

The Exponential Leader's **Guide to Disruption**

(Disrupt Yourself
Before Someone Else Does)

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By Singularity University



Introduction

“The best way to predict your future is to create it.”—Abraham Lincoln

Disruption cannot happen without innovation.

Innovation cannot happen without experimentation.

Experimentation cannot happen without the possibility of failure.

Yet failure is one of the most terrifying human fears that often leads to innovation paralysis or disruption denial.

While the possibility of failure is most often responsible for inaction, the certainty of exponential technologies disrupting business is what drives innovation. It is what fuels the most influential, scalable, agile companies we have ever seen.

Remaining comfortable with business-as-usual is no longer an option. Agile, innovative, scalable companies like Netflix, Instagram, Amazon, Airbnb, and Uber have used exponential technologies to completely disrupt the entertainment, photography, publishing, retail, hotel, and transportation industries. Some of the largest industries in the world have fallen prey to these disruptive companies. *And most of them didn't even see it coming.*

The convergence of exponential technologies, along with bold thinking and the willingness to take risks, is completely altering the business

landscape. And that landscape is changing at an accelerating pace.

Disruption is occurring far more quickly than ever before, as reflected by turnover in both the S&P 500 and the Fortune 500. On average, an S&P 500 company is being replaced every 2 weeks, and over 40% of today's Fortune 500 companies on the S&P 500 will no longer exist within 10 years. The only options on the table are to either disrupt yourself or be disrupted by your competition. Which will you choose? If you choose the former, do you know how to proceed?



Enter Singularity University

Leaders often struggle to fully understand and integrate the power of rapidly accelerating technologies into their businesses. That's a core part of our mission at Singularity University.

Singularity University empowers a global community of leaders with the mindset, skillset, and network to create an abundant future for us all. As a catalyst for global change, we help others leverage rapidly accelerating technologies—including artificial intelligence, nanotechnology, robotics, and digital biology—in innovative ways to unlock solutions that can positively impact billions of lives.

We guide leaders from all sectors and industries to develop exponential leadership, business models, and innovation practices to propel their organizations forward. Through content, community, and a growing number of programs—many of which can be tailored to specific needs—we help leaders navigate a rapidly changing landscape. Whether we're monitoring the latest technology trends, training an organization's next generation of leaders, or taking innovation teams through tailored prototyping sprints or disruption workshops, we can help you see the future of your industry and empower you to take decisive, bold action.

In this ebook, you'll learn how to disrupt yourself before someone else does. You'll discover more about how “being exponential” can positively impact your leadership style and enable the culture of innovation you need to help ideation and innovation flourish at your organization. We'll introduce the skills, approaches, and mindset that we share with enterprise leaders every day to help them ensure the growth and success of their organizations and bring bold, innovative solutions to market that create value and address some of our world's biggest problems.



1 KODAK AND LOTUS: THE DOS AND DON'TS OF DISRUPTION

Vital Lessons on Disruption from the Demise of Corporate Giants

The power of business disruption becomes painfully obvious when we look at the story of Ed McNierney. Through his unique set of experiences, McNierney provides the ultimate cautionary tale about how to avoid being disrupted and, perhaps more importantly, how to disrupt yourself before someone else does.

SU Co-Founder and Executive Chairman Peter Diamandis met with Ed McNierney, who came out of Lotus 1-2-3 and ran digital strategy at Kodak and learned a lot from both companies' failures. McNierney brings 30 years of wide-ranging technology expertise to the table—and he's seen a lot of unintended disruption that he shared with us at Singularity University.

You're Most Vulnerable When You're Doing Well: Lotus, Kodak, and Ed McNierney

By way of background, Ed McNierney led the development of Lotus 1-2-3 for Windows in the late 1980s, attempting to compete with the highly disruptive Microsoft Excel. A few years later, he landed at Kodak, where he led digital strategy. He didn't stay long; McNierney left after experiencing first-hand Kodak's unwillingness to change as it rapidly raced into a brick wall of bankruptcy in 2012.

This inability to embrace change is not unique to Kodak. It's not uncommon to hear of companies that have failed to innovate. But it's quite rare to

have a single individual who's witnessed such massive failures from the inside. McNierney has lived through several outside-in disruptions and has learned a lot along the way.

