CHAPTER 7

LIVING AND WORKING IN AN ERA OF DIGITAL BUSINESS

Let's cut to the chase and get started. Over the past two years or so, my company, Constellation Research, has interviewed, studied, or assisted more than a hundred market leaders and fast followers that are working to create a digital transformation strategy. We've learned that regardless of industry size or company or geography, these early adopters take five common steps to be successful in an era of digital business:

1. They design new experiences and business models that reflect brand authenticity.
2. They develop and nourish a culture of digital DNA.
3. They apply new technologies to existing infrastructure.
4. They move from gut-driven decisions to data-driven ones.

5. They attract new partners to co-create and co-innovate on their platforms.

In each case, these steps provide the foundation to not only transform business models through digital, but also to reinvent the brand promise.

1. Design New Experiences

Let's start with talking about designing new experiences. The goal here is to use digital as an opportunity to craft new experiences. Customers seek outcomes and experiences, but most organizations are still selling products and services. Awesome experiences are now the expected norm—and companies can't afford to ignore that.

Success in digital business models comes from reinforcing the brand promise and promoting the brand mythology. New business models must be part of the new experiences. We see the shift in three areas addressed in earlier chapters: mass personalization at scale, big data business models, and augmented humanity. These provide a starting point toward designing a new digital experience. Early adopters all have applied concepts in design thinking from the beginning.

Mass personalization at scale is the design point of digital businesses. The delivery of a customer segment of one defines success. This shift from analog to digital systems includes a progression from systems of transaction, of engagement, of experience, and of mass personalization at scale. That first shift gave us automation-driven efficiencies. But what we're doing right now in the digital world is achieving mass personalization at scale. These systems start with an outcome-driven design point: solve the delivery—individual P2P on a massive scale that allows us to craft personalized conversation, interface with human APIs, and enable P2P networks.

Old-line industries in the analog world can redesign experiences and bring this information onto new user experiences. Context engines can cut the hype of information overload and deliver relevant information in real time and at the right time. New payment technologies, digital wallets, and personal cloud functionality can take friction out of the purchase process. The goal is to take these technological advancements and craft new experiences.

So how do we take these isolated networks and move them into a connected world of sensor-based and analytic ecosystems that take advantage of all this data? In both the consumer and enterprise worlds, smart machines and wearables are driving new types of sensors, and they're

adding to the mix of data that's available to create new insights. We're estimating there will be as many as 200 million smart wearables by 2017. These products will include bracelets, watches, eyewear, clothing, and other devices with sensors. Data from equipment, such as automobiles, medical devices, and household appliances, as well as power generators and building management systems, will give us an opportunity to improve efficiencies, create new business models, and identify new usage patterns.

For example, my house should know that I like it to be 72 degrees when I get home. My car can tell the house when I'm thirty minutes away, and the house—based on my past preferences and actions—should adjust the temperature on its own. This is the kind of stuff that we're talking about. The car is connected to the house. The house is connected to a temperature sensor. The house also learns that when I come back from the gym, I like the house at 65 degrees. This is the AI associated with the house looking at the pattern of my behaviors. These systems are not only communicating with one another, they're also interfacing with people, overtly and covertly. This Internet of Things is moving from abstract concept to living and breathing machine—the machine mesh network interfaced with humanity.

What comes next is augmenting humanity and creating powerful, yet static cognitive systems that augment human decisions. Cognitive computing is more than a new category. These systems represent a new class of technology, converging artificial intelligence, facial recognition, human APIs, natural language processing, dynamic learning, and hypothesis generation to render vast quantities of data intelligible to improve both human- and machine-guided decisions. The ability to self-learn lets these systems continuously reprogram. Augmenting humanity means that our collective insights and data can be served up at the right time and in the right context.

