Over the past several months, our society has seen disruption like never before. Like every other organization, Hewlett Packard Enterprise has had to focus on unforeseen issues—arising daily—that impact our team members, our customers and partners, and our communities. Our customers are understandably cautious: A recent HPE study found that IT decision-makers are highly concerned about the impact of the global pandemic on their organizations, with more than 60 percent seeing a serious or extreme impact on operations.

But beyond the initial reactive response, we are starting to see companies seize opportunities to thrive—come out of the other side of this disruption stronger and better positioned to win. Our study found signs of optimism and resurgence, with more than two-thirds of respondents expecting operations to substantially resume in the third quarter of 2020.

This edition of The Doppler explores the new imperatives for IT in driving and enabling success in a changed world. We look at what it means to be resilient and adaptable in the face of disruption, whether that disruption arrives quickly like a pandemic or over a longer period as industries evolve.

In our feature article, “9 steps to the new normal,” we propose a framework for simultaneously handling crisis management while accelerating digital transformation. We examine key initiatives that organizations have adopted to manage through the crisis and quickly bridge to new ways of working.

And we explore the imperatives and lessons for the longer term, with articles on the impact of digital transformation across all areas of your business, from customer experience to cloud strategy to resiliency and change management planning.

No industry is immune from the immense impact this pandemic has had on our world and our businesses. Now is the time to act with urgency. While the present crisis demands our attention, we must focus on accelerating our transformations—and at a faster pace than ever before. We are proud to assist customers globally as they address this crisis and realign their industries. We are here to help define our collective new normal, together.

Regards,

ANTONIO NERI, PRESIDENT AND CEO, HEWLETT PACKARD ENTERPRISE
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9 STEPS TO THE NEW NORMAL

An IT response to the coronavirus crisis demands both an immediate and longer term crisis management plan that readies the company to succeed in a changed world. We present a nine-step guide.

**BY ROHIT DIXIT**
Senior vice president and general manager,
HPE Advisory & Professional Services

For many weeks, the world has been reacting to a global pandemic that has affected every aspect of the way we live and work. As a global technology company that operates thousands of customer environments and provides advisory expertise, we have learned some important lessons about how to manage this particular crisis.

In partnership with our customers, we have also begun to think about the world beyond this global event—with the hope that economies will restart and life will return to a future normality. This new normal has the potential to fundamentally change what we do and how we do it. For the bold, there are new opportunities to lead their industries and shape the future.

We have developed a clear nine-step plan, composed of two phases, for organizations to follow to navigate the immediate crisis and, almost in parallel, plan for the medium to long term (see Figure 1). The first four steps are related to immediate crisis management, activating the organization’s resources to protect the business fundamentals and operate with enough capacity to fulfill only the highest priority needs. The latter five steps establish the bridge to the new normal. They need to commence in parallel to the first four—but not until some fundamentals of crisis management have been established.

The overlap in the model is deliberate and reflects the need to have some resources applied to internal pressures while others are focused on the broader landscape and your organization’s future. This is not indicative of a single team with an expanded role but rather implies that different sets of resources will be needed to manage and explore different trajectories in a coordinated way.

**FIGURE 1: 9 STEPS TO THE NEW NORMAL**

<table>
<thead>
<tr>
<th>IMMEDIATE CRISIS MANAGEMENT</th>
<th>BRIDGE TO NEW NORMAL</th>
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<tr>
<td>1. TRIAGE</td>
<td>5. OBSERVE</td>
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<tr>
<td>• Assess immediate threat and associated business and operational risk</td>
<td>• Monitor threat and assess mid- to long-term impact of business and operations</td>
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<td>• Categorize and prioritize business requirements and IT activities</td>
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<td>• Redirect resources to most critical activities</td>
<td>• Gather input from key stakeholders</td>
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<tr>
<td>• Pause non-critical activities</td>
<td>• Develop initial POV on new normal for business and industry</td>
</tr>
<tr>
<td>• Set up temporary roles and responsibilities</td>
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<tr>
<td>3. STABILIZE</td>
<td>7. DESIGN</td>
</tr>
<tr>
<td>• Establish temporary governance structure</td>
<td>• Develop IT strategy for new business environment</td>
</tr>
<tr>
<td>• Mitigate capability gap</td>
<td>• Identify required people and process changes</td>
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<tr>
<td>4. SUSTAIN</td>
<td>8. TRANSFORM</td>
</tr>
<tr>
<td>• Monitor and assess ability to support second-priority activities</td>
<td>• Execute transformation plan</td>
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<tr>
<td>• Refine and tune</td>
<td>• Drive cross-organization management of change</td>
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<td></td>
<td>• Establish steady-state governance structure</td>
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<td>9. OPTIMIZE</td>
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<tr>
<td>• Gather input on new environment and refine POV</td>
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<tr>
<td>• Ensure continuous improvement</td>
<td>• Scan horizon for emerging threats</td>
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</table>
First phase: Crisis management

First, let’s focus on the immediate crisis management. These first four steps need to be set in the context of balancing two dimensions simultaneously: first, identifying and maintaining a minimum viable operating model, and second, determining where to slow (or even stop) the execution of projects to focus on changes already rippling throughout the organization.

Step 1: Triage

Define the critical baseline that enables minimum viable operations, and get immediate visibility into any changes that are planned in those environments. When gathering this data, isolate anything that is core to service availability and uptime, and question changes that relate to features and function. Pivot hard toward uptime and minimal support coverage, which means making hard decisions to cancel many items in the change backlog.

Even if the result of this triage is a decision not to go ahead with many planned changes, ensure you retain a picture of the original plan. Understanding where you were before the crisis is going to be a valuable reference point in the future. Resources are going to be at best unpredictable and at worst unavailable. Make sure any resources (people, capital, time, etc.) are directed toward activities related to the highest priority of the triage step.

For your workforce, focus on systems that keep the organization connected, communicating, and productive. As workers retreat back to their homes, categorize and prioritize systems that enable this sudden distribution of labor. You may need to consider fast-tracking planned (or unplanned) changes that can increase capacity for remote working scenarios.

The key here is to assess and categorize your current position, clearly defining essential systems and their minimum viable operating model, nonessential changes that will be revoked, and new essential scale-out actions that need to be taken (e.g., increase licensing models).

Step 2: Adjust

This mix of focusing efforts on core principles, shutting down nonessential changes, and spinning up new essentials will also invoke an emergency set of roles and responsibilities. This temporary governance structure and related processes will determine how to coordinate and communicate (internally and externally) your adjusted position to everyone affected, clearly explaining how you are acting on it. This is likely connected to a broader company-wide adjustment in the organization’s operating model, covering supply chain management, manufacturing, order management, and other critical activities.

Haven triaged the work to be done, assemble small teams that can act swiftly on those priority actions. Empower them to act, supported by a light-touch interim governance model, with rapid cadences that can support the teams in making quick decisions. At this point, the focus is on directing traffic quickly rather than creating a cumbersome control point that could be overwhelmed. Speed is key at this point, acknowledging that some decisions will be the wrong ones.

Understand that resources directed to the various teams established in this step are likely to become consumed by these activities. It won’t be clear how long the organization will need to operate in this temporary mode, so plan for those resources to focus on these iterative adjustments for some time. Keep the teams together, as they will maintain the insights into why critical decision were made.

Start to pivot to the second phase

As CIOs lay down the fundamentals of the triage and adjust steps, now is the time to assemble a different set of resources with the strategic task of planning for the future. This team will have broad input and include stakeholders from multiple vantage points in the organization. How is technology helping to reshape the industry? Are there already early signs of new opportunities and fundamental market shifts that will sustain the organization into the future?

If there is a proven sustained ability to support a minimum viable operating model, the time is right to step across the chasm of the model and begin to look for opportunities to redefine the future. It is this subtle shift in thinking and planning that transitions the organization into the bridge to the new normal phase of the nine-step model.

Step 3: Stabilize

You are now getting a feed of information and insights about how the triage and adjust steps are functioning, and you can begin to see the results of decisions made. This flow of data now needs to be converted from purely short-term immediacy to include data points that apply to the medium term. Formulate a wider functioning governance model that can take the adjusted baseline and run with it. Working within the teams, ensure this new governance model continues to broadly communicate what the evolving strategy is.

The potentially radical shifting of the IT position over the previous steps will need to start to become transparent to the organization. Rather than being interpreted as reactionary, the adjusted rigor and discipline with which the IT function is now operating will be increasingly understood across the organization as a whole. Stakeholders and beneficiaries of large digital transformation efforts will scale back expectations in line with the evolving situation.

Having captured and addressed the threats on a priority basis, and having adjusted your position, you now need to more clearly define the gap between maintaining

Focus your triage on a few priority principles, including:
- The safety of your people and your customers
- Immediate revenue-generating operations
- Contractual commitments
- Maintaining the organization’s security posture
- Critical customer support services
- Sustaining core services (e.g., ERP, finance, HR)

Examples of “new essentials” that might need rapid scaling at the edge include:
- VPN services for remote connectivity
- Remote communication services
- Remote desktop services
- Shared secure storage
a minimum viable operating model and providing the resources that will be required to meet it. When capability and capacity gaps are identified in the interim operating model, consider fast-tracking conversations with your broadest ecosystem/external partners to help close them. In moments like this, the power of your partnerships (strategic, technology, supply chain, etc.) will play a significant role in getting you through crisis management.

**Step 4: Sustain**

This step is a proof point to the internal organization, as well as to the external market, that the work in the previous steps is paying off. Newly scaled-out front-end services will need time for their performance to be measured and stabilized. A data-driven picture of the remote-working demands on services will emerge over a relatively short period of time. As bottlenecks and pain points are identified, swift adjustments can allow for improved consistency of service experience. This may involve iterations of scaling efforts and fine-tuning services to meet fluctuating demand. The same notion of iterative adjustments based on more data will be equally applicable in back-end services. Now, you can begin to correct some of the decisions that were wrong in hindsight.

Interestingly, as it operates in this emergency mode, the organization may also realize that some of its past assumptions or sacred cows can be questioned. Ensure that you capture these learnings, as they will be invaluable as you build a bridge to the new normal.