A History Lesson: Lotus and Kodak

In the 80s, Lotus was the Google of its day—it was *the* software company. Its core product, Lotus 1-2-3, was the original killer app: it was the reason people bought PCs.

In parallel, Lotus saw that Microsoft was developing Windows and another product called Excel. The Lotus team saw the incoming threat of Windows, but thought if they ignored Windows and didn't build apps for it, everyone else would stay away from Windows, too. Instead, their biggest customers—Procter and Gamble, Exxon, and Shell, among others—thought differently. They were leaving Lotus and going to Windows/Excel.

In response to this mass exodus of large customers, Lotus rushed to bring a product to market. As often happens in a highly reactive state, the company made a fatal mistake: instead of looking only forward, Lotus made its product entirely backward-compatible. Meanwhile, Microsoft focused 100 percent on building a great Windows spreadsheet product without regard for compatibility.

Lotus' strategy failed. Unable to compete, it was left in the dust by a more forward-thinking Microsoft. Lotus experienced complete disruption, which led to its acquisition by IBM in 1995. Today, the company no longer has a product line.

Now, let's look at Kodak

Shortly after McNierney left Lotus, he joined Kodak as its VP of Digital Strategy. This was 1996, during the heyday of Kodak. Kodak had a \$28 billion market cap and close to 140,000 employees.

In 1976, 20 years earlier, Kodak had invented the very first digital camera. It owned the IP and had the first-mover advantage. This is a company that should have owned it all.

Instead, in 2012, Kodak filed for bankruptcy, put out of business by the very technology it had invented. What happened?

Kodak was married to the “paper and chemicals” (film development) business—its most profitable division—while marginalizing R&D on digital cameras as a cost center.

Kodak saw the digital world coming, but was convinced that digital cameras wouldn't gain traction outside of the professional market. This proved to be a fatal assumption.

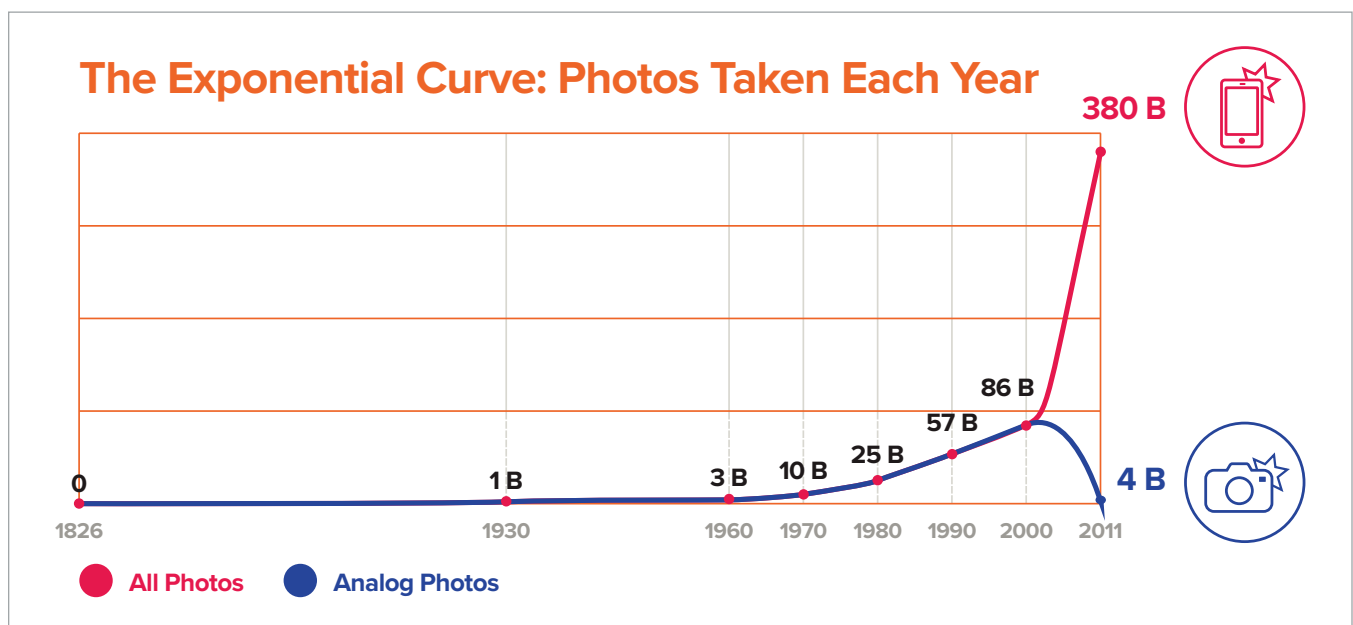


Ed McNierney holding the Apple QuickTake (by Kodak)

