

## The Mainframe's Branding Problem Created a Talent Crisis

By: Ken Harper

Critics have predicted the death of the mainframe for more than 30 years. In spite of constant macabre diagnoses, mainframe technology has proven its staying power.



Ninety percent of Fortune 500 companies continue to rely on mainframes, either solely or as part of a hybrid solution. Contrary to longstanding predictions, the mainframe is not going extinct any time soon, and its technology powers everything from ATM transactions to airline reservations. A 2014 Vanson Bourne [study](#) showed 87 percent of organizations currently using mainframes expect to continue doing so for more than five years. Around a third expect to do so for the next decade or two.

Yet despite its continued relevance and long-term necessity, fewer tech professionals are choosing mainframe careers. With a retiring Baby Boomer workforce – the largest demographic of mainframe professionals – the future of mainframe operations is in question. Who will manage these critical systems with minimal talent entering the space?

## The Mainframe's PR Problem

The mainframe's most common identity is as a "legacy" technology, and its other references are equally unflattering. A headline in MarketWatch from 2015 called the mainframe ["tech's dinosaur."](#)

The mainframe's PR problem has significant repercussions, since a brand's image has the power to attract or dissuade talent from pursuing opportunities within a certain field. Words like "legacy" and "dinosaur" give professionals, educators and decision-makers the impression mainframes are on their way out, with less room for growth than career paths in other tech areas.

Today, only a handful of colleges and universities require classes in COBOL, the mainframe's programming language, as part of computer science degree curriculums. As startups and other businesses praise only the power of cloud, academic institutions cannot grasp the huge importance mainframe IT systems still hold today. Due to the lack of educational opportunities, younger generations are not equipped with mainframe skills or access, and therefore, fewer are actively choosing mainframe careers.

Managed service providers and companies with mainframe professionals in-house are forced to actively recruit technology professionals to work on mainframe operations, often teaching them skills on the job and choosing candidates based on soft skills rather than experience. Because candidates with mainframe skills are difficult to find, many businesses have turned to managed services instead of looking for the talent on their own. If businesses, especially large enterprises, took the re-branding of mainframe IT into their own hands using their own resources, the talent they'd have access to would be of a much higher caliber than an IT professional learning about mainframes on the job.

## Mainframe's Place in Tech: Now and the Future

COBOL, the mainframe language, is estimated to help power 70 percent of business and

transaction systems across the globe, according to [a study from Micro Focus](#). Ninety percent of the world's financial transactions are processed in COBOL, translating to 30 billion transactions per day.

Needless to say, overhauling mainframes simply for the sake of utilizing newer technology would be an insanely difficult and messy task. And really, what's the reason to make such a stressful switch? Mainframes offer many benefits, especially in an age where we're constantly worrying about hackers and compromised information.

The reality is that mainframes are more secure than the cloud. When it comes to the cloud, hackers only need to gain access to an account, not an entire system. It's much easier to ensure security when you're directly in charge of the hardware itself. Of course, it still requires significant effort to secure a mainframe, but if the effort is put in, it's valuable to own the security measures rather than leaning on a cloud provider.

Even if, despite mainframe security benefits, one wanted to switch from mainframe to cloud, the process to do so would be long, hard, and expensive. Organizations vying to make the move have given up midway through the process after discovering just how tedious the transition is.

Additionally, it's technically false to label mainframes as dinosaurs or legacy tech. They may have first come to use in the 1950s, but it's false to say they haven't evolved since then. Today's mainframes are often at work on the backend of modern user interfaces. In being user-facing, newer mainframes can shoulder the increased torrents of data and manage them in a clean and organized fashion.

For example, the newest mainframe models can encrypt all 12 billion of its daily data transactions in real time. This is huge for organizations – particularly financial institutions – as it's previously been [reported by IBM](#) that only 4 percent of all data is encrypted, a true danger in our age of increasingly sophisticated hacking capabilities.

I personally can't see a future where we're not using mainframes, [and others agree](#). For now, it's safe to assume they're not going anywhere – provided we can solve the crisis and keep the needed talent alive to manage mainframes.

## Overcoming Talent Hurdles

The image problem facing mainframes is not something companies can combat easily or in a short time. There are three practices that can help fill the dwindling pool of mainframe workers in the near-term.

Firstly, we need to bring mainframe skills back to universities in a widespread fashion. Courses like COBOL and Assembler need a stronger presence in college computer science curriculum. After all, they're used by countless organizations each day to run their business applications. If academics ditch the attitude that we've mastered mainframe innovation and accept that the death of the mainframe is not imminent, students will be more likely to see it as a legitimate career avenue. IBM works with more than 1,000 colleges worldwide to keep mainframe classes alive. Other businesses should follow suit and provide resources to ensure incoming talent begins the mainframe learning process earlier on.

Secondly, it's up to IT employers to ensure mainframe IT salaries are competitive. According to Glassdoor, the average salary for a mainframe developer is [\\$69,889 per year](#). But the average web developer's salary clocks in much higher at [\\$88,488 per year](#). Mainframe positions should offer the same or more attractive benefits as compared to more popular IT jobs. Competitive compensation will ensure mainframe jobs aren't lost to other more appealing tech positions.

Finally, we need to create a clear career path for mainframe IT. IT leaders and hiring decision-makers must actively recruit incoming tech workers, creating a strong presence at universities to let students know how essential these roles are and promote availabilities at their companies.

Talent will be less likely to choose a technology career if they feel their practice area is slowly

being phased out. The root of the crisis is awareness, and in ensuring mainframe is part of the consideration set for IT students preparing for the real world, the chance of attracting that talent is higher. Company leaders should be honest and clear about the future of the mainframe's role in their business.

Part of solving the career path issue involves simply making mainframes more accessible to the masses, the way web application development tools are. As one young programmer noted in an online forum discussing the skills gap, "I've never seen a mainframe, and I've never had a virtual mainframe to experiment with...I see the web every day and can use its free and readily-available dev tools. Realistically, which path would I choose?"

Young IT talent simply has no route to even acquaint themselves with mainframes. While physical limitations of mainframes certainly make it tougher to bring to the masses (after all, they're the size of refrigerators) the way the web can be made accessible, it's up to IT employers facing the shortage to get creative and turn to guerilla marketing tactics to get the machines in front of tech-enthusiastic youth.

Sponsoring field trips for secondary education STEM classes or developing virtual mainframe programs that allow students to interact with the machines remotely via a computer are just a couple ways to allow potential mainframe talent to get a jump-start on mastering the elusive yet valuable technology.

While these practices are strong solutions to take the problem head-on for the time being, the long-term solution is to collectively focus on re-branding the mainframe's dinosaur image. Whether it's the way employees discuss the job, job postings, or recruitment materials, it's important that everyone in the organization understands the importance of the mainframe and its stability as the company continues to grow. By creating a strong internal understanding with how the mainframe supports critical business functions globally and building a solid succession plan for the mainframe, incoming talent will understand the importance of the role and see the potential for a long career.