**Second phase: Bridge to the new normal**

Somewhere between the adjust and stabilize steps of immediate crisis management we began to spin up a different team—running in parallel. It is not focused on the immediacy of the disruption but instead looking out toward a new future. It is not focused on the immediacy of the disruption but instead looking out toward a new future. The bold will find opportunity in disruption. The same notion of iterative adjustments based on more data will be equally applicable in back-end services. Now, you can begin to correct some of the decisions that were wrong in hindsight.

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**Step 5: Observe**

This global pandemic event is forcing governments to take unprecedented actions and make policy changes that affect some or all industries. Some industries are particularly hard hit: travel, tourism, recreation, pubs, restaurants, cinemas, and more. Each of these has a broad ecosystem and an upstream supply chain that equally feel the effects. And despite this, critical national services and infrastructure need to continue to deliver for their citizens. The way we live and work may not just be temporarily changed. There may be new business opportunities and ways of working that sustain a new economic model in the future.

In these early stages of coping with this scale of disruption, bring on stream a group that can begin to make sense of the emerging reality. As the CIO, bring on stream a group that can begin to make sense of the emerging reality. As the CIO, direct the team to start identifying how emerging solutions and trends are enabled through technology. Be deliberate in crafting the narratives of where technology is playing a major role moving forward—for example, converting customer interactions to online/digital.

Don’t limit the observations to what can already be seen, but rather project forward into multiple scenarios that have potential to flourish. Have new market opportunities opened up that you can take advantage of? Has your industry been significantly altered? Scenarios that were previously not considered mainstream or core to your value proposition might now take on new significance.

Consider ideas over multiple time horizons—nothing is right or wrong at this point. The observations are to enable broad discussions and may find resonance where previously such ideas would have been discounted. Ask yourself if your competition is already outperforming you, and if so, why?

Never waste a crisis: It may be necessary to restart your industry with a different trajectory, one that is digitally enabled, agile, and designed with resilience from future disruptions. The bold will find opportunity in disruption.

At the same time, this step should also cover activities that honestly and openly observe previous weaknesses internally. Were your systems able to scale overnight to a differently shaped demand? Which systems coped well, and which were vulnerable to the changing landscape? Were there new architectural and financial models that outperformed others, and if so, why? Did your partners step up to support you in innovative ways?

**Step 6: Align**

Having observed the external macro trends and internal vulnerabilities, spend a period of time on collective reflection on the observations you captured in the previous steps. Take a position on your observations. Then, include multiple internal functions in this alignment and lead them through a discussion on potential options, shaping up the story of your own survival, with a balanced view of what is working and what needs to be changed.

From previously unconsidered use cases a new best practice for the organization might emerge. Identify consensus around which innovations could persist to fundamentally change your operating model—and in some cases, even challenge your business model. Continue to reach out to the crisis management team, as it will have data on the ever-changing landscape, which may shift or change perceptions there.

Directional consensus—not detailed planning—is the goal right now. Play out scenarios and make judgment calls where data is missing based on your observations and market instincts. Where you can, match anecdotes to actual data. From an internal perspective, include performance, availability, and uptime metrics from the back end—as well as productivity from the front end. Look to incorporate new methodologies from the partners that are involved in the crisis management phase. Frame the consensus from the teams through the lens of short-, medium-, and long-term agreements.

Ultimately, drive the alignment around technology-enabled use cases. Increasingly, this will be the key to organizations differentiating themselves in their industries—and they will look to the CIO to lead.

**Step 7: Design**

At this point, you can revert back to the fundamentals of developing technology-enabled investment strategies. Working with your own enterprise architecture team, as well as internal stakeholders and external partners, begin to build out a model for the new normal. Design in the lessons learned through the crisis management phase to create the resilience to mitigate unknown future (albeit potentially similar) circumstances. Design in the opportunities you’ve captured within the observation step to capitalize.
Put some flesh on the bones of the consensus reached during the align step. Design scenarios that follow the short-, medium-, and long-term options. Look back at the halted change backlog described in triage. Were there planned digital capabilities that may now underpin the go-forward scenarios, providing the opportunity to accelerate outcomes? Some items in the design may be low-hanging fruit that is easy to capitalize on. Options may simply be the restructuring of existing commercial agreements, or in some cases, the introduction of new tools and services that augment or replace existing services.

Show how the scenarios could be delivered, distinguishing between those targeted at the operating model of the organization to drive productivity versus the more disruptive ambitions that reach into the heart of the organization’s underlying value proposition. Challenge the design to include these disruptive initiatives, using the disruption as a chance to think differently. Remember to be bold—there are no sacred cows anymore.

Can I build into the design the combination of a future transformation vision with a leapfrog to next-generation architectures and service offerings? Can I build in increased levels of automation and orchestration, combined with cloud architecture scale and resiliency? In an increasingly digitally driven era, technology-enabled outcomes will be extended from edge to cloud and be driven by data. In which case, how will these be factored into the design?

Ensure you identify and understand the risks, prerequisites, and dependencies of the design. Map these together onto a common visual framework to de-risk the path to value realization. Make sure initiatives at the edge connect through to initiatives in the digital supply chain. Examine correlations around common enablers such as data, intelligence, security, people, and process. Resolve open questions and considerations about how an as-a-Service model would be injected into the outcome. Perhaps buy-back or as-a-Service models will provide the bridge to a financing model that unlocks your ability to deliver the upcoming transformation.

Once the big picture design is in place, piece together what will be needed to support and operate in this mode. Describe the operating model, the key activities you will own and deliver, and where you will partner.

**Step 8: Transform**

With a future design described at the high level, it’s time to get the teams in your ecosystem to work on how to make it happen. This includes the key transformation partners that you want to work with to help you bridge to the creation of an executable wave of activities, using the common model you prepared in the design step to keep all teams coordinated.

Look for innovative ways to finance the transformation so as to keep precious capital flowing through the balance sheet—remember cash will still be king for some time. In selecting technology partners, ensure that they can provide the capabilities to deliver this new normal, and share your appetite to be bold and create market differentiation.

Identify your future-state “right mix” of platforms and services and the migration path that needs to be put into effect during the transform step, which includes identifying priority workloads to modernize, re-factor, rearchitect, or simply replace.

The hardest part of any transformation will be evolving the operating model. At the core of any organization are the people who drive those key activities. Job roles, metrics, and governance models may all be reshaped as a part of the new normal. Managing that change to ensure the organization comes along on the journey will fundamentally dictate the outcome.

Plan to bridge or fill talent gaps through partnerships as you move toward your new normal. Change in any organization, whatever the catalyst, relies heavily on people clearly understanding the objectives and their contribution and roles within it. De-emphasizing or deprecating this from any transformation plan will at best slow the progress and at worst risk any value realization intended to be delivered.

**Step 9: Optimize**

One of the key lessons of responding quickly to the current scenario is to keep the spirit of agility, flexibility, and innovation. There may be some areas of the plan that require a high degree of predictability and precision, leveraged from replicable outcomes delivered elsewhere. Manage them closely, ensuring milestones are achieved and KPIs are hit.

However, there may also be areas that are more exploratory. Don’t forget the newly built “muscle memory” forged in the chaos of the first phase to pursue new (often radical) ideas—and keep the innovation engine switched on. Optimization does not mean achieving a nirvana of zero escalation or zero help desk tickets. It means having the in-built agility to rapidly adapt again in the future.

Your agility should be directly correlated to the outcomes designed into the new service delivery model, the new governance structures, and the emerging landscape in your industry. Where possible, off-load operational activities to partners in your ecosystem so you can pivot resources toward innovation and value add to the organization. Defining who does what in this new construct can provide the much needed bandwidth to support ongoing optimization efforts.

As emergency mode operations are wound down, a great new asset is also created in the learning, experience, and skills your teams have developed. As you constitute your design and transformation team and the new leadership, a fresh assessment of your team, emergent leaders, and capabilities may be required.

**Activate the nine-step model**

The nine-step model is a prescriptive methodology to help you navigate through uncertain times. It will help you identify those core activities that sustain an organization as well as how to transition toward a future-focused new normal. Winning in this new normal will not just be about defining and managing a crisis situation. Enterprises that steer their way through it have the opportunity to find new ways to thrive in an ever-changing landscape of unknowns. Be cautious at the beginning, but emerge bold, with a clear trajectory and capability to better react in the future, more confident in your resiliency and agility to respond to whatever event could drive this kind of approach again.
If they were not already headed that way, many IT departments are now finding it necessary to accelerate their migration to multicloud architectures because of the novel coronavirus. In fact, IDC says that by 2022, more than 90 percent of enterprises worldwide will rely on a mix of on-premises or dedicated private clouds, multiple public clouds, and legacy platforms to meet their infrastructure needs. It even predicts that a rising desire by companies to mitigate future disruptions by being more flexible, agile, and resilient could make 2021 the year of multicloud.

“We are seeing the coronavirus situation accelerating enterprise interest and adoption of cloud,” says Deepak Mohan, research director at IDC. “The term we’re hearing most often in this context is resilience. IT organizations leveraging cloud environments are able to adapt better to the current crisis because they can easily scale or shift and continue to deliver services. Those that have taken more constrained approaches have had challenges.”

Mohan notes that the evolution of enterprise organizations from preferring on-premises deployments to investing heavily in public clouds and finally landing on a blend of the two has been decades in the making. The current disruption is accelerating this process, but companies are seeing the urgent of not having all their eggs in one basket, he says. Instead, they are spreading the risk around to avoid single points of sluggishness or failure. And this is increasingly driving IT organizations to more diversified options, including multicloud.

Cloud everywhere becomes the norm

“We think 2021 becomes a turning point where, instead of just talking about cloud-first, organizations are evolving toward having cloud everywhere,” Mohan says. “A major part of that will involve building broad cloud strategies to assure more flexibility and resiliency in the future.”

Of course, Mohan and other industry experts point out that migrating applications from on-premises architecture to more than one public or private cloud is not cheap or easy. It takes time and money—something smaller organizations do not always have, especially in a down economy. But this situation is increasingly making the case for this investment.

Volterra, a start-up focused on distributed cloud services, recently conducted a global survey of more than 400 IT executives and found that while nearly all (97 percent) planned to distribute workloads across two or more clouds, most struggle to support and secure multicloud and edge deployments.

