



**GENERATIONAL DIFFERENCES IN
KNOWLEDGE MARKETS**

THESIS

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Abstract

The US workforce faces an impending mass exodus of experienced workers as the Baby Boomer Generation prepares to retire. Generation X is entering upper management positions but their numbers are small—approximately half the Baby Boomer population—and they’ll be leading Generation Y which is three times their size. This ‘age wave’ phenomenon has unsettling implications for organizations. Will organizations lose knowledge as their most experienced workers depart? Can that knowledge be captured before they leave? This study examines the differences between the ways members of each generation in the workforce transfer knowledge using semi-structured interviews to understand and diagnose challenges to diffusing organizational knowledge across generational divides.

The results indicate that Baby Boomers tend to share knowledge with coworkers in exchange for favors, such as reciprocal knowledge sharing, while Generation Xers need to know that their knowledge sharing will result in a positive outcome for their team. Generation Yers share knowledge to increase their reputation. Trust is also important to members of each generation in exchanging knowledge, but for different reasons. The Baby Boomers need to trust that a knowledge source will not use shared knowledge to compete against them, the Generation Xers need to trust that the knowledge they share will not be wasted, and Generation Yers need to trust a knowledge source to be credible before absorbing that knowledge.

To my wife who patiently endured the sound of the clicking keyboard many late nights, my daughter who made many trips to the “papa office” with snack in hand, my son who gave me plenty of breaks during all-nighters for cuddles when the rest of the world was asleep, and to the little one on the way

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GENERATIONAL DIFFERENCES IN KNOWLEDGE MARKETS

I. Introduction

An Aging Workforce

The American workforce is rapidly aging as a result of a population swell in the post-World War II years between 1946 and 1964, and subsequent relative ebb in population growth between 1965 and 1981. These two time spans respectively comprise the commonly defined birth-year ranges of the Baby Boomer and Generation X generations. Following Generation X, Generation Y, or the Millennial Generation, includes those born between 1979 and 1994. The size differences between the populations of these generations is staggering. At the height of the baby boom, the United States welcomed 4.3 million births per year and the Baby Boomer generation eventually comprised 75.8 million Americans. By 1975, only 3.1 million babies were born per year and the smaller Generation X only amounted to 38 million. Generation X concluded when the Baby Boomer generation began having children, and the “echo boom” resulted in the 98.8 million-strong Generation Y (Sincavage, 2004).

The resulting unevenness of the population distribution by age in the national labor pool is exacerbated by changing participation rates among workers aged 55 and over. Many of these workers have had to delay retirement plans an average of 3 years to offset the effects of the economic recession which began in 2008 (Hall, 2009). The age

of the workforce in the United States therefore comprises a bathtub curve in which there is a large population of Baby Boomers preparing to retire, fewer middle managers among Generation X to assume leadership, and a burgeoning younger population of Generation Y entering the ranks (Hewlett, Sherbin, & Sumberg, 2009).

Indeed, recent analysis of the demographics of America's workforce reveals a sea change in the balance between older and younger workers:

By 2010, the number of workers aged 35 to 44—or those typically moving into upper management—will decline by 19%; the number of workers aged 45 to 54 will increase 21%; and the number of workers aged 55 to 64 will increase 52%. The gray-haired demographics aren't limited to the U.S. either. The number of workers aged 35 to 44 is expected to decline by 27% in Germany, 19% in the United Kingdom, and 9% in Italy. In Japan, that age group is expected to shrink by 10% and by 8% in China. (Reeves, 2005, ¶1)

Furthermore, in a recent survey of 480 companies across a broad spectrum of industries, the corporate leaders of 42 percent of those companies identified the aging workforce as a significant, challenging issue (“Retiring,” 2007). This aging workforce phenomenon is unprecedented in recent history and is likely to continue into the foreseeable future. A century ago, only 4.1 percent of Americans were over 65 years of age, but today the American population consists of over 12.5 percent of this demographic and it will constitute more than 30 percent by the year 2030 (Singh, 2009).

One implication of this rapidly aging workforce is a mass attrition of experienced employees by retirement—current projections for retiring workers are potentially

alarming. According to a report by the United States Government Office of Personnel Management, by the year 2016 over 60 percent of the Federal Government's 2006 civilian workforce will be eligible to retire (Office of Personnel Management[OPM], 2008). The underlying trend is a steady annual increase from 22 percent retirement-eligible workers in 2007--a tremendous departure from historical retirement rates recorded in the preceding decade which were only around 3 percent (OPM, 2008).

The same issue also threatens the private sector workforce. Among companies concerned about the aging workforce, half employ a majority of older workers who will be eligible to retire within 5 to 10 years, compounding a concern that these employers already lack younger skilled workers ("Retiring," 2007). According to the University of North Carolina's Institute on Aging, half of the American workforce will leave the labor market by 2015 (Ember, 2005).

While the aging workforce phenomenon is widespread in America, this phenomenon unevenly impacts the labor market, first affecting the energy and healthcare sectors, then the science and technology sectors (Reeves, 2009). According to Runy's (2008) survey of hospitals:

Many organizations may be surprised to learn that some units are made up of primarily young employees while others are composed of almost entirely older workers. Judy Warmuth, Vice President of Workforce Development at the Wisconsin Hospital Association, also advises hospitals to look at regional population projections. Some states, for example, are aging faster than others. (The Aging Workforce section, ¶3)

As previously noted in Reeves (2005), this issue is not unique to the United States. In fact, Germany, China, and Japan project a more menacing mass exodus of the elderly workforce. These countries and several multinational corporations have therefore begun to take initial steps to retain knowledgeable, retirement-eligible workers (Ember, 2005).

When Expertise Walks out the Door

Although the United States labor market has projected a deficit of 10 million workers due to workforce attrition by 2010, the projected deficit is not merely in available workers, but mostly in skilled workers. Of the 10 million worker shortage, there are 8 million workers available who simply do not have the skills of the retiring workers that employers need to replace (Dychtwald, Erickson, & Morrison, 2006). Yet, despite this dearth of skilled labor, employers are reported to be even more concerned about losing organizational knowledge when the older generation leaves the workforce.

For instance, Mr. James Sowers, Managing Director of a human resource management practice at Buck Consultants, warns that, “It's more than just a problem of not having enough bodies to replace retiring baby boomers. The real challenge is transferring their knowledge and talents to the succeeding generations of workers” (“Retiring,” 2007, p.2). This wave of mass retirement brings an unprecedented loss of expertise in high technology industries—the retiring Baby Boomer generation pioneered revolutionary product areas such as computer systems, pharmaceutical drug development, and integrated global management processes. In contrast to the ages-old paradigm of passing the same knowledge from generation to generation, today, the retiring generation has vast amounts of new knowledge which did not exist in previous generations (Ember,

2005).

What happens when so many experienced, knowledgeable workers leave an organization in a short time period? Consider the aftermath of a wave of retirement-based turnover in NASA's former Apollo program. This ambitious program landed the first man on the moon, and then repeated the feat five times between 1969 and 1972. The program collected over 400 kg of lunar surface samples and conducted experiments in soil mechanics, meteoroids, seismology, heat flow, lunar ranging, magnetic fields, and solar wind (Williams, 2008). As part of the Apollo program, NASA invested in costly missions prior to reaching the moon to understand various aspects of the problem at hand, from space lift, to orbital mechanics, to complex maneuvering. Members of the project gained knowledge from six uncrewed sub-orbital missions, 10 uncrewed earth-orbiting space flights, two crewed earth-orbiting missions, and three crewed missions which orbited the moon and returned to earth, all in preparation for the first lunar landing of a human being (Williams).

Although this project entailed a workforce of over 400,000 members and consumed \$24 billion in funding over 10 years, NASA says that it could not replicate the achievement today even with current technology (DeLong, 2004). In particular, DeLong's research indicated that the organization has lost the drawings for the Saturn V rocket which propelled the crew and equipment to the moon, and the individuals who solved the complex problems necessary to carry out the mission left the organization through early retirement incentive programs. A NASA manager even suggested that another lunar mission would have to begin from the earliest stages of research and development. Thus,

the next team to attempt a lunar landing from the same organization will enjoy little, if any, cost or schedule advantage from the previous successes due to lost knowledge (DeLong).

Unfortunately, the Apollo program is not the only example of a failure of knowledge transfer at NASA. Thirty years after the program concluded, the United States Government Accountability Office (GAO) (2002), published a report identifying several failed missions that simply repeated past mistakes. Specifically, in 1998 NASA launched the Mars Climate Orbiter which cost \$75 million to develop. The following year NASA launched its Mars Polar Lander which cost another \$135 million. Both spacecraft were lost in preventable mishaps caused by planning mistakes. These same mistakes had been caught and prevented earlier in the decade during launches of predecessor spacecraft in the same program. In fact, NASA had captured and archived such planning-related lessons in database form, but the critical knowledge itself was not transferred to the teams on the Polar Lander and Climate Orbiter, thus costing NASA over \$200 million in wasted effort and a setback in exploration of several years (GAO).

Towards a Solution

Of course, the struggle to retain organizational knowledge, whether technical know-how or lessons-learned, is not unique to NASA. As previously cited research and workforce projections (Singh, 2009; “Retiring,” 2007; Ember, 2005; Reeves, 2009; Runy, 2008) suggest, these costly experiences at NASA are likely to be indicative of even more widespread and serious concerns lurking around the corner for countless organizations around the world as Baby Boomers retire and Generation X takes charge. Thus, it is

imperative that we strive to more fully understand how an organization might retain its hard-won knowledge as one generation retires and another succeeds it.

Fortunately, we may have a brief window of opportunity to capture the knowledge locked away in the minds of Baby Boomers before the wave of mass retirements hits the global economy with full force. Recent economic conditions have caused as much as 66 percent of the Baby Boomer generation to delay retirement beyond their initial plans (Hall, 2009). Forty-two percent of Baby Boomers plan to continue working beyond age 65 and 14 percent say they will never retire (Hewlett et al., 2009). What they do with their knowledge, however, remains to be seen. For instance, research indicates that as retirement-eligible workers age, they are more likely to leave an organization and pursue self-employment to capitalize on knowledge and skills obtained over a lifetime in the workforce (Singh, 2009). Thus, even with current economic incentives for Baby Boomers to remain in the workforce, it seems imperative that organizations act quickly while the knowledge and skills they desire to retain are still resident and readily available.

These issues and concerns of knowledge transfer between workforce generations will be addressed in the following pages. In particular, we will examine the mechanisms which contribute to the transfer of knowledge between individuals; then specifically focus on the organizational knowledge retention problem caused by the workforce “age wave” by exploring the following two research questions:

How does the flow of knowledge differ among the generations in the workforce?

How might generational differences be responsible for difficulties transferring

knowledge between incoming and outgoing workforces?

II. Literature Review

What is Knowledge?

Definition

Before we can understand how to better retain organizational knowledge across the generational divides described in Chapter 1, it is important to first understand the concept of knowledge itself. Davenport and Prusak (1998) defined knowledge by distinguishing it from its lesser constituents: data and information. Data can be simply defined as “a set of discrete, objective facts about events” (Davenport & Prusak, p. 2); information is “a message...meant to change the way the receiver perceives something, to have an impact on his judgment and behavior” (Davenport & Prusak, p. 3). Their working definition of knowledge is more complex:

Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms.

(Davenport & Prusak, 1998, p. 5)

A simpler, workplace-specific definition describes knowledge as that which provides for “the ability of people and organizations to understand and act effectively” (Wiig, 2000, p. 9). Wiig (1999) further explained that:

Knowledge must provide us with the capability, the understanding that permits us to envision possible ways of handling different situations and to anticipate implications and judge their effects...Our knowledge in the form of mental models, scripts, and schemata provides us with the capability to work with novel situations by including not only concepts and predefined methods and judgments, but numerous connections with other detailed concepts, meta-concepts, and mental models. (p. 9)

A common thread that seems to run through all of these definitions is the inextricable linkage between knowledge and the knower(s).

Knowledge and the knower

Hayek (1945) asserted that all of the knowledge in a society cannot be aggregated for a single decision-maker because it is too dependent upon “the particular circumstances of time and place” (p. 522) as understood by individual knowers. Each person uses his own private knowledge to solve local problems with unique solutions on a daily basis. Hayek explained that knowledge is therefore inherently embedded in the minds of individuals.

Likewise, Polanyi (1958) explained that the knowledge resident in the minds of knowers is crucial to the interpretation of information. In examining contradictory scientific experiments which respectively led to and then tested Einstein's General Theory of Relativity, Polanyi explained that interpretations of science experiment outcomes and observed phenomenon depend upon the ability of the observer to understand their implications. This ability, unfortunately, is not easily codified into a precise set of rules

others can follow to reach the same understanding. Sometimes this difficult-to-codify knowledge is captured in maxims. According to Polanyi, “maxims are rules, the correct application of which is part of the art which they govern” (p. 31). A person cannot execute an art solely using maxims; however, maxims can be applied by a person to improve his or her pre-existing knowledge of the art. Examples of such maxims can be found regarding golf swings, poetry writing, and piano playing. Each of these skills has maxims which describe how to perform them well, but a novice cannot readily perform at the same level as an experienced expert simply by reading the maxims; they must be exercised and applied to the performance of the art if they are to create any value for the knower.

Tacit and explicit knowledge

As Hayek (1945) asserted that most knowledge is embedded in the minds of individuals, he also makes a distinction between knowledge as being that which is scientific and easily aggregated and conveyed to others or that which is uniquely applicable by its owners. Polanyi (1958) labeled the former type of knowledge “articulate”; in more recent writings it has been referred to as “explicit” (Nonaka & Takeuchi, 1995; Davenport & Prusak, 1998). Explicit knowledge is relatively simple and easily articulated, taught, and observed. The knowledge contained in a history textbook or that contained in an email from one coworker to another are examples of explicit knowledge; such “knowledge content” need not be demonstrated or practiced to be useful to the recipient, only understood and assimilated. The nature of such knowledge also means it is more effectively codified for other users to access and assimilate. For

instance, explicit knowledge can be recorded in databases for later retrieval and use by others.

In 1966 Polanyi coined the term “tacit knowledge” (p. 11) to connote the opposite of explicit. He described tacit knowledge as, “knowledge [which] cannot be put into words” (p. 4) and said that its existence is evidenced by the fact that “we can know more than we can tell” (p. 4). Tacit knowledge is difficult for one person to communicate to another, especially to several others because tacit knowledge cannot be easily written down or verbally described (Davenport & Prusak, 1998).

Polanyi (1966) offered facial recognition as an example of tacit knowledge. Although one might recognize a person's face, one might not always be able to explain what is familiar about the face. Likewise, the skill of riding a bicycle is difficult to explain to another person, especially the minutiae of muscular responses involved in balance or steering. Polanyi even remarked that those with extensive understanding of physics cannot readily describe all of the knowledge necessary to execute the task of riding a bicycle. The earlier examples of golf swing, poetry writing, and piano playing maxims also illustrate the concept of tacit knowledge.

The importance of tacit knowledge

Although difficult to communicate, tacit knowledge is crucial to the success of both individuals and organizations. Hayek (1945) said of tacit knowledge,

It is with respect to this that practically every individual has some advantage over all others in that he possesses unique information of which beneficial use might be made, but of which use can be made only if the decisions depending on it are

left to him or are made with his active cooperation. (p. 521-522.)

In short, tacit knowledge itself is useless without the person who possesses it, and the person who possesses it can do extraordinary things. Polanyi (1958) asserted that extensive possession of tacit knowledge is a predicate to novel thought, and only those who possess it are uniquely capable of scientific discovery. Those lacking requisite tacit knowledge are constrained by existing rules or precepts from novel discovery, interpretation, or understanding. Explicit knowledge only tells a person what has been discovered in the past, but to identify a gap in current knowledge and recognize a solution when it is found requires deeply embedded, tacit knowledge (Polanyi, 1958).

If tacit knowledge is crucial to individual success in innovation and discovery, it is likely even more important to the organizations who exploit or employ the work of knowledgeable individuals. In fact, Nonaka and Takeuchi (1995) stated that “tacit knowledge held by individuals is the basis of organizational knowledge creation...” (p. 85). More specifically, Nonaka and Takeuchi asserted that only tacit knowledge can serve as the basis for creating new knowledge.

In the post-industrial era, Drucker (1993) asserted that knowledge had become a basic resource in society replacing previously garnered sources of economic advantage such as raw materials or labor. He specified that the more valuable knowledge to be created and exploited is that which the knower cannot explain (tacit knowledge), only demonstrate and learn through apprenticeship from others. He later asserted that knowledge was the “dominant, if not the only, source of competitive advantage,” (1995, p.7) for a country or a firm.

According to the Resource-Based View of the Firm (Wernerfelt, 1984), a firm can achieve a competitive advantage by acquiring resources which are difficult for other firms to match. Dierickx and Cool (1989) identified “firm specific skills, knowledge, and values...accumulated through on the job learning and training,” as the necessary “non-trade-able asset stocks” (p. 1505) for providing that competitive advantage. Prahalad and Hamel (1990) further explained why the tacit knowledge embedded in employees provides such a rich source of competitive advantage to a firm.

Core competence does not diminish with use. Unlike physical assets, which do deteriorate over time, competencies are enhanced as they are applied and shared. But competencies still need to be nurtured and protected; knowledge fades if it is not used. Competencies are the glue that binds existing businesses. They are also the engine for new business development. (pg. 82)

Thus tacit knowledge is a distinguishing, difficult to imitate asset which is necessary according to the resource-based view of the firm and therefore an important source of competitive advantage.

