

Generations in the Workplace: An Exploratory Study with Administrative Assistants

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Abstract. To better support older adults in the workplace, this study examines the strategies workers employ to learn software and complete tasks. The purpose of the overall research project is to understand how to help older workers adapt to and remain productive in the workplace. This knowledge may inform the design and development of training modules and software extensions to accommodate the needs of workers as they age. This paper describes an exploratory study in which administrative assistants at an industrial research facility were interviewed and surveyed about their work practices, preferences, and attitudes. The data revealed a high level of communication, knowledge sharing, and collaboration among the assistants. Possibilities for future research are inclusion of workers at other companies and in other jobs, examination of the motivations and attitudes surrounding work behavior, and development of design guidelines for software tools.

Keywords: workplace, generations, collaboration.

1 Introduction

For the first time there are four generations working together in the labor force in the United States. At a high level, members of each generation share characteristics and values of their generation, following from unique cultural conditions and events experienced during the first part of their lives. In addition, age-related issues, such as cognitive abilities, impact the way workers approach tasks. To provide for the most effective work situations for all employees, companies must take into consideration the diverse work characteristics of the generations while they endeavor to retain established workers, train new workers, maintain morale, and improve productivity.

As the population ages at an unprecedented rate, employers are invested in stemming knowledge loss when workers retire, efficiently training new hires, and effectively supporting established workers as they age [1, 2]. This study is part of a larger effort to support older workers so they remain productive and engaged. The design of information technology to accommodate the needs of workers as they age must be grounded in an understanding of how they work. The study described in this paper explored the work styles and attitudes of administrative assistants at an industrial research facility. Assistants were interviewed about their work and completed a survey

about work preferences, attitudes, and styles. Results from the interviews showed that assistants are highly collaborative, regularly communicating and sharing knowledge. The surveys corroborate the interview results with significant identification of collaborative and inclusive traits, regardless of the generation.

2 Related Work

This section contains a discussion of the generations in the United States workforce and the current research into administrative assistants and their work.

2.1 Generations in the Workplace

People are living longer than ever [3] and, as a consequence, are remaining productive and working for longer as well. For the first time there are four generations working together in the labor force in the United States. Discussions of the multigenerational workforce divide people into four age categories, each having their own set of general characteristics. Lancaster and Stillman [4] delineate the generations as follows:

- Traditionalists (born 1900 – 1945) – This cohort numbers about 50 million in the United States population. Traits of this cohort are loyalty, faith in institutions, frugality, and a “chain of command” style in the workplace. Most members of this generation have retired though a number engage in part-time or volunteer work.
- Baby Boomers (born 1946 – 1964) – This is the largest segment of the population in the US, numbering about 80 million. This segment is characterized as optimistic, competitive, ambitious, and hardworking.
- Generation X (born 1965 – 1981) – The smallest generation, there are about 46 million in this group in the US. This generation can be described as skeptical, self-reliant, and often misunderstood.
- Generation Y or Millennials (born 1982 – 1999) – This is the youngest group in the United States workplace, with about 75 million members. This group tends to be realistic, pragmatic, and collaborative, and places value on diversity. This generation is still entering the workforce.

The prevailing icons and conditions the generations experience as they come of age influence and shape their attitudes, values, and work ethic. While these traits are a generalization, they are a useful guideline when considering how workers of different generations may approach work tasks or situations.

2.2 Administrative Assistants

Administrative assistant work is varied and complex, requiring a range of skills involving interpersonal communication, presentation, and organizational abilities. An assistant’s main objective is to take over from the principal the procedural details of running the business. This involves scheduling meetings, arranging travel, coordinating events, and acting as a buffer against interruptions. Most importantly, the assistants act as surrogates for their principals and their actions must duplicate what their principals would do if they were not engaged by other work [5].

Current research into assistant work suffers from two shortcomings. First, studies do not usually focus exclusively on assistants, but include them as participants along with other professionals, as is the case in studies from Grudin [6] and Whittaker and Sidner [7]. Second, studies usually examine tasks in isolation rather than taking a holistic view of assistant work. Examinations of individual aspects of assistant work include studies of email use [7, 8], calendar management [6], and interruption handling [9, 10]. The only study explicitly focusing on assistants is from Erickson et al [11]. The study's interviews revealed a complex interweaving of situational awareness, background knowledge, preparation, and task execution. The authors developed a model of assistant work and discuss implications for system design.

3 Exploratory Study

This exploratory study is part of a larger project aimed at supporting aging in the workplace. To explore the role of generational characteristics in the workplace, administrative assistants at an industrial research facility were interviewed about their work practices, preferences, and attitudes. Results were analyzed to understand themes and trends and to determine if there was evidence of generational differences.

