

How Executives Perceive the Net Generation

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Abstract

This paper reports on an exploratory study of how executives in organizations perceive the entrance of the “*net generation*” into the workplace. We approached this question by collecting data from interviews, focus groups, and an online survey. The results show that executives perceive tensions associated with values and behaviors of the *net generation* workers as the younger workers enter current organizational settings as well as technology-related issues not solely associated with the younger generation. The paper discusses the different organizational mechanisms and strategies executives use to address these tensions. Particularly, we discuss executives’ preference for top-down strategies and their tendency to address the triad of technology-values-behavior as separate components instead of a unified concept.

INTRODUCTION and OVERVIEW

Knowledge work comprises—and likely will continue to comprise—most of the value creation in the developed world. Observers note that members of the generation just now coming into the workforce as knowledge workers have grown up in a world surrounded by technologies and digital tools that enable a wider range of communication possibilities and greater connectivity than ever before in the developed world and even in developing economies. Researchers label this generation born between 1978 and 1994 as the *Net Generation* because of their perceptions of this generation as immersed in a digital environment (Tapscott, 2009), and the members of this group as “net geners.” We are using this label because it is useful to highlight a portion of the generation that has been actively engaged in the digital world. However, we acknowledge that within this age group, there are individual differences in characteristics and different experiences with the range of information and communications technologies, particularly across different economies and social groups.

Some researchers and observers claim that members of this generation have developed skills, habits, and behavioral norms of using technology that differ from those of previous generations, particularly the baby boomers (Prensky, 2001; Rainie, 2006; Tapscott, 2009; Twenge, 2006). In this study we are not going to resolve the controversial claims that the *net generation* has or has not developed distinct values and behaviors. Instead, we are interested in understanding the dynamics of the entry of this generation into existing organizations. Therefore, we undertook a study that

analyzes CIOs' and other executives' experiences with behaviors of *net generation* workers.

To do this, we reviewed the extensive literature on the *net generation* (variously referred to as gen Y, net natives, digital natives, and millennials) to get an idea of the behavioral differences that might be observed by the executives as this generation entered the workforce. We synthesized these observations and research findings in a scenario and used the scenario to elicit reactions from executives. We used three different methodologies to present the scenario and collect data: interviews, focus groups, and an online survey.

The paper is organized as follows: First, we present literature on the *net generation*. Specifically, we summarize the demographics of the incoming generation of knowledge workers. We highlight some values, norms, and behaviors perceived by observers and researchers for both the *net generation* and previous ones (i.e., baby boomers). In this comparison, we note possible issues that may arise when the different generations work together in organizations. Next, we describe our data collection and approach to the analysis. As an exploratory, interpretive study, we use multiple data collection methods and a thematic analysis. Finally, we discuss our findings, what we see as limitations of the current organizational approaches to managing this influx of new employees and areas that need further research. We discuss executives' preference for top-down strategies and conclude by suggesting that organizations may want to view this generation of workers, and other behavioral issues related to the use of new communications technologies, using a lens that combines the triad of technology, values, and behaviors rather than using these dimensions as three separate lenses.

Shift in the Composition of the Workforce

The U.S. workforce will change over the next ten years as the demographics of the population change. Demographics of the workforce are changing world-wide, but our discussion will focus on the U.S. The significance of these changes is that a large portion of the workforce (the baby boomers) will be entering retirement age soon—leaving the workforce—just as members of the *net generation* will be entering the workforce. Table 1 compares the relative numbers of the three generations of workers in 2000 and shows their respective ages in 2009 to demonstrate these changes. Baby boomers, generally taken to be those born between 1946 and 1964, comprised 82.8 million (Bureau, 2000). In 2008, this group comprises over 40 percent of the U.S. labor force (Poulos and Smith, 2008). By the year 2018, all but the youngest of this generation will be at retirement age.

Table 1. Population Estimates of Three Generations of Workers

Generation	Birth Year	Age in 2000 Census	Current Age in 2009	Population Estimates *
Baby Boomers	1946-1964	36-54	45-63	82.8 million
Generation X	1965-1977	20-35	32-44	50.9 million
Net Generation	1978-1994	6-22	15-31	69.1 million

* Population estimates based on US 2000 Census (Bureau, 2000)

As defined for this study, members of the *net generation* in 2009 are between the ages of 15 to 31. Note in Table 1 that the *net generation*, while not as numerous as the baby boomers, has about 36% more members than generation X. Prensky estimates members of this generation will 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 (e.g., before they reach 21 or 22 years of age, about when they might be entering the workforce) (Prensky, 2001). A large majority of teens in the United States (over 90%) use the Internet (Jones and Fox, 2009) and over 71% of teens use mobile phones (Lenhart, 2009); both play a major role in their relationships with their friends, families, and schools.

