Cloud Computing Reconfigures Workforce

Cloud technologies are feeding a data-based economy that requires people to learn new professional skills.

By Matt Alderton · May 03, 2019

It's called "cloud computing" for a reason. Like real clouds in the sky, virtual clouds are pervasive and far-reaching. They also can cast long shadows. Those same clouds are powering more aspects of our digital lives and shifting the focus to essential skills workers need to succeed in the future.

Robert Half Technology, a human resources consulting firm, recently asked more than 2,800 IT leaders to name their most critical business concerns. Cloud computing ranked as the most important skill in their workforce training. The managers counted cloud security, cloud computing and cloud architecture as three of the top five IT skills they need most.

This revelation flies in the face of those who expect widespread job losses as a result of more companies turning to cloud services.

"The public conversation about technology taking jobs instills fear in a lot of people," said Mike Leone, senior analyst at IT research firm Enterprise Strategy Group.

"I do not view it that way whatsoever."

Like other technologies before it, including the cotton gin, the telephone and the automobile, cloud computing might eliminate some jobs, Leone acknowledges. But it also will create many new ones.

Origins of Sharing Computing

Some trace the roots of cloud computing back more than 60 years, when computers were large, expensive and relatively rare. Computer scientist John McCarthy came up with the idea of "time sharing," whereby multiple users could split a single computer via remote terminals.

Today, companies tap into shared computing resources including software, processing and storage services to run their businesses. It's bringing unprecedented speed and flexibility, said Leone.

"From an application developer standpoint, think about how fast you can iterate, add new features, and test things in the cloud," he said. "You can really start to see the ripple effect of faster innovation."

The result is a new chapter in the global economy, according to Morgan Stanley.

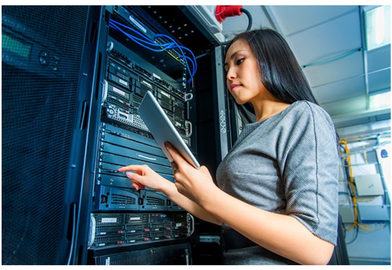
"We believe the market is in the early innings of a technology-driven, decade-long investment cycle centered on data-focused technologies," the company said in its recent report "2019 Outlook: Shifting Toward Software Models as Data Era Matures."

Reconfiguring the IT Workforce

The hallmark of what Morgan Stanley calls the "Data Era" is flexibility: Cloud service providers like Amazon Web Services, Google Cloud Platform and Microsoft Azure give companies on-demand computing power that allows them to instantly scale up or down by paying only for the compute resources they need, when they need them. The resulting efficiency can save companies time and money while making them more agile and responsive.

This is driving IT departments to re-architect roles within the IT workforce, according to Steven Kaplan, vice president of Customer Success Finance at Nutanix. When companies turn to on-premises cloud services, he said, they don't eliminate their IT workforce; rather, they reconfigure it.

"The workforce in traditional IT shops operates in silos, so are inherently inefficient," Kaplan said. "By moving to a software-defined hyperconverged infrastructure (HCI), companies can completely eliminate silos. IT generalists drive optimal business outcomes and value for the organization, instead of worrying about traditional infrastructure tasks."



For example, when organizations move to HCI, they no longer need administrators focused solely on storage needs. Instead, IT staff can look across different business needs to help the company optimize existing and new technical capabilities as soon as needs arise.

"When customers move to Nutanix HCI, we often propose their storage folks work more closely with the DevOps team," said Kaplan. "Cloud-enabled companies also need IT experts to manage security, process and change control, and IT governance," he said.

Effect on New Job Opportunities

New jobs are just as likely outside the IT department, said economist Robert B. Cohen, Ph.D., senior fellow at the Economic Strategy Institute. In 2016, he published a study in which he predicted the rise of a "cloud services-driven, new IP-based economy … [in which] software becomes the central focus of economic activity."

"The U.S. economy will obtain dramatic benefits from enterprise spending on cloud services," said Cohen, who predicted that benefits will include $1.7 trillion in new spending, $3 trillion in GDP and 8 million new jobs by 2025.

Because the cloud enables artificial intelligence, machine learning, and the Internet of Things, many new jobs will be created around data science, Cohen said. He predicted that cloud spending and associated job growth will be strongest in six sectors: financial services, IT, social media, retailing, insurance and agriculture, which collectively will account for almost three-quarters of total spending on cloud services.

As work functions blend, Cohen said that many companies will require their employees to learn new skills.

"One skill is to pull together the data they need to do analytics, and then clean it, maintain it and make sure it's what is needed," Cohen said.

Another is for advanced data analysis. That involves product developers and mathematicians or statisticians, as well as customer service reps, product support personnel or even marketing people who can work closely with product developers to set up systems to analyze various parts of the company.

In Cohen's view, companies in the cloud economy might look like sandwiches; the bread may be machines that collect data and deliver services derived from it, but the meat in between are workers who parse and process intelligence for decision-making.

In that case, the cloud won't be the kind that rains on jobs. Instead, it will bring growth in a wide range of new areas.

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