In contrast to the importance imputed to tacit knowledge for providing a source of sustained competitive advantage, explicit knowledge is easily transferred, aggregated, and appropriated and therefore does not provide a firm with a competitive advantage because it cannot distinguish one firm from another (Grant, 1996). In fact, explicit knowledge has become so widely available and easily tradeable in the information age that it is now commonly considered a public good (Spender, 1996). Specifically, once explicit knowledge has been created and codified, unless it is protected by patents or

copyright, its very nature implies that it can be quickly and inexpensively replicated and distributed, even to a firm's competitors for their own use.

The Knowledge Management Discipline

Given the importance of knowledge, especially tacit knowledge, to achieving competitive advantage, organizations strive to manage such knowledge as effectively as possible. Specifically, knowledge must be deliberately managed to ensure that it flows to the person who needs it, when it is needed, without overwhelming everybody else with knowledge that is irrelevant to them (Adler, 1989). To this end, Knowledge Management (KM) has grown into its own field of scientific study emerging from several existing disciplines and relevant issues including economics, strategic management, organizational culture, organizational behavior, organizational structure, artificial intelligence, quality management, and organizational performance management (Baskerville & Dulipovici, 2006).

KM concerns and perspectives include various themes. Grant (1996) asserted that the firm's purpose, and by extension the purpose of KM, is to determine the best way of "integrating the specialist knowledge resident in individuals into goods and services," (p. 120). O'Dell and Grayson (1998) similarly defined KM as "a conscious strategy of getting the right knowledge to the right people at the right time and helping people share and put information into action in ways that strive to improve organizational performance" (p. 6).

These definitions of KM focus on real-time flow of knowledge as it is needed to complete a task in the here and now, but others look instead to the KM discipline for

managing an organization's stock of knowledge over the long term. For example, Nonaka and Takeuchi (1995) approached KM as a problem of codifying and socializing the knowledge created by employees and transferring it throughout the firm to support product innovation and, more importantly, further organizational learning to constantly improve its stock of knowledge. They focus their work on identifying and creating the conditions under which employees create knowledge, then on the processes for using that knowledge throughout the organization.

According to Nonaka and Takeuchi (1995), there are five conditions which foster knowledge creation in an organization: intention, autonomy, fluctuation, redundancy, and requisite variety. Intention is the condition created when a corporate strategy tells employees what general area of knowledge to pursue using vision statements, posing questions, and tailoring management systems to the targeted knowledge areas.

Autonomy gives individuals and teams more opportunities to create knowledge.

Environmental fluctuation is an introduction of ambiguity for the purpose of creating “creative chaos” (p. 78) which leads to knowledge creation. Redundancy, which is defined as having several experts from the same field on any team, accelerates the knowledge creation process because having members with common experiences allows for better sharing of tacit knowledge. If two or more people on a team can understand each others' ideas clearly because of shared tacit knowledge, they can help each other express those ideas to the rest of the team who are not as familiar with the concepts.

Finally, having a requisite variety of domain expertise ensures that a team will have ample access to various types of knowledge from throughout an organization.

The KM Spiral

Once knowledge has been created in an organization, Nonaka and Takeuchi (1995) asserted that in order for that knowledge to make a positive impact on product development, innovation, and further knowledge creation, it must proceed through a spiral process of codification and transfer. Specifically, knowledge is converted between tacit and explicit several times as it is socialized, externalized, combined, and internalized.

During socialization, tacit knowledge is shared between individuals with similar backgrounds and experiences to build a field of common knowledge within a group of people. This often takes place in face-to-face meetings over time. After developing a common language and establishing a dialogue in which the members understand each other well, those members with a novel idea can share the idea with the group using the common experiences and mental models developed within the group. This results in knowledge creation that the member would be unable to articulate to others without the common understanding.

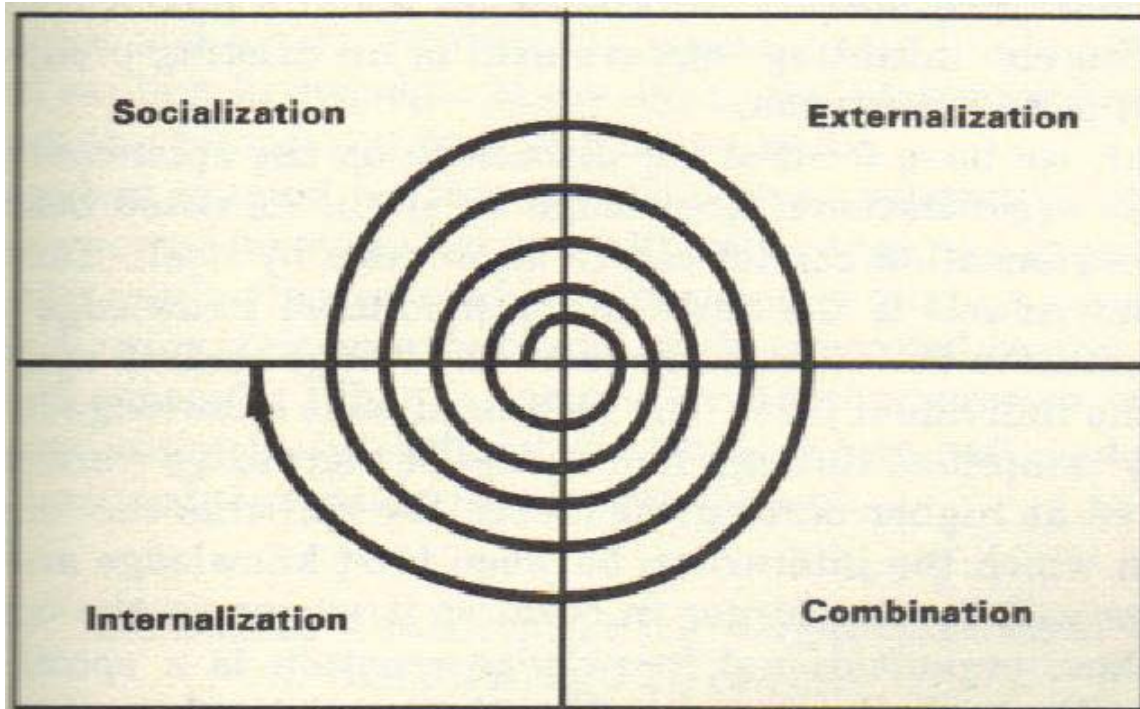


Figure 2.1: Nonaka and Takeuchi's (1995) Knowledge Spiral

Externalization is the conversion of knowledge from tacit to explicit using metaphors, analogies, concepts, hypotheses, or models which can be understood without an intensive common understanding. This enables individuals throughout an organization to use knowledge created by a highly specialized individual or team. For example, suppose a group of ranchers reach an understanding that feedlot rations are not healthy for cattle, but the general public cannot understand the technical reasons because they do not know the inner workings of the bovine digestive system. The ranchers might use an analogy by saying that corn is to cattle as hard candy is to humans. It can fatten one up and keep one alive for some time, but not in a very healthy state. Given this analogy, the larger audience can achieve a rudimentary understanding of the ranchers' concerns

without possessing their extensive tacit knowledge.

Combination is linking different pieces of explicit knowledge developed throughout an organization and synthesizing them into a product or service. For example, consider the linking of metaphors from a marketing department with those from an engineering department to generate a new product offering. The marketing department might say that a new rifle should appear traditional, like an old west relic. At the same time, the engineering department stresses the importance of using modern materials, likening western relics to toy guns in their inability to withstand the explosions of modern cartridges. The result is a common understanding throughout a company, across departments, that the new product will be styled like a western antique but built from modern materials to achieve robustness.

Finally, internalization is the process of an individual assimilating explicit knowledge and turning it into personally-held tacit knowledge. This happens, for example, when a person reads about riding a bicycle--he or she does not acquire the practical skills necessary until trying and practicing until able to ride. Internalization is putting explicit knowledge of a concept into action to develop tacit knowledge of that concept.

Generation, codification, and transfer

Building on Nonaka and Takeuchi's (1995) spiral model of knowledge conversion, Davenport and Prusak (1998) approached KM as a process of knowledge generation, codification, and transfer. Knowledge can be generated by a firm in several ways. The most direct method is by acquiring another organization to gain access to the knowledge

embedded in its employees' minds and processes. This requires that the acquiring organization know that valuable knowledge exists in the target organization, that it knows where that knowledge resides within the target organization, and that it can utilize that knowledge after acquisition. Knowledge can also be rented by hiring a consultant or sponsoring research at a university with rights to the resulting discoveries.

Organizations can also generate knowledge internally by dedicating resources specifically to the creation of knowledge. A corporation may have a research and development department which investigates new technology for use throughout the corporation. Another possibility which draws heavily upon Nonaka and Takeuchi's (1995) spiral model is the concept of fusion—a process involving people from diverse backgrounds to solve everyday problems. A diverse group of knowledge workers offers many potential solutions to a problem when each member draws upon his or her familiar solution set. When an obscure, novel solution set drawn from workers with diverse experiences is conceptually connected to a problem, new knowledge about how to solve that problem is created. Finally, adaptation to changes in the external business environment can force an organization to generate new knowledge in order to survive.

Once knowledge is created, Davenport and Prusak (1998) suggest that it must be codified and coordinated so that it is accessible to those who need it. Knowledge which is explicit in nature can often be codified in databases and documents. Tacit knowledge, however, is more frequently not codified in such a repository because of the difficulty in doing so. Usually, the best an organization can do to codify tacit knowledge is keep a database of who in an organization has what knowledge, and point knowledge seekers to

those individuals for one-on-one teaching. A more ambitious approach to codifying tacit knowledge is to capture and share narratives which allow a learner to vicariously share an experience with a story teller. Tacit knowledge is often codified in an organization's processes and products. System or process designers incorporate tacit knowledge into systems or processes used by a larger corporate body. Those who implement those processes and systems can then use that tacit knowledge and actually tend to learn tacit knowledge over time by using them.

Once knowledge has been created and codified, it must transfer from one person to another in order to be useful. The most effective way to transfer knowledge within an organization is to “hire smart people and let them talk to one another” (Davenport & Prusak, 1998, p. 88). Knowledge is transferred in an organization every day whenever two employees talk to each other to execute their assigned responsibilities or solve a problem. Most knowledge transfer is, in fact, unstructured and fragmented. According to Webber (1993), “conversations are the way knowledge workers discover what they know, share it with their colleagues, and in the process create new knowledge for the corporation” (p. 28). These conversations may take place in meetings and telephone calls, but often occur during informal social mingling at water coolers and break areas (Davenport & Prusak).

Davenport and Prusak (1998) suggest that companies can improve knowledge transfer by encouraging social interaction among employees to facilitate conversation. For example, many Japanese companies have dinner and evening entertainment events for employees to gather and socialize outside the work environment. Other approaches

include company breakfasts and knowledge fairs. Davenport and Prusak insist that knowledge is most effectively transferred in face-to-face meetings rather than through telephone conversations or electronic or print media.

On the primacy of knowledge transfer

Without knowledge transfer, Nonaka and Takeuchi's (1995) knowledge spiral quickly breaks down and the competitive advantages cited by Davenport and Prusak (1998) disappear. In particular, every step of the knowledge spiral embodies some type of knowledge transfer from one or more persons to one or more others. Without knowledge transfer, an organization could not create new knowledge (Nonaka & Takeuchi). Davenport and Prusak similarly assert that knowledge transfer is “vital to a firm's success” (p. 89), and that knowledge transfer distinguishes the most successful companies among those which rely heavily upon research and development. Thus, among the various topics of KM study, knowledge transfer appears to be the most pertinent to the age-wave problem. However, in order to understand or characterize the transfer of knowledge created by an older generation and passed to younger generations, we must first focus our attention on the factors thought or demonstrated to affect knowledge transfer per se.

Those studying knowledge transfer have approached the issue from several conceptual frameworks including a focus on social networks, knowledge characteristics, processes, culture, and the characteristics of participants involved in the knowledge transfer itself. Each of these vantage points is useful for examining a different facet of the various enablers or barriers to knowledge transfer. After discussing each of these

perspectives in turn, we'll examine an integrative conceptual framework that includes pertinent considerations from each.

In studying social network characteristics which influence knowledge transfer, Granovetter (1983) examines strong versus weak ties between individuals. Strong ties in a social network are close associates who know each other well, interact frequently, and share a common culture. Several close associates who share strong ties can be called a clique because their relationship with each other is often highly exclusive of outside members. Weak ties, however, are acquaintances a person infrequently contacts. Strong ties rarely link one clique to another but rather link the members of a single clique together. It is the weak ties which link one clique to another. The most important weak ties are those relationships which serve as the sole link, or “bridge” between two cliques.

The types of ties which exist in an organization influence the type of knowledge which is transferred within it as well as into and out of it (Granovetter, 1983). Strong ties lead to increased frequency of knowledge transfer within a clique. However, the knowledge transferred is usually not relatively novel to the recipients because they often already share knowledge in common with the sources due to their shared experiences, culture, and frequent interaction. The frequency of knowledge transfer is also increased with the strength of the tie because the recipient and source usually trust each other more.

Granovetter (1983) maintains that if weak ties exist between sharer and recipient, however, knowledge is more likely to be novel to the recipient because the two draw upon different bodies of knowledge, experiences, and fields of expertise. Knowledge is less likely to be shared across weak ties because of the low frequency of interaction and

lower trust between participants. Weak ties also enable knowledge to diffuse throughout organizations by bridging cliques—the knowledge created in one clique will quickly pass through strong ties to other clique members, but only if there are weak ties will that knowledge transfer to other cliques.

Although knowledge transfer occurs less frequently across weak ties, Levin and Cross (1998) suggest that when the two parties trust each other, they transfer knowledge more frequently despite the weak ties between them. Furthermore, more useful knowledge is transferred across weak ties when trust is present. Trust within the social network, especially between the knowledge sharer and recipient, is therefore critical to facilitating knowledge transfer.

Another facet of knowledge transfer is the nature of the knowledge itself. For instance, a defining characteristic of tacit knowledge is the difficulty in articulating it to another person (Polanyi, 1958). Tacit knowledge is deeply personal and transferring it requires not just communication, but experience. Explicit knowledge, by contrast can be easily recorded and quickly transferred. Szulansky (1996) further observed that the perceived usefulness of knowledge is a characteristic which influences its transferability. Investigating the sharing of lessons learned within an organization, Szulanski found that knowledge which is causally ambiguous is not as likely to be assimilated by the recipient and therefore successfully transferred. Causally ambiguous knowledge is that which the recipient cannot readily understand to be responsible for success. Both Polanyi and Szulanski demonstrate that the characteristics of the knowledge may influence its transferability independent of the social networks upon which such knowledge

propagates.

Knowledge transfer can also be studied as a process. For instance, O'Dell and Grayson (1998) defined transfer in terms of a seven-step process: identify, collect, organize, share, adapt, use, and create. Similar to Nonaka and Takeuchi's (1995) spiral model for knowledge creation, O'Dell and Grayson suggest that when knowledge is transferred, new knowledge is ultimately created. O'Dell and Grayson use their seven-step process model to prescribe organizational KM initiatives to increase knowledge transfer. These seven steps help identify reasons an organization might not be transferring knowledge. For example, if the first step, identifying the knowledge to transfer, is not completed, the process never gets started. According to Szulanski's 1994 study (as cited in O'Dell & Grayson, 1998), this first step in the process is the most common point at which knowledge transfer breaks down within organizations—people are ignorant that the information they need exists somewhere or that the information they have is needed by somebody else. The seven-step process model suggests that knowledge transfer is situated in action and activity; it is not simply a static feature of an individual or even a collective of individuals.

Cultural issues have also been found to impact knowledge transfer. Hofstede (1980) described several dimensions of culture which are relevant to the study of knowledge transfer—they are collectivist-individualist and uncertainty avoidance. Collectivist cultures are those in which people rely upon a group for various aspects of their well-being, while in individualist cultures people seek their well being independently. The uncertainty avoidance dimension describes the level of aversion to or

comfort with ambiguous situations. Ardichvilli, Maurer, Li, Wentling, & Stuedemann (2006) studied the influences of these cultural dimensions on knowledge transfer using a sample of workers from several countries, each representing a unique set of cultural values.

Of interest to the study of knowledge transfer, Ardichvilli et al (2006) observed that those workers who are part of a collectivist culture, which emphasizes modesty, tends to suppress knowledge transfer because individuals do not want to call attention to themselves by sharing their knowledge. Such a culture exists in countries like China where such behavior could be negatively perceived as showing off. In addition to Hofstede's (1980) dimensions, Ardichvilli, et al suggested that in cultures which emphasize the importance of saving face, such as Japan and Korea, people are less likely to expose their ignorance by asking questions; this tendency also suppresses knowledge transfer. Also, in highly competitive cultures, such as those in Russia and the United States, can contribute to knowledge hoarding when those who possess knowledge regard it as a resource to exploit against others competing for their job or business. Likewise, Kedia and Bughat's (1988) analysis of the literature indicated that knowledge is less likely to transfer between culture groups which differ significantly in the uncertainty avoidance dimension.

Finally, the successful transfer of knowledge may also depend upon the characteristics of the parties involved—the recipient's ability and motivation to absorb the knowledge or the source's ability and motivation to share it. For example, according to Cohen and Levinthal (1990), knowledge recipients may not be capable of absorbing new

knowledge because they lack “absorptive capacity,” which is the ability to receive, retain, and apply knowledge. A recipient's absorptive capacity is dependent upon prior knowledge which helps the recipient understand and absorb new knowledge. Thus, a student taking a course without having taken the prerequisites might lack the absorptive capacity to assimilate the course's content because the student lacks foundational knowledge in the subject. Similarly, Polanyi (1958) suggests that sources of knowledge are also sometimes unable to explain what they know or how they know it. This is, of course, particularly true when the knowledge is highly tacit. Nonaka and Takeuchi (1995) further suggest that knowledge which is explicit for one person may be tacit for another depending upon the ability of the knower to articulate it. Thus, the knowledge recipient and source must each be capable of transferring the knowledge, which can be partially influenced by the nature of the knowledge itself discussed earlier.

