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New architectures of resilience

Are you heading for a restart or a new start?

About the Deloitte Center for the Edge

The Deloitte Center for the Edge conducts original research and develops substantive points of view for new corporate growth. The center, anchored in Silicon Valley with teams in Europe and Australia, helps senior executives make sense of and profit from emerging opportunities on the edge of business and technology. The center leaders believe that what is created on the edge of the competitive landscape—in terms of technology, geography, demographics, markets—inevitably strikes at the very heart of a business. The Deloitte Center for the Edge's mission is to identify and explore emerging opportunities related to big shifts that are not yet on the senior management agenda, but ought to be. While center leaders are focused on long-term trends and opportunities, they are equally focused on implications for near-term action, the day-to-day environment of executives.

Below the surface of current events, buried amid the latest headlines and competitive moves, executives are beginning to see the outlines of a new business landscape. Performance pressures are mounting. The old ways of doing things are generating diminishing returns. Companies are having a harder time making money—and increasingly, their very survival is challenged. Executives must learn ways not only to do their jobs differently, but also to do them better. That, in part, requires understanding the broader changes to the operating environment:

• What is really driving intensifying competitive pressures?

• What long-term opportunities are available?

• What needs to be done today to change course?

Decoding the deep structure of this economic shift will allow executives to thrive in the face of intensifying competition and growing economic pressure. The good news is that the actions needed to address short-term economic conditions are also the best long-term measures to take advantage of the opportunities these challenges create. For more information about the center's unique perspective on these challenges, visit Deloitte.com.

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Recovery—or better?

CRISES CAN BE profound catalysts for change and generate opportunities to create much more value over time. Our current pandemic is understandably focusing everyone on the short-term actions required to get us through challenging times. At the same time, we should consider using this as an opportunity to reflect on what we can learn from the crisis that will help us to thrive and create even more value in a rapidly changing and uncertain world.

Let us expand our horizons as we reflect on the lessons to be learned from the current crisis. There are specific issues that we have to address, such as how to connect distributed workers more effectively and how to improvise more effectively when unexpected needs emerge in the marketplace. Similarly, powerful technologies such as artificial intelligence (AI) and cloud computing offer the potential to have far greater impact. While all these are important issues and opportunities, if we look deeper, we might find that they are manifestations of more fundamental issues and opportunities for improvement.

Resilience is a key requirement for all of our institutions during these trying times, but we take a broad view of resilience as the ability to move beyond simply responding and recovering from unexpected challenges and instead finding ways to grow and evolve so that we can create even more value in the future. Rather than simply "bouncing back" to where we were before, let's find new ways to connect our activities and help us thrive.

To really thrive, we need to push ourselves to look far ahead, challenge our basic assumptions about what business we are really in, and anticipate opportunities that no one has yet seen. A key is to quickly identify the impact that matters today and position us to thrive over the long term. Framing a compelling longer-term opportunity and then acting aggressively now to address that opportunity can provide the foundation for thriving. We'll explore that approach in more detail below.

While we've all heard about the need to look far ahead and then act aggressively now, few of us have made that effort because it can be very challenging. Perhaps the current pandemic crisis can finally impel us to pursue this approach rather than just think about it. Now, more than ever, we need to have a clear sense of direction and focus our efforts so that we can achieve more impact.

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Look at the foundations

AT A VERY fundamental level, the current pandemic crisis is calling into question the architectures that support our businesses, and indeed all our institutions (although in this piece, we will be focusing on businesses). By architectures, we don't mean the buildings we work in. We are referring to the way we connect all our activities and resources so that we can deliver value to our stakeholders.

We all understand the need to integrate our business and technology strategies, but we are talking here about something more foundational. What are the underlying architectures that we need to support our activities, regardless of the specific strategies we might be pursuing—architectures that hopefully reflect the environment around us? Over many decades, we have implemented architectures designed for a specific environment. Given the accelerating changes around us, we are recognizing the need to redesign these architectures.

