



Managing Businesses that are Rooted in Software:

Interview with Dr. Vijay Gurbaxani

Vijay Gurbaxani

Founding Director, Center for Digital Transformation and Professor of IT, Paul Merage School of Business, UC Irvine

Vijay Gurbaxani is founding director of the University of California Irvine's Center for Digital Transformation, a center of excellence in the university's business school. He has written and been quoted extensively on strategic digital business issues.

His research has appeared in *Harvard Business Review*, MIT Sloan Management Review, *MIS Quarterly* and other leading publications. He earned his master's and PhD degrees in business administration from the University of Rochester (N.Y.) Graduate School of Business. He graduated from the Indian Institute of Technology, Bombay, with a master's in mathematics and computer science.

In his 2016 *Harvard Business Review* article⁵⁴, Gurbaxani argued that every firm today competes on the software that drives its business. That doesn't mean they must sell software. Instead, they must understand the competitive dynamics of software companies, and then adopt management practices of the best ones.

⁵⁴ Vijay Gurbaxani, "You Don't Have to Be a Software Company to Think Like One," *Harvard Business Review*, April 20, 2016, accessed May 17, 2019 at: <https://hbr.org/2016/04/you-dont-have-to-be-a-software-company-to-think-like-one>.



We talked to Dr. Gurbaxani about the practices of leading companies that have made software a competitive differentiator.

TCS: *Every company today seems to be digitally transforming some piece of their business, or many pieces. You have told executives to view their companies as software businesses because their products, services, and business processes are increasingly rooted in software. TCS has been saying something similar: that companies must automate every task that can be automated; create new, high-level jobs; and use AI to help employees whose jobs can't be automated. Our question is this: How many companies are ready for this new world?*

Vijay Gurbaxani: Many companies are not ready to move from the physical to the digital world: how you compete, where you get value and competitive advantage from—digital technology fundamentally changes all of this.

Companies that, as TCS puts it, take a Machine First™ approach to transforming their business are going to need much more expertise in software development. You can easily see this when you compare the proportion of software engineers in a software-driven company vs. a more established company. Compare Tesla, which started in 2003, with Volkswagen, an 82-year-old company. By the way, I'm not commenting on whether either company—or some other—will dominate the electric vehicle market in the future. I'm only comparing the composition of their work forces. So the question is why Tesla has led the way so far. I argue that one reason is that it's been a more software-driven company than the rest of the auto industry.

Fifty percent of Tesla's engineers are software experts; it's much lower at VW.⁵⁵ But VW is catching on. Its CEO acknowledged two years ago that Tesla has software capabilities that VW lacked. No surprise then, it recently announced it would create 2,000 new software jobs.⁵⁶

⁵⁵ Reuters, "Volkswagen brand CEO says Tesla has abilities Volkswagen lacks," August 4, 2017, accessed May 17, 2019 at: <https://www.reuters.com/article/us-volkswagen-tesla-diess/volkswagen-brand-ceo-says-tesla-has-abilities-volkswagen-lacks-idUSKBN1AK261>.

⁵⁶ TheDrive.com, "Volkswagen Will Slash 7,000 Automatable Jobs and Hire Software Engineers instead," March 14, 2019, accessed May 17, 2019 at: <https://www.thedrive.com/news/26934/volkswagen-will-slash-7000-automatable-jobs-and-hire-software-engineers-instead>.



TCS: *Companies that are rapidly digitizing need to dramatically ramp up their software development capabilities, and quickly. But doing it internally is not easy, right?*

Gurbaxani: It's not easy at all. Just look at General Motors. Tesla announced its autopilot feature—its self-driving software—in 2016. Traditional automakers, including GM, recognized they had fallen behind. They understood that while they knew how to manufacture cars, they did not have the know-how to build self-driving software.

Companies that take a Machine First approach to transforming their business are going to need much more expertise in software development.

Now they could have developed this know-how themselves by hiring new talent. But that would have taken a long time, and it was crucial to not let their competitors get too far ahead. So GM approached Cruise Automation, at the time a 3-year-old venture capital-funded company, about striking a joint venture. But as GM examined the company's capabilities, it decided to buy Cruise for \$581 million (a price that's closer to \$1 billion including incentives for its top talent).⁵⁷ Beyond acquiring Cruise's technology, GM precluded its competitors from getting access to the technology.

⁵⁷ "GM Is Exploring Listing Shares of Cruise Self-Driving Unit," Bloomberg, June 15, 2018, accessed May 17, 2019 at: <https://www.bloomberg.com/news/articles/2018-06-15/gm-is-said-to-explore-listing-shares-of-cruise-self-driving-unit>.



TCS: *Companies could spend lots of money automating every business process and product in their organization that can be automated. That's a huge investment. How do they know where to begin?*

Gurbaxani: That's a very important question. I tell executives to be very selective about their digital transformation initiatives. They should start by determining what their company does uniquely well in delivering value to customers, and what knowledge they possess that competitors don't—knowledge that's crucial to their distinctiveness.

Formally, you must evaluate your customer value proposition. Why do customers do business with your company rather than your competitors? Is it because the customer experience in buying and using your product is better? Your products are more innovative? Your offerings cost them less, or are of higher quality? Then focus on how digital enables you to redefine your value proposition.

Invariably, most companies will have to partner since it's impossible to do everything in-house.