Beyond an individual’s capabilities to absorb or articulate knowledge, individual attitudes may also play a part in successful knowledge transfer. According to the constraining factor model (Siemsen, Roth, & Balasubramanian, 2008), knowledge will be transferred unless constrained by either a lack of motivation, opportunity, or ability (MOA) to do so. Siemsen et al. (2008) assert that while prior studies of knowledge transfer focused on ability and opportunity, their meta-analysis of relevant literature suggests that if ability and opportunity are minimally met, motivation becomes the determining factor in knowledge transfer.

Unfortunately, there are many potential motivational barriers to knowledge transfer. According to a study by Katz and Allen (1982), teams which remain together

beyond 5 years tend to develop an attitude which motivates them to reject knowledge from outside sources. This tendency arises from cohesiveness within the group that causes members to have a strong preference for established solution sets and processes over outside ideas. Katz and Allen label this attitude the “Not Invented Here” syndrome and prescribe a treatment of shortened tenures for team members to prevent the syndrome and encourage knowledge transfer. Teams or individuals may also hoard knowledge which they perceive as a source of power (O’Neil & Adya, 2007).

Knowledge Markets: An Integrated Framework

The preceding discussion demonstrates the many complexities of knowledge transfer in organizational settings. Davenport and Prusak (1998) attempt to capture such complexities in their conceptualization of intra-organizational knowledge transfer in terms of market mechanisms operating between buyers and sellers of knowledge.

Davenport and Prusak offer the following description of the knowledge market framework:

Like markets for goods and services, the knowledge market has buyers and sellers who negotiate to reach a mutually satisfactory price for the goods exchanged. It has brokers who bring buyers and sellers together and even entrepreneurs who use their market knowledge to create internal power bases. Knowledge market transactions occur because all of the participants in them believe that they will benefit from them in some particular way. In economists’ jargon, they expect the transactions to provide ‘utility.’ (p. 25)

Careful scrutiny of the knowledge market construct reveals a number of elements and

influences that parallel previous discussions of social networks, knowledge characteristics, the knowledge transfer process, cultural impacts, participant characteristics, and motivational factors on the likelihood of successful of knowledge transfer.

The processes of knowledge transfer

The knowledge market framework describes the process of knowledge transfer using market-like activities. Specifically, a buyer seeks knowledge through a broker or seller and requests it. Once a potential seller is identified, the seller evaluates the price implicitly or explicitly offered and provides the knowledge. The buyer is then expected to pay for the knowledge at which time the transaction, and the knowledge transfer process, is complete. Just as O'Dell and Grayson's (1998) seven-step process of knowledge transfer distinguished the concept from static attributes of the parties or context involved, the knowledge market framework also accounts for action and activity. For example, we can examine market activities to diagnose a knowledge transfer process breakdown by asking if the sellers are locating buyers, or if they are agreeing upon prices, able to make payments, etc. Thus, knowledge markets account for the dynamic aspects of knowledge transfer.

Social networking

For example, the social network structure can indicate how efficiently a knowledge market might work. According to Davenport and Prusak (1998), informal networks are more conducive to knowledge commerce than corporate communication structures. Buyers find knowledge sellers through word-of-mouth, often using

knowledge brokers who frequently work at the middle management level of an organization. These knowledge brokers usually have many of the critical bridging weak ties that Granovetter (1983) suggests are necessary to connect otherwise isolated cliques. As middle managers, knowledge brokers interact with more cliques, but true to the nature of weak ties, they share relatively little in common with the clique members and thus access a wide array of knowledge from diverse corners of an organization. Conversely, organizational knowledge markets with few weak ties will suffer from a lack of knowledge commerce (Davenport & Prusak).

Trust between parties is also an important prerequisite for commerce in the knowledge market (Davenport & Prusak, 1998). Trust allows both parties in a market to believe that the other party will make payment for the knowledge shared. For an altruistically-motivated seller, this may mean trust that the buyer will offer thanks. For the reciprocal or reputation-seeking seller, this may mean trust that the buyer will reciprocate the favor or give the seller public credit for providing the knowledge.

Knowledge characteristics

The nature of the knowledge itself may help define such knowledge as a commodity or a rare resource in a knowledge market. For example, it is more difficult to price tacit knowledge and to substantiate afterward that the transaction occurred because tacit knowledge transfer is experiential—showing a worker how to do something is less concrete than sending an email, for example (Davenport & Prusak, 1998). The email can serve as a record of explicit knowledge transfer, but when tacit knowledge is shared, the source and recipient may not agree on how much or how effectively the tacit knowledge

was actually transferred. This lack of agreement may lead to misunderstandings about the level of indebtedness between the seller and buyer.

Motivation

That level of indebtedness is the price of the knowledge transferred, and it indicates the motivation of buyers and sellers to acquire or share knowledge. According to Davenport and Prusak (1998), motivations for sharing knowledge can be either extrinsic, such as reciprocity and reputation, or intrinsic such as altruism. Reciprocity is the expectation that the recipient will do something for the source in return for the knowledge, such as a future favor. A knowledge sharer might also expect to boost his reputation through knowledge sharing—making known his knowledge or expertise which might later result in a pay raise or promotion. The altruistic knowledge sharer enjoys the act of sharing knowledge and receiving thanks from the buyer or simply knowing that he or she has contributed to the good of the organization.

Borrowing from findings in the social psychology field about interactions between intrinsic and extrinsic motivations, Osterloh and Frey (2000) discovered a motivation “crowding effect,” in which an extrinsic reward for sharing knowledge may actually diminish a person's intrinsic motivation to share that knowledge. For example, a person might intrinsically enjoy teaching another person how to catch fish, but under a scenario in which that same person is paid to teach another to fish he or she would find the job less satisfying. Osterloh and Frey suggest that tacit and explicit knowledge are priced differently because tacit knowledge transfer is more often intrinsically motivated and explicit knowledge is more often extrinsically motivated. They warn that injecting

extrinsic rewards into an existing knowledge market may actually suppress a seller's motivation to share tacit knowledge—the key ingredient to competitive advantage and organization knowledge creation.

Davenport and Prusak (1998) identified two motivational factors, knowledge hoarding and the not-invented-here attitude, as market pathologies--factors which interrupt the market and make commerce less efficient. The effect of knowledge hoarding on the market is stagnation—if only one person has a monopoly on a particular piece of knowledge, this knower will be less likely to share that knowledge and end the monopoly position and its associated rents. By sharing the knowledge, others now have it and the original sharer is in a less competitive position to exploit it. Prahalad and Hamel (1990) remind us that knowledge is not consumed as it is used but grows when it is applied and shared. Similarly, Nonaka and Takeuchi (1995) suggest that knowledge hoarding causes knowledge to stagnate and deteriorate over time. The not-invented-here (Katz & Allen, 1982) market pathology slows commerce by depriving knowledge buyers of key sources of knowledge, and conversely denying knowledge brokers access to key markets. It also causes members of a group or organization to undervalue the knowledge from outsiders which also stagnates knowledge transfer.

Culture

Cultural influences on knowledge transfer also impact the efficiency of the market. For example, Ardichvili et al. (2006) found that because collectivist culture discourages a seller from voicing knowledge in accordance with modesty values, such sellers were less likely to engage in commerce with potential buyers. Likewise, when

cultural norms and conventions pertaining to saving face are at work, commerce was slower due to a reluctance to seek knowledge on the part of potential buyers. Finally, in a highly competitive culture where knowledge is power, Ardichvili et al. found evidence of Davenport and Prusak's (1998) knowledge hoarding market pathology as sellers attempted to preserve their own power positions that were grounded in the possession of rare knowledge.

In summary, the knowledge market has been demonstrated to be a useful framework for integrating various perspectives, issues, and mechanisms associated with knowledge transfer. The market framework can account for a wide array of factors that contribute to or inhibit the transfer of knowledge in an organization. Like an economist, we can draw upon these forces and mechanisms to move toward a better understanding of those markets, diagnose market inefficiencies, and eventually prescribe corrective actions.

An Introduction to the Generations

Using the literature surrounding knowledge transfer as a backdrop, we can now work towards understanding and addressing some of the problems associated with the aging workforce and subsequent mass exodus of knowledgeable personnel. In particular, we may be inclined to ask the question, “Why does knowledge transfer seem to be failing between the Baby Boomer Generation and Generations X and Y?” In particular, a study of the unique and theoretically relevant attributes of the generation leaving the workforce, the generation taking its place in leadership roles, and the generation just entering the workforce, may all yield some important clues about how or why knowledge transfer

might differ or falter between these generations, rather than occurring regularly or smoothly among them.

Strauss and Howe (1991) indicate that generations have been studied using two primary frameworks: the age-location cohort method and a static age-group method. The age-location cohort method examines each generation as a unique cohort progressing through various stages of life. For example, one might study those born during a specified time period as they progress through all phases of life. The static age-group method, however, seeks to characterize each basic phase of life regardless of which cohort passes through it. Using the static age-group approach, one might then study the attitudes, perceptions, and behaviors of people during their midlife phases, regardless of their generational cohort. When considering the present generations, then, we may ask what is unique about each phase of life or we can examine each generational cohort. According to Strauss and Howe, the age-location cohort framework offers more distinctive insights because age-cohorts maintain more common attitudes, behaviors, and perceptions than change from one basic phase of life to another (Strauss & Howe).

Generational cohorts can be subjectively defined by their “peer personalities” which consist of “collective attitudes about family life, sex roles, institutions, politics, religion, lifestyle, and the future” (Strauss & Howe, 1991). Generational cohorts might share behaviors that are cautious or reckless, calm or aggressive, generous or selfish, and common perceptions about spirituality, culture, or politics. Strauss and Howe suggest that each generation can be represented by a caricature of its stereotypical member, and that although many members of the generational cohort may not agree with the

caricature, they still identify with and recognize it as a peer.

Meet the Baby Boomers

The Baby Boomer generation, initiated by the end of World War II, is largely identified by influential events which occurred during their youthful, formative years (Hicks & Hicks, 1999). In particular, they were raised by “the most permissive parents in history,” (Smith & Clurman, as cited in Hicks & Hicks) due largely to the influence of Dr. Benjamin Spock, who advocated a kinder, gentler approach to child rearing than previous generations (Smith and Clurman, in Hicks & Hicks). As children, the Baby Boomer generation was collectively inspired by achievements such as the lunar landing, and disenfranchised by scandals such as the Watergate burglary (Hicks & Hicks). Baby Boomers have long felt the threat of a nuclear holocaust living under the Cold War, which has given them a lifelong sense of common purpose. Consequently, they view their careers as meaningful contributions to the greater good and derive satisfaction from that contribution.

Although optimistic about their purpose in life, Baby Boomers are characterized as a highly selfish generation. Hicks and Hicks (1999) attribute this selfishness to focused advertising by toy companies during their youth, as well as hopeful expectations of them expressed by older generations. During their childhoods, Baby Boomers were told they would find cures to many frustrating diseases and solve lingering social problems such as world hunger (Zemke, Raines, & Filipczak, 2000).

Meet Generation X

As the post-world war economic expansion began to slow down at the end of the

1960s, a new generation emerged in time to be influenced by the Vietnam War, workaholic parents, and a sputtering economy (Hicks & Hicks, 1999). Generation X is often called the “latchkey generation,” because many of its members came home from school to an empty house due to working parents (Hicks & Hicks). As a result, members of Generation X are largely independent, not relying upon a large network of friends. They also adapt easily to change, even expecting it over the course of their lives. Growing up in difficult financial times has given this cohort relatively pessimistic expectations of the future.

In the workplace, members of Generation X generally perceive their jobs as necessary means to achieve their lifestyle, rather than an end in themselves (Zemke, Raines, & Filipczak, 2000). This can be attributed to a disdain for their parents' workaholic tendencies (Hicks & Hicks, 1999). Likewise, high divorce rates among their parents, nationally publicized scandals, and disappointments such as the Challenger explosion in 1986 have instilled in them an attitude of distrust toward others and a disregard for authority (Zemke et al., 2000).

Meet Generation Y

Similar to the circumstances of the Baby Boomer generation in its youth, Generation Y has mostly known prosperous economic times in the United States—a factor which likewise created a sense of optimism (Hicks & Hicks, 1999). Generation Y's parents are largely Baby Boomers who have taken advantage of favorable economic conditions and the rewards of successful careers to provide abundantly for their children. Consequently, Generation Y is accustomed to a prodigious lifestyle and expects to enjoy

the fruits of prosperity throughout their lives (Hicks & Hicks).

Sometimes called the “Net Generation,” Generation Y is exceptionally comfortable living lives networked by technology to friends and family members (Hicks & Hicks, 1999). They tend to take technology, such as the Internet, for granted not having known life without it (Zemke, Raines, & Filipczak, 2000). Not as neglected as Generation X, they are far less independent, preferring to relate to a larger group of friends using technology to stay connected (Hicks & Hicks). According to a recent study of Generation Y,

If parents think that their kids are catching on to the new technologies faster than adults, they're right. It's easier for kids. Because [Generation Y] children are born with technology, they assimilate it. Adults must accommodate—a different and much more difficult learning process. With assimilation, kids view technology as just another part of their environment, and they soak it up along with everything else. (Don Tapscott as quoted in Hicks & Hicks)

Networked, online computer-gaming has also made teamwork a natural behavior for members of Generation Y, as they frequently form teams online with other players from around the world to accomplish shared objectives (Wagner, 2009).

Differences Between Generational Cohorts

Absorptive capacity

An alarming consequence of high comfort levels with media technology among younger generations (Generations X and Y) is their tendency to expose themselves to streams of information from multiple sources at the same time (Goodman, 2009).

According to a study of chronic heavy and light media-multitasking, Ophir, Nass, and Wagner (2009) found that those who frequently attempt to absorb multiple sources of information are less able to absorb the incoming information than those who infrequently do so. Furthermore, the study suggested that those who frequently multitask are less able to absorb relevant information while only exposed to a single media source.

According to Nass (as cited in Goodman, 2009), the implication of these multitasking characteristics is that members of younger generations (X and Y) are less able to pay attention than members of older generations who multitask less frequently. The results surprised the researchers, whose objective was to discover why younger people were (as previously assumed) better at heavy media multitasking than older people who generally avoided it. Nass suggests that the younger generations have a degraded ability to focus their attention in any context, whether at the dining room table while sharing a meal with their families, or driving a vehicle on public roads, due to their tendencies towards frequent media multitasking.

Cohen and Levinthal (1990) suggest that a recipient's lack of absorptive capacity, or the ability to receive, retain, and apply knowledge, tends to interfere with knowledge transfer. The implications of Ophir et al. 's (2009) study therefore suggest that there may exist obstacles to transferring knowledge from older generations to younger generations due to an inability of the recipients to focus their attention, thereby impacting the commerce between Baby Boomer knowledge sellers and Generation X or Y buyers. For example, one might surmise that in a knowledge market, a member of the Baby Boomer generation could have difficulty finding buyers among a market of younger people who

are less able to pay attention. The transaction would also be more difficult when selling to a member of Generation X or Y than the Baby Boomer is accustomed to because his or her fellow cohorts are able to pay closer attention. Thus, we can conclude that a lack of absorptive capacity may cause knowledge markets to operate less efficiently when crossing generational lines, reducing commerce and contributing to the stranding of knowledge in the minds of departing older workers when it is needed by the younger. In particular:

Proposition A: In the workplace, Generations X and Y tend to engage in media multitasking during knowledge transfer more often than Baby Boomers.

Culture

Recent survey research suggests that there is a significant difference in the collectivist-individualist cultural orientation between Baby Boomers and Generation X. Specifically, Generation X was found to be relatively individualist compared to the Baby Boomer generation (Sirias, Karp, & Brotherton, 2007). The Sirias et al. study sample did not include Generation Y; however, other research suggests Generation Y is more collectivist than individualist (Zemke, Raines, & Filipczak, 2000). Specifically, Zemke, et al., describe Generation Y as valuing civic virtue over individual profit, and choose employers based on agreement with institutional purpose more frequently than personal compensation. These values are consistent with the collectivism described in Hofstede's (1980) collectivism-individualism dimension of culture and stand in stark contrast to the individualism imputed to members of Generation X.

The implication of a collectivist Baby Boomer generation, followed by an

individualist Generation X, followed by a collectivist Generation Y for knowledge transfer is that knowledge transfer across the generations may be hindered by these cultural differences. In fact, Kedia and Bhagat's (1988) meta-analysis of cross-cultural knowledge transfer suggested that any time when differences in the collectivism-individualism dimension were present between a knowledge transfer source and the intended recipient, such transfer was adversely affected. The same study also indicated that any knowledge transfer involving a collectivist culture would be hindered.

Proposition B: The Baby Boomer and Y Generations tend to be more modest about volunteering knowledge in the workplace than Generation X.

Social networking

Another common behavior between Baby Boomers and Generation Y, but not frequently observed in Generation X, is a propensity to form numerous social and professional contacts and to rely upon those contacts for job accomplishment (Hewlett, K Sherbin, & Sumberg, 2009). According to Hewlett et al, Baby Boomers and Generation Y not only network frequently, but do so with each other to the exclusion of Generation X. Despite the significant age gap, 58% of recent college graduates from Generation Y prefer to seek professional advice from Baby Boomers than from Generation X.