The way we connect all our activities and resources comes together in two distinct but interacting architectures. First, our business architectures determine how we connect all the people and activities required to operate our businesses—not just business processes, but also how we organize and govern the people required to support the processes. Second, our technology architectures help to connect all the devices, software, and data that we need to run our businesses.

For example, look at the global supply chains on which we rely. On the business side, we have explicit agreements on how the participants in the supply chain will support each other, specifying

activities to be performed and outcomes to be delivered. On the technology side, the technology components are hard-wired to support predetermined activities. Both business and technology architectures are designed to ensure that participants in supply chains act in tightly specified ways.

Over decades, we have developed business and technology architectures that are tightly interlocked and designed to be highly stable and predictable. The business architectures were designed to deliver scalable efficiency by specifying, standardizing, and integrating all activities in great detail. The technology architectures were designed to reliably deliver resources that help ensure that these activities do not deviate from tightly prescribed processes. In our supply chain example, these architectures tightly control all the activities and resources required among a limited number of geographically distributed participants.

These architectures brought great success to our enterprises in more stable times. But the current pandemic crisis has brought us to a tipping point. Those same architectures are now creating barriers to further evolution, not only preventing us from addressing rapidly growing opportunities but also creating more vulnerability in a rapidly changing world. In the face of the global pandemic, companies are seeing the significant fragility of these rigid supply chains when confronted with unexpected events. For example, if one or two companies in a narrowly defined supply chain have to unexpectedly shut down their operations, the entire supply chain crumbles, leading to a dangerous scarcity in finished products.

Redesigning our architectures

TO NAVIGATE SUCCESSFULLY through this catalyst for change, we need to fundamentally redesign both the technology architectures and the business architectures that support our businesses. Rather than viewing these architectures as distinct and separate, we need to view them as two interconnected strands, much like the double helix that structures our DNA molecules. We need to abandon the conventional view of architectures as static entities and instead create new architectures that are continually evolving through intimate interaction with each other.

And we should not just settle for more flexibility and agility. We need architectures that will help all participants to learn faster and accelerate performance improvement so that we can thrive by creating more and more value in challenging times rather than simply responding quickly to unforeseen events. Instead of just working with the machine, we need to harness opportunities to learn with the machine.

To harness the full potential of this opportunity, we will need to redesign our technology and business architectures from the ground up. This won't be easy because business and technology architectures, like the double strands of DNA, are fundamentally intertwined and can't change easily. But the good news is that there are pragmatic pathways that can help us design these new architectures by pursuing targeted initiatives in the near term, as we discuss in more detail below.

As these new architectures take shape, they can help us to connect with a growing number of participants that extend far beyond a single enterprise. They will provide governance structures, standards, and protocols that can help participants come together, improvise, and orchestrate resources from many sources to respond to unanticipated needs. But this isn't just about being flexible: These architectures are explicitly designed to help participants accelerate performance improvement through mechanisms such as rich real-time feedback loops. Most importantly, they are designed to rapidly evolve in response to the changing needs of participants and the changing capabilities of key technologies. Resilience in rapidly changing times requires a move from static architectures that focus on a limited number of participants to architectures that evolve rapidly as an expanding number of participants gain greater insight into the approaches required to thrive.

These architectures are designed to rapidly evolve in response to the changing needs of participants and the changing capabilities of key technologies.

By redesigning the foundational technology and business architectures that support our businesses, we will be much more effective in addressing some of the fundamental changes that will be required to thrive in a rapidly changing world. To take our example of supply chains, these new architectures

would provide a powerful foundation for the shift to larger and more diverse supply networks—such as including thousands of participants to support the product line of a clothing designer or orchestrating the ability of a digital device manufacturer to meet unexpected needs. More importantly, these architectures could help all the participants in supply networks to learn faster and accelerate their performance improvement, not just respond to the needs of the moment.

New technologies will be required to support the evolution of these new architectures. For example, AI can help participants to better anticipate events that might significantly alter demand or supply, cloud computing can help large numbers of independent organizations to connect and collaborate at scale in much more flexible ways, and cybersecurity can help to ensure that data and the interactions among the participants are not accessible by unauthorized third parties.