Comparing Two Generations

Because of the size of the *net generation*, considerable research already exists on how its members play, learn, and work. Marketers, educators, corporations, and employers recognize the need to understand the *net generation's* learning and working styles. The Pew surveys have examined the changing uses of communications technology and the accompanying changes in values with younger generations (Lenhart and Madden, 2007; Lenhart et al., 2005; Lenhart et al., 2001). Others have used these and other studies to reach different perceptions about how the *net generation* thinks and behaves. In the case of Twenge (2006) and Tapscott (2009), they go further. They claim that the *net generation* is not only perceived as different from the baby boomers but they are actually distinctly different from them in values and behavior. However, they do not agree on the significances of these differences.

For example, Twenge's synthesis of numerous surveys and reviews (2006) notes that members of the *net generation* (she refers them as the "Generation Me") show high self esteem and confidence, have a desire for fun and to enjoy the moment, a lack of respect for authority—in contrast to the baby boomers' more philosophical life view, a desire for self-fulfillment, a desire to change the world, and respect for authority and experience. According to Twenge, much of the more self-centered attributes of the younger generation can be attributed to how they were raised (e.g., a "self-esteem curriculum" in which no one "fails") and reflect the desires and dreams of their baby boomer parents. In contrast, Tapscott (2009), interviewing and surveying over 10,000 people, reached a different conclusion. He doesn't think that the *net generation* exhibits

selfish values. Nonetheless, he acknowledges that 83% of Americans think that youth feel more “entitled” than the youth of ten years ago (p. 151), but he concludes that this perception is based on observed behavior (e.g., being bored with 9 to 5 work, a willingness to take risks to find meaningful work, a mixing of work life and personal life) and not underlying selfish values.

Abram and Luthers’ (2004) study was based on data assembled from their research and other datasets such as Pew Internet & American Life Project, OCLC, Ontario Libraries Strategic Directions Council, Digital Library Federation, Council on Library and Information Resources, and Outsell. They identified nine aspects of the *net generation* behavior that they believe differentiate this group from its predecessors. Additionally, they claim that members of the *net generation* exhibit fundamental differences in the use of information, personal interactions, and social values. Among the distinguishing aspects are multitasking, experiential, collaborative, adaptive, and direct behaviors.

Table 2 compares the set of values, attitudes, and styles of the *net generation* and baby boomers as perceived in the literature. Many of the differences highlighted in this table can serve as the genesis for potential issues and tensions as members of the *net generation* join organizations.

Table 2: Perceived Differences in Behaviors and Values

<i>Behaviors and Values</i>	<i>Net Generation</i>	<i>Baby Boomers</i>
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

METHODOLOGY: Collecting and Analyzing the Data

Our methodology in this study comprised three steps: scenario development, data collection (interviews, focus groups, and an online survey), and thematic analysis of the data.

First, based on the literature review, we developed a scenario that reflected some of the potential issues between executives and younger generations as shown in table 2. The scenario was developed to address a target audience of Chief Information Officers (CIOs), Chief Technical Officers, and other executives in companies that use information technology extensively and who might be hiring members of the *net generation* for their organizations (see the scenario in appendix).

There were four main reasons for developing a scenario as a methodology and not approaching the study from a more traditional path (e.g., surveying the executives): 1) It allows enough flexibility and room for the executives to add from their own experience about issues not previously identified in the literature review; 2) It helps to stimulate reactions and realistic examples around the issues identified in the scenario; 3) It increases the level of involvement from the participants when they see a realistic situation; and 4) It enabled us to identify strategies executives choose to address the issues they perceived.

Second, we collected data through three methods: interviews, focus groups, and an online survey.

For our interviews, we used a snowball technique beginning with executives who served as advisors to a Master of Science in Information Management program. We identified ten CIOs and CTOs from government and for-profit organizations, sent them the scenario, and conducted interviews that lasted 20-40 minutes.

For our focus groups, we used convenience sample of 110 CIOs, CTOs, and other executives that were attending a seminar on managing the information technology function. We had 12 groups of 8-10 persons, and each group had a moderator and note taker. The participants represented a variety of businesses, from engineering firms to health care.

For the online survey, we posted the scenario to a website, announced the study to executives who were subscribers to a consulting service, and received 49 responses.

In each of these three methods we presented the scenario and asked the participants to respond to four questions:

1. Are there any issues that you've experienced or observed that are missing from the scenario?
2. What issues do you feel are most critical at this point in time?
3. How are you addressing the issues identified in question 2?
4. Do you see some issues as becoming more important over time?