What does this mean in terms of new experiences? It means if you're a lawyer, you can ask a machine, What are fifteen other cases like this and what were the outcomes? What should I look for? As an accountant, you can look for similar types of tax risks or audit risks that could occur. If you're a physician you could ask, Are there other patients with a similar type of genetic makeup? With these specific drug interactions? What other cases have you seen like this? And all this information and all these answers come up. These are brand-new experiences. We're actually creating new opportunities and ways for people to interact. You can even just go and talk to a machine and say,

"Look, I want to fly to San Francisco, to New York, and then to London on these dates. These are the features I like. What are the available flights?" These integrative experiences will create a huge shift in the way we work.

2. Develop a Culture of Digital DNA

Success begins at the top. Digital transformation requires strong leaders who are not afraid of dips in share prices, cannibalizing existing markets, and identifying new approaches. Organizations have to assess their innate ability to thrive in a digital business environment and nurture digital artisans.

What are digital artisans? They are a class of individuals who blend the intelligence of quant jocks with the co-innovation skills of creatives. We've got to figure out how to thrive in this digital business environment, and doing that means looking beyond those who deliver hard science and engineering prowess but also beyond those who can co-innovate and co-create on demand. Consequently, organizations are rethinking the attributes of digital business and what the emerging candidate for

chief digital officer should embody. We're now seeing a rise in demand for the digital artisans that are required for this type of organizational transformation. There's a new war for talent, and it's going to focus on attracting, developing, and retaining these digital artisans. Concurrently, a market will develop for those who can spread the digital business gospel and infuse digital artistry into organizations.

While there are many attributes a digital business should embody, there are seven building blocks that define these digital artisans, who embody the digital DNA required for success. Together, they spell "artisan":

Authenticity. You need to stay true to the organization's mythology and brand.

Relevancy. Deliver contextual personalization at scale.

Transparency. Operate with an understanding that everything will eventually become public.

Intelligence. Adapt self-learning systems that anticipate users' needs.

Speed. Infuse responsiveness into digital time.

Analysis. Democratize decision making with all types of data, but do it in a way that's visual and helps people make decisions.

Nonconformism. Espouse disruption and the creation of new ideas. This is more than thinking outside the box. This is acting toward that, and facilitating a culture that delivers on this.

As we think about developing this talent, we also need to create diversity in thinking. This corresponds to more than race or age. We need a balance of thought. An organization with several scientists should be balanced out by a recruitment of design thinking experts, philosophers, or anthropologists. In an organization with too many thinkers, balance out the team with those who can execute.

This is also about digital proficiency. We're talking about five generations of workers. Not Millennials, Gen Yers, Gen Xers, Baby Boomers, and the post-war generation. Rather, the shift to digital business is five generations defined in terms of where you work, when you work, how you work, what you work on, and why you work. These definitions have been completely disrupted in the digital world. These five generations of workers have different

people-centric values that have to be addressed, and the segmentation describes how digitally proficient people are with digital technologies and culture. The five generations include:

Digital natives. These are people who grew up with the internet, and they are comfortable engaging in all digital channels. Digital natives could be ninety years old, or they could be seventeen. They are very comfortable with technology, and the way they communicate and interact, as well as their expectations, are built around this technology.

Digital immigrants. These are people who have crossed the chasm to the digital world. They were forced into engagement and digital channels, and they're navigating between analog and digital all the time.

Digital voyeurs. These are people who recognize the shift to digital and observe it at arm's length. They're not against it. They know it's happening, but they haven't dipped their toe into the water.

Digital holdouts. These are people who resist the shift to digital, ignoring its impact. They're scared.

They're not ready to jump in. They're happy with their life as it is.

Digitally disengaged. These are people who were involved in digital technology early, but they've given up on it. They're scared post-Snowden. They're obsessed with erasing their digital exhaust.

Let's see how this works. A digital immigrant takes notes on paper and transcribes them onto a computer. A digital native just takes notes on her computer. A digital voyeur keeps a notebook and doesn't even bother to transcribe to digital, and a digital holdout doesn't even bother with the computer. The digitally disengaged individual is out there trying to erase every single document he's ever put on the web.

