Digital Leadership

The GE journey: culture
and talent accelerate GE's
transformation from
industrial conglomerate
to digital services provider

An interview with
William Ruh
formerly with GE

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William (Bill) Ruh was formerly the vice president and chief senior vice president and chief digital officer of GE and CEO of GE Digital. Bill joined GE in 2011 to establish its digital strategy and to lead the convergence of the physical and digital worlds within GE globally. In this role, he has focused on building out advanced software and analytics capabilities, as well as driving the global strategy, operations, and portfolio of software services across all of GE's businesses. During his tenure, Bill has led the charge to develop the first cloud-based platform for the industrial world.

A computer science graduate from California State University, Bill is a 30-year veteran of the software and internet industries, holding executive management positions at Cisco, Software AG, Inc., The Advisory Board, The MITRE Corporation, and Concept 5 Technologies.

The Capgemini Research Institute spoke with Bill to understand more about GE's digital transformation and the important role played by culture and talent.

The GE digital transformation journey

Can you tell us about the role of a CDO in an industrial company and the beginning of GE's digital transformation journey?

The role of a CDO in an industrial company is about taking a traditional company with a traditional portfolio that primarily sells hard assets – such as jet aircraft engines or wind turbines – and trying to help that company transition to a set of digital services that can be operated at greater efficiencies. This is crucial because we all know that the future is going to be the data coming off these hard assets.

GE's former CEO, Jeff Immelt, brought me in seven years ago. At that time, GE's traditional service business was coming under increasing pressure. This was driven by the fact that companies were beginning to use the data coming out of our machines, and non-traditional players – such as software firms – sought to use our data to rethink operations and servicing. At this point, GE made the decision to make sure that it was the best and most knowledgeable about its own machines physically and digitally. We had no playbook at the time, so we had to develop one. We called this "GE for GE," which was about building digital capability into our own service offerings.

The first phase was designing the strategy and creating a software center of excellence (CoE). The software CoE worked with our services groups to begin to build out new digital capabilities and we used it as a mechanism to bring in data scientists and people who understood areas like open source, cloud, mobile, big data, and Agile DevOps. Our CoE helped us attract AI and machine learning talent and user experience talent, which are the technologies at the center point of our digital strategy. This

CoE laid the groundwork for us to have remote monitoring in diagnostics centers and the ability to monitor tens of thousands of wind turbines installed globally.

What was the second phase in GE's digital transformation?

In the second phase, we started to move the digital capability out of the software CoE and into each of the businesses. We wanted to enable new portfolio offerings we could sell in the market, which we called "GE for the install base." I felt that if we left the CoE separate, we would never get the necessary synergy and momentum we wanted. We hired chief digital officers for each of the businesses and helped them to hire their own talent. Each CDO was responsible for building their own unique portfolio and software – digital product lines that extended beyond service, but that they could sell alongside their products. As a result, we had unique, domain-specific portfolios in each of the businesses and built deeper relationships with our partners and customers.

Where is GE today in its digital transformation?

The final phase, and one that is ongoing, began in 2015. This is where we found commonalities – horizontal digital capabilities that were not unique to any one business but were needed by all businesses. We call this "GE for the industrial world," where we now have horizontal capabilities that we sell in conjunction with each of the businesses selling their own portfolio. This third phase is about enabling and building out a standalone business for digital and this is how GE Digital was born.

How has the creation of GE Digital helped to accelerate the transformation?

We created GE Digital because we knew that to win any industrial disruption you must be willing to become a platform player and create the necessary ecosystem to bring that to market. We positioned ourselves to win in the race to the Industrial Internet of Things platform (IIoT). The IIoT platform brings connectivity, data, analytics, and the ability to create new kinds of applications to make assets perform better and more efficiently. GE Digital became a way for us to go after that disruption opportunity in the market. At the same time, it allowed us to share that capability with each of the businesses and for them to go faster and build their own unique set of capabilities.

Where is GE Digital's focus today?

All of industry is going to have to master digital to compete in the future. Industrials need to leverage digital technologies to improve efficiency and move beyond autonomous systems. At GE Digital, our focus is on changing the relationship between humans and machines – moving to a world where machines advise people on how to run more efficiently and be more productive. We do it by understanding and mastering assets – the foundational capability needed to transform digitally.

Through the Predix portfolio, GE Digital's platform and applications for the industrial internet, we are supporting customers across industry to help them run their operations more efficiently.

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What is the digital initiative that you are most proud of? Why?