Again, let's look at GM. With ride-sharing companies fundamentally transforming how we get around, GM is attempting to become a mobility company. Beyond the Cruise acquisition, it made a \$500 million investment in Lyft in 2016, both to ensure that GM cars remain in the fleet and to understand the mobility services market. It built hubs where Lyft drivers can rent vehicles in the short-term rather than using their own cars.

GM is investing a lot of money in the technology behind self-driving cars, and technology that enables people to digitally connect and share cars. But ultimately, GM is focusing its digital investments on generating higher returns on the assets it already produces—its automobiles. GM wants to more deeply take on customers' problems of owning and operating a car, including helping customers make money on their cars.⁵⁸

⁵⁸ "General Motors designs a new 'brain and service system' for its vehicles," *Ars Technica*, May 21, 2019, accessed May 21, 2019 at: <https://arstechnica.com/cars/2019/05/general-motors-designs-a-new-brain-and-nervous-system-for-its-vehicles/>.



One way to do that is using digital technology to continuously engage with its customers. These business opportunities are only possible when a company has the software to continually monitor, operate, and monetize its products after they're sold.

In fact, GM has done this for more than 20 years, starting in the late-1990s with OnStar, an onboard device that enabled Cadillac vehicles to summon help for customers who had been in a crash. This year, the company unveiled a new digital platform for their cars.

TCS: *This sounds like a good opportunity for many companies.*

Gurbaxani: It truly is. Once a company has a continuous digital connection to its customers, it can offer an ongoing set of services, with products being only a part of the overall solution. Many companies have ignored or underestimated these life-cycle opportunities—even companies that have begun rethinking the customer experience. The reason is they haven't fully grasped the new opportunities in a world in which digital technologies enable companies to personalize at scale how they serve customers' needs.

I tell executives to be very selective about their digital transformation initiatives.

I'll give you two very interesting and very different examples of companies that *haven't* underestimated these opportunities: an enterprise software company, Adobe, and a fast-food chain, Taco Bell.

Adobe has been known for years by marketers and graphic designers for its packaged software products like Illustrator, Acrobat, and Photoshop.



When the cloud emerged in 2011, CEO Shantanu Narayan embraced it. It was a bold move. Think about the courage it takes to go from a \$1,900 product to a \$50-a-month product. That means it takes more than three years to make that same \$1,900 off that one customer. And then they had to change their entire philosophy for delivering upgrades because they now had to release enhancements far more frequently than before.

But it reduced the high cost to purchase Adobe products—a high barrier to entry for customers—and all of a sudden many people could engage with Adobe products in a way they couldn't before. And then when mobile technologies like the iPad and the iPhone became big, Adobe execs started thinking, "Why does a creative professional need to be tethered to their desk to design a web page or a graphic? Why can't they create a web page on a mobile platform?" So they delivered products for these technologies. Today, with the advent of AI, Adobe is thinking about how to implant AI technology into its software.

Now, Adobe has recognized that their history as a creative software company allows it to expand into the digital marketing arena. To this end, it purchased B2B and B2C software companies: Magento and Marketo. Adobe is now reframing itself as a digital online experience company.

TCS: *So tell us about Taco Bell's digital transformation.*

Gurbaxani: In a different way than Adobe, Taco Bell has been using digital technology to make it far easier for customers to get its products. Their core premise is that customers want what they want, when they want it, and where they want it. That means getting them food customized to their preferences, faster at its restaurants, or delivered to them. Today's digital technologies, and a delivery infrastructure that's now in place, make that viable.



I'm sure you have heard about the restaurant chain. It's owned by Yum Brands (which also owns the KFC and Pizza Hut chains). Taco Bell has more than 7,000 drive-through and sit-down Mexican quick-service restaurants around the U.S. Their value proposition, like every other

If you look at leading software companies, you will see that they have remarkable adaptability throughout the organization.

fast-food chain, has always been this: getting good, affordable food to customers rapidly. But today, with the fast food industry declining in overall sales, and food delivery services grabbing a foothold, Taco Bell knows that it must innovate faster. And digital is a big piece of their strategy.

They are a digitally-driven company. From using kiosks to improve the ordering process, to sophisticated data analysis to design menus, optimize prices, and even their ad campaigns, Taco Bell is driving productivity and efficiency with technology. Taco Bell even struck a strategic partnership this year with food order and delivery service Grubhub.



TCS: *To do what these companies have done, who needs to lead the change?*

Gurbaxani: Our research shows CEOs must lead these changes. Clearly, the rest of the company has to buy in and that's where leadership and culture really count. If you look at leading software companies, you will see that they have remarkable adaptability throughout the organization. They must have it, since they'll go out of business if they don't evolve to reflect market shifts and the evolving digital world.

Shantanu Narayan of Adobe has said you have to plant flags for employees to aspire to—key goals—and then believe in, and empower, your employees to get there. The best software companies leave it to amazing individuals below the top management team to help them figure it out.

I believe strongly that CEOs must have a point of view about how their sector and company must evolve in a digital world. Yet, it's impossible to always be right amidst such uncertainty.

So we need businesses that can adapt to market shifts and to bets that didn't work out. The solution is to grow with high performance people, not with rules.

Trusting employees to make the best decisions for themselves and the company is a huge part of building a great team. This means you have to give them the rope to be creative and make many decisions on their own. Above all, you must ensure everyone has a built-in commitment to your company's success.