Social networking by Generation X is characterized by seeking a few intense relationships in the workplace and frequently socializing with those contacts during, and outside of, work hours (Zemke, Raines, & Filipczak, 2000). Several studies (Zemke et al; Hicks & Hicks, 1999; and Strauss & Howe, 1990) link this social networking behavior to an unfulfilled need for close family relationships during the generation's childhood

years. Zemke et al. even suggest that Generation X largely lacks the skills to network with a broader source of contacts because of their relative isolation as children—they didn't participate in as many parent-supported social activities as the heavily doted-upon Baby Boomers and Generation Y children.

The high number of ad hoc relationships formed regularly by Generation Y and Baby Boomers suggest that these generations network through weak ties, as described by Granovetter (1983). Granovetter indicated that only through such weak ties are novel ideas and innovation spread from one clique to another. Generation X's tendency to form few relationships of an intense nature indicate that they may largely isolate themselves within cliques of strong ties, thus not availing themselves of a wealth of knowledge market exchanges and opportunities. Granovetter further suggested that such strong, clique-based social networking ties convey frequent exchanges of knowledge which marginally differs from that already held, but these ties lack the ability to broadly convey novel ideas into or out of a clique lacking weak ties. Thus, in a knowledge market framework, we can conclude that Generation X would be somewhat isolated from commerce with Baby Boomers and Generation Y.

Proposition C: Members of Generation X tend to use fewer weak ties in the workplace than Baby Boomers or Generation Y.

Trust

Using General Social Survey data gathered annually between 1972 and 1998, Robinson and Jackson (2001) suggest that each successive 6 year cohort born in the 20th century is less trustful of other people than the previous. Their study indicated that trust

was not only declining from cohort to cohort, but that it was also declining within each cohort as time progressed. The importance of trust in knowledge markets, as suggested by Davenport and Prusak (1998), indicates that knowledge markets may be losing efficiency with every successive generation. The difference between trust in the older versus younger generations might indicate that younger generations are not as trusting in the knowledge market, and therefore less likely to engage in knowledge commerce per se than the older generation.

Proposition D: Members of each successive generation are likely to be more cautious about trusting others in the knowledge marketplace.

Motivation

Hewlett, Sherbin, & Sumberg (2009) suggest that in the workplace, Baby Boomers are generally motivated to perform their jobs differently than Generation X, but similarly to Generation Y. Specifically, Baby Boomers and Generation Y seem to be intrinsically motivated to perform by a similar set of job attributes which include high quality colleagues, access to new experiences and challenges, and recognition from one's company or boss. Generation X, however, seems primarily motivated by extrinsic rewards such as monetary compensation (Hewlett et al.).

These findings suggest that under the knowledge market framework, Baby Boomers and Generation Y might prefer intrinsic payment for the sale of knowledge, while Generation X likely prefers extrinsic payment. Due to Osterloh and Frey's (2000) motivation crowding effect, Generation X might actually discourage Baby Boomers from offering knowledge to them, an activity the Baby Boomers might otherwise enjoy for the

sake of gratifying their altruistic sense of duty, by offering extrinsic prices for intrinsically enjoyed activity.

Proposition E: Baby Boomers and Generation Y tend to be intrinsically motivated to share knowledge while Generation X more likely expects extrinsic rewards to be part of the transaction.

Valuation of information

Before knowledge sellers in Davenport and Prusak's (1998) knowledge market will make a sale, they must expect to be paid an equitable price. But what happens if nobody thinks the product should be paid for? In particular, “Boomers matured in a period when information was highly valued, but a difficult commodity to obtain. [Generation X] grew up during the information explosion” (Hicks & Hicks, 1999). Consequently, research suggests that Generation X largely considers knowledge to be a public good. Moreover, there may be lingering perceptions among Baby Boomers that their knowledge is worth more than Generation X thinks it is. Using the knowledge market framework, this situation might result in a disparity in pricing, reducing the flow of knowledge because pricing is seldom agreed upon between buyers and sellers. Such research might also suggest that Generation X undervalues tacit knowledge, which cannot as easily be procured for free (i.e. on the Internet) due to its necessarily experiential nature.

Proposition F: Generations X and Y are less willing to pay for knowledge than Baby Boomers.

Preferred learning methods

Differences in preferred learning methods across the generations also indicate an eschewing of tacit knowledge by Generation X. According to a study by Ware, Craft, and Kerschenbaum (2007), Baby Boomers prefer to learn workplace skills and knowledge in a traditional classroom setting with an instructor lecturing to students. In contrast, students in Generation X seem to prefer solitary learning at their own pace on a computer, or using computer-based training. Generation Y, however, seems to prefer experiential learning in lieu of the Baby Boomers' lectures and Generation X's computer, as well as collaboration with peers in place of Baby Boomers' one-way communications and Generation X's solitude. The result, viewed from the knowledge market framework, is a truly interesting marketplace. Do the Baby Boomers attempt to sell their knowledge to Generation X through unwelcome lectures? Does Generation X even enter the marketplace for tacit knowledge, which is difficult to codify and program into their computer-based-training (Davenport & Prusak, 1998)?

Proposition G: Baby Boomers, Generation X, and Generation Y tend to prefer different venues for transacting knowledge.

In summary, the knowledge market framework captures many important aspects of knowledge transfer. Furthermore, prior research concerning the attitudes, perceptions, and behaviors of the three generations primarily occupying the current workforce in question suggest several possible sources of knowledge market inefficiencies between those generations. The following chapter will describe the methods by which these issues will be explored in the hopes of reaching a useful characterization of knowledge markets in the inter-generational workforce context.

III. Method

Research Strategy

The selected research strategy should provide an opportunity to discover evidence indicating that the proposed differences between generational cohorts in the workforce exist, and that they affect the transfer of knowledge (and, ultimately, the ability of organizations to retain their critical corporate bodies of knowledge). At the same time, the method must be flexible enough to reveal any evidence that allows for contradictions of the propositions outlined in Chapter 2, characterize the relative importance of each finding, and reveal evidence of any unanticipated effects or factors relating to inter-generational knowledge transfer in the workforce.

Rather than measuring what we know to exist, we ask, “What exists?” The preferred strategy for such an investigative study is using qualitative analysis, which yields insights to provide the initial foundations to form a theory or hypothesis once potential answers to those “What exists” questions come to light (Trochim & Donnelly, 2008). According to Trochim and Donnelly, “qualitative research enables us to get at the rich complexity of the phenomenon, to deepen our understanding of how things work” (143). Such sentiments are entirely consistent with the objective of the present study, to tell the story of inter-generational knowledge transfer in the workplace and determine what, if anything, exists that might account for the problems observed and cited.

Among the various qualitative measures available, the nature of this study and its line of inquiry suggest a method which specifically provides a “thick description,” as

defined by Eisner (1991). According to Eisner, there are two levels of interpretation of events. The first is a simple explanation of an apparent cause and effect. The second level explains the meaning of an experience from the perspective of those who experience it, using expressive language to convey the full meaning of the experience. Direct observation might provide a surface-level description of the knowledge markets in action, but Davenport and Prusak (1998) indicate that much of the payment through reciprocation or other currency occurs on highly variable time scales. Furthermore, many of the transactions and payments would be invisible to a third party, especially where implied or intrinsic pricing is present. Thus, the nature of knowledge transfer suggests that Eisner's thick description is appropriate to characterize what's really happening in the minds of the participants, to capture their explanation of the attitudes, perceptions, and behaviors surrounding knowledge transfer. How better to get inside their minds than to ask them?

A semi-structured interview was selected as the instrument to capture the participant's own perceptions, attitudes, and behaviors regarding knowledge transfer as they would interpret them to form a more complete understanding of events than mere observation would provide. The interview protocol (see Appendix A) developed for this study guides participants through descriptions of their interpretation of knowledge transfer among their generation as well as among members of other generations they work with to create a composite understanding of the generational issues at work that are theoretically or empirically relevant to the process of knowledge transfer and the efficiency and functioning of a knowledge market.

Research Context

Participants

The participants in this study were military and civilian acquisition workers attending courses at the Defense Acquisition University (DAU) campus in Kettering, OH. Participants were solicited from one class each of newly hired management workers, mid-career managers, and senior-level managers. Each of these courses roughly target one of the generations of interest to this study: the entry level course included primarily Generation Y, the mid-career manager course included primarily Generation X, and the senior-level management course included primarily Baby Boomers. This sampling frame thus represented each generation of interest in this study. The participants were invited at the beginning of a multi-day course to volunteer approximately 60 minutes of their free time between classes to be interviewed. All participants were Department of Defense employees and performed similar knowledge-based acquisitions work.

The defense acquisition workforce was remarkably well-suited for this study because it conforms to the “bathtub”-shaped manpower curve described in Chapter I. In fact, as of early 2010, 64 percent of the defense acquisition workforce was eligible to retire (C. D. Hayden, personal communication, January 27, 2010), making this an organization for which the age-wave challenge is especially relevant. DAU attendees also provided a rich sampling frame because students attend DAU courses throughout their entire careers, from initial training through senior leadership preparation. Thus, the DAU student body represented members from each of the generations of concern, but eliminated a potential source of organizational variability because all worked in similar

Defense-focused contexts.

The purposive sample of participants included representation by members of the Baby Boomer Generation, Generation X, and Generation Y. While there is a high variation of adherence to generational “peer personalities” within each generation, most members of each generation are purported to be highly conscious of their cohort's general characteristics regardless of personal adherence (Strauss & Howe, 1991). Strauss and Howe assert that members of a generational cohort can universally describe the attitudes, perceptions, and behaviors which characterize their cohort. Thus, the participants served as proxies for their own generational archetypes and were therefore tasked with speaking for the attitudes, perceptions, and behaviors of their generational cohort rather than their personal attitudes, perceptions, and behaviors.

The volunteers for this study included three members of the Baby Boomer generation, four members of Generation X, and five members of Generation Y, based upon self-identification. All participants were active members of the workforce and indicated they could describe the attitudes, perceptions, and behaviors of their respective generations. Occupational specialties represented in each course were contracting, management, or engineering, all fitting Davenport and Prusak's (1998) conceptualization of those workers for whom knowledge is most important, including those who, “need to create, share, search out, and use knowledge in their daily routines” (p. 108).

Procedures

Using the inter-generational propositions from Chapter 2 as a guide to inform the nature of the questions that were posed, a semi-structured interview protocol was

developed and administered in three phases. The first phase included a brief introduction and asked the participants to identify which generational cohort they personally identified with, to describe the basic characteristics of that generation, and to describe their understanding of the construct of knowledge. This phase established the participant's qualifications to speak on behalf of his or her generational cohort. None of the 12 participants were disqualified from further participation due to indicated unfamiliarity with their generational archetype. According to Strauss and Howe (1991), the test of an individual's membership in one generation or another is based upon perception—in other words, ask the person. Age location can serve as a rough guide to generational assignment, but self identification is the rule (Strauss & Howe). Thus, participants were not asked their ages, merely their perceived generational assignment.

The second phase of the interview consisted of items organized to elicit insights, explanations, and anecdotes detailing how various elements of knowledge transfer in general, and knowledge markets in particular, behave for each generation. Questions were structured to allow for the introduction of unanticipated topics and explanations. In addition to answering questions about their own generations, participants were asked to also describe the other generations to illuminate potential common misunderstanding between the generations which confound knowledge transfer. Based on initial reviews of the proposed interview protocol, all formal and explicit references to the knowledge market framework per se were omitted so as not to bias or prime the respondents to a particular line of thought or perspective on inter-generational knowledge transfer.

In the final phase of the interview, participants were asked to compare their

generation's participation in knowledge transfer processes within the workforce to the knowledge market metaphor. The purpose of this phase was to investigate and explore the applicability and appropriateness of the market construct across the generations.

The protocol was administered to all participants in person, in an empty classroom and recorded with a digital voice recorder. No other people were present during the interviews. The interviews were conducted during the participants' noon break times from class, prior to the start of class, or after class. Each interview was completed in a single session and all interviews were completed during a one-week period. Interview recordings were transcribed verbatim.

IV. Results

The interviews averaged 36 minutes in duration and ranged between 18 minutes and 55 minutes for a combined total of 437 minutes. The transcribed interviews resulted in 99 pages of 12-point font, single spaced text, which were analyzed using an open coding technique to identify themes and patterns (Esterberg, 2002) associated with each of the main elements or subsections of the interview protocol. For each such section, relevant quotes were identified from the transcribed interviews and entered into a spreadsheet. One row was assigned to each quote, and each row consisted of a series of columns used to record the generational cohort described by the quote, the quote itself, a code indicating the source of the quote, and researcher notes entered for each quote. In general, the researcher notes consisted of simple statements summarizing the latent or extant sentiments, themes, or issues embodied within the quote. These notes were then compared across each theme to create a composite description of the nature of that topic as it pertained to the transfer of knowledge within and among the generations. In total, 217 quotes were selected from the transcripts for coding across 9 topic areas. Quotes for each topic were selected from throughout the interview transcripts—not merely the portion of the interview intended to investigate the particular topic.

Definition of Knowledge

Participants' perceptions of the term “knowledge” were useful for clarifying what each participant meant throughout the interviews when talking about knowledge and how each generation conceptualizes knowledge. The focus of this study is the exchange of

knowledge between generations, so it was important to clarify exactly what each generation thought it was exchanging with the others. In knowledge market terms, were buyers and sellers negotiating for the same product?

The main theme to emerge was a dichotomy in the description of knowledge between those who described tacit knowledge and those who described explicit knowledge. All three Baby Boomers described knowledge using the word “experience,” a near-synonym for tacit knowledge. In fact, Nonaka and Takeuchi called tacit knowledge “knowledge of experience” (p. 61). All three Baby Boomers described an accumulation of knowledge over time; none described facts or other temporal information. One Baby Boomer concisely stated, “I would say [knowledge is] experience, what we've learned over the years.”

Two of the four participants from Generation X similarly described tacit knowledge. The other two used more generic language which suggested neither a tacit nor an explicit dimension of knowledge. For example, one of them said, “We would say its people skills, getting things done. How to motivate people.” In stark contrast to the Baby Boomers' description of tacit knowledge, all five participants from Generation Y described explicit knowledge; information that could be accessed and used quickly from books or the Internet. Two members of Generation Y boldly excluded knowledge which wasn't explicit in nature when defining the concept of knowledge per se for their generation. As one said, “knowledge has been replaced with access to information”; the other similarly noted that “Most in my generation would just send a link and say, 'see for yourself.' They can click on the link and learn everything I know about something.”

Three of the five Generation Y participants described a common perception in their generation that being knowledgeable means being able to find information in books or on the Internet, rather than knowing the knowledge oneself.

Absorptive Capacity

Two themes emerged suggesting that members of Generation Y tend to engage in behaviors which have a negative effect on their ability to focus their attention and absorb knowledge. The first was a tendency toward media multitasking; the second suggested that members of Generation Y have shorter attention spans than the other generations. Specifically, only one of the three Baby Boomers and one of the four Generation X'ers indicated that their generation frequently engage in media multitasking at work; however, all five members of Generation Y indicated that members of their generation frequently do. Interestingly, members of Generation Y were aware that multitasking degrades their ability to pay attention to what others are saying, but they do it anyway; e.g. "...talking to somebody who is surfing the internet and watching television means they can't pay attention to what I'm saying, even if they do it all the time." Another described how members of Generation Y were distracted by multitasking but were learning to feign paying attention, "If you're on the phone with someone and they think you're keeping up with the conversation then it doesn't matter if they know what else you're doing."

Another finding suggested a common preference amongst members of Generation Y for knowledge in small quantities and a nearly disdainful attitude towards contextual knowledge. As one participant said, "We're very accustomed to getting little bits of knowledge...we only want the answer to the question we ask. We don't want all the

context. That's just wasted time.” Another said that members of Generation Y “see a need to give others only the information they need to know...you don't want to read five pages...” such sentiments were also echoed in a general reluctance among Generation Y to seek knowledge in person because a lengthy person-to-person conversation might become “unbearable,” and not worth the sought-after knowledge.

Culture

Obtained results suggest that there is a difference in modesty between the Baby Boomers and Generations X and Y. Two of the three Baby Boomers described their generation as more reserved than outspoken, and four of the other five participants from Generations X and Y also agreed that Baby Boomers are, indeed, more modest. One Baby Boomer said, “Many of us... don't want to admit that we don't know something...we got to where we are afraid to share it openly and completely.”

In contrast to the Baby Boomers' modesty, three of the four Generation X and all five Generation Y participants indicated that their generations typically speak up and share freely, but for different reasons. One member of Generation Y said of his cohorts that, “if you do happen to have the knowledge, we share it so they know that we know something. It becomes a way to establish your credibility, so that coworkers see that we know something. You know...he's a person who knows all about cars or whatever you're talking about.” Three participants from Generation Y similarly described their outspokenness as a means of showing off. Members of Generation X did not similarly describe a desire to show off, but rather that their outspokenness arose from a desire to be helpful.

Motivation

When asked why their generations shared knowledge, members of each generation described differing motivations. All three Baby Boomers indicated that members of their generations expected extrinsic rewards for sharing their knowledge, and two of the Baby Boomer participants said that the expectation would often be stated explicitly to the knowledge recipient as a condition of sharing. Members of the other generations reinforced this observation, indicating that an unspecified, future reciprocal favor or knowledge exchange would be the preferred motivator for Baby Boomers.

When asked what motivates Generation X to share knowledge, one participant simply stated, “We have to get things done.” All four of the Generation X participants indicated that their generation was motivated by extrinsic rewards though one also mentioned intrinsic rewards. Unlike the Baby Boomers, however, none of them cited reciprocal favors or knowledge sharing and none cited tangible rewards. Rather, the generation seems to be motivated by a mix of intangible rewards such as altruism, gratitude, civic duty, and a sense of efficacy. There were no clear leading rewards among that list and none of them mentioned tangible rewards.