“The increasing deployment of technologies, including AI, machine learning, and IoT, are causing apps and data to be progressively spread across multiple clouds and edge sites,” says Ankur Singla, CEO and founder of Volterra. “Our report found 98 percent of IT leaders think it is very important to have a consistent operational experience between the edge and public and private clouds. But the data shows there are tremendous obstacles preventing that, mostly around

HOW COVID-19 ACCELERATED THE MOVE TO HYBRID CLOUD

BY DAVID RAND, contributing writer, HPE Enterprise

The changes wrought in business by the impact of the pandemic make business agility and flexibility the leading necessities in your digital transformation process. A single solution just cannot offer the required flexibility to adapt to rapidly changing business conditions.

1. “IDC expects 2021 to be the year of multicloud as global COVID-19-impacted initial need for business agility,” IDC, March 31, 2020

2. “Infrastructure and security challenges threaten multicloud and edge deployments, new survey from Volterra shows,” Business Wire, March 9, 2020

RECOVERY

A look at the immediate responses by organizations and institutions, and the technology implications.
Preparing for the ‘novel economy’

Brian Solis, global innovation evangelist at Salesforce and a leading expert and best-selling author on digital transformation and innovation, says those difficulties are part of why many organizations wrap their cloud and multicloud efforts under the banner of larger digital transformation efforts. But many of those efforts are stalled or redirected right now because of the global crisis. Whereas earlier IT investments tended to come out of this crisis, you’ll see investments in cloud and multicloud accelerate, but the trajectory of those investments will be tied to specific needs now and over the immediate horizon.

Solis says that’s because digital transformation itself has been “digitally disrupted”—almost overnight—by the current crisis. Whereas earlier IT investments tended to go to just about anything promising to improve operational efficiency or improve competitiveness, recent experience will cause business support and continuity to become even higher priorities.

“We now have to look at digital transformation and the push toward cloud and multicloud more purposefully than we have in the past,” Solis says. “This is going to take more unified digital strategies, vision, leadership, and purpose.”

Multicloud strategies even more critical

Alexey Gerasimov, vice president of global cloud delivery at HPE Pointnext Services, agrees, saying it is always critical to have a cloud strategy aligned to what a business hopes to accomplish for current or anticipated economic conditions. The current situation is making that even more clear.

“Public or private cloud aside, you have to start with the overall business strategy and then look at the IT strategy needed to achieve that,” Gerasimov says. “I’m not sure that COVID-19 is forcing people to swing more toward the cloud, but it certainly is causing them to pay more attention to the need and opportunity to run IT more efficiently and to strike the right balance between cloud and on-premises deployments.”

He adds, “Few organizations, not even top public cloud providers, operate entirely in the cloud. So it is becoming even more important, as the economy stumbles, to consider what should be kept local and what can be done in the public cloud to save money, improve agility, and generate revenues.”

Gerasimov says migrating to the cloud can be difficult for some companies that might not have the financial or human resources to pull it off effectively.

“It’s not like you have a Staples red ‘easy’ button that you can push and be automatically migrated over,” he quips. “In reality, it isn’t so simple. Even migrating between data centers can be hard. Vendors will tell you that you can save money by putting more in the cloud, but it takes money to make that happen, right?”

The value of third-party services

It also takes expertise that many organizations simply do not have, experts say. In fact, in an extensive survey by Flexera, finished before quarantines took hold, 77 percent of enterprise and SMB respondents cited lack of resources and expertise as one of their top cloud concerns. Security (81 percent), managing cloud spend (79 percent), and governance (77 percent) were among the other challenges.

“With employees working from home and an increasing number of business interactions going digital, more than half of enterprise respondents (in our survey) said their cloud usage will be higher than originally planned at the beginning of the year due to the pandemic,” according to Flexera CEO Jim Ryan in a statement. “Companies plan to migrate more services to cloud, yet they’re already exceeding cloud budgets. They will need to focus on optimizing workloads as they migrate in addition to cost management and governance to ensure operational efficiency.”

HPE’s Gerasimov notes there is help out there for organizations unsure of where to start or feeling a little overwhelmed by the digital transformation tasks ahead of them.

“If you have limited budgets but know it’s important to balance more of your operations across on-premises and cloud or to rationalize what you have across multiple clouds, then it’s time to look to outside experts to help you figure it out,” Gerasimov advises. “There are options out there, from hiring specialists who can help you get the right mix of technology and applications to consumption-based IT services that help you monitor, manage, and optimize your on-premises and cloud deployments.”

LAST-MILE CHALLENGES TO REMOTE WORK

BY SAADAT MALIK, VP for IoT and Intelligent Edge services, HPE Pointnext Services
JEFF ENTERS, distinguished technologist, global networking, HPE Pointnext Services

How do you create a consistently functional remote work environment when faced with employees’ inconsistent home Internet connections?

Quickly rolling out and extending solutions to allow employees to work remotely has been a saving grace for many companies. For the most part, these solutions work as advertised: They let employees do most, if not all, of what they were doing at their workplaces from their homes. However, there is one catch we often hear customers talk about: inconsistent home Internet connections, leading to poor experiences while doing conferences or sharing material.

This is not an easy problem to solve because, for most companies, the Internet connectivity of employees is beyond the realm of what they consider their scope of influence. Many companies simply decide to live with the suboptimal remote work environment marked by variances in the quality of home Internet connections of their employees.

In this article, we challenge that view and provide a set of best practices that can help you significantly improve the overall functionality of employees’ remote work environment in the face of inconsistent last-mile connections.

Best practice No. 1: Everyone’s remote work needs are different. Understanding and classifying the needs of your employees is a key first step toward solving this.

Conduct a well-rounded analysis of the remote work needs of your organization. This should be a multidimensional review of:

- Computational requirements
- Storage requirements (local, remote, and backup)
- Voice communication requirements
- Video communication requirements
- Security requirements
- Special access requirements (e.g., cellular and air-gapped systems)

Once you have collected this information, you will have a better idea of the type of remote work environment each person needs and, more important, the criticality and challenges associated with maintaining each type of environment. This information will help you compartmentalize the employees and determine how you would go about creating an appropriate level of experience for each type using best practices below, which focus on the connectivity aspect. Try to narrow it down to as few types as possible. For example:

- Average remote worker
- BYOD remote worker
- Power remote worker
- High security remote worker
- Executives

Best practice No. 2: Internet is an essential utility for key employees

Based on the segmentation above, you will determine a set of key employees for whom a functional remote work solution based on their specific needs would be non-negotiable at all times. For these employees, consider two things:

- Ensure they have the ability to get an appropriate bandwidth and usage contract with their Internet provider (see best practice No. 3). Many service providers have service-level agreement options for home users who need greater assurance of quality of service as well as enhanced technical support. Having such SLAs in place for the appropriate groupings of your employees can make a significant difference in your ability to control the overall experience for your employees, especially in situations where Internet connectivity is choppy.

- If they typically or potentially need to work from home, be prepared to send employees home with a user experience measurement and troubleshooting device. This can significantly decrease the troubleshooting time for your support staff, and it could allow the users to do a bit of troubleshooting on their own, avoiding support calls altogether.

Best practice No. 3: Helping employees choose the right hardware can go a long way

Consider providing recommendations for home networking hardware employees can choose from. Carefully selecting products that support key features—such as WPA3 encryption, attack detection, and prevention and adaptive quality-of-service (QoS) for upstream traffic—can help improve your ability to manage the quality of the remote work environment and avoid problems caused by poor hardware choices, which impact the connectivity of the employee.

Best practice No. 4: Golden configurations can be worth their weight in gold

A set of guidelines for how employees should set up their home networks can help improve connectivity, avoid potential problems, and increase security. These guidelines can be made specific for a small set of recommended hardware. At minimum, this will help ensure proper levels of security and QoS settings.

For security, provide guidance on Internet-side security configuration. For devices with built-in Wi-Fi, recommend best practices such as tough passwords and use of WPA3.
encryption, and segment or disable guest Wi-Fi. For QoS, the best way is to pick home router devices that support adaptive QoS for outbound traffic.

With this, the router can prioritize your business-critical voice and video traffic over the kids’ video streaming and adapt based on the fluctuating upstream bandwidth available. By simply recommending a few products and their configuration, you can decrease your risk and increase the quality of experience you are delivering.

Virtual private network configurations can play a major role in the quality of the connection for home employees. Determine the right VPN options, such as split tunneling and load balancing, to optimize the user experience.

**Best practice No. 5: Build an extranet architecture that stands the test of time**

Appropriate considerations for an extranet architecture help maximize quality of connections from homes, aimed at reducing issues that are within your control.

Ensure you have geographic diversity for your VPN concentrators, to avoid any local outages. While you do not want all your eggs in one basket, you should be conscious of your remote workforce locations and provide close-proximity (low latency) primary and backup termination points. Try to keep them both within 30ms of your furthest users. Tertiary options can be a bit more relaxed, but only if you must. At least keep them in region.

Understand your application architecture and the split of public vs. private. Some of your applications might not be suited for a public cloud-based approach for several reasons, including security, compliance, latency, and legacy design. Provision VPN concentrators and pipes appropriately to handle the extranet connections, and include provisions for situations where you have 100 percent of your workforce working remotely. This applies to your secondary and tertiary sites as well. For applications in public cloud, current and future considerations, split out as much or all of that traffic at the host, leveraging local Internet connections instead of bringing it back through much or all of that traffic at the host, leveraging local public cloud, current and future considerations, split out as your secondary and tertiary sites as well. For applications in public vs. private, some of your applications might not be suited for a public cloud-based approach for several reasons, including security, compliance, latency, and legacy design. Provision VPN concentrators and pipes appropriately to handle the extranet connections, and include provisions for situations where you have 100 percent of your workforce working remotely. This applies to your secondary and tertiary sites as well. For applications in public cloud, current and future considerations, split out as much or all of that traffic at the host, leveraging local Internet connections instead of bringing it back through your data centers.

Consider an architecture that leverages public cloud resources for voice and video conferencing, like Zoom or Microsoft Teams. Many companies underestimate the resource strain that voice and video conferencing can put on VPN concentrators and Internet pipes, especially when everyone is remote. If you must keep everything “on the ground” in your data center, follow a “provision, monitor, adjust, repeat” approach to ensure you can support the business in a time of need.