How to move forward

THERE'S A VERY large opportunity ahead, but we're going to need to find ways to do much more with far fewer resources and far more quickly.

A key to thriving is to strike a balance between a long-term view of emerging opportunities and a commitment to aggressive action now to begin to address those opportunities and learn from that action. Achieving this balance can be challenging, but, when done right, it is a powerful propellant.[1]

By looking far ahead, we will be in a much better position to assess the impact that matters today and focus our action so that it accelerates our movement toward the opportunities that will allow us to thrive over the long term. In focusing on impact that matters today, we need to give equal attention to both building new edges of our company that will explicitly target big opportunities as well as taking targeted action to strengthen the existing core of our business. For impact that matters both on the edge and in the core, we'll need to find ways to support our own efforts through a growing range of third parties.

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Look far ahead

In a rapidly changing world, there's a temptation to shorten time horizons and react quickly to whatever is happening at the moment. Resist that temptation. An imperative is to look far ahead and try to anticipate where the economy is headed and what specific business opportunities we might be well positioned to address.

For most companies today, "far ahead" means two to five years. We suggest that to really thrive in a rapidly changing world, we need to look ahead 10 to 20 years, as challenging as that might seem. If we challenge ourselves to look that far ahead, we will be more likely to question what our business will really be and what opportunities will provide the fuel to thrive. It pulls us out of an incremental mindset and helps us to anticipate the really big opportunities on the horizon.

Well-developed scenario planning tools can help us anticipate a wide range of potential futures and determine which one is most likely. That will help give us some context to determine where and how to play in that future in order to thrive. The key is to explore alternative futures, but then be prepared to identify and commit to a very significant long-term business opportunity that we could target in one or more of the scenarios.

Since the goal is to commit to a view of the long-term

future, we need to avoid becoming consumed in all the uncertainties and details of that view. The key is to focus on long-term trends that are reasonably predictable—for example, demographic trends such as the aging of certain populations or technology trends such as the continued exponential price/performance improvement of digital technology. Use these trends to frame a high-level view, not a detailed blueprint, of the future that is also specific enough to focus near-term action. For example, some of the most successful technology companies that started in the 1970s developed a view of the computer industry that saw that computing would move rapidly from centralized mainframes to the desktop, and that the big opportunity was to become a leader on the desktop. They didn't have a detailed view of what the industry structure would look like, but it helped them to focus on the rapid development of desktop computing technology.

Seek the impact that matters

Once we have identified and understood the longer-term opportunity that will enable us to thrive, we need to shift attention to what might have the greatest impact in accelerating our movement toward that opportunity in the short term. This means committing to two to three opportunity-driven initiatives over the next six to 12 months and ensuring a critical mass of resources is allocated to each initiative.

1. Scale the edge. At least one of those short-term initiatives should focus on identifying an edge to the current business that has the potential to scale very rapidly by addressing the longer-term opportunity that we have identified in the marketplace. Use that edge to begin to design and deploy the new business and technology architectures that we've been describing. Scaling

this edge will provide an opportunity to learn through action what architectural design principles are the most effective in accelerating performance improvement.[2]

For example, health care providers might see an opportunity to significantly expand their reach beyond their existing customer base to address new segments of the population through telehealth offerings. Until now, a patient had to live within driving distance of the health care provider. With rapidly evolving digital technology infrastructures, including increasingly robust broadband networks, that no longer may be necessary. An ambitious health care provider might see an opportunity to scale an edge by targeting geographically remote customer segments that were previously unreachable. Since this would be addressing a new customer segment with a new set of telehealth offerings, the provider could design business and technology architect-ures from the ground up to support this new initiative. If done right, this edge initiative could also provide significant insight into how telehealth capabilities can also serve existing customers.

Scaling the edge will provide an opportunity to learn through action what architectural design principles are the most effective in accelerating performance improvement.