Four of the five Generation Y participants indicated that their cohort was motivated to share knowledge by intangible, extrinsic rewards; though one participant also indicated intrinsic motivational factors. All four who cited extrinsic motivational factors indicated that reputation was the sought-after reward. Similarly, all members of Generation X perceived Generation Y’s motivational factors in terms of reputation. None of the Generation Y participants indicated that tangible rewards were desired. As one

participant summarized, “I think that we share knowledge to try to flare our feathers and show what we know, what we're good at... we don't like tangible benefits for anything.”

Social Networking

Baby Boomer participants indicated that they had mixed perceptions about the size of their networks and the strength of the ties they frequently form. One stated, “we have no problem asking just about anyone if we think we can gain something from asking the question.” Yet another felt the opposite by describing the size of a typical social network among his generation by saying, “I think its just a few. Not very wide.” All three members of Generation X who perceived the Baby Boomers' social networks in terms of the former; that Baby Boomers typically had relatively large networks consisting of both strong and weak ties.

A majority of Generation Xers indicated that members of their generation form few ties, but those ties are generally strong. None indicated a tendency to form weak ties or that Generation X tended to form large networks.

Four of the five Generation Y participants described relatively large social networks. Descriptions indicated a tendency to form both strong and weak ties though the main emphasis was on the size of the network. One participant illustrated the aggressiveness with which his generation pursues large social networks by noting that “I've had huge competitions with my friends...we would brag about how many people we were talking to at the same time.” When asked how well this same individual knew those people he was talking to, he said, “It didn't matter, all I cared about was the number.”

Trust

Across the three generations, respondents had very little to say themselves about disparities between the generations regarding general tendencies to trust. However, significant themes emerged which did vary across the generations including the necessity to trust during knowledge sharing, the role in knowledge exchange for whom trust is important (source vs. recipient), and the desired basis of establishing that trust.

All three Baby Boomers said that members of their generation considered trust important for sharing knowledge and that it was necessary for the sharer to trust the recipient but that trust in a knowledge source was necessary to receive knowledge. Specifically, they all said that members of their generation needed to trust that the recipient would not use the information to try to compete against the source for advancement in the workplace. Participants from the other generations suggested that the Baby Boomers' preferred basis for trust was affection. For example, one participant from Generation X said about Baby Boomers, "Bottom line, if you don't develop a personal relationship with them, they won't tell you anything. They need a friend."

All four Generation X participants similarly indicated that it was necessary for members of their generation to trust the recipient before sharing knowledge, however, only two expressed concern about possible competitive intentions of the recipients. The other two stated that members of their generation needed to trust the recipient to accomplish something with the shared knowledge, fearing that the time and effort spent sharing would have been wasted.

Only one of the five Generation Y participants indicated that there was any need

to trust a recipient before sharing knowledge. The other four indicated that trust was necessary to receive knowledge. Among those four, three indicated that the trust should be based on careful scrutiny of the knowledge source, while the fourth indicated it should be based upon a personal relationship.

Value of Knowledge

During several portions of the interviews (not just the section of the interview specifically devoted to the subject), participants provided important clues about how the generations assign value to knowledge, and who has a right to that knowledge. Some gave such clues during their discussions of the meaning of the concept of knowledge, others while discussing when members of their generation share knowledge, and still others when talking about ownership of knowledge. One focal theme emerged regarding each generation's perception of how to assign a value to knowledge: whether it is perceived by the generation as personally exploitable or not.

Two of the three Baby Boomers used the phrase, “knowledge is power” to indicate their generation's perception of its exploitability. Four of the five participants from the other generations similarly described the Baby Boomer generation as perceiving knowledge as a valuable resource for personal exploitation. There was very little evidence that the Baby Boomer generation considers knowledge a public good.

In describing perceptions of the ownership of knowledge, all four members of Generation X insisted that their cohorts considered knowledge held by an individual as a public good within an organization. None indicated that knowledge was a resource which belonged to the individual knowers to be exploited for personal advantage.

Generation Y participants gave differing views on knowledge ownership and belonging. Only one of the five indicated that his generation uses knowledge to “get ahead.” The others talked about sharing knowledge as an obligation to society. One said that a common perception among his generation was that, “knowledge is free, and is meant to be free...”; further supported by another indicating that knowledge is, “decreasing in value as it becomes easier to get...straight off the internet.” A Baby Boomer participant and two from Generation X both commented that Generation Y tends to think that knowledge has little or no value. Furthermore, a participant from Generation X commented that Generation Y “...think[s] it belongs to everyone. It’s a public good. If they can get it out, it’s for everyone whether they want it or not.”

Venues

In describing how their generations prefer to exchange knowledge, Baby Boomer responses indicated that their generation has a unique preference for asking somebody rather than seeking out the answer oneself. One Baby Boomer said, “We’re old school, we phone a friend, ask a peer, find somebody who knows.”

A typical Generation Y response illustrates the generation's apparent disdain for face-to-face knowledge sharing of knowledge, “I don't want to waste too much time, so here's where you can find the answer. I certainly don't want to meet up with the person because that's too much 'good time.' I'll send [them] a link or something, but I won't call [them] or meet [them] somewhere.” A similar Generation Y response indicated that this generation perceives that people do not need to meet face to face to exchange knowledge, “If you can't access it from your computer, it’s checked off as irrelevant or

obsolete...does not exist. There's a notion across the generation that if it's not on the Internet...nobody knows it." Four of the five Generation Y participants explained that the reason for preferring computer search is to avoid talking to people, especially members of older generations who take more time than is required to impart knowledge. As one participant said, "It takes longer to ask someone, to track someone down and get their time and make sure they're answering the question you asked and not taking so much time...often times they'll talk for so long."

Responses from Generation X indicated their generation's preferences for exchanging knowledge lie somewhere between the Baby Boomers and Generation Y. Two of the four Generation Xers indicated a preference for face-to-face knowledge exchange while the other two indicated preference for independent searches for source documents.

Knowledge Market Framework

The Baby Boomers and all but one of the Generation Y participants agreed that the manner in which members of their generations tend to exchange knowledge can be conceptualized as a marketplace including buyers, sellers, and a pricing system. Interestingly, the other generations disagreed with Generation Y, and did not think the knowledge market was an appropriate way to describe the way Generation Yers transfer knowledge.

Only one of the four members of Generation X thought that the market framework was appropriate for the way their generation exchanges knowledge. The three Generation X participants who objected to the market framework said that their generation shares

knowledge out of obligation, duty, or altruism.

Baby Boomers and Generation X participants' comments regarding the applicability of the knowledge market framework were internally consistent with remarks they made throughout the interviews on topics such as motivation, the value of knowledge, and the nature of knowledge. However, the agreement with the market metaphor among participants from Generation Y appeared to contradict many statements these participants had made earlier. For example, one Generation Y participant who agreed that the knowledge market metaphor accurately characterized Generation Y's knowledge transfer activities had previously stated that those who possess knowledge have an obligation to share it with anyone who needed it.

Among the other generations, three Baby Boomers and three members of Generation X said that the knowledge market metaphor did not apply to Generation Y, the remaining out-group members three were ambivalent. However, those who thought the metaphor was not applicable were more articulate about their rationale. As one said of Generation Y, "No, they're like a soup kitchen, it's all free but hardly worth buying. When they want somebody else's knowledge, they just tap into somebody else's broadcast."

V. Analysis and Discussion

Analysis of Results

In Chapter 1 we reviewed some alarming facts about the aging workforce in the United States: an impending wave of Baby Boomer retirements vacating important positions and a small cohort known as Generation X is preparing to lead an enormous workforce flooded with younger Generation Y workers. In light of these issues, we asked the following questions:

How does the flow of knowledge differ among the generations in the workforce?

How might generational differences be responsible for difficulties transferring knowledge between incoming and outgoing workforces?

Using these questions to inform subsequent analysis, potential causes for the disruption of knowledge flow was examined within the Knowledge Management literature and analyzed within the context of the attitudes, perceptions, and behaviors which are purported to distinguish the generations of interest. In the following pages, the results of the inter- and intra- generational workforce investigation will be compared to the propositions developed in the second chapter. Results will also be analyzed with respect to their impact on the knowledge market framework as an appropriate metaphor for describing knowledge exchange patterns and activities between the generations.

Proposition A: In the workplace, Generations X and Y tend to engage in media multitasking during knowledge transfer more often than Baby Boomers.

This proposition was partially supported. Baby Boomers were purported to avoid media multitasking while members of Generation Y frequently engage in it, to the acknowledged detriment of their ability to pay attention. Contrary to expectations, however, the results indicated that members of Generation X do not tend to engage in media multitasking. Assuming media multitasking is indeed related to absorptive capacity, members of generation X are not likely to experience such problems working with knowledge in the multigenerational workplace. The knowledge market implications are that, *ceteris paribus*, members of Generation Y may be poor customers for the knowledge made available by the two older generations, but that knowledge commerce between Baby Boomers and Generation X is likely not affected.

Proposition B: The Baby Boomer and Y Generations tend to be more modest about volunteering knowledge in the workplace than Generation X.

This proposition was partially supported. The results suggest that Baby Boomers are, indeed, the more modest generation. However, both Generations X and Y seemed to be relatively outspoken. Nevertheless, there seems to be a cultural disparity between the younger two generations and the Baby Boomers which, in accordance with Kedia and Bhagat's (1988) study, is likely to adversely affect knowledge transfer. Indeed, the results indicated that the younger two generations have difficulty obtaining knowledge from Baby Boomers because of their reluctance to speak up. The evidence that Generation Y might be far less modest than the Baby Boomers challenges two paradigms in the literature. Specifically, it may be so that the tendencies of Generation Y are an exception to the association between collectivism and modesty implied by Hofstede's (1980)

description of collectivism, or perhaps Generation Y's tendency toward civic virtue (Zemke, Raines, and Filipczak, 2000) compels them to share knowledge in spite of their collectivist culture which would otherwise emphasize modesty. It is also possible that the construct of modesty does not necessarily extend to sharing knowledge in public.

The knowledge market-related implications for these findings are that the goods held by Baby Boomers may be more difficult to access for members of Generations X and Y because of the differences in culture. Davenport and Prusak (1998) remarked about such modesty that, “While these cultural norms can have positive impacts too, they inhibit internal knowledge markets.”

Proposition C: Members of Generation X tend to use fewer weak ties in the workplace than Baby Boomers or Generation Y.

The results strongly supported this proposition and indicated that members of Generation X tend to form smaller networks than the other two generations. The results indicated that Baby Boomers are well connected throughout an organization, and Generation Y tends to make sport of forming as many weak ties as possible, but members of Generation X seems to rely upon the same few people for knowledge transactions. This suggests that Generation X is largely excluded from many knowledge markets offering fresh ideas and novel solutions in accordance with Granovetter's (1983) findings that bridging weak ties connect otherwise isolated cliques which contributes to the spreading of knowledge.

Proposition D: Members of each successive generation are likely to be more cautious about trusting others in the knowledge marketplace.

The results generally indicated mixed support for Proposition D regarding the inter-generational advance or decline of trust in favor of more compelling evidence that knowledge exchange between generations may be predicated on trust for highly disparate reasons. For instance, Baby Boomers need to trust a person based upon a personal relationship before sharing knowledge with that person though trust was not a factor in receiving knowledge. Similarly, trust did not seem to be a factor for Generation X to receive knowledge, but participants generally articulated trust in terms of motivational factors consistent with Expectancy Theory. Specifically, the Generation X participants indicated that the motivation for doing one's job corresponded to an expectation that if an effort was made to perform well, that performance will result in an outcome at least commensurate with the effort required to perform the task in the first place (Griffin & Morehead, 2010). Thus, it seemed that the Generation X participants either confused or perhaps simply reinterpreted the concept of trust in terms of motivation for performance; i.e. trust in the "system" of exchange such that knowledge sharing would result in a positive outcome of corresponding value to the input.

In contrast to the Baby Boomers, the results indicated that Generation Y does not require trust to share knowledge, but that trust is critical to seeking and receiving knowledge from others. Furthermore, Generation Y seemed to need to scrutinize and establish the trustworthiness of a knowledge source for providing reliable knowledge, rather than trust based on the personal relationship as required by Baby Boomers.

The differing bases on which trust must be established for knowledge to move between Baby Boomers and Generation Y was similarly described by McAllister (1995)

who found that affect-based trust was positively associated with civic behavior, such as sharing knowledge, toward peers among managers. The obtained results regarding the Baby Boomers' need to establish such affect-based trust were consistent with McAllister's findings. McAllister asserted that trust in interpersonal relationships was either affect-based or cognition-based. The evaluation of a source's trustworthiness suggested Generation Y utilized such cognition-based trust for their knowledge transactions. McAllister also suggested that "there may be a negative relationship between a focal manager's cognition-based trust in a peer and his...assistance-oriented citizenship behavior toward that peer" (p. 49). McAllister's findings suggest that Generation Yers' apparent need to establish trust with a knowledge source reduces their tendency to provide reciprocal assistance to that knowledge source.

Within the knowledge market, the obtained results suggest that in order for inter-generational commerce to take place, especially where Baby Boomers are selling information to buyers from the younger generations, the Baby Boomers must feel some degree of affection for the buyer. However, buyers from Generation X or Y do not seem to feel the need to establish a similar relationship. However, before a member of Generation Y negotiates for knowledge, he or she is likely to evaluate the trustworthiness of the source. A positive evaluation of trustworthiness may lead to knowledge purchases; however, it decreases the likelihood that the buyer will assist the seller in the future per McAllister's (1995) findings that cognitive evaluation is negatively associated with civic behavior. Specifically, if the seller is expecting a reciprocal favor (as in the case of a Baby Boomer) the price of knowledge therefore becomes even higher for the Generation

Y buyer.

Proposition E: Baby Boomers and Generation Y tend to be intrinsically motivated to share knowledge while Generation X more likely expects extrinsic rewards to be part of the transaction.

The obtained results suggest that all three generations are, in fact, motivated by extrinsic rewards. Though contrary to prior thought regarding generational archetypes, Hewlett, Sherbin, and Sumberg (2009) recently observed that job performance motivations are actually not applicable to sharing knowledge in the workplace. Nevertheless, the results suggest significant differences in the extrinsic rewards sought by members of each generation. The Baby Boomers apparently seek tangible rewards such as reciprocal favors, while the other two younger generations seem to prefer intangible rewards. For example, members of Generation X seem to be motivated by an expectation of successful job performance while Generation Y seems to share knowledge in exchange for repute.

In knowledge market terminology, these findings suggest that each generation prefers to transact knowledge based on different currencies. For the Baby Boomers, the desired payment should be in the form of reciprocity while Generation X seeks payment in the form of the trappings of job success. The best way to purchase knowledge from members of Generation Y seems to be with praise, acceptance and regard. The results also suggest that Generations X and Y are well aware of the Baby Boomers' preferred method of payment indicating that such differences in currencies alone do not likely have a negative effect on commerce.

Proposition F: Generations X and Y are less willing to pay for knowledge than Baby Boomers.

Although all three generations seem to prefer extrinsic rewards for sharing knowledge, this proposition was supported by the results indicating that the younger two generations consider knowledge sharing to be more obligatory than do the Baby Boomers. Specifically, members of Generation Y seem to disdain paying for knowledge, seeking knowledge from sources where it is perceived as free, such as the Internet. Members of Generation X appear to perceive that coworkers are obligated by duty to share what they know as part of the job. Baby Boomers did tend to embrace the notion that knowledge holders should exploit their knowledge for personal gain.

The implication for the knowledge market is a clear case of pricing disparity—Baby Boomer sellers believing their knowledge is worth more than prospective Generations X and Y buyers are willing to pay. For instance, there was a strong tendency observed for members of Generation Y to avoid seeking knowledge from Baby Boomers at all because of the high cost in time and effort.

Proposition G: Baby Boomers, Generation X, and Generation Y tend to prefer different venues for transacting knowledge.

The results supported this proposition, indicating that there is a continuum of preference for exchanging knowledge which extends from the Baby Boomers, who seem to prefer face-to-face knowledge exchange, to Generation Y, which seems to avoid face-to-face exchange in favor of “bursty” electronic communications. Generation X seems divided between the two. The results further indicate that this difference in preference

has a negative effect on knowledge transfer because participants frequently observed members of their generations acting on such preferences and avoiding sharing knowledge via non-preferred means. This especially applied to the younger generations seeking knowledge from Baby Boomers. Both claimed avoidance of face-to-face interaction with the Baby Boomers who seem to need that interaction to develop a personal relationship with knowledge recipients.

This disparity suggests that many members of the younger generations do not shop where Baby Boomers are offering their goods for sale. The results indicated that, in fact, many would rather do without than incur the costs required to enter the Baby Boomers' showroom.

Revisiting the Knowledge Market Framework

A focal question of this inquiry is whether or not current conceptual framework, that is, current understanding of how knowledge is transferred from person to person, are still applicable in an inter-generational context, given the differing attitudes, perceptions, and behaviors found in each generation. The findings discussed above can shed some new light on the way knowledge is transferred when it crosses generational boundaries, but is the evidence sufficient to weaken the current knowledge market paradigm?

Specifically, can the knowledge market framework still be used to understand the way knowledge flows within this multigenerational context, despite the evidence that it flows less efficiently? Davenport and Prusak (1998) defended the knowledge market framework against criticism by providing for market inefficiencies, noting that:

There are no such things as pure markets—markets that can be understood solely

in economic terms. As analysts from John Stuart Mill to Karl Marx to Thorstein Veblen to James March have argued, every market system is embedded in and affected by social and political realities. The value of anything exchanged depends strongly on the context of the transaction. (p. 27)

Because each of the findings of this study can easily be articulated in terms of their impact on the knowledge market, and that market-based mechanisms can easily account for the obtained results, it seems that the dynamics of the multigenerational workforce analyzed in this study pose little threat to the conceptual framework itself. For example, we might say that the market context surrounding these particular inter-generational transactions is likely to be less efficient due to “social and political realities” such as discord over how to exchange knowledge or what currency in which to trade.