**Best practice No. 6: Leverage 5G network options as they emerge**

5G options are rapidly becoming a reality in many regions. In some cases, they can be leveraged to completely bypass the home Internet connection. In other cases, they can be used as a backup. Here are some considerations around 5G for your remote work scenarios:

1. 5G could quickly become the norm for rapid office deployments. Gone are the days of waiting weeks for a carrier to provision an Internet access line. If you have power remote workers or offices, you can now send them a gateway device with 5G for their primary or secondary Internet connection—with zero-touch provisioning. This can include built-in Wi-Fi, which you can lock down to only corporate devices and then encrypt the data flow.

2. However, access to high-quality 5G may be a challenge for some time. While telecom providers are advertising their rollout of 5G and touting that they are moving fast, consider the reality behind those claims before you update your connectivity plan. Two points of consideration:
   - Device compatibility is becoming less of a concern because dongles and hotspots are readily available in most parts of the world. However, you should still analyze your options and carrier plans.
   - The bigger concern is carrier capabilities in the areas where you need connectivity. While you may have 5G towers near your workforce, not all 5G is created equal. First, if you see “5G evolution” technology, know that it is not 5G.

Next, understand that 5G covers a broad frequency range, and the higher frequencies, which give local Internet providers a run for their money, cannot travel as far nor penetrate as well. This is why we will see more and more 5G cells popping up—micro, pico, and even femtocell (in the house). Therefore, while your workforce may have 5G connectivity, you should confirm the speed at the exact place where the dongle or hotspot will live.

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**Global Workplace Analytics’ current estimate (in 2020) is that about 60 million U.S. employees could work from home at least part time, which is 56 percent of the U.S. workforce.**

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**Migrating to the new normal of employees working from home**

Having applied these best practices and the productivity capabilities they bring, it raises the question: “Now that we’ve created this capability, how does it affect our thinking for the new normal of working?”

Global Workplace Analytics’ current estimate (in 2020) is that about 60 million U.S. employees could work from home at least part time, which is 56 percent of the U.S. workforce. Applying last-mile best practices does not, in itself, improve preparedness for global, national, or even building-level disruption. Perhaps the best practice of all is to roll out last-mile best practices into business continuity preparedness so that learnings can be applied to possible future events.

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1. “How many people could work from home,” Global Workplace Analytics, 2020
FAST-TRACKING TELEMEDICINE WITH A FLEXIBLE NETWORK

BY ERIC DAVIS, IT infrastructure architect, Vancouver Clinic

Vancouver Clinic fast-tracks to telemedicine and remote work to deliver patient care.

Planning for the arrival of the COVID-19 pandemic in southwestern Washington included fast-tracking two networking-centric initiatives here at Vancouver Clinic.

One was establishing a telemedicine program, from scratch, in less than a week. The initiative would support moving 40 percent of appointments from on site to video, helping us reserve visits for meeting our patients’ regular healthcare needs as well as pandemic-related concerns.

The other project was expanding a virtual call center for our critical frontline employees, called patient service representatives (PSRs), enabling most of them to work from home during the outbreak.

During our normal course of affairs, our clinic could expect 50,000 to 100,000 face-to-face patient encounters in a month. Like everyone in healthcare, we had little insight into precisely how the coronavirus would impact our area. However, based on our previous emergency preparedness efforts for other types of crises, we knew we had to be ready.

Continuing our tradition of patient care excellence while keeping staff safe

When Vancouver Clinic management approached IT, they asked us whether our new HPE Aruba network infrastructure could support the envisioned models and, if so, how. With our network already supplying the high-performance connectivity necessary for web conferencing, the primary telemedicine effort was integrating our Epic electronic health records system with the vendor’s video visit module. We completed this project in record time.

As we had previously started piloting a virtual call center for our PSRs, the pandemic-related effort involved expanding the deployment to move 80 percent of those individuals to home offices. Given HIPAA patient privacy regulations, secure connectivity back to our data center was essential.

For the pilot, we purchased several remote access points (RAPs) to supply the secure, compliant connectivity we require. Unsurprisingly, a rapid expansion to cover most of our PSRs sent our ultra-lean IT staff scrambling to locate units in the channel, where we discovered supplies were already tight. We needed to figure out which additional RAP models were capable of supporting our standard thin-client desktops and a physical VoIP telephone.

Fortunately, at about the same time, our HPE reps reached out to ask if there was anything they could do to help us navigate the pandemic. When we explained the situation, they immediately began helping us identify alternate RAP models with the appropriate characteristics that also maximized our long-term return on investment.

Upon distributing the RAPs, our PSRs simply picked up their company-issued equipment and headed home. They reported that plugging in the RAP, along with their computer and phone, was completely seamless, enabling them to start taking patient calls in minutes. It was a big win for our lean IT staff and our entire organization.

AT A GLANCE

In the face of COVID-19, Vancouver Clinic established a telemedicine program, from scratch, in less than a week.

The clinic assembled turnkey off-site Wi-Fi kits that allow staff to quickly establish an off-site location when and wherever needed.

It also expanded a virtual call center for critical frontline employees, enabling most of them to work from home during the outbreak.

CASE STUDY

In the face of COVID-19, Vancouver Clinic established a telemedicine program, from scratch, in less than a week.

The clinic assembled turnkey off-site Wi-Fi kits that allow staff to quickly establish an off-site location when and wherever needed.

It also expanded a virtual call center for critical frontline employees, enabling most of them to work from home during the outbreak.
Extending our Wi-Fi for instant pop-up medical facilities

As part of our preparedness efforts, we also mapped out a plan for extending Wi-Fi access outdoors, such as along the exterior of our buildings for conducting drive-up virus testing and other curb-side services as needed.

Additionally, we assembled some turnkey off-site Wi-Fi kits that let us quickly establish off-site locations, such as a pop-up facility in the local high school parking lot, at a senior care center, or wherever else our staff may be called to serve. These kits leverage a RAP for connectivity to our internal systems, along with additional access points to increase the Wi-Fi coverage area.

In either case, we’ve been modeling what-if scenarios to ensure we’re ready with the proper configurations our network access and policy management security software to reserve Wi-Fi access for our internal clinical communications.

Preparing for what comes next

Regardless of whatever comes next, we’ve now moved a significant portion of our non-clinical staff off site to help them stay healthy.

At a time when anxieties are running high, our PSRs are more important than ever. They’re fielding a significantly increased volume of patient calls, answering questions as appropriate, rescheduling appointments as either video or physical visits, triaging patients with pandemic-related symptoms, and seamlessly transferring individuals to our Nurse Advice help line as needed.

For all of our patients, the fact that we’re able to continue to deliver a high level of care—despite the upheaval—is calming and comforting, which is so important in these uncertain times.

For us in IT, current events have not only proved our network infrastructure to be as resilient, flexible, and scalable as we had hoped, but also demonstrated the importance of working with a networking company that puts its customers’ needs first.

Eric Davis has served as the IT infrastructure architect for the Vancouver Clinic since early 2017. As the technical lead for the infrastructure engineering team, he has spearheaded numerous network modernization initiatives at the 80-year-old Vancouver, Washington, medical practice. The largest private, multi-specialty clinic in the greater Portland, Oregon, area, the 2,000-employee Vancouver Clinic operates seven locations spread across the region and 40-plus medical specialties. Davis has more than three decades of IT experience covering every aspect of networking, compute, storage, and security.

The most observed event in history is rendering insights beyond revelations about the globe-trotting COVID-19 disease.

How the Pandemic is Driving Data Literacy

By Glynn Bowden, chief architect, AI & data science practice, HPE Pointnext Services

The novel coronavirus appeared abruptly in early 2020 and spanned the globe within weeks. No country was spared the ravages of the commonly lethal COVID-19 it spawned. The disease continues to stump doctors and researchers because it is almost freakishly personalized in terms of early symptoms, clinical presentations, and lingering health effects.

Tremendous amounts of data have been and are still being collected and shared as the entire scientific world collaborates in a massive, historic push to stop the seemingly unstoppable. Finding treatments and vaccines are, of course, the intended end goals. But it turns out that the data has much more to reveal.

Microorganism generates macro data and the big picture

As the world stood still and united in lockdowns, massive amounts of data—on the virus and the affected nations—were shared among multiple entities. These include academic institutions such as Johns Hopkins University, national governments, and international organizations such as the World Health Organization (WHO).

Some of the historic data had existed for quite some time, but a good bit of it was hard to access. Newer data was often proprietary and closed off to many researchers and competing entities. But then the pandemic hit and suddenly these datasets were made accessible by everyone. The data is available in many formats, from programmatically accessible APIs and downloadable comma delimited files to ready prepared data visualizations.

“The amount of data on the pandemic that is suddenly available is breathtaking. It’s not just medical data, but economic data, societal data, community and world response data, educational and cultural impact data, remote and migrated workforce data, and on and on,” says Iveta Lohovska, principal data scientist at Hewlett Packard Enterprise.

Models were built, algorithms coded, inputs weighed, queries made, and artificial intelligence loosed upon it, as all of mankind mined that data from multiple perspectives and with a single purpose: to save lives.

We’ve rarely been more informed about the current status of anything. But the discoveries proved myriad and surprising. For example, this newfound wealth of data also brought to light the true power of data aggregation.

Going beyond immediate results

Initially, the thinking was that the immediacy of real-time data and analytics was the sole aim, given the immediacy of the threat. The lesson eventually learned is that immediate insights are only part of the story. When new statistics were published, everyone had immediate access to that and were running it through their own models.
This meant a wide variety of results were generated and, on the surface, could even be conflicting, even though based on the same data. This was where understanding of how the results were derived was very important. There are only a limited number of conclusions that can be drawn from the number of active and resolved cases per nation and region. Over time, this can show us a trend, and it also gives a very real snapshot of where we stand today. However, if we layer on additional data such as what actions were taken and when, as well as data from the larger macroeconomic sources, we can see clear pictures of the impact of that strategy over time.

Crisis data wins and warnings

Nations take different approaches based on a number of their specific characteristics, ranging from current political forces to culture and other socioeconomic factors. Several valuable lessons can be learned from making side-by-side comparisons of their strategies and effectiveness in combating the spread of the novel coronavirus, but only if the reasons for those differences are well understood and accounted for.

