies as part of their work.

This scenario served to initiate and stimulate discussions with executives via telephone interviews. These interviews enabled the team to accomplish several objectives: assess the face validity of the scenarios; identify other behaviors and concerns not included in the scenario; determine the issues that were of greatest concern to the executives; and initiate a discussion of strategies and tactics currently being employed (or anticipated) to deal with these concerns.

Results of Interviews with CIOs and CTOs

Ten executives, each a CIO or a CTO, agreed to discuss the research with the team. The organizations for which the executives were employed included units from both government and for-profit corporations. The for-profit sector represented a variety of businesses, from engineering firms to health care. These were typically large and established firms that used information technology as a core supporting infrastructure, although a few relatively new organizations were developing Internet and web-based services. Because this was an exploratory study, we made no attempt to have any representative sample. We did not ask their ages, but some volunteered that they were in their 40s, and this is consistent with their organizational position and responsibilities, and we may assume that most are at least this age; a few may be in their 50s.

We emailed each executive the scenario and a consent form (disclosure statement outlining out the information would be used) required by the university's policy on human subject research. In the email, we indicated that we would like to record the discussion with the understanding that

we would follow the conditions of the consent form (no quotes attributed to a named individual and reporting only anonymous results).

Each of the executives agreed to have the discussion recorded. The following summary is based on an informal content and thematic analysis of the transcripts of the telephone discussions with these CIOs and CTOs.

Reactions to Specific Highlighted Issues

Multi-tasking elicited mixed but skeptical responses—some openness to tolerating it, recognizing that it could create a culture issue within the organization if managers tried to suppress it. Most confessed to doubting the efficiency of anyone doing multi-tasking:

> *I think also one of the things I see with email and instant messaging is I think that a lot of people, and sometimes ourselves, we think we can multitask and [do] instant messaging listening to a meeting, but in reality I think the human mind still can only do one thing well at a time.* [1]

At least one worried about the evolution of how multi-tasking generally, and the persistent conversations of instant messaging, reflected on the characters of those who have grown up this way:

> *Multitasking, like… people almost have three tasks running simultaneously every hour of the day or more. I think that is , in my mind, an unresolved question, because I know when I did technology with my hands-on it type stuff, I kind of had to shut the world out and focus down very hard to have a continuous stream of focused analysis going on… so if people…have developed almost an ADD-type* [i.e., Attention Deficiency Disorder] *need because they [have become so multi that] …they're listening to their music, they're chatting with three different people online, and you know something other, they're taking pop-ups…if that's what they grew up and they're getting, so that anything else is boring to them… we almost create an ADD generation in this group. And what kind of a problem does that cause in your ability to stay focused long enough to do some technology construction or any other job work that requires some thought or focus.*

Another had a similar concern about focus and the digital natives:

> *I overheard an interesting conversation the other day in a Starbucks between two, clearly millennial generation, people. They were maybe 19, maybe 20, 21, but certainly not any older than that and didn't appear to be married or with kids or you know—on into their lives…and they were going on and on about how long they were both working at the same company, been at the same company, and I was sort of waiting for the punch line, and you know, it was time to leave already for them, and one of them had been there for six weeks and the other had been there 8 weeks and you're going "Wow."*

[1] On the other hand, a project leader at a high technology firm heard about the discussion on multitasking. His reaction was more accepting. "My most productive programmer watches TV while he is working," he said, evoking surprise from others in the discussion.

Information sharing across organizational boundaries was consistently viewed as an issue. CIOs/CTOs uniformly expressed concerns about the wasting of time and the potential leakage of intellectual property through free-flowing communications across organizational boundaries. A typical organizational response is to place restrictions on communications and the use of particular technologies.

> *We've restricted instant messaging and blogs. And until we get another fight years down the road we're not going to open up instant messaging. …when we do open up instant messaging it will be for internal communications only. …What we are trying to do is provide business tools to perform business functions for business solutions, so when people come in, you know we make them sign all the usual security agreements and tell them that the technology tools in the company are for business purposes…occasional personal use is fine…but instant messaging and anything with blogging or chat rooms or anything like that isn't acceptable to the company.*

Issues Not Highlighted in the Scenario

Several norms and trends of technology use—some of which cut across generational lines—were mentioned as concerns by those we interviewed even though they were not specifically highlighted in the scenario. The CIOs/CTOs noted that the *work-personal life balance* and *the quality of life* is changing—and not always for the better—by the changes in cultural expectations associated with the technologies. The mobility and web presence enabled by established technologies enable workers to maintain persistent presence (persistent conversations) and to be "always on." As one CIO observed,

