

# IT Culture Clash

The Impact of Changing Demographics on  
IT Infrastructure and Mainframe Operations

# Executive Summary

**The demographics of the IT workforce are changing, with more Millennials entering the field and many veterans — especially veteran Mainframe specialists — retiring.** In this environment, IT leadership is facing a host of new challenges and issues related to recruiting and managing a multi-generational workforce.

Many IT veterans with decades of experience are at or nearing retirement age.

This white paper explores some of these issues and offers a few solutions to the challenges faced by CIOs when it comes to managing the 21st century IT department.

The aging of the Baby Boomer generation has been well-chronicled. In 2011, the oldest of this generational cohort reached the traditional retirement age of 65, and approximately 10,000 Baby Boomers now turn 65 every day, according to the Pew Research Center.

This demographic shift is having profound effects on the U.S. workforce, including in the IT industry. Many IT veterans with decades of experience are either at or nearing retirement age, while many young Millennial employees (generally defined as those born between 1982 and 2004) are now entering the IT workforce.

**The changing face of the IT workforce is presenting CIOs with unprecedented challenges in several different areas, as well as changing how many corporations approach their IT operations.** CIOs who want to help their companies thrive in this new environment are being proactive by planning now how they will adapt their recruiting, training and management practices to reflect these macro changes.

## Impacts on Mainframe Operations

**Mainframe is probably the area where these demographic shifts are having the biggest impact.** The majority of large corporations today that host and maintain their Mainframe computers are all dealing with the same problem: the aging and pending retirement of their veteran, experienced Mainframe staff.

“We hear from IT leadership all the time that many of their Mainframe employees could retire tomorrow, or their Mainframe veterans are working for a little while longer,” says Mark Griesbaum, the managing partner for Affinity4U, LLC, which consults with companies on IT strategic projects and helps assess and develop the careers of IT professionals. “At the same time, many companies haven’t successfully recruited new IT employees to replace them.”

Jeffrey Shoup, a Mainframe solution architecture leader who has been with Ensono since 1998 and is responsible for designing and creating all customer Mainframe services, says that the IT industry has been staring at the pending retirement of veteran IT staff (and Mainframe staff in particular) for some time, but it’s just now starting to hit the industry in full force. “The 2008 financial crisis forced many Mainframe vets to work a little longer than they originally planned,” he says. “But now that their retirement portfolios are recovering, they are starting to retire in droves. And this is having a huge impact on corporate IT departments, especially those with large Mainframe operations.”

**So the question is:** How is your organization preparing for life after the retirement of your long-time and experienced Mainframe employees?

**We see that you have, at minimum, four main options:**

- 1. Replace your Mainframe computers** so you no longer need to hire IT employees with Mainframe skills.
- 2. Recruit and hire experienced Mainframe employees** to replace those who are retiring.
- 3. Recruit and hire young (i.e., Millennial) and inexperienced IT employees** and train them in Mainframe operations.
- 4. Outsource your Mainframe operations** to a Mainframe management services provider.

The pending retirement of Mainframe staff is starting to hit the industry in full force.

### OPTION 1: REPLACING THE MAINFRAME

**Many companies have learned the hard way that replacing their Mainframes is often much easier said than done.** While the use of cloud computing has been on the rise in recent years, many large organizations still rely heavily on Mainframe computers to handle the bulk of their large-scale critical transaction-processing business functions. Rewriting applications to move them off of the Mainframe is both time-consuming and expensive, and the reality is that many applications simply cannot be deployed to another platform.

### OPTION 2: RECRUITING EXPERIENCED EMPLOYEES

**Option 2, meanwhile, is probably little more than a temporary band-aid, if it's even practical at all.** Even if you find qualified people to hire who have the right Mainframe skills, they may have many years of longevity with their current firm and enjoy significant benefits beyond just a high salary, like lots of vacation time or a generous pension plan or 401(k) match.

“How many experienced and qualified Mainframe staff are really out there looking for a job right now?” Griesbaum asks. “And even if you do find them, it probably won’t be long until they too are thinking about retiring soon.”

### OPTION 3: HIRING AND TRAINING MILLENNIAL IT EMPLOYEES

**Option 3 could be viable if done proactively and with careful advance planning. However, one drawback to this strategy is that few universities and technical schools offer the kind of Mainframe training and curricula that formed the core of a Computer Science degree two or three decades ago.** So while it may not be difficult to locate sharp young Computer Science graduates, finding graduates who have received even the most basic level of Mainframe education could be a challenge.

**Shoup believes that corporations should be actively letting universities know about their need for well-trained Mainframe employees.** “The bottom line for most universities is how many of their graduates get jobs — they all compete against each other in this metric,” he says. “If corporations tell universities they have solid, well-paying jobs just waiting for graduates with Mainframe training, universities will start teaching Mainframe skills again.”

**Until this happens, though, corporations must be proactive by planning well in advance for the departure of their veteran Mainframe engineers and staff.** This will provide ample time to hire new Millennial IT employees who can work beside and learn from veterans so they receive hands-on Mainframe training. “Thirty to forty years of Mainframe experience needs to be transferred into the minds of young Millennial employees in a very short period of time,” says Shoup. “Otherwise, an insurmountable amount of knowledge is going to walk right out the door.”

Many organizations still rely on Mainframe computers to handle the bulk of their large-scale critical business functions.