These comparative studies are helping organizations and governments make decisions going forward. In fact, the data we are producing today by processing all of these feeds may turn out to be far more valuable for the next pandemic than it will for this one. Today’s data illiteracy rates are very high in corporate workforces and the general population. Yet, the urgency of the crisis spurs immediacy in the release of information, which typically means with little regard as to how the information without the needed context is likely to be interpreted by untrained minds. The default assumption of those releasing the data is that it will be interpreted by subject matter experts, and so the data is often incomplete or lacks context. The expectation is that the SME already has that background data and can aggregate, whereas unintended recipients may not even be aware of this need. This is one thing that can lead to varied interpretations of the same data.

For example, a reduction in infections within a country could be interpreted as an improvement in the condition rather than a simple variation that is expected. At the time of writing, the total number of recorded deaths from the novel coronavirus stood at more than 425,000 and continues to rise. The numbers can be large or small depending on the time frame, the geographic scale, the demographic composition of the population affected, or percentage of the population.

Improved data literacy improves future responses

Enterprises encounter similar issues in a business crisis or a natural disaster. Improving data literacy rates now can go far in preparing an organization to survive and even thrive through the next disaster. Of course, these skills are cross-transferable now; the principles, when applied to market data or supply chain analysis, will yield much better insights when the consumer understands how to apply basic data literacy and source understanding.

Other lessons are being learned as well, such as cautions against unfettered data collection. In short, more data is not always better. That’s true, in part, because data has a defined shelf life. Data fluctuates, in other words, particularly medical data. And data surrounding a specific event can become less relevant over time. Quality also suffers over time as less attention is given to keeping the data clean and current. Privacy concerns may also emerge over time, leading to data pollution—the intentional feed of false information by people trying to protect their privacy.

Presenting information—not in its raw format but normalized, cleaned, and presented alongside other influencing data—is what teams at Hewlett Packard Enterprise and other organizations have been doing. Further, sharing contextualized data with the community drives valuable insights from the mass of data we have. And augmenting that data to provide new contexts and new insights is proving ever more valuable in how societies react and even predict the impact of COVID-19. That will also hold true for corporations seeking refined and accurate predictions and actions for any crisis.

By analyzing every facet of the world’s biggest collective crisis experience, corporations can pay it forward in mastering the immediacy of data analysis during the next crisis. In the end, a truly data-driven organization is one that can capture the meaning of the moment and render a meaningful corrective or leveraging action in record time.

Where the big picture and the bottom line meet

What all of this work on novel coronavirus pandemic-related data has taught us, as eager data scientists and engineers, is that there are two personas when it comes to data science: producers and consumers.

There are multiple levels of consumers: the intended audience, which is often professionals who have their own implied context, and passive observers who are exposed to the data through news reporting, Internet searches, and general discovery.

The data scientists and engineers are the producers, and they have a specific view on that data and a firm understanding of how to interpret the data they are working with and which bits can be safely disregarded. Seeing a scatter plot or a hexbin map or other such visualization can be intuitively processed and provides immediate understanding to the viewer.

The consumers do not have the necessary experience and training required to make such judgments. Therefore, data should be presented to the consumer with the intent to fully inform, which means taking into account likely assumptions and pertinent context.

The data parsing and interpretation skills the population can learn from this approach—along with the fine-tuning of the skills of the data professionals in learning how to present the information in consumable packages—will likely coalesce to bring a data literacy level never before seen. This same skill set can then be leveraged for presenting social, political, financial, and many other verticals of data to a data-savvy populace.

The best defense for the next event

In summary, current work focused on the news about COVID-19 and surrounding data is only the tip of a very large iceberg. This reactive response is likely not the work that will have the most impact over the longer term. Educating millions on the meaning of data when it is presented in context will drive new social conversations far in the future. This will allow us all to equally understand how our societies and economies really work and fully understand what our priorities should be, so that when the next pandemic hits the world, we are ready and informed.

The learning we are doing now will be the best defense for the next event, while helping us make immediate decisions to inform our reaction to this one.
The current global disruption is affecting digital initiatives. It’s forcing many organizations to reprioritize plans with a renewed focus on expected outcomes, while bolder companies are elevating digital ambitions to seize emerging market opportunities.

As organizations retreat to a minimum viable operating model, they are also observing their industries’ broad response to the disruption, trying to determine if they are facing a new normal that repositions how they connect to customers, citizens, and employees.

The key question is whether industry responses have the potential to survive beyond the initial phases of the crisis. Are they, in retrospect, a better way to build a resilient business model for the future—which leads inevitably to the heart of the diagnosis: whether their own digital ambitions are constructed in a way to maximize this new potential.

Examples of how digital engagement models are redefining experiences are plentiful: companies undergoing a massive redistribution of their workforces to remote work, museums offering virtual tours, hospitals using car parks as virtual waiting rooms, movie releases bypassing theaters and heading straight for home streaming services, and telehealth becoming more common.

The common thread is the use of technology platforms to digitize the physical world and project the experience into the digital world. The increased penetration and consumption of digital commerce in this time will help “translate into sustainable, long-term growth,” according to Maggie Wu, CFO at Alibaba.1 That means now is the time to double down on initiatives that can help redefine the digital experiences you can offer, supported by increased digitization of the physical world.

If you’re up for the journey, you’re going to need a map. The approach below will help you reprioritize digital initiatives and plot a path forward.

The digital edge emerges

In our model, we start at the edge, deconstructing your digital ambition into two key journeys.

The human edge: The first journey at the edge is focused on people. It is an exploration of ideas that seek to redefine the experience through digital engagement. It forces you to describe the person that will benefit from your idea—their likes and dislikes, their pain points, how the idea will change the way they live or work. Ideation and design-thinking techniques can help unlock the riddle of defining compelling new digital experiences. Be clinical about defining the “day in the life” of the persona you are addressing.

Don’t fall back on tried and tested ideas. Look for innovative, outside-the-box thinking, and work with an ecosystem of partners to help explore the potential of technology to fundamentally offer something differentiated and unique. Offering the experience through digital engagement is a delivery vehicle that is immune to social distancing and stay-at-home policies.

The physical edge:

The second journey at the edge is the applicability of data that can be created and exploited by digitizing the physical world. Can digital insights be used

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1. “Alibaba CEO: Coronavirus is a ‘black swan’ that affects global economy,” Yahoo Finance, Feb. 13, 2020
to drive the experience? Can those insights provide a chance to apply new levels of control to your physical spaces or assets?

Increasingly, autonomy of your edge will be enabled through this journey, and that autonomy can be an extremely powerful ingredient in the ideation of new experiences. With greater autonomy comes a reduction in the need for personal intervention. Robotic process automation and other technology-enabled strategies are steps to enabling full autonomy.

The digital edge: Connecting these two journeys at the edge will help shape your digital edge—the convergence of digital experiences that are contextually unique to you. Why have these journeys seen an increase in business interest? Organizations that invest in these edge journeys are able to continue to build and deliver value, stealing market share from traditional competition during operational crises.

A cloud-enabled supply chain

Organizations need a new cloud-enabled supply chain to back up the ambition at the digital edge. Moving to cloud-native application development and leveraging API-driven microservice architectures can increase agility and time to value. Once again, there are two distinct journeys, which also have the potential to be interlocked to create compound benefit for the organization (see Figure 2B).

The first journey is to renovate legacy platform architectures and convert the IT supply chain into a more agile and scalable services engine. This is powered by a shift to software-defined and cloud-based service delivery models, which is required to address the siloed nature of legacy back-end architectures.

As organizations move to explore the scale of the digital edge, it is possible that the transactional systems that support core functionality—such as ordering, payment, supply chain, ERP, HR, and finance—will struggle to cope with the unpredictable demand. From online shopping to unresponsive e-learning platforms, many of the back-end systems and services that underpin these experiences were not designed to scale on unexpected demand. They were designed for a maximum usage, which was estimated at build time, or incremented based on average use patterns.

The second journey is to unleash the talent of cloud-native app developers, enabling them to speed up time to value and adapt to quickly identified requirements. Linked to the strategy of the first journey to modernize the core, this path lays the foundation for how organizations can quickly establish and test new products and features and quickly pivot to the most adopted and successful services.

Equipping developers with instant access to build and test environments as well as the curated set of tools and data models can support experiments in new digital engagement models. Moreover, development of a repeatable services library can grow into an ecosystem play and potentially open up new platform-driven offerings by organizations in the future.

A cloud-enabled enterprise that automatically leverages cloud architectures to scale and load balance on demand, coupled with a developer’s ability to fine-tune service delivery at speed, can solve much of the back-end and innovation constraints of digital disruption.

Journey enablers

The two major technology business goals of the digital edge—the customer experience and the cloud-enabled supply chain—converge through three major common enablers that exert demands into a common pool of digital capabilities. These are journey enablers, without which the ambition of any one of the four main journeys above cannot be realized. The three journey enablers are:

Intelligence

The first enabler is the ability to derive intelligence from data. That means exploring the world through new techniques to capture, consume, and process the zettabytes of data created. It also means leveraging constantly evolving and emerging techniques, some of which have already hit mainstream, such as natural language processing (who doesn’t enjoy talking to Alexa?). Artificial intelligence in all its many forms is at the spearhead of this enabler, and organizations are increasingly turning to data scientists and high-performance compute solutions to help get answers to questions they didn’t know to ask. This intelligence can be applied to all four of the major journeys described above, from offering personalized services to customers to embedding cognitive services.

Operating model

The second enabler is the underlying operating model. Ultimately, the biggest pinch point for organizations looking to establish a new normal, one that is digitally enabled, will be the need to evolve operations to make sure the full value of any digital ambition can be realized. This might involve cultural change programs, re-skilling programs, or changes in metrics to drive new behavior. Managing the change of the operating model will be the single most essential ingredient in any digital aspiration. Remember to bring your people with you as you transform—they are your biggest capital asset.