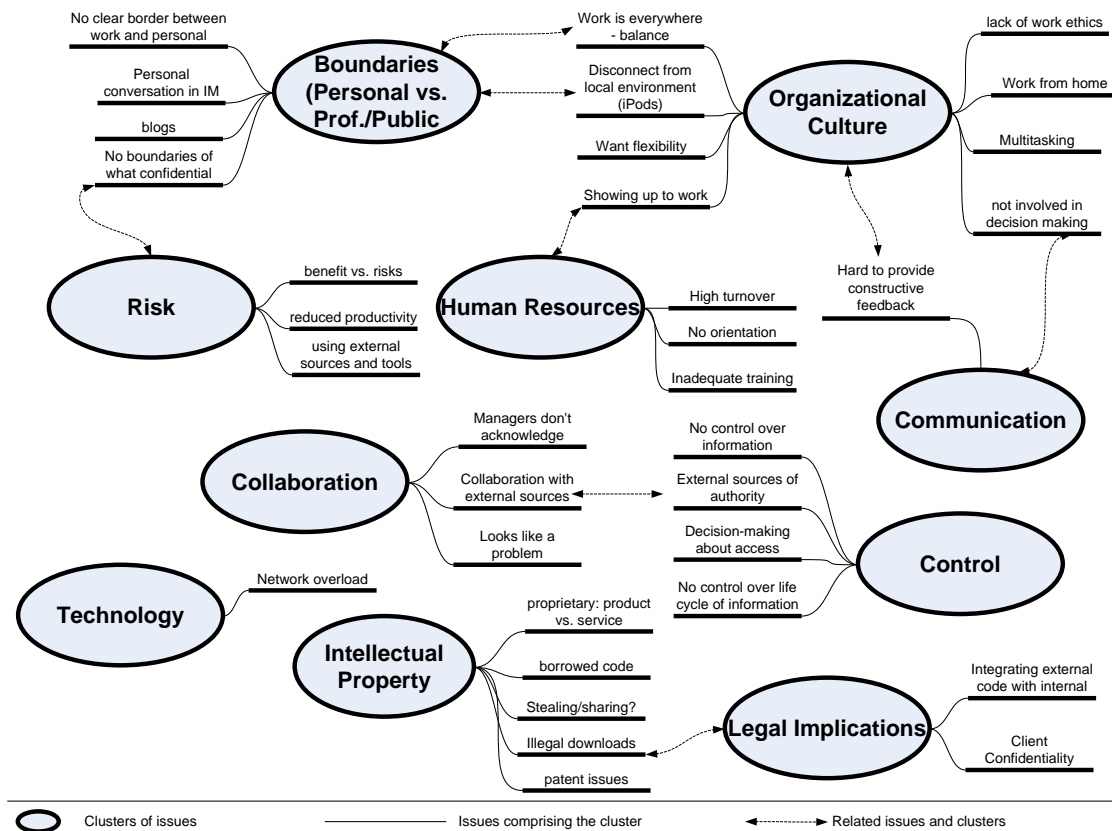
The research team (the authors and two research assistants) reviewed and coded the transcribed interviews and focus group notes using thematic analysis. We identified concepts and key phrases and then grouped the coded concepts and phrases into clusters of issues (shown in Figure 1). We followed the same approach to identify specific organizational responses to the issues and grouped the responses into clusters of mechanisms used by executives and organizations.

RESULTS: Perceived Issues and Sources of Tensions

We identified ten clusters of issues from the three data sources. Each cluster represents the research team's interpretation of the major issues identified by

executives. As shown in Figure 1, “organizational culture” forms the cluster that is associated with the greatest number of issues. It is linked to human resource issues, the boundary (personal-professional) issue, and communication issue. “Technology,” the source of the capabilities on which the members of this generation have developed skills, was associated with one theme only (network overload).

Figure 1. How Executives Perceive Issues of the Net Generation Entering the Workplace



Examples of Reactions to Specific Issues in the Clusters

In the *Organizational Culture* cluster, *Multi-tasking* elicited multiple, mixed, but generally skeptical responses—some executives expressed openness to tolerating it, recognizing that it could create a culture issue within the organization if they 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.” [I-7]^{1 2}

“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.” [I-2]

There was concern among executives with feedback they were getting about a lack of work ethics:

“...it is hitting us. I mean we also see it with like the Parks kids we hire and stuff, we hire a lot of temporary staff and a lot of what I hear is they just don’t have the same work ethic kinds of comments, or they just want to work on the things they want to work on and they don’t want to work on whatever...” [I-4]

For the *Human Resource* cluster, there was concern about a lack of focus and the likelihood of high turnover with employees of the *net generation*:

“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.’” [I-4]

Information sharing across organizational boundaries was consistently viewed as an issue related to several clusters: *control of information, Risk, Leakage of intellectual property, Lack of separation of work from personal life*. The respondents often articulated that the concerns were not limited to a single issue and that tensions were not just generational but were due to the technology. Examples include:

“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

¹ Quotes are typically from interviews [I] or online survey [S] and coded with the number of the respondent; as examples: I-7 refers to the 7th interview respondent and S-10 refers to the 10th survey respondent. Quotes from the focus group notes are labeled [FG].