Another way to look at it is how you wake up in the morning. If you wake up to an alarm clock, you're probably a digital holdout. Waking up to a watch could make you a digital voyeur. Using a wake-up call could make you digitally disengaged. Waking up to a smartphone makes you a digital native, or maybe a digital immigrant. I have an alarm clock, the same alarm clock I've had since second grade, which I use at home, but I don't use an alarm clock at a hotel. Where does that put me? But the point here is to

show you how these five generations of digital proficiency work and come into play.

3. Apply New Technologies to Existing Infrastructure

Going digital doesn't mean a wholesale replacement of existing technologies. It doesn't mean just putting up a mobile front or adding a social collaboration feature to a process. The convergence of mobile, social, cloud, analytics, big data, and communications is just one starting point. Adding sensors to old machinery provides data in context. Mobilizing mainframe data for use in analytics delivers new experiences and provides insight into new opportunities. Bringing external data to internal systems creates new patterns that provide better data for testing out new business models. You want to use this opportunity to rethink your technology strategy, so you can align business objectives with digital transformation. It's not about just adding one technology to change how things are working. It's deeper than that.

A digital reference architecture is emerging. There are eight factors to consider in developing these next-

generation platforms, and they align back with many other elements I've been talking about.

1. **Brand authenticity remains paramount.** Trust and transparency will drive brand authenticity in digital systems. Every touch point, every click, and every sensor fired will either enhance or damage the brand. The cumulative set of interactions determines brand presence, influence, and value. Digital systems must not only monitor but also apply corrective actions to ensure brand authenticity. Technologies may include sensor-filled and analytical ecosystems tied to advanced brand monitoring networks. For example, brand monitoring will move from reactive to proactive intervention with brand goals driving overall customer engagement strategies.

2. **Right-time contextual relevancy drives engagement.** Context is king in digital. While real-time delivery is emphasized, real time creates more noise and fewer signals in a world deluged by data. Achievement of contextual relevancy will require systems to capture, process, and publish contextual elements such as role, relationship,

ownership, business process, channel, time, location, weather, sentiment, and even intent. For instance, a conference attendee could note the most interesting individuals or trade show booths from their mobile app or augmented reality device as they enter the show floor. They could even see personal LinkedIn profiles or the latest news using a video version of Shazam.

3. **Probabilistic business processes enable personalized journeys.** The world of forced-fit deterministic business processes built on the best practices of yesterday and applied to today's engagement journeys often fail. Digital platforms must support choose-your-own-adventure journeys. These probabilistic models orchestrate composable APIs and customer journeys to allow users to customize their experiences. Technologies move to advanced complex-event-processing engines, advanced business process management, and intelligent workflows. Imagine the ability to shop in-store, buy online, return by mail, schedule installation, and apply a refund to a gift card anytime, anywhere, and in any order.

4. **Augmented humanity improves decisions.** A convergence of artificial intelligence, natural language processing, dynamic learning, and hypothesis generation renders vast quantities of data intelligible to help humans make better decisions. The ability to self-learn enables continuous reprogramming. These advancements represent a new class of technology to enable human and machine-guided decisions. Cognitive computing, self-learning systems, and knowledge bases drive augmented humanity, where the sum of our collective insights and data can be served up at the right time in the right context. Technologies include facial recognition, human APIs, machine learning, natural language processing and self-learning algorithms. The goal is to democratize data to democratize decision making inside digital systems for all types of stakeholders.

5. **Access versus ownership of information changes design points.** Many studies state that 90 percent of the world's data was created in the last two years. Constellation estimates that by 2020, 60

percent of an organization's mission-critical data will reside outside of its firewalls and owned secure environments. Add the mash-up of data points from insight networks, and most organizations must design systems to rapidly access, process, refine, and distribute insights from external systems. Technologies include data preparation, data governance, data integration, data distribution, context engines, and broadcast networks. Users can expect situational awareness capabilities from mash-ups of insights.