Trust

The third enabler is the ability to establish trust. Trust comes in many forms and is enabled through a variety of technologies. Regulatory compliance and data privacy are top of mind for CxOs and is now moving into new areas such as data ethics. Establishing trust in your industry and between partners and customers is more than a security response; it’s about your organization’s brand—how it’s perceived and how it’s reported on. Networking, security, compliance, and legal teams must be closely tied to outcomes to ensure that trust is at the heart of your value proposition. The trust model established will inform and support all four of the major journeys described above.
Everything as a Service

Sitting behind this model is the question of how to leverage an as-a-Service model. This is not restricted to the way in which technology is consumed in the supply chain, but it is just as significant and impactful as companies explore and experiment at their digital edge. Offering new services in a subscription mode is a critical business model principle that can create better customer experiences and increase retention. Consumption-based pricing models can allow investments to flow alongside usage—paying only for what is actually used. This economic lever to dampen upfront capital required to progress is a critical ingredient. An as-a-Service model also creates deeper relationships and partnerships that will sustain organizations during periods of crisis better than transactional relationships (see Figure 2C). This means that delivering services that also have an as-a-Service offering can make them more relevant to customers in times of economic instability.

The final map can be constructed as a helpful tool to navigate digital transformation agendas, even at a time when the way we live and work has been so fundamentally disrupted.

Plot your own journey

This digital journey map is an essential tool to navigate through disruption. Use the framework to help articulate, visualize, and plan a path. Overlay your digital initiatives onto the map and look for dependencies, risks, and prerequisites across the map to help de-risk the path to value realization. Plotting your own journey through the map will also expose relationships that may not have been apparent at the individual initiative level. It is only when multiple initiatives are mapped together that the congestion in the middle of the model becomes apparent, and that can help avoid duplicate efforts and de-risk the path to value. The digital journey map helps streamline transformation plans and ensures you connect value creation to value delivery strategies that are central to your business model. It also provides a sanity check on how digital initiatives will be supported by the three common enablers and forces you to make strategic decisions about the input and output of those initiatives, including observing them through the as-a-Service lens.

PATH TO VALUE

There are a number of lightweight and rapid follow-ups (some that can be experienced virtually) to the basic concept of the digital journey map in HPE’s Digital Next Advisory framework. The framework uses the map to help unlock a variety of different problem statements companies often have in their own unique journey.

1. **Activate**: How do I visualize and communicate my digital ambition to my key stakeholders? Clear communication and easy visual representation through the use of models is an extremely important step in transformations. Aligning behind this common model as a vehicle to articulate your own journey is immensely powerful.

2. **Align**: How do I de-risk the path to value across multiple initiatives? Here we use the map to uncover the dependencies, risks, and prerequisites between different initiatives that all start from one of the big four journeys. By isolating the common enablers for an initiative, it’s easy to start to de-risk the path to value by connecting initiatives together and avoiding duplication.

3. **Advance**: How do I create a unique and compelling value proposition with technology? Emerging from this pandemic with a unique and new offering requires ideas, and those ideas need to be compelling to warrant investment. Here we use design thinking and ideation techniques to explore how technology may enable a new wave of innovative offerings.

4. **Accelerate**: How do I get started with a new initiative? What are the key building blocks? Leverage a wealth of insights into what digital capabilities will be required to deliver value faster in your initiative. Stop spinning up lengthy and costly proofs of value—get to a minimum viable product with the minimal number of steps.
HOW ENTERPRISES NEED TO RETHINK BUSINESS CONTINUITY PLANNING

BY YOGESH HINDUJA, hybrid IT services lead, HPE GreenLake
LOIS BOLIEK, security & risk management practice lead, HPE Pointnext Services

Most enterprise organizations have business continuity plans, but it took a global pandemic to expose how full of holes many of them were. In fact, few are able to address the enormity of the current crisis.

Traditionally, business continuity has focused on the idea that a few things might fail. A network operating center loses power. An earthquake, flood, or other natural disaster shuts down offices in a specific region. A criminal or terrorist act shuts down a neighborhood or city. In most instances, solutions focus on systems redundancy, failover, and workplace recovery. Never did anyone fully anticipate a major health crisis closing nearly every business facility on the planet and forcing all active employees to work remotely for months at a time.

That was simply beyond the realm of imagination, so when COVID-19 erupted, it forced most businesses into serious crisis management mode.

“Most organizations right now are still trying to figure out how to keep operations running and revenues flowing,” says Phil Goodwin, an enterprise infrastructure analyst at IDC. “This is an event unlike anything we’ve seen in modern times, and it has long-term implications for how enterprise organizations will think about business continuity planning. When they get beyond this situation, many will have to stop, reassess, and think long and hard about how they do it better next time.”

Numerous lessons will be a part of this reevaluation process, mostly notably the need to build more resilience and agility into continuity planning, analysts say. Traditionally, most preparation has centered on operational recovery with less focus on minimizing workforce disruptions. But analysts insist stronger, more thorough, and more elastic approaches will be needed to prepare for future events.

“Our research1 shows only 38 percent of business operation functions are covered by current disaster recovery plans,” Goodwin says. “We also find that, of those organizations that do have plans, only about 9 percent rate themselves as fully mature in business continuance. So there are definitely big gaps in the industry with regard to continuity planning.”

To close those gaps, analysts recommend ensuring resiliency across each of four key dimensions of business resiliency: technology, people processes, operations, and corporate culture.

Ensuring technology resiliency

From a technology standpoint, most companies have typically focused on ensuring that networks continue running and that people can access them in the event of an emergency. While many companies in recent years were on a path to enabling more workers to perform their jobs remotely, few had invested in the tools required to make that happen on a widespread basis.

Since many enterprise organizations have now invested considerable time and money in remote work capabilities because of COVID-19, analysts predict that they will be more amenable to allow it after the crisis ends. As such, companies will need plans for not only keeping more remote employees connected on an ongoing basis but also keeping all of those people online should another severe disruption occur.

Those plans would have to consider areas most likely to be affected by such events. For example, they would need to ensure that network stability and capacity does not falter if significantly higher numbers of people start logging on remotely. They would also want to consider how to provide employees with the most effective communication and collaboration tools available as well as the underlying virtual desktop infrastructure needed to support everything. And they would absolutely have to employ the highest possible levels of cybersecurity across every access point on the network.

Another important consideration would be the remote worker learning curve. Even before COVID-19, firms like McKinsey warned 87 percent of executives were either experiencing a skills gap in their workforce or expecting one within a few years.2 Worse, less than half had a clear sense of how to address the problem.

To meet the challenge in the context of business continuity, analysts recommend crafting talent strategies that include ongoing training, tips, and guidance. That way, if another major disruption occurs, employees will not lose too much time due to a lack of understanding of the technology they’re using.

Pushing people and process resiliency

Vigorous process resiliency should be another key consideration of any continuity plan. This involves practices such as virtual onboarding of new hires, support for bring-your-own-device programs, and providing all of the cybersecurity and human resource policies and procedures employees are expected to follow while working outside of the office.

Process resiliency should also entail making sure virtual employees have access to many of the same comforts and support systems they enjoyed in physical settings. That includes power backup for uninterrupted connectivity; ergonomic chairs, desks, and computer gear; wellness programs to address employees’ physical and mental needs; and virtual social events to sustain team morale and togetherness.

“We find it’s simple to focus on technology aspects of business continuity but also easy to lose sight of the people part of that equation,” says Chand Basha, worldwide business continuity planning manager at Hewlett Packard Enterprise. “People are the biggest asset in any organization. So, if you do not put processes in place to keep them online, provide knowledge and support on how to connect to critical resources, and at the same time, ensure they’re healthy and happy, your continuity plan is not likely to be effective in any major disruption.”

Owning operations

Organizations know all too well they have to ensure operational resiliency to stay in business, which is why many are so focused on critical systems right now. But analysts say as companies move beyond the current crisis and look to the future, they will need to think through ways to function that go beyond urgent needs and address alternate methods to conduct work without entering physical offices or holding face-to-face meetings.

“The biggest element for operational resiliency is the ability to keep the business running almost unattended,” says Clifford Grossner, who heads cloud and data research for Omdia, an independent analyst and consultancy firm. “Before the current crisis, most continuity plans assumed organizations would have at least some people on site keeping everything running and answering customer calls. We now know you can’t assume that, and organizations should be looking at more options, like digital signing of documents, that don’t require you to be in an office or in front of someone to get a job done.”

Changing corporate culture

Corporate culture is another important but often overlooked element of business resiliency.

Before COVID-19, remote work was already rising in popularity as more digitally savvy millennials and Gen-Zers entered the workforce. But there was still a deeply ingrained preference among corporate leaders to have most workers physically present in corporate facilities. Some believe employees lose creativity and productivity when working from home, analysts say. Others think it’s just human nature to slack a bit when not under the watchful eye of management. Neither sentiment is necessarily validated by statistics (the opposite may actually be true). And if enterprises are to go to evolve and enable more remote workers, their cultures will also need to adjust to make way for that, analysts say.

“We’ve always had a lot of societal and cultural resistance to remote work where management just felt that if it didn’t see you, it couldn’t be confident you were doing your job,” says Grossner. “But when COVID-19 hit, guess what? All of a sudden, everyone is working from home, and we find out the model actually can work. A big cultural barrier now seems to be permanently lifting. I don’t know if we’ll ever go back to that old way of thinking, and future continuity planning should not allow it.”

Keep it going

Analysts say post–COVID-19, business continuity planning will need to be a more active and recurrent process within organizations. They note that has not often been the case, however. In fact, all too often, it’s just a one-time project that’s forgotten almost as soon as it’s completed.

“Very few enterprises test their disaster recovery plans to make sure they work,” Grossner says. “When this crisis started, I literally pictured someone taking an old book from the shelf, blowing the dust off of it, and that was their disaster recovery plan. Many organizations think they have a solid plan, but when they actually try it out and it hasn’t been IT tested or updated in quite a while, it doesn’t work so well.”

Daniel Kennedy, research director at 451 Research, adds that organizations that have made strides toward improving business continuity processes during the current crisis shouldn’t take their foot off the gas when it’s over. Unfortunately, he says many do just that.

“The further away an enterprise gets from a continuity event, the less attention they pay to business continuity or disaster recovery plans,” Kennedy says. “Some of that relates to resources. Enterprise leaders tend to concentrate on problems at hand. But championing business continuity requires a good deal of discipline, and organizations should strive to keep their efforts going after all of this is over.”

Some analysts say the best way to do that might be to hire outside consultants to help.

“Many organizations think they have a solid plan, but when they actually try it out and it hasn’t been IT tested or updated in quite a while, it doesn’t work so well.”