3.1 Participants

Ten administrative assistants participated in this study. All were female and all were IBM employees working at the T. J. Watson Research Center sites in Hawthorne, NY and Yorktown Heights, NY. This population was selected because they make extensive use of several types of software, they each perform similar tasks but with some variation between assistants, and they routinely complete complex work tasks with speed and accuracy. Participants were recruited through email sent by their managers. Participants were given a cafeteria meal voucher for their participation.

It is against company policy to ask an employee his or her age. In some cases the approximate age could be calculated due to voluntary participant remarks, such as the number of years since high school. The thus inferred generational distribution was 7 participants from the Baby Boomer generation and 3 from Generation X.

3.2 Method

All interviews took place at the participants' individual offices during times of their choosing. Interviews were conducted over the space of about four weeks. After obtaining informed consent, each participant was interviewed individually for about 30 to 45 minutes. The interviews were semi-structured to ensure a level of consistency while allowing participants some latitude to talk about what was most important to them. Interview questions addressed:

- Typical and atypical work tasks and software
- Formal software training and self-directed learning of software
- Techniques used to assist in completion of tasks and problem-solving (i.e. lists, mnemonics, reminders)

Interview responses were recorded in written notes. After each interview, the participant completed a survey about her attitudes and preferences regarding learning and work (see Figure 1 in Section 3.4 for the survey). Written notes were typed and expanded with comments and observations immediately following each interview.

3.3 Analysis

The data were analyzed with a combination of qualitative and quantitative methods. Interview notes were analyzed using Grounded Theory [12]. Survey results were analyzed using non-parametric statistics [13].

3.4 Results

Throughout this section, those whom assistants support are referred to as principals.

Interview. To ensure some commonality between interviews, each assistant was asked about procedures, learning, and problem solving in the context of meeting and travel planning. Outside of discussing those tasks, however, assistants were free to talk about other work that was significant to them for any reason (i.e., it is frustrating, unique, very common, infrequent, etc.). Though each interview covered slightly different combinations of topics, several common themes emerged during analysis.

Hindrances to work. The major factors that hindered work were presence of distributed information sources and interruptions.

For efficiency, assistants preferred to have all information necessary to a task together in one place. Meeting and travel scheduling both exposed this problem. A modification to the room reservation procedure resulted in room information being dispersed over at least three locations, where before it had been in a single location. For most employees the change may not result in much time loss, but since assistants repeat this task several times a day they were very aware of the decrease in efficiency. Online travel reservations were also a source of inefficiency because several screens are involved in booking a flight. Many assistants need to gather information on several flights before reaching a decision so the screen navigation slowed their work.

Interruptions interfere with efficiency because they stop the current task and must be dealt with immediately. For example, assistants said that the instant messaging system is useful for quick, time-sensitive communications, but it can become a barrier when too many people are vying for attention or when others use it for non-urgent matters. Several assistants said that they will ask others to email them once they deem that the communication is not urgent, thus allowing them to prioritize their response along with other tasks. In addition to the time spent dealing with the interruption, there is also time loss associated with the resumption of the interrupted task.

Success factors. Factors important to success in assistants' work were adept time management, attention to detail, correctness, and communication. Since their jobs are fast-paced and always changing, tasks must be completed quickly and accurately. There is little room for error and assistants pride themselves on the ability to complete tasks quickly, thoroughly, and accurately. For example, after a new method for room reservation was instituted, one assistant accidentally reserved two rooms for the same

meeting. She repeated this mistake on a second occasion only a short time after the first. The error was a source of embarrassment for her and prompted her to develop and document a procedure she now follows every time she schedules a meeting.

Communication network. The most striking theme common across all interviews was widespread information-sharing and a strong communication network between the assistants for the purpose of problem-solving and learning. In one participant's words, "assistants help each other out." Exchanges can occur through email, in person, over the phone, through instant messaging, on paper, or through a database.

Each assistant has her own strategy for problem-solving that may depend on the particular problem, the amount of time pressure, her level of expertise, and personal preference. While each may initially approach a problem differently, the most common backup strategy is to contact another person. Assistants build up a network of contacts on whom they rely for help. The network typically consists of other assistants and specialized experts whose contact information often came from other assistants. Networks are segmented into routine contacts, occasional contacts, and emergency contacts. Routine contacts are a first option when a general problem is encountered. These contacts are often other assistants with whom they have a regular relationship. Occasional contacts are a second line of defense when a routine contact can not address an issue, and they often serve a niche role. For example, an assistant might have a direct contact for technical support issues when the Help Desk is not able to resolve a problem. Emergency contacts are called into play only when necessary. An example might be a higher-level employee in a department. These contacts are especially valued and assistants are careful not to overuse them.