6. **Engagement driven by self-interest creates frictionless value exchange.** Improved user experiences and value exchange frameworks come together to create a market for ease of self-interested experiences. This design element drives friction and transaction costs from the user experience while creating a mechanism that enables users to trade value elements for convenience. Expect more fine-tuned and explicit trading networks that are self-interested and emphasize convenience. Technologies include bionic APIs, trading networks, gamification models, payment

systems, and identity networks. Digital wallets such as Google Wallet and Apple Pay are examples where users trade identity and payment information for convenience.

7. **Digital business models provide new opportunities.** New business models must focus on delivery at the smallest incremental unit. These unit-cost business models must also support aggregated bundles customized to the individual. Digital business models also aggregate, refine, and broker insights. The value of insight networks will enable organizations to drive 20 percent of their revenue from insights by 2020. Big data business models are an example where organizations can provide the content, serve as an enabler, or play the role of the insight network.

8. **Networked ecosystems deliver digital scale in the market.** Success in digital requires organizations to open up their digital platforms for co-innovation and co-creation. These networked ecosystems provide not only the foundation for such innovation but also a platform for value exchange. While trading networks and innovation communities can provide

standalone options, digital leaders must incorporate these elements into the design of their future platforms in order to gain digital scale.

These next-generation platforms are changing the way we look at technologies. But we can't throw away the existing technologies. They're there, but we build layers into each one of them. So as we moved away from analog systems, we built systems of transaction. As we built systems of transactions, we built engagement layers on top. As we build experiential systems, we're going to connect to those engagement layers. And ultimately, as we build mass personalization at scale, these systems are going to connect into the other layers. There are five layers of getting into digital, and this is really how we apply these new technologies to existing infrastructure in order to be successful.

4. Move to Data-Driven Decisions

The fourth step in moving into the digital business world is moving from gut-driven to data-driven decisions. Data is at the heart of this digital transformation. Every touchpoint, every click, every interaction provides us with digital exhaust that's rich in context. The goal is to move

from right-time information overload to real-time contextual relevancy. Organizations need relevancy delivered in real time. This is asking the right questions. This is anticipating future behavior. The goal is to move from data to decisions, and every bit of data flows into upstream and downstream information flows, aligned with business processes. These information flows then provide the foundation for the patterns that provide insight. That business insight then enables people to make fact-based decisions. Serving up the next-best action is the foundation of building these data-driven decisions.

To make those data-driven decisions, we've got to learn to ask what the question really is. There's a lot of hype around big data. It's getting ridiculous. But in fact, when we take a survey of the experts, we get a ton of definitions of what big data is. Some folks see big data as large data sets and data warehouses and operational data sources. Others see big data as a code word for analytics and business intelligence. Some people see the output of big data as infographics or the hardware behind the support of big data. There are other folks that are saying, "Wow, it's intelligence, it's smart, it's going to save and cure everything!" That's not true.

What's the answer? Big data is really about how to ask the right questions. You have to start each project or each

solution or each initiative by asking, "What are the questions that need to be asked? What are the answers that will help us move from data to decisions? Can we shift insight into action? How do we tie this information back to a business process? Who needs this information at what right time? And how often should this information be updated, delivered, and shared?"

Moving away from gut-driven toward data-driven decisions is about making choices with an eye toward the future, not rehashing the past. The history in moving from data decisions has been littered with lots of failed technologies. The failure of data warehouses to provide real-time data led to the creation of data marts. Data marts failed to provide complete and updated and comprehensive views, so we moved to business intelligence to access insight. Yet none of this addressed the issues. A movement to master data management helped, but the lack of a central repository of information never got us there. Over the past twenty years, we saw a complete cycle repeat itself. People spent tons of money trying to solve the technology problem with new technologies, yet we still didn't address the key part. So what is it? It's really about getting to the right questions. We have to address the key issue. How can organizations make the right decision? How can you help a leader solve a problem? Business questions remain

unanswered, despite all this investment in technology. People are building reports and views and charts, but we have to ask the right questions instead of seeking the right answers. The big shift is about moving from gut to data decisions, and this transformation is in thinking and is not easy to achieve.