² On the other hand, a project leader at a high technology firm overheard the authors discussing 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.

and personal life on both sides, 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.” [1-7]

“People just don’t see that separation between work and life the same way that they used to. It used to be that you went into work and all you thought about work and you went home and all you thought about was home, it doesn’t seem to work that at all anymore.” [1-4]

Responding to the Net Generation: Organizational Mechanisms

The data for the thematic analysis we conducted for understanding how executives address perceived tensions were collected from responses to the question: ‘How are you addressing the issues you identified as most critical?’ We categorized responses into four main clusters of organizational mechanisms: project management, technology, human resources and policy.

Project Management

The project management responses focused on defining management rules, testing performance, and restricting ways of working. One example of the project management approach is the following:

“...whether the employees of the company want to or not, in order to be effective as a full team they've got to work in a similar manner. The organization put together for all of our core activities a series of execution procedures that we follow in order to make sure that we are as productive as we can be. Some of the kids when they come in don't necessarily want to change, you know they think in some ways it's an old way of doing things...” [1-3]

Technology

The technology mechanism responses referred to the use of technology to address tensions, often taking the form of prohibiting or restricting the use of particular technologies. Examples include:

“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.” [1-3]

“...we don't allow IM in our equipment firewall...” [1-4]

Human Resources

The human resources mechanism responses referred to the use of the HR function in addressing the tensions, either early (to improve screening and hiring for fit) or later in policies and training. Examples of these responses include:

“So, I didn’t get the attorneys involved but... I did need HR’s perspective on the trade-off of taking away from the employees something they knew they could be doing and what might it demonstrate in terms of the corporate attitude...” [I-2]

“...we have been trying to do this mostly by training people we have had through HR and through our legal department we are trying to have information meetings...” [I-7]

Policy

In this cluster, we collected responses that referred to organizational processes, managing risk, and specific organizational policies. Examples include:

“...we have a policy so it starts with a policy around, ‘you know, our business tools are meant for business reasons’...” [I-5]

“... we produced a policy statement and sent it out to all of the employees, which unfortunately was written in policy-eze language vs. a more warm and friendly memo, and it pointed out that all of the corporate assets, including our computers and phones, etc, etc were for the use of the employees at work, some reasonable amount of personal use was allowed, but, and then we itemized the types of things they weren’t supposed to be doing.” [I-2]

When examining carefully the four organizational mechanisms that emerged from the thematic analysis, we observe that each of them also can be mapped in terms of types of management strategy applied by the executives (Birkinshaw, 2009). These strategies differ in terms of the *net generation’s* and executives’ involvement, the decision approach of the executives, the duration and scope of the change, and the implications for resources (Barzilai-Nahon and Mason, 2009). Table 3 shows this range of strategies and the percentage of executives using each. Note that because executives use multiple and mixed strategies according to different situation, therefore the sum of their responses totals to more than 100%. We further found that some executives prefer instead of adopting one of the strategies in Table 3 to “wait and see” and not take any actions until it is necessary.

Table 3 - Types of Strategies and Frequency of Use

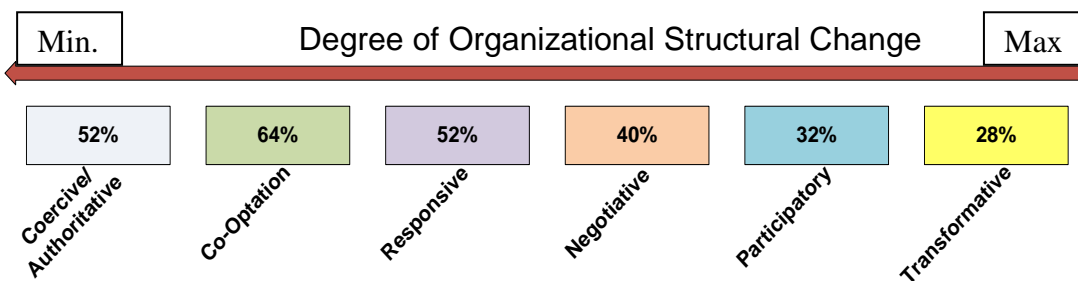
<u>Strategy</u>	<u>Description</u>	<u>% using this strategy*</u>
Coercive/ Authoritative	“It is my way or the highway.” In this strategy the organization prefers to enforce existing policies with minimal changes. This strategy is one-sided and top-down driven.	52%
Cooptation	“Manipulative.” In this strategy the organization influence and manipulate employees from the <i>net generation</i> to accept the existing organizational culture and policies through different mechanisms (e.g., socialization). This is less direct, but still a one-sided and top-down driven strategy. It may involve ostensible participation, but the goals and results are similar to the coercive strategy.	64%
Responsive	“Flexible firefighting.” This is a deliberate strategy that reacts to individual issues as they arise. The choices are context sensitive; the decisions are based on tradeoffs made unilaterally by the executives’ assessment of the costs and benefits of different alternatives.	52%
Negotiative	“Making compromises.” In this strategy executives negotiate and make tradeoffs on critical issues with the participation of the <i>net generation</i> .	40%
Participatory	“Let’s play together.” This strategy involves full engagement and collaboration by all stakeholders in the organization’s vision and operational processes.	32%
Transformative	“Melting Pot.” In this strategy the organization changes its structure and norms to something new.	28%