But what about the emergent perception among members of Generation Y that knowledge should not be traded at all? Does this suggest some other type of knowledge transfer mechanism at work in the youngest of the workforce generations? This explicit sentiment was actually contradicted by the same individuals who later stated that their generation still expected to receive something in return for sharing knowledge in the first place. Perhaps these new entrants to the knowledge markets have yet to be faced with this inconsistency between their perceptions and behaviors in a meaningful manner. Or it may be that knowledge that doesn't have direct impact on one's job performance and livelihood has been, until now, considered a public good, but anything that doesn't provide a positive outcome for the Generation Y knower is otherwise still subject to the market mechanisms. This could be attributed to the relative youth of the workforce—they

grew up with all relevant knowledge at their Googling fingertips, but they haven't been making a living long enough to understand the implications, or get burned, when their knowledge that is linked to their livelihood would also be expected as, or subject to the inefficiencies of, a public good (i.e. the tragedy of the commons).

Will Generation Yers give up their perception of entitlement to receive payment and provide knowledge to others at no cost, or ultimately come to learn that knowledge is a trade-able good and continue to participate in the markets? Thus, while the knowledge market framework seems to remain informative in light of the results obtained in the present study, the contradictions between the Generation Y participants' statements and sentiments as opposed to what appear to be their own perceptions of what is otherwise clearly market-driven behavior suggest that members of Generation Y may have difficulty fully adapting to the realities of a changing knowledge-based economy between outgoing and incoming generational workforces.

Recommendations for Practice

Based upon the obtained results, managers concerned about retaining knowledge within their organizations across generational lines may be able to take some actions to improve the efficiency of the inter-generational knowledge markets in their organizations.

- The suggested degradation of absorptive capacity indicates that knowledge buyers among the younger generation have small shopping carts and little tolerance for extras—knowledge should be imparted as concisely as

possible lest they lose interest if the communication includes too many sentences or paragraphs.

- Baby Boomers seem to have much more for sale than they advertise. The implied challenge for managers is to speak up on their behalf and open those storehouses of knowledge before they close forever. For example, find ways to inform the younger generations about the knowledge held by the Baby Boomers.
- To keep commerce moving, recognize and encourage trading in the various currencies. Remind a member of Generation Y to do something for a Baby Boomer, attribute task success to knowledge shared by a member of Generation X, and grant members of Generation Y their fifteen minutes of fame for being an expert at their chosen specialty.
- Connect Generation X to those markets they often don't reach—facilitate the establishment of weak ties.
- Encourage activities in which Baby Boomers can get to know members of Generation Y who can then develop a sense of trust in that the Baby Boomers know what they're talking about.
- Show members of Generation Y that there is knowledge that can't be found free on the internet.
- Find ways to bring Generation Y face to face with Baby Boomers to exchange knowledge, and teach Baby Boomers how to impart knowledge in

shorter bursts.

Limitations

An interpretive and inductive study such as this one must be prepared to address concerns regarding the following research challenges: construct validity, internal validity, external validity, and reliability (Yin, 2009).

Construct Validity

During this study, several sources of evidence were used to ensure that the underlying constructs of interest were actually the focus of the participants' analysis and responses. For example, in addition to asking members of each generation to describe their own generation, participants were also asked to describe the other generations. At least two questions were used to elicit perceptions, attitudes, and behaviors relative to each construct of interest. Finally, whenever it was unclear within the interview transcripts whether respondents were consistent in their definition or consideration of a given construct, additional evidence was sought throughout the entire interview to reconcile such misunderstandings or apparent contradictions. For example, when asked a question about trust, three respondents described a motivation-related construct. This apparent discrepancy in the definition of trust was reconciled against the respondents' other interview responses indicating that trust per se was, in fact, not an important construct.

Internal validity

Several steps were taken to keep the participant pool relatively homogenous with respect to certain contextual influences that might otherwise obscure the impact

of the generational factors under investigation. For example, all of the participants were part of the same Department of Defense organizational structure and worked in similar career fields. However, they belonged to different tactical-level organizations and therefore are likely to not share common inter-personal historical events or the undue influences of unique office dynamics or commonly known personalities from a single workplace. Nevertheless, a longitudinal study could more easily isolate and separate ongoing cohort effects from longer-term maturation effects to improve internal validity over a cross-sectional study such as this.

Another threat to internal validity was response bias on the part of the participants (Trochim & Donnelly, 2008). Specifically, respondents may have favored more socially desirable responses during the interviews themselves. Attempts to limit such effects included questions within the interview protocol about the attitudes, behaviors, and perceptions of the participant's generation, not the participants themselves. Thus, despite the relatively small sample size, questions pertaining to the generational archetypes effectively sampled the behaviors of those who made a collective impression upon each participant about their generation and the other generations. Furthermore, interviews were conducted in an empty classroom with no bystanders to reduce the possibility of social pressures.

External validity

A theoretical sampling frame was purposefully selected to represent the population that can best benefit from the research—a knowledge-based organization facing a massive wave of impending retirements. This purposive sample therefore

included members of each generation of concern and each participant indicated awareness of his or her generation's caricature and archetype as described in the relevant literature (Hicks & Hicks, 1999; Strauss & Howe, 1991; Zemke, Raines, & Filipczak, 2000). Empirical evidence further attests to the ability of a few members of a generation to speak on behalf of several million, as Strauss & Howe asserted:

as a social category, a generation probably offers a safer basis for personality generalization than such other social categories as sex, race, region, or age. We can more easily fix a consensus on personality for the Lost (or for Boomers) than we ever could for women, Hispanics, or Californians, or for all 30-year-olds of a given century.
(p. 63).

Such homogeneity across generational lines therefore mitigates some of the concern about generalizability relative to the statistically driven concerns over generalizing to a larger population based on a small sample. Furthermore, Strauss and Howe further suggested that many more of the members of a generation can identify the typical peer personality than actually fit it themselves. Therefore, participants need not typify the peer personalities of their generations to form a representative sample. They must simply be able to identify those peer personalities.

Reliability

In accordance with Yin (2009), all documentation and derivative analysis forms and coded data are included for the sake of methodological and theoretical transparency at appendices A and B. Furthermore, participant responses were highly

consistent across the sampling frame, indicating that the measures are likely to be repeatable. In fact, two operationalizations of study constructs produced unanimous results among the five Generation Y participants. Four other “measures” produced unanimous results for at least one group, clearly distinguishing it from the other two.

Reflections on method used

Semi-structured interviews provided a foundation for characterizing the unique aspects of knowledge flow between generations, but, as with any methodology, provided only a limited description of the phenomenon. As a cross-sectional study, this investigation did not distinguish between differences which resulted from aging versus those which result from being born as a member of a particular cohort. Likewise, the initial description provided by is only qualitative in nature. A quantitative description of the observations is beyond the intended scope of this study.

Recommendations for Future Research

A logical next step would be to conduct a longitudinal study investigating whether or not attitudes, perceptions, and behaviors of the generations relative to the knowledge markets change over time, or whether the impacts to knowledge markets remain relatively stable within a single generational cohort. Specifically, will the nature of current knowledge markets change to accommodate the tendencies of the burgeoning Generation Y workforce, or will Generation Y simply adapt their tendencies and preferences to more efficiently buy and sell according to the trading and exchange dynamics of the older generations.

More globally, it would also be sensible to examine the means by which to

counteract the various market inefficiencies identified in this study. For example, might overcoming a single inefficiency in trust, pricing inequities, or medium of exchange between generations be "enough" to counteract the seemingly cumulative effects of these various generational impediments to knowledge-based commerce? A qualitative study with a larger sample size might provide such additional insights.

Conclusions

The knowledge market framework remains a useful metaphor for analyzing the way knowledge flows from person to person through an organization. Each generation currently occupying the workforce tends to impose its own preferences for knowledge pricing, purchasing, and delivery. Managers concerned about maintaining organizational knowledge in the midst of high retirement rates can likely take some actions to improve the flow of knowledge between older and younger workers by examining the attitudes, behaviors, and perceptions of each generation which otherwise hamper such knowledge commerce during day-to-day transactions.

Appendix 1. Interview Questions

General Questions:

- a. Please describe the generation you most identify with.
- b. Please describe the other generations in your workplace.
- b. Please tell me what you think your generation considers “knowledge.”

1. Absorptive Capacity:

- a. How do you think members of your generation perceive the effect of media multitasking on the transfer of knowledge between people?
- b. In which situations do you think members of your generation consider it either appropriate or inappropriate to multitask when spoken to by another person.

2. Culture:

- a. Tell me about the willingness of members of your generation to volunteer knowledge in the workplace.
- b. What about the other generations in the workforce?

3. Motivation:

- a. What do you think motivates each generation to share knowledge?
- b. Explain whether you think members of your generation considers sharing knowledge more of a burden or a pleasure.
- c. Do you think workers among your generation generally expect to receive something in exchange for sharing knowledge with others? If not, why do they

share? If so, what do they expect?

4. Social Networking

a. When seeking knowledge from people, do you think members of your generation frequently ask the same few people or maintain a large number of infrequent contacts? What about the other generations?

5. Trust:

a. How do you think members of each generation differ in their tendency to trust other people?

b. What role do you think trust plays in the exchanging knowledge for your generation? For the other generations?

6. Value of information:

a. Do you think members of your generation consider the knowledge in an employee's head as belonging to him/her or is it more of a common good available for free to anyone in the organization who asks? Why do you think so? What do the other generations think?

7. Preferred learning methods

a. Describe the preferred ways you think members of your generation seek knowledge in the workplace.

b. Describe preferred ways you think members of your generation pass such knowledge along to others.

8: The Knowledge Market:

I'm going to describe a metaphor for you that illustrates one possible way in which knowledge might be moved or transferred between individuals. In this metaphor, knowledge flows between buyers, who seek knowledge and sellers who offer it. Whenever knowledge is exchanged, there is a price either stated or implied, which may be intrinsic such as enjoyment of sharing or extrinsic, such as reciprocation or advancement through public praise. Additionally, there are knowledge brokers who connect buyers and sellers, and occasionally market pathologies such as monopolies exist, which perturb the markets.

- a. How accurately does the knowledge market metaphor describe how your generation participates in knowledge transfer in the workforce?
- b. What about when your generation transfers knowledge to and from other generations?
- c. How well does the knowledge market metaphor describe how the other generations in the workforce transfer knowledge exclusive of your generation?

Appendix 2. Open-Coding of Data

Definition of knowledge:

Subject Generation	Quote	Speaker	Comments
Baby Boomers	an accumulation of everything we've gained through book knowledge and everything our companions, our friends, or any of our associates have gained.	BB#1	experience; accumulated
	I would say experience, what we've learned over the years. The younger generations would probably look for mentoring—how to do the job from the older people.	BB#2	experience; accumulated
	I'd say its everything we've learned, our values, experience.	BB#3	values; experience
Generation X	We would say its people skills, getting things done. How to motivate people.	GenX1	people skills; how to
	what we learn through others	GenX2	learned through others
	So I think knowledge is more useful information or perhaps its information that you can't easily put down on paper.	GenX3	tacit knowledge
	Mostly experience, I don't think we get all that much knowledge from school. I think the more you live the more you store up knowledge for later.	GenX4	experience; accumulated
Generation Y	reading books and retaining that information and more capacity of how to use well whatever tool such as the internet and things like that to find the answers to what we need to know,	GenY1	explicit; accessing information
	knowing how to access information	GenY2	accessing information
	knowledge has been replaced with access to information. Before, you needed to know if you worked in the tire industry, you had to know what kind of tires your branch carried and what the performance characteristics of each one is, so that if a customer asks you can rattle it off. My generation just needs to know how to find that knowledge if we're asked or if it comes up.	GenY3	accessing information
	Most in my generation would just send a link, and say, "see for yourself." They can click on the link and learn everything I know about something.	GenY4	accessing information; explicit only
	knowledge is something that is backed up with something. So, the nice obvious one that I think all my peer group has been into is wikipedia. We were building it up in my college years, so a big issue with wikipedia is how do you know if its based on fact? Is there knowledge there or is it all a bunch of crap? I think at some point it was deemed that there was enough quality information there that we began to call it a valuable source of knowledge, so now I want to learn more, I want to discover, to peruse.	GenY4	credible information

Absorptive Capacity:

Subject Generation	Quote	Speaker	Comments
Baby Boomers	...multitasking is not necessarily a bad thing, but it sure doesn't put you into the depths of anything you're doing... That kind of multitasking I can see is okay. But if you expect to draw from any of that in the future its going to be difficult to do.	BB#1	Doesn't tend to multitask
	[media multitasking makes a worker] more effective. You've got to be able to pick up something and move on...	BB#2	Tends to multitask
	Because of the values I grew up with—my mother taught me that if you start a task, finish the task before you start another task. So, I was raised in a family that was very serial in nature. Multitasking was something my mother would never let me do because she was concerned that I would leave something undone, or that I wouldn't complete a task. And that's what I think, because of my experiences. My daughters who are both Y Generation folks—my youngest one is 24. She's in her bedroom, she has her phone on, she has her computer on, she's at myspace or wherever that social place is that she goes. She's on the land line, she's texting on her phone, and she's reading a book. And the strange thing is she's functional. I'm dysfunctional. I'm not a multitasker. Maybe because I haven't been taught. Maybe genetically I'm not genetically disposed to multitasking.		Doesn't tend to multitask
	I think they just always want you to stop what you're doing. Its hard for me to—I'm thinking about—whether its a military courtesy thing or just common courtesy but its a lot more formal with them. If you're going to look something up while you're talking to them, you have to say, “wait a minute, I'm going to look that up.”So they don't get offended.	GenX#4	Doesn't tend to multitask
Gen X	But with the younger people starting to run the show, things keep going, you've got to keep moving and you can't just stop everything except one thing. We take it all in.	BB#2	Tends to multitask
	Our generation doesn't multitask nearly as much as Gen Y. We multitask but we don't multitask outside of what we're supposed to be doing. WE don't multitask as broadly. We stay on task while we multitask and its all work.	GenX#1	limited, focused multitasking?
	It would probably degrade from some of their performance. They would much rather focus on a certain task and not multitask.... Same with most of my peer group, when they're working on a project they're mostly just focused on the one project. Then they close the cover on that book and open another book. Never having eight books open at one time. if you're giving a presentation or doing something then folks shouldn't be playing with their blackberry or phone or doing something else. Its sort of looked down upon. I think in my generation accept its very hard to not do that, but definitely look unfavorably on people that do that.	GenX#2	Opposed to multitasking
	At least in my experience it seems to hinder more than anything. I think the most efficient and effective form of communication that I've found is usually face to face...I think most of the time it would be inappropriate. I think your primary concern should be focusing on the person you're talking to. I guess there could be some times when during the conversation you might bring up some source of information to augment your conversation, like, “hey look at what I found here on the internet,” and its pertinent to the conversation. But as far as carrying on two conversations, one verbally and one via texting, my generation would say that that's just rude anytime.	GenX#3	Opposed to multitasking
	It all depends on the situation. I would say that its usually not appropriate in most circumstances, especially at home with my wife. Even at work in the office. You know, if the boss comes by we stand up in our cube. That's just what's expected of us in the military. Who knows if its the same in the civilian world.	GenX#4	Opposed to multitasking

Absorptive Capacity (continued):

Subject Generation	Quote	Speaker	Notes
Gen Y	...but I'm not so sure that they'll ever understand completely the losses they suffer through multitasking. I understand they're just trying to accomplish everything they're expected to do, everything that has to be done, but even in my field, in contracting, it is very hard to truly multitask and get into the depths of what it is you're actually doing.	BB#1	Tends to multitask
	Its kind of like a video game. They're always doing a bunch of things at one time.	BB#2	Tends to multitask
	I think she's more effective. For me absolutely not. Because she's not giving anything her single attention, I doubt she has any retention. Because she's not focusing on that book, she isn't going to retain any of it. I'm not saying she's dumb, and I'm not saying her generation is dumb. I'm saying their retention level is—I'm wondering how much they're retaining—but they're functional. They do it all the time with the TV on. Its amazing that they're functional.	BB#3	Tends to multitask
	Because you don't know if they're listening to you or not. But they respond. So, you learn to live with that. You learn the ebb and flow. And everyone's different. Give them their space. I refuse to be overimposing on people. IF they get the job done, fine. But we expect them to get the job done. If they deliver, it doesn't matter how they deliver. If its on time, up to par, good quality. That's what matters. But if they didn't hear something I said and their work reflects it, then we have a problem.	BB#3	Suggests feigned absorption while multitasking
	The Gen Y's aren't usually multitasking with multiple work tasks, there are several things going on. They are networkers like the baby boomers but in a different sense. They constantly maintain their social networks while trying to perform work tasks. The work task gets their hands but their mind is really focused on just one thing at a time.	GenX#1	Tends to multitask across work/play boundaries
	Especially my little brother's generation. They keep multiple conversations—multiple dialogues—going at the same time. Nothing complementing the other things, just a hodgepodge of talk.	GenX#4	Tends to multitask
	...it can speed things up but you get a degradation as far as quality goes in terms of transferring knowledge...I know it goes on a lot and can speed things up and that's why they do it.	GenY#1	Tends to multitask; aware of degradation
	I think we perceive it as increasing effectiveness in general terms, in so far as I think it really, whether its good or bad is an opinion thing, everybody has their own thoughts on that. People see a need to give others only the information they need to know, you know, you go online or pick up a newspaper you don't want to read five pages for an article because you want to get back to your text message from your buddy, which might be totally unrelated but is much more interesting, like where to go to the movies or what to do after work	GenY#2	Tends to multitask; perceives positive benefit to effectiveness
	In my experience, talking to somebody who is surfing the internet and watching television means they can't pay attention to what I'm saying, even if they do it all the time. They're not going to hear what I'm saying.	GenY#3	Tends to multitask; aware of degradation
	its probably second nature to multitask in our generation and we don't give much thought to it. Whereas, maybe the gen x or baby boomers might be more conscious of where their thoughts and attention are focused. I think it comes from the overwhelming change in technology—the sensory overload from the day we were born. We were born multitasking...Well obviously if its apparent that you're not focusing your attention on them then its rude, inappropriate. If you're on the phone with someone and they think you're keeping up with the conversation then it doesn't matter if they know what else you're doing. But if you're obviously distracted then its inappropriate. Its a fine line I guess. It depends upon who you're talking to. It depends on the content of the communications. There are times when its not appropriate but it all depends on whether you're being rude or not.	GenY#4	Tends to multitask; feigning absorption
	A lot of people my age who said that multitasking is how I do it. I do my homework while I watch tv and I'm playing an online fantasy football game and all these things going on. Whether its good or not, or can it still be a good thing, then depends on where you have to do it. I feel like we assume that you have to be good at multitasking. You may think, you may argue about it, but at the end of the day you have to multitask because of the volume of information...they admit there's a trade off. They agree its not as quality time talking, but they've got stuff to do, they have to multitask. I think we understand our limitations, we sacrifice quality for quantity...I think we're very accustomed to sharing little bits of knowledge and saying follow it up yourself and find the rest. We're also accustomed to getting a chunk of knowledge rather than the full spectrum. We only want the answer to the question we ask. We don't want all the context. That's just wasted time. Just give us the soundbite. I think that detracts from our knowledge of the big picture, but it fits our short attention span.	GenY#5	Tends to multitask; aware of degradation; short attention span