To help others learn, assistants proactively share tips, information, and procedures. Since their work tasks are similar, an assistant knows that if she finds a more efficient method, another assistant will also benefit from that information. Sharing may occur directly between assistants, or it may be mediated by the assistants' manager.

Some assistants are particularly known for being resources. One assistant keeps a stack of accumulated course training materials that she makes available to whomever needs them. Another assistant produced a library of procedural documentation she emails to other assistants. A third assistant is known for having detailed directions to various company sites and even to commonly used rooms within buildings.

The assistants' manager serves as a central contact and distribution point for information. Assistants will email something they want to share and the manager will pass it on to the entire team. The manager also maintains a database with the information emailed to her from assistants. The shared items are quite diverse and might range from the procedure for handling an expense credit to tips for working with difficult people or the link to a helpful travel site. The database is updated frequently and the manager sends out reminders to check for new additions. One assistant said that she makes sure to check it at least every two weeks just to browse and learn. She also uses the search capability if she has a specific problem.

Survey. Much has been written about generational conflicts in the workplace [4], and certain work attitude and preference characteristics are attributed to the generational cohorts. The purpose of the survey was to determine if the personal work attitudes and preferences identified by the assistants corresponded to the accepted generational characteristics. Participants were only informed that they were completing a survey

	A	B	C	D
Training	The hard way	Too much and I'll leave	Required to keep me	Continuous and expected
Learning style	Classroom	Facilitated	Independent	Collaborative and networked
Communication style	Top down	Guarded	Hub and Spoke	Collaborative
Problem-solving	Hierarchical	Horizontal	Independent	Collaborative
Decision-making	Seeks approval	Team informed	Team included	Team decided
Leadership style	Command and control	Get out of the way	Coach	Partner
Feedback	No news is good news	Once per year	Weekly / daily	On demand
Technology use	Uncomfortable	Unsure	Unable to work without it	Unfathomable if not provided
Job changing	Unwise	Sets me back	Necessary	Part of my daily routine

Fig. 1. Work attitudes and preferences per generation. Adapted from [4].

about their work style and were unaware that the characteristics corresponded to generational traits. Figure 1 shows the survey form that was given to each participant.

The columns correspond to generations. Table 1 shows the mapping between column headings (labeled A through D) and the generation name. The generation labels were changed to letters so that the participants would not be influenced by the generation names. The rows correspond to categories of work attitudes and preferences. The attribute or phrase in each cell, therefore, is the characteristic associated with the generational cohort for that category. The survey content is drawn from Lancaster and Stillman [4]. The survey was given to each assistant and she was asked to circle the cell in each row that most described her.

Table 1. Generation definitions and participant distribution

Generation	Birth Years	Participants
A - Traditionalist	1900-1945	0
B - Baby Boomer	1946-1964	7
C - Generation X	1965-1981	3
D - Generation Y	1981-1991	0

To try to understand how generational factors might influence work style, the participants were classified into one of the four current work generations. From the estimated age distribution, participants can be classified according to generation (Table 1). This classification is just an assumption, however, given that the age of the participants was not known. Therefore, this classification serves only as a guideline.

Due to the fact that data did not satisfy assumptions for using parametric methods, survey responses were analyzed using non-parametric statistics [13]. The data set was number of selections per column for each participant (summary statistics are in

Table 2. Means and standard deviations for selections per column for each generation

	A	B	C	D
Baby Boomer	.8 (.6)	1.2 (1.1)	2.6 (.5)	4.4 (1.0)
Generation X	.3 (.6)	.3 (.6)	3.5 (1.8)	4.5 (1.8)

Table 2). First, the Friedman test was used to detect the presence of any difference in population means between all columns for all participants. There was a significant difference ($p < 0.0001$) indicated, so pairs of columns were tested using the Wilcoxon Signed-Ranks test. There was no significant difference between columns A and B or between columns C and D, but there was a significant difference when either column A or column B is compared with either column C or column D ($p < 0.01$).

As no significant difference was found between columns A and B or between columns C and D, the data from those columns was combined and the Wilcoxon Signed-Ranks test was repeated. The resulting data set was the sum of the number of selections in columns A and B and the sum of the number of selections in columns C and D per participant. This is equivalent to combining the Traditionalist and Baby Boomer generation characteristics in one group, and combining the Generations X and Y characteristics in the other. The results were significant ($p < 0.003$), with more responses typical of Generations X and Y than of the older group.