The company certainly had the expertise to design and build consumer digital cameras—Kodak actually built the Apple QuickTake, generally considered the world's first consumer digital camera.

Amazingly, Kodak decided not to put its name on the camera, another nail in the company's coffin.

What happened next? The “digital movement” decimated Kodak. The company simply couldn't



keep up with the rate of business change and ultimately was forced to file for bankruptcy in 2012.

It's difficult to create change in a large organization steeped in tradition, and even harder to disrupt yourself when you're leading a company that's cranking out cash the way Kodak was at the time.

But you have to disrupt yourself, or someone else will.

Eight Don'ts: How Not To Be Disrupted

During his time at Lotus and Kodak, McNierney learned a lot about what not to do. Here are eight things you **should not do** if you want to avoid disruption:

1. Don't close out your options too early

Kodak decided it wasn't going to be in the digital camera business. As a result, it stopped devoting resources to digital before it was too late. Don't eliminate new products, new markets, or new opportunities from your possible pipeline.

2. Don't be tied to your history

According to McNierney, "You have way more ahead of you than behind you... [and] bringing the dead weight of your legacy from your past into the future can be detrimental to the business." Just because Kodak was in the paper-and-chemicals business didn't mean it couldn't evolve into something new.

3. Don't be overly attached to your existing business

All existing products/services will be disrupted, and revenues will eventually go to zero. Don't be attached to them. You have to move with technology and the pace of the market. This is hardest to do when you are profitable, like Kodak was. You must be aware that *you're most vulnerable when you're doing well*.

4. Don't ignore the signals

McNierney shared, "It's easy to see that little disruptive force on the horizon and think to yourself, 'I hope that thing goes away,' or, 'I hope if I ignore that, it's just not going to happen.'" Don't ignore them. Your biggest threats are probably in the deceptive phase.

5. Don't be tentative

Kodak built the first digital camera. But it was tentative. The company didn't want to put its name on it. Don't be tentative; be bold. Don't play defense—spend money on accelerating.

6. Don't say, "We can't do X because it is not the way we do things"

"It's not the way we do it" is never a good enough argument NOT to try something new.

7. Don't worry about the big guys

When looking at potential disruptions, don't worry about the big companies. They are usually (with some exceptions) slow-moving and tentative. Instead, you should be worrying about the small guys in a garage. They have nothing to lose. Try to find them, invest in them, partner with them, or hire them.

8. Don't fret!

You are fighting against billions of years of human evolution. We have evolved to be linear thinkers. Just keep trying to innovate and avoid doing the things above. And keep reading.

Now let's talk about the things you **CAN** do to disrupt yourself.

Six Dos of Disruption: How to Disrupt Yourself

1. Disrupt your adjacencies

It's hard to disrupt yourself; few companies have done this successfully. So instead, try this hack and disrupt your suppliers and/or your customers. You can disrupt your suppliers by vertically integrating and building business around the systems that power your existing business. You can disrupt your customers by looking at the other products and services they are already using and build better ones. Apple, Amazon and Google are all great at both of these tactics.

2. Build the best products, or get a piece of them

The best product wins. Either build the best product in your category; if you can't, find a way to get a piece of the best one.

3. Be agile

Agility is everything. Make sure you have the right culture and people to support agility. Oftentimes organizations have an immune response to new innovations—instead, try to embed innovation and change into your cultural DNA.

4. Watch and listen to your customers

It sounds intuitive, but it's not. As Ed McNierney mentioned, Lotus saw that its customers were switching to Excel. Then Lotus heard them say they preferred it. Yet the company chose to ignore them. Your customers are your lifeblood. Listen and adapt to them or they will abandon you.

