If you’re not turning your company into a “math house” you’re headed for serious trouble. Every industry will soon be driven by digitization and every winning company will be using algorithms, or mathematical rules for processing information, to shape the end-to-end customer experience. Any advantages you have now will pale in comparison with a great set of algorithms that differentiates the customer experience. It is the algorithms that will create value for the business.

This is not guesswork. Sensors, the cloud, mobile and broadband wireless, and other such technologies are increasing the flow of digitized information exponentially. Algorithms, run on ever faster computers, can do amazing things with that information, from detecting patterns and making predictions to solving complex problems. They can even modify themselves as new information comes to light. In the hands of a “catalyst,” such as the late Steve Jobs, Jeff Bezos, Larry Page, Sergey Brin, Mark Zuckerberg, or Mark Andreessen, algorithms can radically alter the consumer experience.

More such catalysts are entering the fray every day. Venture capitalists have their radar out for and provide ample resources for the catalysts to scale up very quickly. The result is the reconstitution or destruction of industries, creation of new market spaces, and reshaping of old industry ecosystems.

Some leaders will ignore the trend, as happened at Nokia, or remain on the defensive, as reflected in Walmart’s delayed response to Amazon. But others know it is not going away and that they have no choice but to transform the company. That realization creates more anxiety than insight into what to do. CEOs are on the hunt to understand who has done what, and who has succeeded. They want to know, does a legacy company really have a chance
It is possible to transform a big company, and a roadmap has been laid by one of the most established companies in the world. GE, the only surviving member of the original Dow Jones Index of 1896, is reasserting its pre-eminence by reinventing itself in the context of the newly emerging digital space. It is shaping the new game of industrial businesses on a worldwide basis and showing other companies, regardless of their size, complexity, and history, how to proceed. Here are several lessons that leaders of legacy companies can draw from GE’s transformation:

1. **Think like a large-scale entrepreneur.** The new game is to think about the business model and strategy for not just the company but the entire ecosystem. You have to conceive and build a new platform and reshape partners in the ecosystem in ways that would not be possible without digitization and algorithms. For example, GE has created a digital platform in the energy sector that its own and third-party software developers can write applications to. The platform allows the exchange of digital information, services, and products across the power grid, allowing much greater efficiencies industrywide. The platform can bring wind, solar and other renewable energy producers — even individual homes equipped with solar panels — into the same ecosystem.

2. **Recruit a digital leader from outside to spearhead the initiative.** It will be a bold choice to choose the correct person, because you will be selecting someone with a new kind of expertise and bringing that person in at a high level. In 2011 GE, the company famous for exporting great leaders, imported one when it recruited Bill Ruh from Cisco to lead GE’s push into software and analytics. He built a team to develop Predix, a cloud-based platform that underlies all of GE’s industrial businesses. Three years later, GE hired veteran software engineer Ganesh Bell to be chief digital officer of GE Power and Water. Many such leaders are relatively young and highly sought after. GE’s ad campaign showing GE as a good place for millennials to work is part of its effort to be a talent magnet.

3. **Focus where domain expertise and digital expertise intersect.** Domain expertise at an automaker includes things like mechanics, telematics, structural engineering, design, and so on. Elevate the power and status of digital leaders and create mechanisms to bring them together with the domain experts. The leader of a financial services firm created a mechanism to bring together the experts in software and data analytics with people who knew the specifics of the business and consumers. They met once a week to hash out the details of how the digital platform should work to transform the consumer experience. “We had to get both buy-in and understanding of how the pieces of the strategy were going to be integrated,” she explained, “and we had to road test them, so we wanted the chief marketing officer, the chief digital officer, the head of distribution, the CFO, and so on all talking about it simultaneously to make sure all aspects were being considered.” When she sensed that the experts were not listening to each other, she intervened. Those sessions produced a highly sophisticated system that achieved the end goal: a wonderful end-to-end experience for consumers.

4. **Change the dialogue in the senior leadership team to focus on the end-to-end customer experience.** How can algorithms be used to create a better or entirely different kind of experience? This should be the dominant theme of discussions at the highest organizational levels in place of things like product quality and sales. CEOs cannot manage their silos via hub-and-spoke and expect digital expertise to be properly incorporated in key decisions. They have to integrate various perspectives and not give algorithms short shrift for lack of understanding them. It may mean spending some time in Silicon Valley to learn. Tom Watson, Jr. spent an enormous amount of time at MIT, the Silicon Valley of his day.

5. **Radically cut costs in the old business to fund the new game.** Balancing the short-term and long-term is a dynamic leadership challenge. Find the proper pace for extracting resources from the legacy business. GE has been steadily reducing its ratio of SG&A expense from 18% in 2011 to a targeted 12% in 2016, and in fall 2015 CEO Jeff Immelt told CNBC he planned to take out $1 billion in costs in the next two years on slightly declining revenues. Many leaders err on the side of slow change, which can be a killer, especially when a competitor from outside the industry jumps in. Don’t blindly accept assumptions about Wall Street myopia. As BlackRock CEO Larry Fink has said, “One reason for investors’ short-term horizons is that companies have not sufficiently educated them about the ecosystems they are operating in, what their competitive threats are and how technology and other innovations are impacting their businesses.”
6. Make the tough calls on people. Radically reduce people dedicated to the old business. Find new ways to motivate the legacy people. Redefine
criteria for officers and move out those who cannot be “digital heads.” Immelt elevated marketing and digital media when he promoted Beth Comstock
to vice chair, while other positions, including that of the CFO, are at the senior vice president level. He also removed a layer of vice chairs to make room.

7. Make the organization team-based and fluid. Cut layers. Change the mindset from “span of control” to “speed and collaboration.” GE adopted its
FastWorks initiative, based on lean startup principles, to cut bureaucracy around innovation. Drastically change the operating mechanisms to allow
adjustments in real time; for example, eliminate annual strategic planning and annual performance appraisals in favor of ongoing assessments and
feedback. Keep information and communications flowing internally and externally so people know how their work links to the overall company
direction. Get people aboard through short duration training programs. GE trained some 40,000 employees on its FastWorks initiative.

8. Communicate often so the board, investors and the media understand the steps you are taking to become a new company. Connect with major
shareholders and potential activists to explain the reasons for shifting resources. Immelt reached out to activist Nelson Peltz before Peltz’s Trian Fund
had invested in the company. Soon after, Trian did due diligence on the company and bought a $2.5 billion stake. While Peltz made suggestions to
divest a bigger piece of GE Capital and increase leverage, he generally supported Immelt’s efforts to steer GE onto the new track. Dialogue took place
without major upheaval to the business.

The key lesson from GE is that transforming a company for the digital age cannot be delegated, outsourced, or done piecemeal. Rather, it involves many
steps that are interconnected. The CEO should spend at least 50% of the time on the transition to transformation. The CEO must have the imagination
to conceive the reconstituted business and the scope to manage the broad range of elements in and outside the organization that must change.

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