CLIFFORD GROSSNER, HEAD OF CLOUD AND DATA RESEARCH, OMDIA

Nine steps to continuity maturity

Basha notes that HPE Pointnext Services has defined a transition framework involving nine discreet steps—triage, adjust, stabilize, sustain, observe, align, design, transform, and optimize—to help organizations transition from immediate crisis management to full-blown business continuity maturity.

In the end, the idea is to go from a point where companies are simply observing various problems and reacting to one where technology, people processes, operations, and corporate culture are all aligned and enhanced to quickly adjust to any emerging crisis.

“Major disruptions never come with an appointment,” Basha says. “Building resiliency must involve ongoing processes that prepare you for the unknown and allow you to adapt to change in a more agile and structured way. Organizations should seek to prepare and prevent the next disruption rather than going down the same old path where they aren’t ready and have to repair and repent for any mistakes.”
TAKE YOUR WORKFORCE TO THE NEW NORMAL

ANKE HIRNING, management of change practice lead, HPE Pointnext Services

The hidden benefits of an external event are forcing organizations to consider ways of working that were once thought unattainable.

Changes triggered by the pandemic may be considered only quick fixes by many organizations. However, what was a necessity during the crisis can become a prime opportunity to implement organizational changes that are long overdue.

Once the immediate crisis has been managed, organizations should identify changes that were positive with the goal of instituting new ways of doing things (see Figure 3A). Leveraging momentum and improving outcomes are an intermediate step to a potentially new organizational culture. The ultimate outcome is a shift to a new normal—driving innovation and breakthrough, and not set up for finding unusual and never-before-seen solutions to unprecedented situations.

Immediate crisis management
When it comes to your employees, the top priority during crisis management is to maintain productivity as much as possible while taking care of their health and well-being.

The first task is to identify areas that require immediate attention in order to maintain business-critical operations and continue serving customers. Existing organizational structure and processes may be too slow and complex or not set up for finding unusual and never-before-seen solutions to unprecedented situations.

To respond to these challenges, emergency teams may be needed—shifting people, at least temporarily, to new teams and roles. This leads to a level of uncertainty for the people moving, as well as for the ones remaining. For emergency teams to get up to speed as quickly as possible, uncertainty must be managed as new routines are established.

Enabling work in a mobile environment has become a top priority. Having online access and the right equipment is a necessity, but equally important is an understanding of how to effectively and efficiently use various tools for collaboration and communication.

In whatever ways team members are impacted, they need support to settle into the new environment. A number of enablement activities are required to preserve morale while ensuring the best possible business outcomes.

To facilitate and accelerate the transition to a remote work environment, the workforce requires accurate and timely information and training to stay up to date and gain necessary skills. Working remotely is a game changer and requires well-thought-out preparation. From the beginning, procedures and guidelines are needed for collaboration. For example, routines must be established for creating, editing, storing, and circulating documents, since email is not the best solution. New procedures for handling reviews and approvals are important, as casual interactions are less likely. Perhaps most important, remote workers need to be aware of cybersecurity and data protection risks that may be amplified while working from home.

FIGURE 3A: IMMEDIATE CRISIS MANAGEMENT—MAINTAIN PRODUCTIVITY

RESPOND TO THE CRISIS
- Emergency teams
- Working from home
- New communication and collaboration tools

ENABLE EMPLOYEES
- Establish new routines
- Get organized
- Build new skills

One key aspect, for each and every team member, is to get self-organized in the new environment. In remote work environments, casual, face-to-face interactions don’t happen—there are no spontaneous chats in the hallway, informal exchanges during lunch, and unplanned access to experts. When isolated from co-workers, some people struggle with prioritizing tasks and finishing assignments on time. Teams need to be made aware of the potential pitfalls of remote working and new ways to collaborate. To get them started, it is important to discuss proven techniques and simple tools and tips that can help maintain alignment, alleviate frustration, and avoid miscommunication.

While these measures can help people stay productive throughout the crisis, new practices can be carried beyond the crisis period into the next level. Once basic operations are up and running again, organizations should take advantage of opportunities to improve processes and optimize outcomes.

Maintaining the momentum
Crisis situations force people to work in new ways and do things that may have been considered risky from the perspective of people management and productivity in the past. However, barriers have been removed and new habits are proving successful. This is the time to improve outcomes and optimize the way of working (see Figure 3B).

Some organizations may start out with the notion that mobile and remote work environments are only temporary solutions. However, once successful, these environments reveal benefits that may be useful over the long term—such as spending less time in traffic, freeing up office space, and balancing work and family life.

TAKING HR TO THE NEW NORMAL
Implementing a structured remote working environment and making it a company policy is a next step. Initially, more work processes need to be digitized. A fully mobilized workforce requires a paperless office and access to applications and documents anytime, anywhere, and from various devices. To make that work, several critical areas must be addressed, including system access, safety, security, and office hours. In addition, a number of other issues need to be considered:

- What are the do’s and don’ts for a remote worker?
- How is communication kept alive?
- What is the most effective way to share information?
- How can workers manage the potential effects of isolation and deal with stress and overload?
- How can conflicts be detected and solved?
- How are good relationships with colleagues—especially new colleagues—built and maintained?

Since managing a remote or mobile team requires much more effort and explicit action than in a face-to-face team, the role of the team leader is critical. Leaders have to build a new set of leadership competencies, especially as the quick look over the shoulder and the short spontaneous chat in the coffee corner are not possible. Quick checks on work quality and spontaneous instructions cease to exist. Team members need to make their own decisions to solve day-to-day problems and achieve work results independently from leadership involvement. Leaders need to learn how to trust their teams, empower them to make more decisions on their own, and manage the relationship from a distance.

The crisis also necessitates a different way to solve problems. The focus is on quick solutions that fix immediate issues, involving out-of-the-box thinking and short decision cycles. Interdisciplinary teams may be required to speed up the process and leverage collective knowledge. Such solutions may not be perfect from the start, but they must be established quickly and need to deliver solid results. This means the organization must focus on speed over perfection—trying out alternative routes without an upfront, detailed analysis of every potential pitfall. Out of necessity, the emergency team has already dealt with many of these challenges and sets the example for new competencies like innovative problem-solving, collaboration across silos, and acceptance of failures as learning opportunities.

Communication, collaboration, change management

The remote work environment requires a stronger focus on communication and collaboration—within the team and across the organization. Teams need to know how to facilitate online meetings, actively listen, and balance conflicting interests. Learning new and better ways to communicate and collaborate takes time and practice, and breaking old habits will not happen overnight.

A change management program is recommended to address the inherent people challenges in a crisis-driven change. The program must make sure that all people impacted by the change are aware of what is changing and when, how they are personally affected, and what they are expected to do. Ideally, people will be willing to give new ways of working a fair chance.

An effective communication program becomes a key success factor in driving employee motivation and positive change. Without communicating upcoming changes and informing individuals and teams about the effects, any change is likely to fail. The communication program needs to address all target groups, accommodate feedback, and provide the opportunity to ask questions. People need to know where to find information on new technologies and processes, be able to acquire the required skills, and get access to available resources.

The world changes so rapidly that conventional training programs are not sufficient anymore. An upskilling program that delivers formal training and informal exchange of knowledge provides options for learning how to navigate the new environment. For teams and leaders, a coaching program helps to define ways to operate and overcome specific barriers in the new environment.
The next level
According to an Owl Labs report on remote work, 44 percent of companies globally don’t allow remote work at all. However, having implemented new processes and work habits, at least in parts of the organization, provides the opportunity to drastically reconsider how things can be improved, leading to change on a broader level. Once out of the crisis, the business world will not look the same anymore—new products and services will emerge, purchase processes and consumption patterns will evolve, and values and beliefs of individuals and groups may change. Understanding what is possible provides the chance to move to the new normal (see Figure 3C).

Being forced by the crisis to work in different ways, barriers are broken more quickly than with other events. Before the disruption, many organizations doubted that working remotely with flexible teams could lead to the same good results achieved in the traditional way. This crisis proved them wrong. It has become apparent to many supervisors and leaders that more things are possible than ever anticipated, and in the future, they can be braver when it comes to changing the way they work.

The data supports this:
- 76 percent of workers would be more willing to stay with their current employer if they could work flexible hours.
- 21 percent of workers would give up some of their vacation time to get flexible working options.
- Companies that allow remote work have 25 percent lower employee turnover than those that don’t, according to Owl Labs’ report.

Stepping up to the next level requires new ways of innovation that aren’t generated in silos but rather built on the wisdom of the many. To find solutions for new challenges and new opportunities to innovate, experts from all parts of the organization need to collaborate.

New organizational models may be a better fit for faster innovation and higher quality customer service.

New work methodologies are needed to respond to challenges with flexibility and agility. To enable this, the culture of the organization has to change. It must be built on team success, rather than individual success. It must be failure tolerant and built on constant learning, and it must allow for a variety of career options while challenging—or even overcoming—old hierarchical models. The new mantra is to act quickly and move forward with great agility. Decision-making lies in the hands of the teams, with the top priority being the customers’ (internal or external) best interests.

To achieve these goals, organizational development programs are required to consciously shift the culture to support the new ways of working. It starts by changing the organizational setup to create and support flexible, agile, and temporary teams, built for a specific purpose. Traditional hierarchical management styles will not work here—which means a change in the roles and behaviors of leaders. Leaders are less involved in day-to-day tasks and instead provide a vision and purpose to set the frame and ensure that the guardrails for everybody, They must develop coaching skills and learn how to lead in uncertain times with an unpredictable future.

Everyone in the organization needs to develop skills and competencies on an ongoing basis. Skills development in a rapidly changing world requires access to a variety of learning opportunities—online training, e-learning, on-site classes, knowledge sharing with peers and experts, mentoring, job aids, and many more. Knowledge and skills related to the latest technologies and methodologies must be developed within the organization. There need to be smart ways for everyone to share expertise and exchange information and ideas. Pooling knowledge and leveraging expertise across the organization brings desired innovation and drives creative solutions for the complex challenges of the future.

New ways of working
The current crisis has suddenly—and without warning—forced organizations to maintain employee productivity and respond to customer needs in new ways. These challenges have provided a hidden benefit by forcing businesses to consider ways of working that were previously unthinkable.