5. Build a skunkworks

McNierney said that he “would have loved to have had a business inside Kodak whose job it was to totally destroy the core business.” You need to create a safe, secure place for innovation to happen within, or else it will come for you from outside.

6. Have an abundance mindset

As McNierney put it, “There is more ahead of you than behind you.” Don't be afraid to reinvent yourself.



2 THE BIG SHIFT: ENTREPRENEURS VS. MEGA CORPORATIONS

A Big Shift is Coming, and it Could Uber-ize Entire Industries

Who will rule the future economy: entrepreneurs or mega corporations? Will the economy fracture into smaller and smaller bits, or centralize in a winner-take-all scenario? The answer, according to John Hagel, is it depends where you look.

Hagel is Co-Chairman of Deloitte's Center for the Edge. Speaking at Singularity University's Exponential Manufacturing Summit in Boston

in 2016, Hagel outlined a powerful, decades-long economic trend his group calls the “big shift.”

Hagel believes understanding the big shift is key to navigating an increasingly uncertain economy driven by digital technology, liberalization, and globalization. The question is less about whether the big shift is coming and more about where it's taking us.

Competing Visions

According to Hagel, two competing visions vie for our economic future.

“There's one side of the debate which argues that the impact of all this digital technology is to fragment everything,” Hagel says. “We're all going to become free agents—independent contractors will loosely affiliate when we need to around specific projects. But basically, companies are dinosaurs. We're going to fragment down to the individual. The gig economy to the max. That's one side.”

Another view, Hagel says, suggests we're moving toward a winner-take-all economy in which network effects enable a few organizations—the Googles or Facebooks of the world—to capture most of the wealth while everyone else is marginalized.

“You couldn't have two more extreme positions,” Hagel said. “Which one is right?”

The Big Shift

The centralization of corporate power has a long history in pop culture. The early 1980s sci-fi classics *Neuromancer* and *Blade Runner* imagined corporate power run amok—a future in which sprawling, faceless corporations run the world.

It's not hard to see why this vision hits a nerve.

The modern history of business is jam-packed with legendary corporate giants. A little over a century ago it was US Steel, Standard Oil, GE, and JP Morgan. Today, it's the likes of Apple, Google, Microsoft, Exxon Mobil, and (still) GE.

But according to Hagel, as the world entered the digital era, something changed.

To learn more about the “big shift,” watch [John Hagel's presentation at SU's Exponential Manufacturing Summit](#).

In the industrial past, big companies had the advantage. They owned the factors of production. This included capital equipment like expensive industrial machinery and infrastructure. The more they produced, the more their costs were spread out. They gathered the right people and machines under one roof to make products.

To a point, it was simply much easier and more efficient to coordinate activity within one institution than across many institutions. Going big made sense.

In the digital economy, this rationale isn't always as rock solid. Why? Computers and the internet enable the organization of thousands, even millions of small producers.

Further, the factors of production, once out of reach for entrepreneurs and small organizations, are becoming much more accessible. In the tech sector, anyone with the skills can write and sell a new app. Provided they have a computer and a connection, app developers can make and sell a product in their pajamas at home.

“In digital media—everything from music to video to software—we’re increasingly seeing dramatic fragmentation of product businesses because more and more people can participate at much smaller scale,” Hagel says.

But it doesn’t end there. Increasingly, you can also make quality physical products anywhere, too. Digitization is pushing into areas like manufacturing.

For big production runs you still need traditional factories, but for product development? Not so much. These days, \$20,000 will get you a desktop CNC machine, 3D printer, and router that’s nearly as precise as anything in a big factory. Or you can go to a maker space and rent time on these machines. Even supercomputers (in the cloud) and other high-tech facilities are within reach.

“I don’t need to have a chip fab facility. I can rent capacity in somebody else’s fab facility if I’ve got an interesting chip design,” says Hagel. “The means of production are becoming more accessible and affordable to more and more people with creative new product ideas.”

Combine increasingly accessible production with digital platforms to organize small creators, and you get a new mode of economic organization.

This is the future, as Hagel sees it. On the one

hand, the development and production of many (not all) goods and services will fragment, and the gig economy will rise. On the other hand, the businesses tying these fragments together will centralize further. Producers will get smaller, while the companies uniting them get bigger.

A Gig Economy for Everything

You don’t need to go far for early examples of this concept. In recent years, there has been no end of hype (and sometimes controversy) about the sharing economy.