5. Co-Create and Co-Innovate with New Partners

Next, we've got to co-create and co-innovate with new partners. No company can succeed on its own. We know that. But in digital transformation, there are ecosystems of co-creation and co-innovation. Organizations can participate in a number of industry consortia and also create their own ecosystem aligned around their organization's self-interest. In many scenarios, an ecosystem doesn't exist, but market-leading and fast-follower vendors, suppliers, and customers are going to come together to solve their problems.

This co-creation and co-innovation is important. Advisers recommend areas for business impact and deliver larger perspectives and trusted advice. Yet, at a higher level,

innovators inspire game-changing transformation, conceive and design innovation, and apply disruptive forces—and they lead, too. At the highest level are the creators, who build new technologies in IP for the marketplace. These can be software, products, or even information services, but co-creation becomes supremely important as organizations learn to partner. And partnering in a digital world requires a certain level of discipline that doesn't always exist out there. That's because the way you co-innovate and co-create today, you have to assume that a partnership only works when you realize what you are *not* going to do. You can't partner with anybody if you can't tell him what you're not going to do, because he doesn't know how he can help you without competing with you. It takes a new level of sophistication in this digital business transformation to think about partnerships.

You also partner on different levels. There's product-level alignment. There's sales alignment. There is service- and support-level alignment. And there's ecosystem alignment. And in product alignment, what you want to do is spend a lot of time thinking about what products you're not going to build and how you and your partner can complement each other. It's a very tough decision—especially agreeing on what *not* to do. But if you understand which products

you're not going to build, you give people opportunities to build them so that you can focus on what you do best. And that becomes important for co-innovation and co-creation.

On the sales front, you want to make sure that teams are aligned to sell things and that they're incentivized to work together. You don't want to be competing against your partner. You don't want to be underbid by your partner when it doesn't make sense. And so the sales alignment is important. Putting territories together is important. Making sure that they're cross-funded is important.

And then there's service and support. Who's responsible when something breaks? How do you coordinate that? You don't want customers to have a completely broken, fragmented, isolated experience. What you want them to do is have a unified experience. So who handles the first-level support calls? Who handles the second-level support calls? What happens if something breaks? How do you coordinate? Do you have access to each other's systems?

The last piece revolves around ecosystems. The big questions on the ecosystem side are, How do you support each other in the marketplace? How do you bring partners together? How do you form alliances? How do you bring other people into consortiums? And when you have

the answers to these questions, you're set for co-innovation and co-creation.

Right now, the existing leadership in most organizations is ill-equipped to drive the change. As a consequence, we've seen the emergence of chief digital officers, which is important for the new age of digital business. People think, "Do we need a CIO? Do we need a CMO? Should the CTO take over digital? Chief digital officers can come from different areas. But we need leaders who are enabled to solve the digital business problems. And the path forward is going to involve a multidisciplinary approach, so the skill sets required for this digital age have got to be infused throughout the executive ranks, in the organization's DNA. We need skills behind digital business transformation that require those tasked with digital leadership to do a few things. These leaders must be able to translate analog business into digital business. This effort is going to require more than adopting a technology or a process. We have to rethink the core business models, those that move from promoting products and services to keeping promises and meeting outcomes. We need to manage this world of trust and radical transparency. Success requires more than fluffy statements about open leadership. The power belongs in building relationships in the personal corporate

networks. Leaders have to expect business to move from real time to right time.

Remember: the goal is to develop an authentic business brand. The organization has to ask itself what the company would be like if it were a person. Digital leaders have to think about this every day and then reflect that on customers, employees, partners, and suppliers. The goal is to identify the technologies that will disrupt the business model, so that we get the transformational change. Organizations of all kinds—not just digital media brands—must embrace a central champion who ensures that the digital business principles and policies are in harmony with the organization's overall strategy. The era of the chief digital officer and the digital-enabled CXO is here. Digital leadership is important, and digitally transformed organizations do differentiate themselves with higher margins, greater market share, increased brand relevancy and massive scale. And this is where we want to go as we live and work in this era of digital business.