

## Five Technology Imperatives for the Next President

Five thousand years ago Mesopotamian leaders had one thing on their minds: the wheel.

This emerging technology promised to change their world, much as the discovery of fire had revolutionized society 400,000 years earlier.

The next president will face a similar game-changing scenario. The evolution of technology in the coming years likely will chart the course of human progress for centuries to come. Tremendous tides rush around us; someone will have to steer.

Here are five technology imperatives for the next president.

### Opening the Borders to IT Talent

For the tech community, immigration policy is a burning priority. Some argue government's zeal to limit new arrivals to the United States could hobble development and commercialization of important technologies.

The nonpartisan National Foundation for American Policy reports that immigrants have started nearly half of America's top 50 venture-funded companies and are members of management or product development teams at more than 75 percent of leading companies.

In April, after spearheading the Jump-Start Our Business Startups Act, AOL co-founder Steve Case joined other IT leaders in calling for legislation that would allow companies to recruit highly skilled immigrants.

The tech industry has long struggled to find the talent it needs. "Traditionally, the void has been filled with immigrants, who possess 67 percent of doctoral degrees in the United States," says Darren Hayes, a professor at Pace University's Seidenberg School of Computer Science and Information Systems. "A tightening of immigration laws would stifle the needs of IT employers."

Immigration reform is a hot-button issue that has met stiff resistance and political gridlock. Presidential leadership could drive new policy and help propel legislation that IT advocates say industry needs.

### Securing the Supply Chain

Technology has taught government and industry to fret admirably about the possibility of malfeasance in critical networks. Security managers wring their hands daily, planning for the next scenario and asking who might break in and what might they steal or compromise.

Much has been done to keep the bad actors out. But sometimes they work from within.

There is a very real possibility that some network components are compromised before they are ever installed. “What clandestine espionage functions are baked into network components at the manufacturing and distribution levels?” says retired Navy Rear Adm. Jamie Barnett, senior vice president at the Potomac Institute for Policy Studies.

Most network equipment in the United States comes from abroad, much of it from China. “For instance, [Chinese firm] Huawei dominates the undersea cable market, and in excess of 90 percent of America’s international communications, including the Internet, is carried on undersea cables,” Barnett notes.

The supply chain is insecure without a standard process of checking for malicious components inserted into the pipeline. As an under-the-radar threat, supply chain vulnerabilities face little resistance from those who are looking along the perimeter when they build their defenses.

No laws or regulations exist to address the potential threat, Barnett says. Leadership at the presidential level could put the issue into play and perhaps lead to legislation that would bolster governance over the import and deployment of critical infrastructure components.

## **Thinking Big - Data**

The latest amorphous IT buzzword to hit the streets, “big data” generally refers to the ability to harvest vast quantities of information and put it through the analytics wringer, slicing and dicing to reveal patterns of behavior. The result can drive anything from fraud investigations in the financial sector to pinpoint-marketing among retailers.

The next president will have a couple of good reasons for putting big data on the radar. First, these techniques soon will be ubiquitous in the commercial sector, leaving policymakers the task of balancing businesses’ desire to peer as deeply into their customer base as possible, against consumers’ concerns about privacy and security. This is a regulatory morass waiting to happen.

On the public sector side, big data offers a means of driving policy. By aggregating and interpreting vast amounts of information culled from commercial, demographic, geographic and other sources, legislators and federal leaders can base decisions not just on public perception, but on verifiable facts as well. It will take some work to get there. “The federal government probably represents the largest single data repository in the world, but most of this data is fragmented, stored in disparate systems and differing formats,” notes Alan Hill, vice president of government relations at Serco Inc., which provides IT and management services to federal agencies.

The next president will be well-positioned to push for relevant information to be incorporated into intelligent information systems. New policies and regulations could put in place the vehicles for harnessing already available data in the interest of better public policy decisions.

## **Looking to Mars**

A manned mission to Mars could drive technological innovation and pump new energy into an IT landscape that derives little enthusiasm with breakthroughs such as Facebook.

The Apollo program gave us cardiovascular treatments, life-saving kidney dialysis technology, high-performance insulation, high-endurance textiles, freeze-dried food and cordless vacuums.

We’re already on the way to the Red Planet, at least on paper. In 2010, Congress discontinued plans for a manned mission to the moon and instead authorized piloted

missions to an asteroid in 2025 and to Mars by the 2030s. Cost estimates vary widely, anywhere from \$20 billion to \$450 billion and up.

Distance factors in. Depending on the time of year, Mars ranges anywhere from 35 million to 235 million miles from the Earth. This is not trivial.

But that is exactly the point.

“If the president is to lead with technology, it needs to be driven by an inspiring goal that people and Congress can get behind,” says Robert Dunton, chief information officer at federal employment law firm Tully Rinckey.