Tech companies are commanding valuations of tens of billions of dollars when they themselves don’t own much physical capital at all. Instead, they make software platforms to gather and organize entrepreneurs. Uber is for car owners; Airbnb for homeowners. No one buys a hotel chain or fleet of taxis to participate. People just need an apartment to rent, a car to drive, and a way to connect to customers.

These are the most well-worn examples, but they aren’t the only ones.

As *The Wall Street Journal* put it, “There’s an Uber for everything now.” Personal valets, doctors that do house calls, laundry services. Some of these will survive, many won’t. But the core strategy isn’t going anywhere.

This is just one type of platform. Another type, more specific to manufacturing, unites lots of players to accomplish a common goal none could complete alone.

In this area, China and India are leading the way, according to Hagel. He gives the example of apparel company Li & Fung, with such

clients as Ann Taylor and Calvin Klein. Li & Fung orchestrates some 15,000 partners to take product orders from raw materials to production to global distribution—but the company itself doesn't do any of these things.

It's the organizer; the platform allowing the players to collaborate.

Hagel calls these big organizers “scalable pull” platforms. Instead of forecasting demand and pushing resources into production and distribution, scalable pull platforms more flexibly respond to demand to pull all the bits and pieces together.

“When we talk about scalable pull platforms,” Hagel says, “we're talking about platforms that involve tens of thousands, hundreds of thousands, and in an increasing number of cases, millions of participants that can be drawn out, pulled out when needed...where needed, as needed.”

It Isn't *Either or*—It's *Both and*...

It's tempting to go all-in on one forecast or another when we see compelling forces pushing us in that direction. Hagel says it isn't so much that big companies are going to go away; it's just that what they do best will change in a big way. And we aren't all going to be solo entrepreneurs in a uniform gig economy (though many more will be). It's both.

We'll see fragmentation and concentration, depending where we look. And, critically, the two will happen in parallel—and reinforce and amplify each other.

“You wouldn't have [this] degree of fragmentation if there weren't these concentrated and consolidated businesses and services to support those fragmented businesses,” Hagel says.

Individuals, meanwhile, will have unprecedented amounts of freedom and flexibility. And at the same time, the stability and security once provided by large organizations will be gone.

The big shift will introduce new opportunities and challenges for both companies and creators.

Companies need to take a serious look at the ground beneath their feet—if it's fragmenting, they'll need to quickly plot a new course or risk being upended.

Even so, despite the challenges, Hagel is optimistic.

“Our belief is the big shift—for those who make the transition—opens up the possibility, for the first time, of a business world that is driven by increasing returns,” Hagel says. “Where the more who participate and the more experience that's gathered, the more value gets created for everyone. That's a very different and very exciting business world, and I'm looking forward to being part of it.”



3 THE FOURTH INDUSTRIAL REVOLUTION

6 Reasons Why Industry Needs to Be as Agile as Software to Survive

On hearing words like “industry” and “manufacturing,” most of us probably picture sprawling assembly lines, heavy machinery, groaning metal, and flying sparks. We don’t always associate *agility* with *manufacturing*.

But that’s about to change.

We’re in what’s being called the fourth industrial revolution. In particular, this shift manifests itself in the recent and ongoing explosion of sensors and data in industrial settings. Sensors can do everything from precisely counting inventory to tracking goods as they’re trucked across the country or over the ocean.

This information will provide a real-time window into the supply chain and make it more efficient, which is always a familiar goal in manufacturing. But that’s just the beginning. Customers and managers want to turn these insights into action, to satisfy an ever-increasing need for agility as they strive to keep pace with the rapid changes already fueling their digital peers.

Here are six reasons that physical product companies need that agility to survive.

1. Agility to react to other market forces

Market conditions change fast, and when they do, it’s important to respond quickly and decisively. But that’s easier said than done, and we can see industries struggling to adapt.