On the edge, rather than trying to keep all the services within its own company, the provider might cultivate a broader network of specialized service providers, such as clinical lab companies and physical therapists where geographic proximity may still be important. This expanding network of expertise might be augmented by remote monitoring devices providing access to rich, real-time views of a patient's condition. AI tools could then anticipate patient needs and connect

patients to a wide range of services tailored to their specific needs.

This edge initiative would require changing pricing models so that health care practitioners such as doctors serving patients in remote geographies would be motivated to provide telehealth services. Currently, doctors do not receive the same incentive for telehealth appointments as for live visits.

While based in a remote location, this health care provider would be able to compete successfully with locally based providers because of its focus on anticipating patient needs and connecting patients with relevant expertise and resources wherever they reside. Most importantly, all the participants, including the patients and the AI applications, could learn faster as they receive rich and rapid feedback on impact achieved.

2. Strengthen the core. While edge initiatives can help companies target large emerging opportunities, the core business is still where the bulk of revenues and profits reside. At least one of the short-term initiatives should focus on addressing performance improvement within the existing core of the business.

In this context, companies might look at where the COVID-19 pandemic has been most disruptive in their business and use it as an opportunity to begin to redesign the architectures for that part of the business. If the products are no longer a good fit for shifting market needs, focus on developing new products and tapping into new domains of expertise outside the firm that may be required. If manufacturing has been disrupted, focus on evolving supply chains into supply networks that can accelerate performance improvement. If customer relationships have been disrupted, perhaps focus on rebuilding trust by becoming more proactive in delivering value to customers

based on available customer data. If sales activities have been disrupted, it might be a good opportunity to leverage digital infrastructures to connect with customers in deeper and more flexible ways.

Companies might look at where the COVID-19 pandemic has been most disruptive in their business and use it as an opportunity to begin to redesign the architectures for that part of the business.

Wherever a company chooses to focus for near-term impact, the key challenge will be to learn from the pandemic experience. Use the selected initiative to find ways to create more value by harnessing the potential of new business and technology architectures and not just returning to the old way of doing business. The good news is that companies don't need to deploy totally redesigned business and technology architectures at the outset; they can find ways to loosen the tight coupling that exists between these architectures today and use overlay tools to help participants begin the journey toward more effective collaboration.

For example, if a key product is experiencing diminishing demand in the marketplace, a company might use this as an opportunity to shift from standardized, mass-market products to developing scalable product platforms that can be tailored to meet individual customer needs. Business and technology architectures can be redesigned to mobilize and support an ecosystem of specialized product enhancers that can take the product platform and develop add-ons that will adapt it to very specific customer needs. An early example of this in the home appliance business is when GE Appliances created FirstBuild, a socially

engaged community of home enthusiasts, designers, engineers, and makers that has been mobilized to cocreate variations on traditional home appliances. FirstBuild tapped into a broad range of expertise and resources that could leverage GE's basic products in innovative ways, providing the community with tools to improvise but also guardrails to ensure that the products met certain regulatory and quality standards.

Another opportunity for strengthening the core would be to rethink how work is done. The pandemic crisis is certainly teaching us that, for many jobs, there may be more flexibility in terms of where the work is performed. Yet, for most, the work itself isn't really changing—it's just being done through remote video platforms rather than sitting in our offices. One powerful way to strengthen the core would be to harness new business and technology architectures to redefine the work itself. Rather than simply performing tightly specified routine tasks, perhaps we could find ways for technology to take over those tasks and free up workers to address unseen problems and opportunities to create more value—and then provide them with the resources and tools to help them create even more impact.[3]

Rather than trying to redesign work for everyone, it might be best to target a specific set of activities within the company that could have significant impact on the performance of the company as a whole and focus the work redesign initiative there. For example, think of a construction company that has just taken on the urgent task of building a new production facility for one of its customers because the existing production facility is unexpectedly experiencing some bottlenecks. The project is so urgent that the facility design documents have not yet been completed. The construction company needs to mobilize expertise from its many subcontractors to improvise on the missing elements of design. How

could the construction company break its rigid, sequential process maps and find ways for relevant subcontractors to convene and creatively address the design gaps? How might it harness cloud computing platforms to help connect the various participants and enable them to share relevant data in a secure environment?