Leading the creation of the world's leading solution for IIoT has been one of the most important digital initiatives I've worked on in my career. Building the platform and applications that are driving real productivity in the industrial space has been both incredibly rewarding and an important lesson when it comes to making a digital transformation journey successful. From improving efficiencies, to optimizing processes, to reducing unplanned downtime – we are delivering powerful business outcomes to industrial companies around the world. The vision for the industrial internet and the opportunity to contribute meaningful, purpose-driven work that improves the way people live and work gives us something we can all rally around.

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The importance of leadership to digital transformation

Our digital mastery research found that organizations still struggle with developing the necessary leadership capabilities for digital transformation. Why do you think organizations falter on the leadership side?

I think there are three things that get in the way of any company's ability to do this well. First, most leaders don't have a digital background. In fact, one could say that they are reticent to engage with digital. They may not have a Facebook account, they may not read Twitter, they may avoid reading news digitally. You cannot just dictate "being digital" – you must know it and fully embrace using digital in everything that you do. Engaging with technology is a prerequisite for leadership.

Second, you need to have a culture of investment and measurement, as a startup would. Most startups do not begin making money for at least five years, so leaders need to have a growth mentality. You must have a deep desire to drive growth and measure that growth on day one, and day five, and year five. You must be willing to provide a sustainable investment and know how to utilize your scale so that the entire company embraces it and takes it forward into their customer base, their geography, their portfolio. This set of capabilities is not natural. In fact, they are often the antithesis to what brought that person to the CEO position, which is often a focus on traditional operational excellence and an ability to drive great bottom-line financial results.

Thirdly, you must be willing to hire other great leaders and you must protect them in a way that allows them to fit into the culture as opposed to having the culture reject them, because all existing businesses reject the culture. The hard thing is that a new CEO of the future who is embracing digital must do two things simultaneously that are at odds with each other – managing for the short term while also planning for the long term.

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Culture and talent – key building blocks of digital transformation

Our digital mastery research also found that many organizations still consider employees as an afterthought in the transformation journey. Why do you think that's the case?

One thing I've learned is that I myself underestimated the importance of culture, talent, and leadership in digital transformation. Companies often think of digital as a portfolio issue. In other words, we will build up a new product line or a new set of capabilities for the market. They think about it as only a technical problem to be solved and don't pay enough attention to the people and leadership component.

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How has GE prepared its workforce to take advantage of digital?

We've done two critical things. The first is that we brought in talent – digital natives – from the outside and enabled them to come into GE effectively and get them motivated and excited to learn. We embedded this talent with the rest of our workforce, so that helped us to drive this new DNA into the company.

The second thing is we retrained our workforce on the new capability. This was to encourage these employees – who we like to call our "digital migrants" – to see the opportunity that digital has at GE. This opportunity is the power to leapfrog competitors and bring disruptive products and services to market. For example, we made sure our supply-chain employees understood the impact of technology on the future of supply chain. If an organization doesn't commit to both digital natives and digital migrants, it will never make the shift.

We continue to manage our digital capabilities using an Integrated Talent Management (ITM) framework – a multi-year strategy to build GE's digital talent and fulfill the IIoT vision. Built by employees for employees, we created MyITM, a tool that enables employees to connect the skills and capabilities they need for their role, and identify learning solutions to help them grow in their careers. This also helps our team understand where there are capability gaps across the organization, which then informs our hiring and talent pipeline. To date, over 30,000 digital employees across GE have access to MyITM.

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What are the elements of culture that are most important to GE?

We strive to make our people feel part of the mission of the company and ensure a culture of learning and of collaboration. A culture that thinks Agile and DevOps, and minimally viable products versus a culture of specification and waterfall. In my mind, this culture can only come from the leadership at the very top, at CEO and board level, as well as the CEOs of the various divisions. They must be fully and absolutely committed to driving a digital agenda. Leadership must be willing to incubate and protect this culture through their own actions, through policies, and through investment and capital.

How has GE measured the success of its cultural transformation?

There's no hard and fast metric or scorecard, but there are a couple of things that I look at as the chief digital officer. I look at the growth and momentum of our new digital offerings. For example, the sales of our net new digital offerings and the year-to-year growth of those sales. We also measure our talent.

Our HR team in GE Digital put together a tool set that we call "integrated talent management." It's focused on the acquisition of digital skills and allows us to assess the individual skills of all 26,000 digital employees across the company. Incorporating both the older set of skills and the new digital skills, the tool doesn't rank employees. Instead, it gives us the ability to have a conversation with an employee about areas for development, especially areas that are necessary to be successful in our digital organization. We also use the tool to identify areas where we need to upskill in certain capabilities or hire more talent in.

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