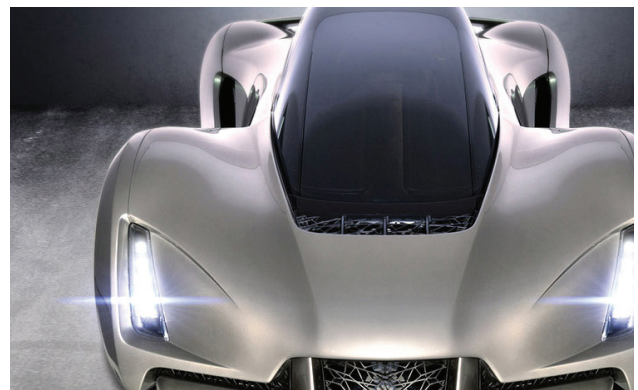
According to Nomura, 2015 marked the first year that growth in shipping volumes was below growth in GDP. A trillion-dollar industry was never more visibly subject to currency fluctuations and fickle demand. Boats have been idled and scrapped, and in certain markets new orders have frozen, sending shivers throughout shipping—from shipyards to ports.

This picture is repeated elsewhere. In oil and gas, for example, the shale industry in the US virtually collapsed overnight as prices eroded. Shale wells have the advantage of a low shelf life and are relatively easy to close down. Car companies had less luck and had to be bailed out in 2008 as they struggled to adjust production to demand.

Agile production methods make tooling less expensive and machines fungible, and thus enable companies to adapt rapidly to changes in global markets by redirecting resources easily to new tasks.

2. Agility to react to competitive changes

The relentless pressure to improve performance is particularly clear in transportation. Fuel efficiency, for example, is constantly getting better. Where do these gains come from? Design, better utilization, but also, crucially, from manufacturing technologies.



Divergent3D Blade supercar

The automotive power-to-weight ratio, which has been decreasing steadily, is maybe the best example of this. Take Divergent3D's first car, the Blade.

The Blade's frame, made entirely of carbon fiber and 3D-printed components, is the lowest power-to-weight ratio ever built. It also reduces tooling costs by a factor of 13. The techniques used for the Divergent3D car are now being licensed to large-scale production runs of well-known brands.

Deploying exponential technologies such as 3D printing gives companies a large step ahead in highly competitive industries with razor-thin margins, such as the automotive market. But increasingly, companies need this edge just to be able to compete.

With rapid technology changes, we don't always know where the next innovation will come from. Firms need the ability to integrate new solutions into production quickly. The current form of heavy, up-front capital investment and fixed production lines that are trimmed to a specific output years in advance cannot afford firms this necessary flexibility.

3. Agility to use cheaper inputs & reduce costs

It's not just tooling prices that can be reduced through more agile operations. Smarter manufacturing operations are allowing chemical companies to adapt to changing raw materials prices.

Let's use a refinery as an example. The price of a particular kind of crude oil becomes an attractive low-cost option—the problem is that it's corrosive. The solution? The refinery can

use corrosion sensors in the pipes. Or perhaps the refinery wants to use shale oil and needs to monitor heat exchangers. Again, sensors are the answer. With the right monitoring, it's possible to switch between cheaper inputs.

4. Agility to meet fickle customer demand

The customer is always right. Managing inventory to keep up with quick changes in needs and tastes is a must. For physical product companies, there is a high cost of moving too slowly. Some firms are adopting software-like cycles of testing, measuring, and iterating to get an edge.



Zara, the biggest brand in the fashion conglomerate Inditex, is famous for picking higher-cost production locations such as Spain, Portugal, and Morocco so it can react to customer demand faster. In contrast to its rivals, Zara commits to only 50% of the season's production at the outset of the season, giving it the flexibility to add new designs as the season moves along, sometimes doing so in a matter of weeks.

According to a Columbia University case study, this agility gives Zara a strong competitive advantage. It needs to sell only 15 to 20 percent

of its clothing at discount, compared to 30 to 40 percent at other retailers. Further, this degree of responsiveness encourages customers to visit the store more often—17 times a season versus 3 to 4 times for GAP—because they know there will always be new items.

Xiaomi, the billion-dollar Chinese consumer tech startup, built its business on a similar strategy—using flash sales to test demand and producing only after meeting certain thresholds. This practice allows the company to keep very low inventory and have far faster product release cycles than its competitors.

Both of these cases, and many others like them, show that hardware release cycles are moving the same way as software. As new influences and needs bounce around the internet at the speed of light, all businesses, including product companies, need to react faster.

5. Agility in the workforce

Who you employ is as important as what you produce.