*% refers to percent of executives’ (N=160) responses in the named strategy classification. Since respondents can use multiple strategies, the total is >100%

DISCUSSION

The results we presented above illuminate the growing awareness of executives on the recurring nature of the tensions with members of the *net generation* as illustrated in figure 1 and with use of the newer technologies in general. This growing awareness causes them to address the tensions in a more systematic way. This is particularly evident when looking at the strategy preferences of executives, who choose strategies that are not dependent on the particular situation (as in the ‘responsive’ or ‘negotiative’ strategies) as shown in Table 3. These strategies can be mapped along an axis corresponding to the degree of organizational structural change (changes in decision-making and power relationships) required for implementation (see Figure 2).

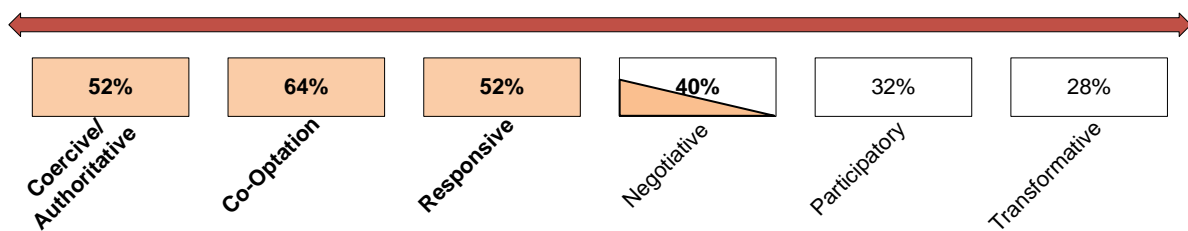
Figure 2: Degree of Organizational Structural Change



We would like to discuss two phenomena we observe in our findings: 1) the priority executives give to top-down strategies as opposed to bottom-up ones. 2) the preference of executives to control either behavior or technology determinants while ignoring values and norms, which we believe form the third apex of an integral triad.

Choosing Top-Down Strategies as a Priority

Figure 3: Top-Down Strategies



In Top-Down strategies, executives dictate the boundaries, goals, and, to a large extent, the outcomes. Figure 3 illustrates the prevalence of top-down strategies for dealing with the *net generation*: the Coercive, Cooptation, Responsive and, to some degree, the Negotiative. Here are two quotes that exemplify the top-down approach:

“Must set very clear goals/expectations. Need to manage and micro-manage more than with previous generation of employees. Need more mentoring by senior people to train new employees on how to produce high-quality outputs.” [S-9]

“Training is key, and setting expectations correctly at the time of hire.” [S-17]

Management literature suggests that top-down strategies may be ineffective in dealing with changes in an organizational context specially for the long-term (Pascale and Sternin, 2005). This could apply to the *net generation* as well, which may require organizations to perform some changes on their behalf. In the long-term, top-down strategies have the potential to stimulate higher levels of resistance to attempts at control, especially in periods of change (Kotter and Schlesinger, 2008; Weber, 1978). Conversely, creating and maintaining a cohesive organizational culture in a process that involves all stakeholders has higher chances for long-term success (Christensen et al., 2006; Hill, 2007). In the near term, a top-down strategy can alienate the younger employees, decreasing the chances to build a shared and common vision, mission, and organizational culture and increasing turnover.

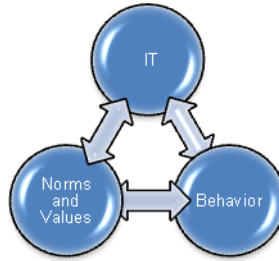
“So I think it’s [change] got to be on both sides. If you don’t, you won’t have staff. I mean, I don’t think corporations who stick to the old way of doing things are going to be able to maintain any kind of staff base unless they adapt or are willing to hire people with other work ethics.” [I-4]

Finally, addressing challenges in a top-down manner often requires dictating behavior uncommon to the *net generation* members. This is an example of treating the symptoms and not the underlying cause. The *net generation* initially might be compliant, but the gaps in behaviors and values remain; Organizational behavior literature agrees that gaps in behavior and values in most cases create a dissonance, that later is translated into the need for change (Schein, 2002). Leaders are likely to find they need to address the same fundamental challenges again unless they are resolved at a more fundamental level.