> *I think one of the conclusions I have—and it's not only the young generation--it really is drastically changing our work pattern because there is definitely a blur between work and personal life on both side,s meaning that you work in your personal life because you have your Blackberry your IM, and you can work from home when there is something that you need to do, and vice versa you tend to do some personal things from work because you have access to the internet and all these different ways of communicating with the outside world.*

The related trend toward ubiquitous mobile communications means that an organization's capability to monitor and control information flow in and out of the organization is threatened. Even if control is not an issue, the effective use of these low cost mobile devices is an issue. One CIO expressed interest in what may be in the future:

> *…the idea of smartphones and that type of device. It would be interesting to see if people start bringing in their own technology equipment and using it in the office at the same time. It's this next generation of personal computers that are the size of paperback novels. You know[if] those things actually take off.... we'd like to used those as a business tool. I could see people buying those for 2-300 dollars and driving them into the office the way they do personal phones.*

Realism of the Scenario

The scenario was uniformly judged by the executives to be realistic—it highlighted digital natives' behavior and subsequent tensions. Each executive had, to some degree, made these observations either within their own organizations or, in some cases, at home with their own digital native children. Most of the executives noted that we are just beginning to see the evidence of the tensions that can arise from the issues raised in the scenario. Asked to provide a reaction to the scenario, one executive said it was

> *Well, largely kind of "duh"…I think it's an extremely realistic scenario.*

Another executive noted:

> *I…laughed…we have similar types [of] scenarios going on in the company.*
>
> *The new kids coming in are much like my college children…they think email is old-people technology…I have to text message my kids or I won't be able to get them to respond.*

However, two executives were unsure that the tensions they observed in their organizations were associated with age differences. One believed that the tension was simply one of how readily members of their staff were will willing to adopt, or even try, new technologies.

> *The fundamental…dynamic…is one I've seen, but it's not necessarily one…that breaks down along generational lines. …some people seem to be, I don't know, much looser, much more dynamic, in how they develop or how they work and other folks are more structured, more process-oriented.*

Further probing indicated that this person's organization had employees within a fairly narrow age range—from the mid-20s to the early 40s. The company started and remains a cutting edge high technology firm, one that is creating a web-based service, and most of the technical employees would be considered to be early adopters of technology.

> *…to this day, IM communications remain a pretty important part of [my company's] culture. …it's not quite as much as it used to be…we would have two account managers sitting right next to each other, IMing each other…but it still remains an important part of the culture, especially since we've stretched across [multiple offices] and need to collaborate across all these…*

Discussion with the other executive revealed that the median age in the organization was late 40s, indicating that this organization was atypical. This organization did not have a wide range of ages within its employees.

Overall, the scenario resonated with most of the executives. Some noted that they were two or more layers of supervision separated from the new (younger) employees and perhaps were not as aware of the issues as others in the organization.

Differences among Sectors and Sizes of Organizations

Even among this small sample of executives, the executives recognized that perceptions of the timing and severity of the tensions varied according to sector and type of business. For examples,

> *I'm in the public sector and you read…about how gray we're getting because we don't tend to attract the millennials, although we're starting to get a [few] because they have a desire to "do good" and there are a lot of government jobs where you can quote/unquote "do good." So we're starting to see more influx…but we don't see it as much as I hear about it from people anecdotally in the private sector…*
>
> *I've probably had quite limited exposure to the people that this is addressing in terms of that generation. …I think it will be a real issue for all companies eventually…if even an older, established, non-technology company starts to see rotation of in their IT organization…as the boomers are retiring or being replaced…I would imagine that they are going to experiences some of these challenges. It's just a question of…how significant the issue becomes, how quickly.*

Differences among Organizations and National Cultures

The executives acknowledged differences in both organizational and national cultures. An organization that is just starting out, one executive noted, has little to lose and can risk more. It can be tolerant to a more open approach to work practices and to sharing information. A more established firm may have intellectual property that is essential to their product, service, or operations, and its business model may require that it be very protective of this asset.

The executives' comments on differences in norms across national cultures were not consistent, suggesting the need for more observation and studies. The CIO of one firm, which has operations in three continents, believes that both demographics and national traditions affect the use of information technologies.