Culture:

Subject Generation	Quote	Speaker	Comments
Baby Boomers	Many of us, we don't want to admit that we don't know something...I think my generation isn't necessarily willing to share knowledge. We see our knowledge as power and I think we got to where we were afraid to share it openly, and completely... We are a little more hypocritical at knowing something and sharing with the people we have to work with of course. I think my generation isn't necessarily willing to share knowledge. We see our knowledge as power and I think we got to where we were afraid to share it openly, and completely.	BB#1	Not likely to speak up
	I would say we're more willing to volunteer because we want to mentor the next generation. WE're looking at it because we want them to replace us. They're the next generation of workers and we'll depend on them to carry the torch.	BB#2	likely to speak up
	I'm not so sure that we do.	BB#3	Not likely to speak up
	the baby boomers only share if they are amenable to sharing with you on a person to person basis. They need to get to know you on a person to person basis.	GenX#1	Not likely to speak up
	I think they're more the speak up, its more the I've got a right to be heard. People have to hear what I'm saying because its my right and I've been here long enough.	GenX#2	likely to speak up
	They do most of the hoarding, they are the least likely to share knowledge with the rest of us.	GenX#3	Not likely to speak up
	Oh no, I think the baby boomers, you have to drag it out of them. Some like to toot their horns, but usually they just sit there. It pisses me off sometimes because a guy will have a great idea or some insight but he doesn't say anything until the meetings over and all the decisions are made, all the comments and objections are discussed and recorded.	GenX#4	Not likely to speak up
	its seems like the older generation seems to be less likely than us. They seem to think knowledge is power and if they give away knowledge they lose power. I think it might be a little stronger in older generations, and a little less in generation x, but our generation doesn't feel that way.	GenY#1	Not likely to speak up
	I know the baby boomers are pretty good about only sharing what needs to be shared. They're not very likely to just go on a rant about something they know. They kind of come off as being more reserved in that respect.	GenY#3	Not likely to speak up
Generation X	I think they're more open.	BB#1	likely to speak up
	It seems like the next younger generation is pretty quiet, they seem to be just sitting back and waiting to see what they need.	BB#2	Not likely to speak up
	I think they're more willing to speak up at times... but only to a nonconfrontational level	GenX#2	likely to speak up
	So far, in my experience, people are pretty helpful. At least in the environment I've worked in, with members of my generation.	GenX#3	likely to speak up
	I'd say we speak up whenever we know something. Its not a big deal.	GenX#4	likely to speak up

Culture (continued):

Subject Generation	Quote	Speaker	Notes
Generation Y	They'll share anything today. They just put it out there in the open, for whoever wants to know for whatever reason.	BB#1	likely to speak up
	I feel like Gen Y freely shares information sometimes that nobody cares about. They broadcast everything	GenX#1	likely to speak up
	So far I think the ones I've seen, they talk quite a bit but I don't know how useful their knowledge has been.	GenX#3	likely to speak up
	Oh no, they just put it out there, whatever they think. I think they're used to just saying whatever pops into their mind, whatever happens to them during the day.	GenX#4	likely to speak up
	I would say that there's a more willingness to volunteer, but at the same time we have less information to offer, just the essentials...We just put it all out there, you know, why not?	GenY#1	likely to speak up
	members of my generation are comparatively to Generation x, substantially more willing to contribute their two cents. In some situations you get a lot of people trying to prove that, because their still young, they want to prove that they're still valuable. I think a lot of members of my generation are less sensitive to information overload. We're not so sensitive in what we volunteer, because we often don't know what will be needed by the older people at the table, so we just put it out there.	GenY#2	likely to speak up
	I think that we're very willing to speak up. It kind of comes back to that whole fact that a lot of the time we don't have the knowledge without the source handy, so if you do happen to have the knowledge we share it so they know that we know something. It becomes a way to establish your credibility, so that coworkers see that we know something. You know, well he's a person who knows all about cars or whatever you're talking about.	GenY#3	likely to speak up
	We all speak up whenever we can.	GenY#4	likely to speak up
	We love to! Love to! We want to be sources of knowledge. We want to be tasked as indexers. I think there's a good number—I can't speak for everyone. Most of us want to share what we know. Maybe the few in my generation who don't want to share what we know think they're too busy, or feel like you're not worthy of my information.	GenY#5	likely to speak up

Motivation:

Subject Generation	Quote	Speaker	Comments
Baby Boomers	You should be paid for your ideas...So yeah, you do get something for your knowledge. You get a new position, more income, and as you share with your with the rest of your employees or people you're supervising they gain knowledge which you use, as they learn things and you assimilate it...I share knowledge readily with those I work with and other people in my field. If it will help them out with their job, But that's partly because I'm still gaining information all the time.	BB#1	Extrinsic rewards; explicitly stated agreements; trade knowledge for knowledge
	If you need some information you go ask somebody and then that person can always ask you.	BB#2	Extrinsic rewards (trade knowledge for knowledge)
	If I do something—help you out, you owe me. Now I need your help, you owe me...Anything, help with something. Whatever I need in the future, I can count on you because I helped you with this other thing	BB#3	Extrinsic rewards; explicitly required but unspecified until needed
	definitely, they're wheelers and dealers	GenX#1	Extrinsic rewards; explicitly stated
	Yeah, I have had several conversations where the “I’ll scratch your back if you scratch mine” idea actually came up in the discussion while I was asking them for something..I’ll help you out with this information now, but you better do something in return for me in the future.	GenX#3	Extrinsic rewards; explicitly stated but unspecified
Generation X	in general we want to try to improve things. SO we try to share knowledge to try to improve things when we have the time...Not necessarily to see something back, but to see an effect...Definitely in the organization, or maybe in your team. Or it could be in the world at large. As long as there is a positive effect of sharing the knowledge, we'll share, but we won't broadcast vainly. If there's not going to be a good effect for sharing it, we're not going to put anything out there.	GenX#1	Extrinsic rewards; intangible (altruism, efficacy)
	I think we're still into the please and thank yous, and the overall situation where if you help somebody else they're going to say thank you.	GenX#2	Extrinsic rewards (gratitude)
	I think maybe just a willingness to help. I'm trying to think if in my experience they expect something in return, or if its because someone made the effort to ask so they feel obligated to help them...If its from somebody who is part of the organization, then if you help them its going to help the organization which will come back around and help the person sharing...I would think most of it would be intrinsic. I guess occasionally you would want some information back from the person, but never explicitly stated. So yeah, there's a pricing system there but its all implicit, I've never seen among my generation, anyone explicitly asking for something in return for sharing knowledge.	GenX#3	Intrinsic and Extrinsic rewards (civic duty, altruism); always implicit

Motivation (continued):

Subject Generation	Quote	Speaker	Notes
Generation Y	The Gen Y's, they just want to make themselves look good by showing how much they know... Obviously, Gen Y loves their broadcasting, its definitely a pleasure for them.	GenX#1	Extrinsic and Intrinsic rewards; intangible (reputation)
	It just seems like a desire for fame or glory or what but it seems like they're always willing to spew out whatever they can so people see and hear it. They're all celebrities I guess...I've seen some younger people who will do their texting and if you don't text back right away they get a little peeved. You have to acknowledge that they sent something out. You have to grant them that celebrity status their seeking by sending out their texts or emails. Yeah, you have to stroke their ego by letting them know that you've read what they wrote and considered them worthy of writing back to them.	GenX#3	Extrinsic rewards (reputation)
	the gen Y's, just love to talk, I think. Or else they love to text or tweet or whatever they do that's what they're all about...I think they want to add to the number of people who listen to them. They want a following.	GenX#4	Intrinsic rewards; extrinsic rewards (reputation)
	We just put it all out there, you know, why not?	GenY#1	Intrinsic rewards
	In some situations you get a lot of people trying to prove that, because their still young, they want to prove that they're still valuable...Like when somebody posts a question on a blog and you know the answer so you go there and post a useful answer then you can feel like you've done your part.	GenY#2	Extrinsic rewards (reputation; civic duty)
	I think that we share knowledge to try to flare our feathers and show what we know, what we're good at...No, we don't like tangible benefits for anything.	GenY#3	Extrinsic rewards (reputation)
	people like to feel like they're needed, that they're in the know and that other people know that that person is in the know. Then that person is needed by everyone else...I don't think there's a conscious thought that I'm going to get something back, quid pro quo. But its part of developing a relationship with someone and they'll be there to share knowledge with you when you need it. So there's an exchange but its not on the conscious level.	GenY#4	Extrinsic rewards (reputation)
	We want to be knowledgeable about something so we can say this is what we know. I think its trite to say we just want to feel better about ourselves but I think that is part of it. I feel better if I can say this is something I know about. You want to have your followers on twitter, your groupies.	GenY#5	Extrinsic rewards (reputation; civic duty)

Social Networking:

Subject Generation	Quote	Speaker	Comments
Baby Boomers	We have no problem asking just about anyone if we think they can gain something from the question.	BB#1	indicates weak ties
	I think its just a few. Not very wide	BB#2	indicates few ties
	I think our generation judges folks, very quickly, very rapidly. Because of that, we keep going back to the same people we trust. Diversity of thought is not prevalent in my humbled opinion, among my generation.	BB#3	indicates few strong ties
	I see the baby boomers as having a lot of connections they talk to often	GenX#1	indicates many strong ties
	I've seen some close ones but it seems like they—and maybe its just because they've been around longer—but they seem to all have lots of connections all over the place. I don't know if they've always been that way or if its because they've just been working so much longer.	GenX#3	indicates many ties
	Well, the baby boomers—they seem to know everybody. One guy at my last job seemed to just pull names out of nowhere—people I never heard of—after I had been in the job 4 years. He knew people from past jobs, past projects. But I don't think he knew them very well. I think a lot are like that	GenX#4	indicates many weak ties
Generation X	we definitely have close contacts that we rely heavily upon	GenX#1	indicates strong ties
	We have small networks—just a couple mentors that we look to. A few people we work with that we share experiences, thoughts, ideas, especially as I'm looking up to the older generation I don't have a vast array of 500 people I would ask once in a while	GenX#2	indicates few strong ties
	I think there are little of both, but most are smaller networks of close relationships. I have seen, a lot of the ad hoc. Maybe that's just forced on us by the work environment, but I think we more commonly form close relationships that last beyond our assignments and projects—quite a long time	GenX#3	indicates few strong ties
	I think we all just have a few people. Well sometimes we have to reach out to other organizations, but mostly its just a few people we get to know.	GenX#4	indicates few ties

Social Networking (continued):

Subject Generation	Quote	Speaker	Notes
Generation Y	I think the younger generations are pushing the envelope, they're on the leading edge of being willing to ask anybody anything.	BB#1	indicates weak ties
	I think the young ones go to a large number, they're more connected.	BB#2	indicates weak ties
	I think in the younger generation, the Yers, they want to know diversity of thought. They just don't want to know what mom and dad have to say, they go to their friends, but then also auntie, uncle, cousins, other people to get more inputs.	BB#3	indicates weak ties
	The Gen Y'rs, I think they think that they have a lot of contacts, but they really don't interact, they broadcast. They contact a lot of people but they really don't exchange much valuable knowledge with them.	GenX#1	indicates many weak ties
	It just seems like they—again if you have a thousand people on your facebook friends, that's good. Even if you don't know who any of those thousand people are, that's what they're after. No, I would have to say their friendships, their contacts are more temporary in nature and there are lots of them.	GenX#3	indicates many weak ties
	They seem to want to have a lot of people to talk to, but I don't know if they do. They seem to tell a lot of people things but I don't know if they also hear back from them—or if they're listening to them. I don't know how I would compare their stable of contacts to everyone elses'	GenX#4	indicates many ties
	I think that overall, we're probably willing to reach a little bit farther but at the same time if you find the individuals that know certain things extra well, we'll tend to stick with, if you know an expert in a certain area and you need to know a lot about that area you're probably going to stick with that expert for your answers	GenY#1	indicates many strong ties
	more willing to branch out to other sources of information and help	GenY#2	indicates many ties
	We often have a lot of different experts we talk to but we might have one person we'll talk to for all things x and someone else for all things y and another for all things z	GenY#3	indicates many strong ties
	I don't think there's a difference from generation to generation, I think it depends on context.	GenY#4	not indicative
But I think even those people in my generation are trying to build their network one way or another. I've had huge competitions with my friends back when facebook first came out—when it was more restricted. Like, “Oh, how many friends do you have now?” You know? Before that it was myspace. Before that it was AIM and we would bragg about how many people we were talking to at the same time.	GenY#5	indicates many weak ties	

Trust:

Subject Generation	Quote	Speaker	Comments
Baby Boomers	You should be paid for your thoughts, so if you tell john, and he takes your idea and you don't see any return for that, he's getting the promotion and the benefits and all the pay everything else that goes along with it, then wouldn't it be a little hard to share that idea?	BB#1	Sharer must trust knowledge recipient
	I think its a vital role, that you can tell somebody and its non attribution, that they won't tell everybody what you know. That takes a lot of trust. ...the younger ones don't trust quite as much.	BB#2	Sharer must trust knowledge recipient; trust declining
	look for trends and do a little analysis and according to my past experiences, I say well maybe that person is not as trustworthy. I'm not going to say to much to him. Maybe I need to do some more research on this person, what they say....I think our generation prejudices people a lot before we share anything with anybody...Motives are very important. Probably motive overrides the effectual basis...No, you just have to think about who you're talking to...I think the young folks are more trusting. More so than baby boomers. Definitely	BB#3	sharer must trust knowledge recipient; trust increasing
	The baby boomers need a relationship to share. Bottom line, if you don't develop a personal relationship with them, they won't tell you anything. They need a friend...The baby boomers don't trust as easily, but if you get into a personal relationship with you then yes, they're very trusting of you. But as long as you get that personal relationship they're very trusting	GenX#1	Sharer must have affect-based trust of recipient
	I don't know if its the same thing as the hoarding information, but I know a lot of the older workers don't seem very trusting of people in my generation as far as in the workforce. We say we're going to do something and they either don't listen or they listen and don't believe. But for whatever reasons they're actions frequently indicate that they don't believe we'll do what we say we will do. I see that all the time among the baby boomers.	GenX#3	Sharers reluctant to share knowledge because of tendency not to trust recipient
	If they don't trust you, they won't tell you anything valuable. You have to earn it with them.	GenX#4	must have affect based trust in recipient to share

Trust (continued):

Subject Generation	Quote	Speaker	Notes
Generation X	We do need to know that there must be a positive effect, so we need to trust in that. But we really don't need to trust in the person.	GenX#1	Cognitive-based trust required to share knowledge
	I think it relies upon trust. I think if I share knowledge with someone they're going to use it to climb the ladder. Then it might second guess me imparting information and being full and open. If I think its that we're all in this together you know, more able to share knowledge but I think yeah if I know someone is trying to step on other people and make their way to the top then I probably won't be ready to share knowledge with them.	GenX#2	Trust in recipient required to share knowledge
	from the point of giving information to others, you trust the person that they're going to use the information for what they say they're going to use it for.	GenX#3	Trust in recipient required to share knowledge
	We have to know that someone is going to take what we give them and do something with it.	GenX#4	Require cognitive based trust to share knowledge

Trust (continued):