The last tests repeated the first two analyses on just the data for the Baby Boomer participants. Both analyses showed significant differences consistent with those for the full data set. Specifically, there were no differences in the number of responses between columns A and B or between columns C and D; however, there were significantly more responses in columns C and D than columns A and B ($p < 0.01$), showing a pattern typically considered to characterize younger workers. The data for the Generation X participants was not analyzed separately because n was too small.

These results show that the assistants tended to most identify with the characteristics conventionally associated with Generations X and Y even if they were not members of those generations. This indicates that work styles and attitudes may be shaped by more than a worker's age and that the stereotypical generational characteristics are not always accurate.

3.5 Discussion

The findings from the interviews call to mind research into the work of systems administrators [14, 15] and copy machine repair technicians [16]. These populations engage in extensive information sharing and communication practices like those of assistants. Looking closer at general work patterns, other similarities emerge. All three engage in complex work that is done under time pressure, that must be completed correctly, and that is similar day to day and worker to worker. In addition, each of these populations must have complete information before carrying out a task, but that information is often broken up over several information sources.

Systems administrators, repair technicians, and assistants rely on communication for learning and problem solving. Constant et al. [17] conjecture that people share information more freely when it is not a part of their identity and there is no advantage to holding on to the knowledge. For systems administrators, repair technicians,

and assistants, there is no significant advantage to keeping information but there is a benefit to sharing information. Bock and Kim [18] found that workers will share when there are intrinsic rewards and they feel that their knowledge will benefit others. Though each individual administrator, technician, or assistant may have slightly different responsibilities than his or her coworkers, their tasks are still very similar. This means that information that benefits one will probably benefit all, giving a worker the expectation that their information will be of use to others. The result of these two factors is a higher rate of communication and information sharing between these coworkers than may occur with other professions.

The survey results are interesting because the characteristics selected by the Baby Boomer assistants are contradictory to those expected of their generation. The Generation X and Generation Y work styles and attitudes tend to be more collaborative and inclusive than those for Baby Boomers. However, the interviews also indicated that the assistants work in a very collaborative environment and inclusive manner regardless of generation membership, as evidenced by their strong communication and information sharing. The work environment may influence work styles and attitudes, or more collaborative and inclusive personalities may gravitate toward this type of environment. Either possibility suggests that work styles and attitudes are shaped by more complicated factors than simply generation membership.

4 Future Work

Possibilities for further research include studies at other institutions, studies with other types and ages of workers, and development of software design guidelines.

Study of administrative assistants at other institutions and of other types of workers is a necessary step for assessing generalizability of these results and extending understanding of work. It may be, for example, that the attitudes of this particular set of assistants were due to their work in a large, high tech research environment. This pattern may not be characteristic of assistants in smaller companies or of assistants even in other large organizations not in the technology business. Since the goal of the overall project is to support older workers as they age on the job, it is especially important to study a range of ages to fully discern the age-related changes that could benefit from technology tools.

This study revealed a great deal of information sharing among assistants, but it does not tell us why that sharing takes place. There is some research into motivations for sharing and attitudes toward sharing [17, 18] that can serve as a starting point for a further exploration of reasons for this behavior. A deeper understanding of why sharing occurs can inform the design of effective collaboration and support tools.

After supplemental studies, a set of design guidelines can be developed for software to benefit assistants specifically. For example, this study showed that problems arise due to disjointed information sources and multi-step interfaces. Clearly, the interface that works for a casual user does not meet the needs of such a frequent and intensive user. The results guidelines could also be compared with requirements developed for systems administrators [14] and other similar work to possibly create a more general set of principles to benefit a wider range of workers with similar practices.

Finally, it is interesting to consider why the response patterns of the older workers in this study reflected attitudes typical of younger workers. Work with older adults has typically focused on novice use and age-related declines and studies are just beginning to consider the complexity of ability of older adults [19, 20]. Studies such as those suggested above could illuminate questions of whether this pattern is unique to workers in a technologically advanced workplace context, or whether it is a more general characteristic. If more widely obtained, these results would challenge traditional assumptions about the learning and work styles of older workers.

5 Conclusion

To better support older adults using technology in the workplace, it is critical to study the strategies workers employ to learn software and complete tasks, as well as their general work attitudes and styles. Administrative assistants were interviewed and completed surveys about their work practices, preferences, and attitudes. The interviews revealed a high level of communication, knowledge sharing, and collaboration among the assistants. Survey results supported the interview findings by showing a tendency toward collaboration and inclusiveness in work styles and attitudes, regardless of generation. This seems to run counter to the accepted view of the work attitudes and styles of older workers, pointing to the need for more research into the influences that shape work styles and attitudes. Possibilities for future research are inclusion of workers at other companies and in other jobs, in-depth examination of the motivations and attitudes surrounding work behavior, and development of design guidelines for software tools.

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