The TVB (Technology-Values-Behavior) Triad

A “generation gap” is not a new phenomenon. The values and behavioral norms of succeeding generations have always differed in some degree from past ones. Also, it is generally accepted that information technology shapes many organizational norms, values and behavior, and the reverse is also true (Orlikowski and Robey, 1992). Additionally, groups take technology and appropriate it to their own needs. None of this is new. What is new is the extent, timing, speed and the closeness of this recursive relationship between information technology and the *net generation’s* values and behavior. We believe that understanding and resolving the tensions arising from perceptions about the *net generation* can only be achieved if we use a lens that considers technology, values, and behavior as a closely coupled triad of factors affecting the perceived organizational tensions.

Figure 4: The Technology-Values-Behavior Triad



One of the things we observed in the data is that executives in many cases seek to control either behavior or technology determinants to resolve tensions.

“We’ve provided internal tools for collaboration, are encouraging their use throughout the organization, and are allowing for the eccentricities that emerge as personal and professional collaboration become more intertwined. We also encourage the use of such platforms externally, and are attempting to enable our client base and greater market through similar strategies.” [S-27]

“So we have done a couple of different things. We are looking at new teamwork setup to cater for the work anywhere type situation. And we have a project that we are looking at that, you know, obviously branches out to security in and compliance and what are some of those requirements and in terms of training as well. And then in our leadership program.” [I-10]

“We have been trying, the way we have been trying to do this mostly by training people we have had a through HR and through our legal department we are trying to have information meetings about that. But when you look from an IT perspective, and we have a lot of discussion about that, there is no way to block the company from the outside, and so it's really relied on every associate to make sure that we understand the implication of what they are doing and that uh, the tools they are using the information that is shared is really, uh compliant with the different laws to abide by and also from an ethical perspective that we work ethically. “ [I-7]

“It’s all about Management

- *Address project management structure, HR involvement, CIO policy, corporate IM system, client info leaks can be grounds for termination*
- *Define goal and judge by results, not micromanage the stops*
- *Managing the new workforce (leadership and management training – more clear boundaries – millennials don’t have boundaries (physical communication) but businesses do*
- *Measuring performance*
- *Importance of setting expectations for employees” [FG]*

Decomposing this triad into separate components and trying to resolve issues by treating only one component at a time may not be effective due to the close relationship

between these concepts. We posit that this triad should be treated from a holistic point of view. One of the consequences of the information society is that these three components move together and are closely coupled.

Executives' decomposition of the triangulation of technology, behavior and norms also helps to explain the failure of top-down strategies, which inherently focus on regulating behavior either through rules and policy or technology. It is not a coincidence that most CIOs chose top-down strategies to address tensions resulting from their entry into the workplace. These strategies require minimum critical structural and political changes to the organization because the compromises to operational processes are typically minimal.

“From the technology side, from the IT side, the main reason that we're restricting IM from the technology side is a performance issue and a security-related one. ... And so we look at it from the stand point of protecting the business activities with minimal changes. Now as far as restrictions on the Internet, for the most part we tell people they are not supposed to do things, but from the IT's perspective we're looking at performance issues and security.” [I-3]

“And the reality is, unless you are a company with a bunch of young people, you have to put certain restrictions on ways of working on efforts within an organization or you don't make money.” [I-3]

We also observe that executives approach the behavior of members of the *net generation* (and other behavior associated with use of the newer communications technologies) from the individual level and ignore the norms that emerge from social groups. For example, managers believe that they can train individuals to behave according to the company rules and this will solve the tensions they perceive.

“Training, training, and more training.” [S-10]

We suggest that the new unit of analysis should be *communities* rather than individuals. The technology component in Figure 3 provides platforms for communities to be established quickly; these communities establish and reify norms and reinforce behaviors at a pace that has not been observed as prior generations entered the workforce. By choosing strategies that focus only on the individual level, ignoring the complexity of the communal values interwoven with the technology use and behavior, executives will find it difficult to enforce desired behavior for the long run.

Limitations

This study was designed and implemented as an exploratory study, and the methods and resulting data have the limitations associated with such studies. The sample from which data were collected was not necessarily representative of the entire universe of executives and CIOs.

Data available from the literature often emphasized the U.S. population. However, the demographics of other nations illustrate that the population under 30 years old of

India and China (totaling about 125 million) dwarf that of the U.S., Brazil, and other developed countries (Tapscott, 2009) (p. 27, citing UN population figures). Tapscott concludes from his proprietary study of 10 countries³ that we're in the early days of having a "worldwide youth generation" in which attitudes, norms, and behaviors are similar regardless of national boundaries. This is speculative, but the perception of the generation gap being a global gap is held by executives in our sample:

"... we are a company that will work across three continents. Asia, Europe and North America... if you look, 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 and people who have lived their lives with traditional communist China, they are definitely much bigger than in the US because they are not used to so much change..." [1-7]

As this executive and others have noted, cultural and local conditions and organizational size and type of business can influence the degree of tension and rate of change of organizations:

"...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..." [1-4]

"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." [1-2]

"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." [1-7]

Respondents in our study were predominantly from established organizations, and these are more likely to experience the tensions than a newer organization such as Google or Facebook. (Facebook was established by Net Geners.) Such organizations can have a different workforce demographic and may not have the legacy systems that can stimulate the tensions perceived by our respondents.