> *…we look at other countries and yes there are definitely differences…China would have even more differences because when you look at people who are of the younger generation who are starting in the work force now in China [compared with] people who have lived their lives [in] traditional communist China, [the differences] are definitely much bigger than in the US because they are not used to so much change.*
>
> *Even within Europe you have some countries being either adapting better to change or adapting less to change like in Finland for example because of the influence of Nokia they have been very quickly, you know when you look at the ratio of people connected to the internet and using these sorts of tools, Finland would probably be ahead of the US. But there are other countries that have seen much slower development the internet and new tools and so even within Europe there are significant differences from country to country. …smaller countries like Finland, Holland, Switzerland, in order to survive, they have to have contact with the outside, where countries like France and Germany have*

been most self-sufficient in the past so they are not as open to change coming from the outside well—that's one thing. …I think also a lot of people in France are not open to change and things tend to change slower in France and Germany.

Summary: Choosing a Cautionary, Responsive, or Proactive Strategy?

The executives reported different strategies for responding to the tensions (both currently existing tensions and those anticipated) as the digital natives move into the workplace. The strategies might be viewed as *cautionary* ("wait and see"), *responsive* ("adapt and make tradeoffs") and *proactive* ("engage").

The wait and see group believe that their processes are "tried and true," and that development processes provide a necessary structure that is unappreciated by the newcomers. They believe that no changes are currently necessary, and they will wait until problems become more evident before they modify their recruiting, training, or internal processes. Such organizations are likely to restrict particular sites (e.g., Facebook) and to prohibit Instant Messaging clients on the organization's computers.

The second group acknowledges that changes may be needed. They see or anticipate that the expectations of digital natives are, or will, create pressure for change. They acknowledge that they need to react to these pressures, and they are viewing each issue as a situation requiring tradeoffs. They examine the potential uses of the technology and ask, "are the expected benefits worth the expected costs or risks?" Organizations using this strategy increase their training and require annual refresher courses on compliance with company policies and practices. They may use the technologies under restricted conditions. For example, one firm uses wikis and blogs, but only internally, on their own servers inside the organization's firewall.

The "engage" strategy is normal for new firms and firms whose products and services depend on rapid development of these products and services by teams comprised of digital natives—such a strategy is part of the culture. The engage strategy is not completely absent from more established firms, however.

The CIO of one mature firm reported that the organization recently set up an information management leadership program. The program, a two year rotational program for selected employees "fresh out of college," is intended to develop new company leaders. The new employees get a variety of experience in a short time and are provided with mentors and sponsors from upper management. Additionally, the organization seeks inputs from these employees on their concepts of sharing and collaborating in work. The voices of these new employees become part of the discussion and debate about what technology to use and how to set up new systems.

Conclusions and Discussion

Members of the millennial generation, or digital natives, use information in ways that differ significantly from those of prior generations. They have different behavioral norms from prior generations, and these behaviors may be viewed as inefficient, ineffective, or even unethical by

those already in the work force. Few organizations are currently set up to accommodate these behaviors. Most CIOs and CTOs recognize the challenge they will be facing as their workforce becomes more populated with digital natives, and some executives already are working to deal with the issues. For those that do recognize the issues, they are using (or planning to use) different strategies. It appears that there is no single strategy appropriate for all organizations.

This study was designed and conducted as an exploratory study, and the initial focus was on ethics and behavioral norms of the digital natives and how these norms may create tensions with existing organizational norms. Rather than framing these tensions as ethical issues, CIOs and CTOs tend to see the issues—which they recognize and acknowledge as significant challenges—more as strategic business issues and choices as digital natives become a larger portion of the knowledge-based workforce.

The tensions identified in the study and summarized in the scenario have face validity—they make sense when compared with anecdotal experiences—and they also are anchored in limited empirical evidence from interviews. Because of the limited empirical evidence, the findings should not be considered definitive or scientifically proven.

To a great extent, these findings are "forward looking" and point to issues that deserve attention from executives, and they warrant additional research from academics. The findings provide a rich basis for firms to discuss strategies and future plans for exploiting new technologies and for working effectively with the digital natives who are most familiar with these technologies.

Accommodation and adaptation both by existing organizations and incoming digital natives are likely, meaning that the tensions will be resolved over time as individual and organizational norms come closer together. Some (creative) tension may remain, providing the opportunity for rethinking the organization and its information infrastructure. The results suggest that while there may be templates oriented around the reactions outlined here, the accommodation and adaptation for a specific organization should depend on a thorough discussion within the organization of the competitive environment and the organization's choices of what it chooses as its core competence in this environment.

On the other hand, emerging enterprises may develop organizational forms and processes that are more congruent with the behavioral norms of digital natives. Within such organizations, the digital natives may need no adaptation, and the organization may thrive under new business models. For example, Google, which states that its primary assets are its employees (i.e., not intellectual property), claims that it does not experience the tensions exhibited in the scenario used for the study.

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