Manufacturing companies, for example, have long been able to rely on loyal, experienced professionals. Now, these workers are retiring and few are willing to fill manual jobs. The US is expected to have 3.5 million manufacturing vacancies in the next 10 years, according to a Deloitte study, 2 million of which are likely to go unfilled due to the skills gap.

The rapidly changing environment of the manufacturing workplace is partially to blame, as new IT skills are needed. But exponential technologies such as robotics and augmented reality can also help make the workforce and hiring process more agile by reducing the need

for skilled labor in areas where those particular skills are retiring.

Companies don't have an alternative route to growth. Previous strategies such as outsourcing have become victims of their own success. China's unit labor production costs were 47% of U.S. levels in 1990. By 2016, they had risen to 75% of U.S. levels, according to the Economist Intelligence Unit. Without intelligent manufacturing processes enabling a more agile workforce, reshoring may prove extremely difficult.

6. Agility to react to environmental issues

While companies may spend a decade planning for shifts in the workforce, environmental disasters often dictate significantly more agility—and its absence can cost companies dearly.



When the Tōhoku earthquake and following tsunami wiped out four key Toyota plants and countless suppliers, no contingency plan would hold. Nearly a month later, two thirds of Toyota's suppliers from northeastern Japan were still not functioning.

A more agile manufacturing operation that allowed production to be rerouted autonomously

may have been able to keep more of Toyota's operations running during the event. Fixed tooling for factories able only to produce a single car also means there are fixed points of failure. Toyota's production declined by over 600,000 cars in 2011 and the firm lost its place as largest automaker by volume. The price of a less-than-agile manufacturing operation is staggering.

Most manufacturers are aware they must adopt a more agile approach, so it's no wonder so many are eager to adopt Industry 4.0. Whether it's customers, the environment, suppliers, or the market, leaders are hearing they have to turn their large, slow-moving ships into nimble jets.



4 SCRAPPY INNOVATION FOR CORPORATIONS

Five Lessons from GE

Kevin Nolan, CTO of GE Appliances, spent 28 years at General Electric “trying to do innovation,” as he puts it, before giving up. He finally accepted that he couldn't do it—internally, at least.

At one point, Nolan watched how refrigerators were made and assembled at GE's Appliance Park in Louisville, Kentucky, and realized that the process of designing and building refrigerators today was not much different than it was in the days of the icebox.

He wanted to infuse the company with some of the innovative techniques he was seeing others using. To do this, he created a new business within GE Appliances—FirstBuild—with the



Kevin Nolan speaking at Singularity University's Exponential Finance in 2016

mission of inventing a whole new world of home appliances and infusing innovation into an industry that was lacking it.

FirstBuild focuses on bringing together a diverse community of enthusiasts, designers, engineers, and makers to share ideas, test them, and then build real products.

Here are five lessons on scrappy innovation from Kevin Nolan.

1. Create a separate environment for risk and open the doors

FirstBuild's offices are located a few miles away from GE's Appliance Park on the University of Louisville's campus, which supports GE's strategy to get students involved. It's important to note that this new venture is physically separate from the corporate offices—that's one of the secrets of its success. Instead of asking people to sign non-disclosure agreements and go through strict security, everyone is welcome to come see what's happening at FirstBuild.

“What we’re doing at FirstBuild couldn’t be more different [from the corporate office]. It’s completely open. Anyone can come in any time. We’re open 9 in the morning till 9 at night Monday through Friday, 9 AM till 5 PM on Saturday. If you’re a competitor, if you’re just someone that wants to see what we’re doing, anyone can come in.”

2. Let the community validate ideas

At FirstBuild, the engineers work alongside the community to execute projects. New products are built in small batches, using various manufacturing techniques. Those products are then sold just to validate the idea. If there’s a market for it—only then will they build more. As Nolan says, “That’s our real value-add: to sell products to validate that people really like the innovation we’re working on.”

The power of community is clear in everything that’s happening at FirstBuild—anyone can

stop by the office and anyone can pitch ideas online. The community is the driver in this scenario, rather than executives and five-year business plans.

“The whole aspect of FirstBuild is not inside us, it’s working with the community and doing everything with the community on how we design, build, and sell products, and to build products that people are passionate about and that they really want.”