³ US, UK, China, India, Russia, Brazil, Italy, Iran, Japan, Canada

Within these limitations, our findings are suggestive of issues that deserve further investigation. They suggest to us that the current approaches to changing behavior might be more effective if executives used a different lens and focused more on communities than on individuals as they seek to understand the dynamics of their organizations.

CONCLUSIONS

Members of the *net generation* are perceived by executive and others as using information technologies in ways that differ significantly from those of prior generations. They are also perceived as having values and behavioral characteristics that differ from prior generations. In many cases these behaviors are viewed as inefficient, ineffective, or even unethical by those already in the work force. These perceptions, whether true or not, stimulate tensions between new employees from the *net generation* just entering the workforce with other generations. Similar tensions can arise when others adopt new technologies and behave like the *net generators*.

According to the executives we interviewed, few organizations currently are set up to accommodate these behaviors. Organizations have an inertia that inhibits rapid change, and this presents a challenge even to executives who recognize the need to change. Moreover, organizations that have been led by baby boomers have processes and information systems that were designed by baby boomers, for baby boomers, using technologies that were available at the time baby boomers were becoming managers. These legacy systems, and the accompanying comfort with their use by baby boomers, add to the inertia.

However, most CIOs and CTOs recognize the challenge they will be facing as their workforce becomes more populated with members of the *net generation*, 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, which we discussed in this paper. It appears that most executives feel more comfortable using top-down approaches, which may not be effective to address tensions with the *net generation*. We suggest using the TVB (Technology-Values-Behavior) triad as an effective holistic lens through which researchers and practitioners should analyze the ecological system of the *net generation*. A consequence of taking this ecological view is that the concept of communities becomes embedded in strategic management practices.

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References Cited

- Abram, S. and Luther, J. (2004) "Born with the Chip: The next Generation Will Profoundly Impact Both Library Service and the Culture within the Profession", *Library Journal* 129(8): 34.
- Barzilai-Nahon, K. and Mason, R. (2009) "How Organizations Respond and should respond to the Next Generation of Workers--Digital Natives and Organizations (working title)", p. 18
Seattle, WA: The Information School of the University of Washington
- Birkinshaw, J., and Jules Goddard. (2009) "What is Your Management Model?", *Sloan Management Review* 50 (2).
- Bureau, U. S. C. (2000) "QT-P1. Age Groups and Sex: 2000. Census 2000 Summary File 1, Matrices P13 and PCT12. Retrieved 8/09/07 from: http://factfinder.census.gov/servlet/QTTable?_bm=y&-qr_name=DEC_2000_SF1_U_QTP1&-geo_id=01000US&-ds_name=DEC_2000_SF1_U&-_lang=en&-format=&-CONTEXT=qt
- Christensen, C. M., Marx, M. and Stevenson, H. H. (2006) "The Tools of Cooperation and Change", *Harvard Business Review* 84(10): 73-80.
- Hill, L. (2007) "Becoming the Boss", *Harvard Business Review* 85(1): 48-56.
- Jones, S. and Fox, S. (2009) "Generations Online in 2009". Washington D.C.: Pew Internet & American Life Project.
- Kotter, J. P. and Schlesinger, L. A. (2008) "Choosing Strategies for Change", *Harvard Business Review* 86(7/8): 130-139.
- Lenhart, A. (2009) "Teens and Mobile Phones Over the Past Five Years": Pew Internet & American Life Project.
- Lenhart, A. and Madden, M. (2007) "Teens, Privacy & Online Social Networks How teens manage their online identities and personal information in the age of MySpace". "Washington, D.C.": PEW Internet & American Life Projects.
- Lenhart, A., Madden, M. and Hitlin, P. (2005) "Teens and Technology: Youth are leading the transition to a fully wired and mobile nation". "Washington, D.C.": PEW Internet & American Life Projects.
- Lenhart, A., Rainie, L. and Lewis, O. (2001) "Teenage life online: The rise of the instant-message generation and the Internet's impact on friendships and family relationships". "Washington, D.C.": PEW Internet & American Life Projects.
- Orlikowski, W. J. and Robey, D. (1992) "Information Technology and the Structuring of Organizations", *Information Systems Research* 2(2): 143-169.
- Pascale, R. T. and Sternin, J. (2005) "Your Company's Secret Change Agents", *Harvard Business Review* 83(5): 72-81.
- Poulos, S. and Smith, D. (2008) "Aging Baby Boomers: In a New Workforce Development System". Washington D.C.: Urban Institute.
- Prensky, M. (2001) "Digital Natives, Digital Immigrants: Do they really think differently?", *On the Horizon* 9(6).
- Rainie, L. (2006) "Digital Natives: How today's youth are different from their "digital immigrant" elders and what that means for libraries", PEW Internet & American Life Project.