As we've already mentioned, there are short-term ways to loosen the tight coupling that currently exists between business and technology architectures, both within and across firms. API gateways and cloud computing platforms can help participants access AI tools and other applications that will make it easier for them to improvise as they confront unexpected challenges. Low-code/ no-code graphic user interfaces help workers to enhance the tools to meet their needs. As the construction company learns from this crash effort what workers really need to improvise within necessary guardrails, it can evolve its business and technology architectures more broadly within the company to support a growing range of construction projects over time.

One powerful way to strengthen the core would be to harness new business and technology architectures to redefine the work itself.

Look for leverage

In pursuing the select short-term, opportunity-driven initiatives we've just described, be aggressive in seeking out third parties that can help leverage your own resources and efforts so that you can achieve even greater impact faster.[4] This is a key value that the new business and technology architectures we have described are designed to deliver: They can orchestrate efforts flexibly across a growing number of third parties

to help all participants accelerate their performance improvement.

If we do this right, it will not require massive investment up front, but instead can be pursued with carefully targeted initiatives that can deliver tangible impact quickly. These initiatives can also help us learn faster what these new business and technology architectures will require and how we can most effectively harness these architectures to create and capture value in the market. The key is to commit to aggressive action and to learn from that action. Small moves, smartly made, can set big things in motion.

If we do this right, it will not require massive investment up front, but instead can be pursued with carefully targeted initiatives that can deliver tangible impact quickly.

Why now?

We've been urging companies to adopt the approach outlined above for quite some time. The current pandemic crisis underscores the urgency of looking far ahead, seeking impact that matters, and looking for leverage. We need these approaches now, more than ever. In times of crisis, the need to look far ahead is even more important for resilience—simply responding and recovering will not open up the opportunity to thrive, despite the urge to shorten time horizons. Similarly, in times of unprecedented pressure, we often have a strong urge to just sense and respond to whatever is happening at the moment, rather than seek impact that really matters in terms of addressing the opportunity to thrive. At a time when resources are likely to be more limited than before, looking for leverage can become a key to driving much greater impact than can be achieved by relying on just one company's resources.

The bottom line

OUR TECHNOLOGY AND business architectures provide the foundations for our actions. It's time to reflect on the foundations that we will need for the world that is evolving around us. This is not just about responding more quickly and effectively to unforeseen challenges. It is about the ability to create far more value far more quickly with far fewer resources than would have ever been imaginable a few decades ago. This is an opportunity to learn and thrive in a more challenging world.

And it's not just an opportunity for companies to thrive. As these new architectures are deployed, they can provide an opportunity for workers to achieve more of their potential as they mobilize to address unseen problems and opportunities to create more value. This becomes a win-win situation for companies and workers. Let's recognize and address that opportunity.

As you think about your choices ahead and what it will mean to ramp up again, the question will be whether you are restarting your old business or starting a new one. Who wants to just "bounce back" to where we were before? Let's embrace a richer form of resilience that is about using challenges as a catalyst to create much more value and thrive.

Endnotes

1. We explore this approach in more detail in: John Hagel and John Seely Brown, *Zoom out/ zoom in: An alternative approach to strategy in a world that defies prediction*, Deloitte Insights, May 16, 2018.

2. For more on this approach, see: John Hagel, John Seely Brown, and Duleesha Kulasooriya, *Change from the outside in: Scaling edges to drive transformation,* Deloitte Insights, July 10, 2019.

3. For more on this opportunity to redefine work, see: John Hagel, John Seely Brown, and Maggie Wooll, *Beaten path won't get you there: A pragmatic pathway for redefining work*, Deloitte Insights, 2019.

4. See our perspective in the article: John Hagel III, "Leveraged growth: Expanding sales without sacrificing profits," *Harvard Business Review*, October 2002.

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