3. Stay agile and make small bets

There are no three-year product roadmaps at FirstBuild. The rule of thumb is 6 months from idea to market. The group aims to come out with 12 new products a year—with at least one of those graduating to the big leagues at GE Appliances, which means that the demand is so high that it needs to be built at scale.

The screenshot displays the FirstBuild.com interface for idea voting. On the left, a sidebar contains navigation links: 'All', 'Ideas', 'Personal Projects', 'Projects', 'Challenges', and 'How-tos'. Below these are 'Categories' with 'All Categories' selected, and a list of categories: 'cooking' (444) and 'refrigeration' (183). The main content area shows three idea cards. The first card, titled 'project', features a photo of a kitchen cabinet garden and has 4 votes, with a comment from 'jarvis' stating: 'Conveniently in your kitchen, an out of sight garden automatically lights and waters your favorite, freshest possible, herbs or veggies.' The second card, titled 'idea', shows a hand holding a mango with a light cross-cut and has 0 votes. The third card, titled 'idea', shows a reusable K-cup pod for a Keurig machine and has 1 vote, with a comment from 'timphelan15' stating: 'A reusable K-cup pod for the K-cup refer so consumers have the option to use their own coffee grounds and allowing more coffee options.'

Idea voting on FirstBuild.com Check out the kitchen cabinet garden that automatically lights and waters vegetables and herbs!

“We’re all about experimenting... We don’t have a plan, which sounds odd from GE... We don’t know what we’re going to be working on during the year, because it iterates, it changes constantly. It’s basically what the community wants to work on.”

4. Run community hackathons instead of product planning meetings

Some of FirstBuild’s best successes have come out of a group of people having fun and just seeing what crazy (or not so crazy) ideas come out of it.

“Our best product planning has actually come out of hackathons. This is not how corporations typically do product planning, but our hackathons have just been amazing things. People coming in there, in 12 hours we’ll come out with 10, 12 ideas. But what we find out is what resonates with the community. What do people like working on? We have no clue what’s going to come out of these hackathons.”

5. Stay lean

FirstBuild strives to have zero capital investment in new products. That means the first product it sells actually can have returns. The group makes products in small batches to validate each idea because most of the time, there’s nothing else like it on the market.

“The other thing is we’re all about lean. As we try to do this with zero capital investment, lean is our best friend. I’ve been studying lean for a long time at GE. I’ve never had lessons like I’m getting at FirstBuild on what lean is really about. We don’t make parts until we get orders or we have a purpose for the product. Our workforce actually [is students] from University of Louisville. We bring in engineering students. It is an unbelievable

training ground, and we’re flexible. When the students are available is when we make products.”

Nolan admits there are some unique challenges—like how to handle intellectual property when the process is so collaborative. Still, FirstBuild is a great case study for big companies looking to infuse their organizations with more creative methods for innovation.



5 START YOUR INNOVATION-THROUGH-DISRUPTION JOURNEY

Define the Future by Inventing it with Singularity University

Do you have the right capacity and expertise to innovate your way out of being disrupted by another company? The first step is to make sure you have an appropriate innovation strategy.

At Singularity University, we help enterprise organizations from all industries and sectors at every stage of their innovation journey. By understanding and making use of exponential technologies such as AI, virtual reality, 3D printing, and more, we help you and your teams disrupt and innovate from within your company.

Are you ready to disrupt yourself into business innovation? Is your organization ready to be transformed into an exponential enterprise?

Our enterprise innovation model and program offerings can help you advance your innovation capabilities from any starting point. If you and your core leadership team want to learn how exponential technologies and an exponential

mindset can help transform your organization, apply to our popular [Executive Program](#).

To disseminate this knowledge to a group of key leaders and customize the insights for your industry and company strategy, consider a [Singularity University Spark Learning & Innovation Platform](#) that's tailored to your organization's specific needs and strategic opportunities.

to help lead your organization into the future. Learn more about building your exponential enterprise today, by starting a conversation with us.

We hope you found this guide helpful and hope to hear from you soon!

Ready for a conversation today?
Reach us at sr@su.org.

Acknowledgments

Content in this publication originally appeared on Singularity Hub. Special thanks to Peter Diamandis, Jason Dorrier, Andre Wegner, and Sveta McShane.