- Schein, E. (2002) "Models and Tools for Stability and Change in Human Systems",
Reflections 4(2): 34-46.
- Tapscott, D. (2009) Grown up Digital. New York: McGraw-Hill Companies.
- Twenge, J. M. (2006) Generation me : why today's young Americans are more
confident, assertive, entitled--and more miserable than ever before. New York: Free
Press.
- Weber, M. (ed.) (1978) Economy and Society: An Outline of Interpretive Sociology.
Berkeley, CA: University of California Press.

Appendix: Scenario Used to Elicit Responses

HighTec's New Information Professionals

Jeri Smith heads down the corridor to HighTec's conference room for a meeting with four of her most experienced project managers. The managers, in their last monthly meeting, realized that they shared concerns about the working styles and behavior of many of their newer employees, and they have requested this meeting to discuss why they are anxious about what they are observing.

The project managers are worried because the working styles of some of their new employees are in sharp contrast to the styles and behaviors of the existing staff of experienced professionals. The new employees comprise system engineers, web designers, and marketing experts. They were hired to expand and complement HighTec's existing staff of experienced workers. The new employees are just out of college; a few have been working a few years as free-lancers. They all were hired for their demonstrated competence and potential.

Jack, the project manager who initially expressed his concern, is responsible for a team whose mission is to create an online marketplace for a regional distributor of independent music. Jack has over ten years of successful project management experience, the last eight with HighTec. His observation, after a few months with his young team, is that the new hires prefer to work in ways that are much more collaborative than the more experienced designers and engineers. In discussions with other project managers, they have discovered they have similar observations that make them, as managers, uncomfortable enough to request this meeting with their CIO.

In their work, the young professionals spend a lot of time working not as individuals but in groups, with membership in groups often crossing organizational boundaries. They seek out opportunities to talk shop with other sections of the organization instead of focusing only on their own project. Indeed, they frequently communicate with professionals outside the company to discuss projects and ideas. These communications often occur on-line through instant messaging, message boards, listservs, social networking sites, and other collaborative applications, some of which are new to project managers and other experienced staff. In fact, the use of Internet-based applications is a primary form of communication that is central to their working style. They use the Internet is used not only for work-related tasks (e.g. conducting research, obtaining materials for their work, such as code, graphics, and designs for use in their own projects) but also for sharing experiences and making business and social connections.

The project managers' discomfort is not limited to employee activities such as making online purchases while at work—this has been going on for years (even among the older employees), and HighTec has tacitly accepted such personal use of company resources. The newer employees, however, acknowledge that they solicit ideas for their project on electronic message boards that are open to hundreds of people outside

the organization. In reviewing some of the posts, Jack has found that they frequently contain technical details of his project and even place the project in the context of HighTec's business strategy to better enable others to understand the technical tradeoffs that are being considered. Instead of coding applications or web pages on their own, some programmers borrow code found on the Internet. One project manager has even come across a blog that appears to be written by someone within the organization and that is critical of the internal practices of the company. Project managers are worried that these behaviors have strategic and ethical implications for the company and its clients and customers.

As she walks down the hall, Jeri has decided to start the meeting by expressing her appreciation to the project managers for their sensitivity to behaviors that may have strategic as well as operational implications. She mentally summarizes the issues that she has already identified as she prepared for the meeting. The first is how much knowledge the company may lose through the free flow of information, and she wonders if there is enough new knowledge coming in to compensate. If not, a secondary impact may be a decrease in competitiveness. She sees the potential dangers in using software modules picked up from outside sources: ethically, the company might inadvertently infringe on someone's patent, leaving it vulnerable to later lawsuits. The software acquired from outside may have not been tested adequately—how credible are the sources? She sees what could be a dilemma in annual employee evaluations: how do you evaluate someone whose work product has evolved from a group effort and from information gathered from outside the company? Who can be held accountable for the result? She has identified these issues, but doubts that this is a complete list. How can she be sure she has identified all the possible impacts of what her project managers have observed? Which of the issues are the most significant?

Jeri realizes that she and the managers will want to leave the meeting with an idea of how to address these issues, and she expects that a next meeting may involve corporate counsel because of the intellectual property issues. She has not yet talked with the human resources director, but she may want to recommend additional training for the newer staff and a revision of the initial training for future hires. Among other topics, the revised training may need to place increased emphasis on professional ethics and the importance of limiting access to proprietary knowledge.

Finally, she wonders if she is missing something—that perhaps she and other HighTec executives need to review their operations and the assumptions underlying their standard procedures. Is there something the organization should learn from the new employees' work styles?