Generation Y	Also, I don't see the Ys as trusting anything, whatever the relationship. Us, I think we like to think that we're trusting, but we're still reserved.	GenX#1	Indicates declining cognitive-based trust
	I don't think they even consider who to trust when they open their mouths. But seeking it, I think they're less trusting.	GenX#3	trust not necessary to share knowledge, but necessary for receiving knowledge
	They might ask anybody, or look it up. But as soon as they get an answer they go and verify it somewhere else. Its like they don't trust any answer unless they get some kind of confirmation from two other sources. I've seen them take an answer to a question and send it out to everyone they know, including the source—the person who answered the question—and ask if its really true.	GenX#4	Cognitive-based trust necessary to receive knowledge
	We just put it all out there, you know, why not? We have knowledge available from lots of sources, its commonly accessible to all, why not put what you know out there for others to know? What do you really have to lose?	GenY#1	trust not necessary to share knowledge.
	I would say that in the information age, I don't mean for this to come across as bad, but people don't look for credentials as much, they tend to be a little too trusting of where you get what you need to know. You have to be inquisitive and find out if the source on the internet or whatever is valid. The older guys, like gen x tend to just take whatever they find online as valid and I think often they should check it out first.	GenY#2	Cognitive-based trust necessary to receive knowledge
	We often have a lot of different experts we talk to but we might have one person we'll talk to for all things x and someone else for all things y and another for all things z. So I don't just go to one person for everything, it all depends on what their background is. How well do I personally know how well you know what I'm asking about. If you don't trust; if you can't trust that the information coming into you is valid, then you just have to go without it and whatever you're doing will suffer for lack of it. You'll be the only person working on your project.	GenY#3	Cognitive-based trust necessary to receive knowledge
	its part of that relationship that gets developed. If you have a trusting relationship with someone, you'd be more inclined to spend the time to help them. There's a level of trust that's developed in there that makes you feel more comfortable expressing your opinions and that makes the exchange more available.	GenY#4	Affect-based trust required to share and receive knowledge
	If they're giving me information, I would have to know—they would have to be authorities. I would have to somehow know that they know....Its like, well, you know does this sound academic? Does is sound like they know the field? Do they have the hot-button lingo? So they could possibly fake you out, but then when you realize you've been faked you never trust them again. But we have to do that because there is so much wrong information out there. For...giving someone else knowledge, we're far more likely to just spout it off.	GenY#5	Cognitive-based trust necessary to receive knowledge; trust not necessary to share knowledge

Value of Knowledge:

Subject Generation	Quote	Speaker	Comments
Baby Boomers	We see our knowledge as power and I think we got to where we were afraid to share it openly, and completely...And, the power is lost once you do that. You're no longer the only one who knows how to do this or that.	BB#1	Knowledge is valuable for power
	I would say experience, what we've learned over the years.	BB#2	Knowledge is inimitable
	I'm not so sure that we do share knowledge because in our environment, information is power.	BB#3	Knowledge is valuable for power
	I think a lot of that baby boomer generation has that knowledge is power mentality but not us.	GenX#2	Knowledge is valuable for power
	that knowledge hoarding behavior that says, "Its mine, I'll use it so that it best benefits me."	GenX#3	Knowledge is rare, inimitable, valuable
	No way. The baby boomers withhold it. Its theirs and they own it.	GenX#4	Knowledge is rare
	would feel kind of a loyalty obligation in that company to share whatever you know, whatever job knowledge you have, you'd be obligated to share that knowledge. I think that perhaps as company loyalty and tenure decreases, that will change and be more and more applicable to our generation as well.	GenY#1	Not rare
	they own that knowledge versus the company because if they share everything they know then there's less incentive to extend that contract to get more knowledge from that employee. You don't just need satellite engineers, you need Lockheed martin engineers, because we're the only one who can fix it.	GenY#3	Rare, valuable, non-substitutable
	I think that each older generation is more inclined to consider the knowledge as belonging to the organization.They're all in it together but we don't have to be....The baby boomers had a lot of middle class jobs that didn't require an education, they're not middle class today but minimum wage or they don't even exist anymore. You need your own education to get a middle class salary.	GenY#4	Not valuable; not rare

Value of Knowledge (continued):

Subject Generation	Quote	Speaker	Notes
Generation X	We think it should belong to the organization	GenX#1	Not rare
	It should belong to the organization. You should bring all that to the table. And you should be willing to help any others. And if you find that knowledge is power, that's not a good thing when you're sitting back and not imparting that knowledge. That's not a characteristic we look for in people because the knowledge should be shared openly and freely	GenX#2	Not rare
	I think it probably belongs to the organization. If its in that person's head, then its that person's responsibility to make sure that anyone who needs it can use it whenever they need to. That's a significant burden, but how did they get that knowledge anyway?	GenX#3	Not rare
	I think they have an entitlement to whatever they need to get the job done. I belong to the Air Force, so whatever I have at my disposal is also the benefit of the Air Force. If a lieutenant needs to know something in my head, then he's entitled to it.	GenX#4	Not rare
Generation Y	Why do I need all this information now? Until they can apply it to reality and use it, why do I need this. I got a college education and I'll never use this stuff, until they see an application.	BB#2	Not valuable
	Gen Y thinks it belongs to everyone. Its a public good. If they can get it out, its for everyone whether they want it or not...they're like a soup kitchen, its all free but hardly worth buying. When they want some knowledge, they just tap into somebody else's broadcast.	GenX#1	Not rare, not valuable
	They seem to just say whatever they know, so I guess they probably think that everybody owns their knowledge.	GenX#4	Not rare
	I think there's a feeling that it belongs to you but there's also an obligation to share it with those who need it, especially again, if a couple years down if you've been in the job a while its your obligation to get a new person spun up on everything they need to know, so I guess its that obligation as far as your job knowledge goes, to share it. Maybe it belongs to the organization, but I think that in general my generation feels like the knowledge belongs to you.	GenY#1	Not rare
	sharing your knowledge is a bigger thing these days, that knowledge is free and is meant to be free, is very important to my generation.	GenY#2	Not rare, not valuable
	I would definitely say that they're role is decreasing in value as it becomes easier to get the shallow, broad knowledge straight off the internet.	GenY#3	Not rare
	My generation I think they feel it belongs to the individual. I think that's just a cultural norm that has developed where, if you think from the beginning of the education system, you're told to learn everything you can to distinguish yourself with grades, to get ahead in the rat race.	GenY#4	Rare, valuable, non-substitutable
	I think we're very accustomed to sharing little bits of knowledge and saying follow it up yourself and find the rest. We're also accustomed to getting a chunk of knowledge rather than the full spectrum. We only want the answer to the question we ask. We don't want all the context. That's just wasted time. Just give us the soundbite. I think that detracts from our knowledge of the big picture, but it fits our short attention span.	GenY#5	Not rare, not valuable

Venue:

Subject Generation	Quote	Speaker	Comments
Baby Boomers	Well, hands on, books, getting to be where online is a good way to get it. My generation is predominantly self. We go to the right people, ask the right questions, looked it up, found it out and assimilated it ourselves. We search it out...We find out who knows, or who knows somebody who knows.	BB#1	look it up; ask somebody
	We're old school, we phone a friend, ask a peer, find somebody who knows.	BB#2	ask somebody
	We're learning how to turn to Google. Real time, I mean, in the work environment we turn to policies, regulations, directives, very legalistic approach...In a library. In the office pub library or on a computer. Shared drive or web address like the Air Force Portal....I think my generation would give them guidance on who to talk to, where to look for it. Me, I'll make sure they get everything they need, and make sure they understand it. You've got to follow up, find out if they're applying that knowledge correctly.	BB#3	ask somebody
	They go to the person who has the knowledge. Because they know the person.	GenX#1	ask somebody
	I think they do more of the ask a friend, and whatever comes out of their crowd is gospel.	GenX#2	ask somebody
	Maybe they reach out to their large network to find something, but given their tendency to hoard information and knowledge, I don't know how that works. How do they pry it out of the grips of the other baby boomers? Who knows.	GenX#3	ask somebody
	Well, my parents call. I think its silly some times. My mom will call and ask me how to make a dish I made one time. I'll tell her to just google the name of the dish and it will come up. But she won't, she asks me to tell her over the phone or write it down and send it to her. And its like, come on, its the third result in the google search, why do you need me to reproduce that for you? But that's what they do.	GenX#4	ask somebody via phone call
	I think they're much more reliant on going and finding the person who knows the answer first before they're going to sit down and do a google search for whatever.	GenY#1	ask somebody
	The baby boomers, they always ask people. You know, sometimes they'll go around the office from cubical to cubicle until they find somebody who knows. They might hassle 5 people when they could have just typed the question in Google and got the answer right there.	GenY#2	ask somebody
	A baby boomer just goes straight to the end person and asks the question and gets a direct response. But they like to hang out and talk so its okay for them.	GenY#3	ask somebody in person

Venue (continued):

Subject Generation	Quote	Speaker	Notes
Generation X	I think that they go from cube to cube to cube to cube and they get their information from their peers, then they go up their chain to their supervisors and managers.	BB#3	ask somebody in person
	I think some of us are more people saavy, and go straight to Google, while others know who to ask and go straight to the people.	GenX#1	Online search; ask somebody
	I'm still a fan of going back to instructions, regulations, using the computer. I like to Google through the internet but if something doesn't sound right but if something doesn't sound right, if it sounds wrong to me, I'm likely to say let me go do some homework and research and do my own research and come back and have the textbook answer...What's the authoritative source?	GenX#2	Source document; online search
	Probably goes and researches things first. Try to find it themselves...Maybe first via internet, or whatever literature is out there. Then in that process finding out who out there maybe knows more, then going to that person. I mean, we know that a lot of knowledge is in peoples' heads but some times you don't know who to go to first. If you know someone who has the information, the smart thing to do would be to go to them first and see what you can get out of them.	GenX#3	Online search; ask somebody
	I think we would first look it up ourselves...Online, books, regs, depends on what I'm looking for...If we think they have the time to help us. Usually, though, we can find out ourselves.	GenX#4	self search

Venue (continued):

Subject Generation	Quote	Speaker	Notes
Generation Y	I think they go to google, or any number of online means.	BB#1	self search online
	I think the younger generation just gets online and searches. They don't really need anybody.	BB#2	self search online
	They go straight to the internet. Straight to the computer. They don't talk to people.	GenX#1	self search online
	the one favorite for our generation would be the first resource would be anything online that might be relevant, after which you might look toward your coworkers. Sometimes you can feel like you're really inconveniencing a coworker or somebody who's busy working on something else and if you have to pull them aside and ask for help. So if we can we'd rather go ahead and find the answer ourselves, by ourselves before we have to turn and take their time away.	GenY#1	Self search online; reluctant to ask somebody
	People see a need to give others only the information they need to know, you know, you go online or pick up a newspaper you don't want to read five pages for an article because you want to get back to your text message from your buddy, which might be totally unrelated but is much more interesting, like where to go to the movies or what to do after work. The world around you is totoally social, but the text message is just date, time, place, nothing extra to wade through, just the essential message. Okay, then I go to my email and there are 10 messages in your personal inbox and 10,000 unread messages in your work email inbox and who has time to look at all that, most of it is a waste of time. You have to reply to each and you see it more and more that you get email that is one line, and it seems rude to the older generations but to us its great, it could be a friend we haven't heard from in years and that's okay, so I think the big effect becomes just shortening communication to what's necessary in the communication.	GenY#2	Ask somebody via brief, electronic communications
	I would definitely say, look online first. Its definitely easier, and I think there's more reliable information out there, less biased. It seems to be removed from the personal bias you might get in the office. If its something you can find on the internet, simple enough, that's the first place you look. Speed, ease of access, simplicity. It takes longer to ask someone, to track someone down and get their time, and make sure they're answering the question you asked and not taking so much time. If you just want to know a little thing and go ask someone for just that bit of information and get out of there then often times they'll talk for so long.	GenY#3	Self search online; reluctant to ask somebody
	IF you can't access it from your computer, its checked off as irrelevant or obsolete. Does not exist. There's this notion across the generation that if its not on the internet, its like a tree falling in the woods or something. Nobody knows it...Most in my generation would just send a link, and say, "see for yourself." They can click on the link and learn everything I know about something. Unfortunately that's just one way conversation, you can't ask questions as easy, as a person to person interface, but that's the way it is.	GenY#4	self search online; reluctant to ask somebody;
	I don't want to waste too much time, so here's where you can find the answer. I certainly don't want to meet up with the person because that's too much "good" time. I'll send you a link or something, but I won't call you or meet you somewhere...I think we're very accustomed to sharing little bits of knowledge and saying follow it up yourself and find the rest.	GenY#5	Self search online; reluctant to ask somebody

Market Framework:

Subject Generation	Quote	Speaker	Comments
Baby Boomers	I think my generation would probably include buyers and sellers. Isn't that what books are all about? We all research it by buying the book or going to the library. And knowledge is shared for the most part that way. Teachers instruct and they get paid.	BB#1	Framework fits; currency is monetary or other knowledge
	I think it applies, I can see how that works.	BB#2	Framework fits
	Yes, that whole metaphor holds for us. If I do something—help you out, you owe me. Now I need your help, you owe me.	BB#3	Framework fits; currency is reciprocal favor
	Yes, definitely, they're wheelers and dealers.	GenX#1	Framework fits
	The baby boomers, they buy and sell.	GenX#2	Framework fits
	Yeah yeah, I've seen that quite a bit. They definitely buy and sell.	GenX#3	Framework fits
	Well, I've definitely seen it among the baby boomers. I think they trade information for information. They'll expect you to share what you know. So I don't know how that works with pricing. Maybe its more bartering. My generation doesn't want more information back, we want success.	GenX#4	Framework fits; currency is other knowledge
	Generation X	I don't have a clue. I suppose that if they're watching my generation they would do it the same way. That seems like a natural way to do it. If you need some information you go ask somebody and then that person can always ask you.	BB#2
I don't think it applies to us. We don't need a price. We really just need to foresee some result.		GenX#1	Framework not applicable; knowledge is for common benefit
No, we have to share knowledge just to do our jobs. That would be like selling office equipment.		GenX#2	Framework not applicable; knowledge sharing is civic duty
Yeah, the buyers and sellers. Yeah, and brokers you have that too. The broker uses his knowledge of who has what knowledge. We have all of that.		GenX#3	Framework fits
Maybe it sounds oversimplified. I don't know if it always applies. If you consider that a lot of times, we just want to get the work done, then what are we getting paid?...My generation doesn't want more information back, we want success.		GenX#4	Framework not applicable; sharing knowledge is civic duty

Market Framework (continued):

Subject Generation	Quote	Speaker	Notes
Generation Y	I don't see it as much. Knowledge seems to be free, for the most part, knowledge is free for them. I'm sure that if somebody gets a really unique idea they try to copywrite or patent it, but I think there's a lot more knowledge sharing going along among them without buying or selling.	BB#1	Framework not applicable; knowledge is free
	I don't have a clue. I suppose that if they're watching my generation they would do it the same way. That seems like a natural way to do it. If you need some information you go ask somebody and then that person can always ask you.	BB#2	Agnostic
	I don't think so. Maybe because I haven't observed it from that perspective. So, I would say, no for them...It seems like they're getting getting, getting, and not giving, but they actually are...They owe a debt that they'll pay eventually. They're not there yet, but they'll make their contribution some day. They're learning and they're learning and they're learning, and there's a couple of times you might see a product that comes out and you help them out, and you say that I would prefer that you improve in these areas, but its coming along and they go and fix whatever needs fixing and I get a good product.	BB#3	Framework not applicable; knowledge is public good paid for with public debt
	No, they're like a soup kitchen, its all free but hardly worth buying. When they want some knowledge, they just tap into somebody else's broadcast.	GenX#1	Framework not applicable; knowledge is free
	I don't know, I haven't worked with them enough.	GenX#2	Agnostic
	Yeah, I have seen some of that but I don't know that that's the rule or the exception...they sometimes ask for something in return.	GenX#3	Framework fits; currency is reciprocal favor
	I think its pretty applicable although in our generation I would say there's less monopolies in that piece. I think there are few if any people who are the sole holder of any knowledge. I think you can't rule that out entirely, but I think there's very little of that today.	GenY#1	Framework fits
	I would agree that the idea of sharing your knowledge is a bigger thing these days, that knowledge is free and is meant to be free, is very important to my generation. And if you measure just the satisfaction of having recognized that you have done your part to share knowledge, if you view that as a payment. Like when somebody posts a question on a blog and you know the answer so you go there and post a useful answer then you can feel like you've done your part. If you consider that payment, then yeah, it fits us too. But, I think less so when you speak of the more explicit, measurable prices.	GenY#2	Framework not applicable; sharing knowledge is "doing your part"
	I can see the buying and selling part in my generation.	GenY#3	Framework fits
	I think it could be described that way. Its complicated I suppose and it all makes you think of you know, obviously we're not talking about monetary values most of the time but it makes you think about people's intentions most of the time and I think that makes it a great way to think about it. I think it applies the same across the generations, but there are probably some differences. I would say the currencies are probably different. Perhaps the cost to Baby Boomers is probably time, so they must need some opportunity cost.	GenY#4	Framework fits; same for all generations
	I think it certainly fits what we've been talking about. Knowledge brokers are the connectors, the good at networking. I've met a lot of brokers in my generation. We don't generally hold the knowledge ourselves, so we tell people where to find it, or we share knowledge that they could have otherwise got somewhere else.	GenY#5	Framework fits

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14. ABSTRACT
The US workforce faces an impending mass exodus of experienced workers as the Baby Boomer Generation prepares to retire. Generation X is entering upper management positions but their numbers are small—approximately half the Baby Boomer population—and they'll be leading Generation Y which is three times their size. This 'age wave' phenomenon has unsettling implications for organizations. Will organizations lose knowledge as their most experienced workers depart? Can that knowledge be captured before they leave? This study examines the differences between the ways member of each generation in the workforce transfers knowledge using semi-structured interviews to understand and diagnose challenges to diffusing organizational knowledge across generational divides. The results indicate that Baby Boomers tend to share knowledge with coworkers in exchange for favors, such as reciprocal knowledge to increase their reputation. Trust is also important to members of each generation in exchanging knowledge, but for different reasons. The Baby Boomers need to trust that a knowledge source will not use shared knowledge to compete against them, the Generation Xers need to trust that the knowledge they share will not be wasted, and Generation Yers need to mtrust a knowledge sources to be credible before absorbing that knowledge.

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