**With this strategy, be sure to budget sufficient funds for recruiting and training new IT employees.** Also estimate how much time you think it may take to get them up to speed and productive in their Mainframe operations responsibilities. There is likely to be a steep Mainframe learning curve for even the brightest young Computer Science graduates.

**One challenge to this strategy is convincing the best and brightest young Computer Science graduates that a Mainframe career is actually desirable.**

Many want to work in the latest “cool” (insert the latest fad programming language du jour) sectors of technology, such as mobile application development or network engineering. “Many young graduates think they’re going to work for Google or Facebook right out of college, but it’s extremely competitive,” says Shoup. “Only a fraction of new grads land these sexy jobs.

“The rest need to recognize the importance of learning a marketable skill like Mainframe that will be in demand for a long, long time,” he adds. “There’s a tremendous need for IT employees with Mainframe skills who can support billions of lines of COBOL and work on application programming and in technical support and systems administration.”

In fact, IBM has forecast that approximately 37,200 new Mainframe administration positions will emerge worldwide by 2020 — and this doesn’t include the open positions that companies are having trouble filling today. Pundits have been predicting the death of the Mainframe for years, but as Mark Twain put it, rumors of this death have been greatly exaggerated.

#### OPTION 4: OUTSOURCING YOUR MAINFRAME OPERATIONS

**The fourth option is also a viable one for many organizations. In fact, Mainframe outsourcing has been shown to lower organizations’ IT costs by up to 25% by reducing licensing, labor and facilities expenses.** Outsourced Mainframe services providers can offer design, planning, implementation, transition and ongoing Mainframe operations either remotely or on their data centers.

**Remote management involves securely connecting to your Mainframe environment without disrupting your Mainframe operations, thus reducing the effort and risks of data migration.** One of the main benefits of remote management is that you will obtain the Mainframe support services you need while still retaining ownership of the hardware and software, which is automatically upgraded regularly so you don’t have to worry about this. With remote management, your outsourced Mainframe services provider becomes a valuable adjunct to your IT team.

Shoup tells of an organization that was facing the unexpected retirement of about half of its Mainframe team members. The company turned to an outsourced Mainframe services provider, which was able to get up and running

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managing the Mainframe within a couple of months. “You want to identify an outsourced services provider that’s a good cultural fit before you enter crisis mode,” he says.

**To get the most value and cost reduction from Mainframe outsourcing, you can take advantage of an outsourcer’s hosted Mainframe management services.** “This will enable your company to bring data center equipment costs off your books, leverage the buying power and economies of scale of your Mainframe service provider, and make it easier to stay current with Mainframe software and OS upgrades,” says Griesbaum.

## Plan Now to Adapt and Thrive

**There’s little question that the changing demographics of the IT workforce will play a big role in shaping the IT department of the 21st century.**

Progressive and forward-thinking organizations will begin planning now for how their organizations will adapt and thrive in this new environment.

**Here are 10 tips for managing the impact of changing demographics on your IT infrastructure operations:**

1. **Be proactive by planning now how you will adapt your recruiting, training and management practices** to reflect the changing IT workforce demographics.
2. **Determine your overall strategy:** Replacing your Mainframe computers, hiring experienced Mainframe employees, hiring young Millennial IT employees and training them in Mainframe, or outsourcing your Mainframe operations.
3. **Talk to universities to let them know you have good jobs for Computer Science graduates** with Mainframe training and encourage them to offer Mainframe courses.
4. **Explain to young Computer Science students and graduates that Mainframe is a marketable skill** that will be in demand for a long time.
5. **Pair new young IT employees with existing Mainframe employees** so they can get hands-on training from experienced veterans.
6. **Adapt your management style** to the general attitudes and characteristics of Millennial employees.
7. **Disregard any stereotypes** you may have heard about Millennial employees, such as they have a sense of entitlement and aren’t willing to pay their dues.
8. **Remember that most Millennial employees prefer to draw a sharp line between their work and personal lives,** and manage them accordingly.

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9. **Consider creating an internship or mentorship program** that will pair nearby Computer Science students with your experienced Mainframe veterans.
10. **If you decide to outsource your Mainframe operations**, carefully weigh the pros and cons of hosted vs. remote Mainframe management.

## Managing Millennials

If you have spent most of your career primarily managing Baby Boomer or Generation X IT employees, adapting your management style to Millennial IT workers will be an adjustment — and, quite possibly, a challenge. But it's one that you must overcome if you want to prepare your IT department to meet the challenges of the 21st century.

Here are some general characteristics of Millennials that you should keep in mind when managing these young IT employees:

- **Diversity and tolerance** are very important to most Millennials.
- **Millennials like to believe that the work they're doing is making a positive contribution** not only to their employers' bottom line, but also to society in general.
- **The Millennial generation is the most technologically savvy generation** in history, having literally grown up in front of some kind of screen.
- **Most Millennials are very good at and enjoy multi-tasking.** In fact, they can get easily bored if they don't have a variety of tasks to work on.
- In general, **Millennials can sometimes be impatient** and be perceived to lack discipline.
- **Millennials tend to view their jobs as a means to an end** and they don't tend to define themselves by their careers.
- **Many Millennials have an entrepreneurial mindset** when it comes to their jobs.
- **Millennials are often eager to move on to the next project** or task after they have completed the task at hand.
- **Few Millennials view their jobs with a long-term perspective.** They don't expect to work for one company their entire careers — in fact, many view moving from one job to the next as the key to advancing their careers, making more money and getting ahead.

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