Organizations are discovering that there are alternatives when it comes to how, when, and where people work, collaborate, and communicate. Lessons learned while navigating the crisis can push them to develop structures and work habits that are far more suitable for new ways of working—not developed in the ivory tower but based on tried and tested best practices.

3. Ibid.
CUSTOMER EXPERIENCE IS DIGITAL

BY CHRISTIAN REICHENBACH, digital adviser worldwide, HPE Pointnext Services

It’s time to put the customer first across all channels.

There are many facets of the digital business era but none more important than customer experience. The way customers interact with a company, whether online, in store or through electronic signage, is enabled by digital technology. Accustomed to gathering information, communicating, and making purchases online, customers expect to be the focus of attention. Because the way customers interact with a company is the way they remember that company, it’s not too much to say that the experience a company offers is its brand.

The importance of customer experience is no secret—it’s overtaking both product and price as the top differentiator in the minds of customers. Because it typically costs seven times as much to gain a new customer as it does to continue doing business with an established one, investing in existing customer relationships pays big dividends. Today, those investments should be in digital technologies designed to reach customers across multiple channels, including online advertising, online purchasing, video conferencing, chats, and product delivery.

Digital channels are on the upswing

Digital business strategists who study human behavior find that consumers tend to stick with what they’re used to, while being a bit slow to move to new and better methods. There is quite a difference between the minority of innovative early adopters, the majority of mainstream purchasers, and the trailing minority of laggards. The cycle is clearly spelled out in Diffusion of Innovations, a theory popularized by Everett Rogers (see Figure 4).

FIGURE 4: DIFFUSION OF INNOVATIONS

Against this backdrop, the pandemic has broken the traditional channels of customer interaction. It’s no longer possible to offer in-person demos, meet over lunch, or gain purchasers’ attention through attractive storefronts. Instead, companies must take a digital approach to cultivating current customers and attracting new segments of buyers.

Research from McKinsey bears out this contention. The necessity of using digital channels during the pandemic has given rise to sharp increases in the numbers of first-time users.1 In approximately eight weeks, consumer adoption of digital channels has vaulted five years ahead, according to the research firm (see Figure 5).

FIGURE 5: U.S. CONSUMERS ARE ACCELERATING ADOPTION OF DIGITAL CHANNELS, A TREND SEEN ACROSS GLOBAL REGIONS

Digital adoption, by industry, % of digital access

<table>
<thead>
<tr>
<th>Industry</th>
<th>Regular users</th>
<th>First-time users</th>
</tr>
</thead>
<tbody>
<tr>
<td>Banking</td>
<td>73</td>
<td>21</td>
</tr>
<tr>
<td>Entertainment</td>
<td>64</td>
<td>24</td>
</tr>
<tr>
<td>Grocery</td>
<td>61</td>
<td>31</td>
</tr>
<tr>
<td>Apparel</td>
<td>45</td>
<td>13</td>
</tr>
<tr>
<td>Utilities</td>
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</tr>
<tr>
<td>Telecom Carriers</td>
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<tr>
<td>Travel</td>
<td>37</td>
<td>6</td>
</tr>
<tr>
<td>Insurance</td>
<td>35</td>
<td>8</td>
</tr>
</tbody>
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1 The COVID-19 recovery will be digital. A plan for the first 90 days. McKinsey Digital, May 14, 2020
Most important, when the lockdown ends, it’s unlikely customers will go back to their old behavior patterns. Much like riding a bicycle, learning to use online tools is a skill that, once learned, is never forgotten. It’s a sure bet that newly adopted digital interactions will weave their way into the new normal.

Build a better customer experience
Savvy IT and business leaders should keep these trends in mind as they rethink and redesign the customer journey. Putting digital technology in place at each of the five key customer touchpoints—awareness, considering, purchasing, retention, and advocacy—will pay rewards for years to come. For example:

• **Awareness:** Online advertising, already a powerful force, continues to gain momentum. In addition to optimizing search engine results for your products and services, explore online forums like LinkedIn Sessions, TED Talks, and sponsored events such as webinars.

• **Considering:** Most customers do online research when Mulling a purchase. Include test reports and reviews on your website, as well as tools for comparing your products with those of competitors.

• **Purchasing:** The simplicity and ease of use of online purchasing is winning over even resistant customers. The rebound to in-store purchases is unlikely to return to pre-pandemic levels. Strive for a frictionless experience across all channels, including online, in store, and combinations of the two, such as click and collect.

• **Retention:** Customers expect their experience to be consistent across channels, whether online, in a store, or over the phone. Customers assume you have—as you should—the same knowledge of their habits regardless of channel.

• **Advocacy:** Customers will recall how they were treated at each touch point and spread the word to others in the form of online reviews, emails, and social media posts. Turning customers into advocates builds brands and primes the pump for future sales.

Who’s doing it right
While the pandemic has disrupted business as usual everywhere, companies in some industries are putting innovative approaches into practice. For example:

• **Travel:** Lockdown policies are causing many people to dream of travel. How about virtual travel? Digital technology can provide interactive 3D views of destinations and allow would-be travelers to interact with guides and ask them questions about an exotic locale. Customers who have an outstanding virtual experience now are likely to put a destination on their bucket list and make a real-life trip there later.

• **Museums:** The ability to take a virtual tour through an exhibition can be a moving and educational experience. Often, the online experience offers advantages such as enabling visitors to get closer to the works of art or exhibits they want to see, without being obstructed by other visitors and tour group members. Such a virtual experience can whet the visitor’s appetite for a more rewarding real-life visit later.

• **Call centers:** By enabling call center staff to work remotely during the time of pandemic, providing them with complete customer information and enabling interactive customer video sessions, companies can retain and enhance a critical touch point. Apple provides an example worth emulating. The Apple representative schedules customer video sessions, companies can retain and enhance a critical touch point. Apple provides an example worth emulating. The Apple representative schedules customer video sessions, meetings, sends reminders, accesses complete historic information, and uses FaceTime to interact with customers.

Seize the moment
While the overarching trend has long been toward increasing reliance on digital channels, the pandemic has accelerated that transition. In many cases, the customer journey, having become 100 percent digital during the lockdown, will remain that way afterward. This disruption is giving organizations an opportunity to be bold, think differently, and improve the customer experience at every touch point. Companies that seize the moment will gain an edge for years to come.

WE MOVED QUICKLY TO THE CLOUD—NOW WHAT?

BY ALEXEY GERASIMOV, vice president, global cloud delivery, HPE Pointnext Services

In fast-tracking their move to cloud, organizations may have missed some critical steps. Here’s how to ensure cloud success in the long term.

The global pandemic has pushed a lot of cloud initiatives off drawing boards and into action. Far-flung organizations are using cloud apps to connect people and handle key business functions. Governments are moving constituent services online. Food retailers are adding cloud instances to support online distributions and inbound customer requests.

For many, cloud has saved the day—at least for the time being. But for how long? Has the rapid acceleration of cloud adoption invited problems down the line? Have some organizations moved to the cloud so quickly that they’ve skipped valuable steps that could help them build secure, sustainable, efficient, and cost-effective cloud operations in the future?

If your business migrated to the cloud faster than it originally planned to, now might be a good time to take a breath and reassess. Look at the steps you’ve taken, evaluate how well things are going, and develop a detailed, methodical plan to ensure that cloud will be serving your needs well after the current disruption.

Here are seven things to do to optimize for the long haul.

**Start with why**
In the book "Start with Why," author Simon Sinek stresses the need to set honest, relatable end goals for any situation. “People don’t buy what you do; they buy why you do it,” Sinek writes. So, organizations should ask themselves: Why move to the cloud? Just because we can do it, should we?
The short answer most executives will give during the pandemic is that cloud enables their business to solve an immediate problem. Cloud can connect our workforces. Cloud can make sure the website won’t crash during heavy usage. Short-term fixes can be accomplished by moving around a few workloads. But cloud, done correctly, is a long-term process that requires a long-term view of how it will benefit your organization and a clear vision for the role you want cloud to play as part of your broader IT strategy.

Do you want your company to be known as an innovator that breaks new ground with every product introduction? Do you want cloud to play as part of your broader IT strategy. Moving to cloud just because you can, or because you need to solve a short-term problem, doesn’t position you for long-term success. Understand what you want to achieve, and why cloud can help get you there.

GET ALL THE ISSUES OUT IN THE OPEN

Cloud projects promise all kinds of benefits. But they also can be scary for some in the organization because they require people to change the way they do things. If your team rushed into the cloud, there’s still time to get naysayers on board. Start by bringing key stakeholders together—in the same room, if social distancing guidelines allow. This gives everybody a chance to not only ask questions and debate future plans but air potential grievances about processes, roles, tools, and other things a cloud-driven business has to adopt.

At HPE Pointnext Services, we use a structured three-day workshop that trains executives in the finer points of our Cloud Adoption Program (CAP). We involve leaders from a variety of disciplines—everybody from C-level executive sponsors to application owners to finance, security, GRC (governance, risk, and compliance), central IT operations, infrastructure coordinators, and database engineers. Getting all the factions aligned is a critical first step in an initiative as important as cloud adoption.

ESTABLISH A CLOUD BUSINESS OFFICE

A lot of cloud engagements start in individual departments—with one person paying for an Amazon Web Services (AWS) or similar implementation using a credit card. That has probably happened often during the work-at-home period. One instance turns into three, and soon there are 30 implementations, all operating without central control.

Establishing an office to coordinate all cloud activities eliminates a lot of confusion. Cloud projects are long, complicated, and challenging for any organization—particularly ones that have been operating with legacy infrastructures and outdated processes. We’ve found that the inability to make informed decisions presents the most formidable blocker to moving cloud projects along. Putting a team in place that can make decisions quickly removes—or at least mitigates—that blocker.

The Cloud Business Office is more than just a cloud center of excellence. It’s a permanent operational and governing body that directs and guides all aspects of your cloud program, from the first implementation through ongoing operations. It brings together leaders with vested interests—all aligned to serve the cloud customer: the business unit or software owner.

ADDRESS SECURITY AND GOVERNANCE EARLY

According to a recent survey, security issues present the biggest barriers to public cloud adoption. Organizations that rushed into the cloud should take note: This finding indicates that security and compliance need to be addressed early and tended to throughout an implementation. What’s often missed is the process of assessing security and governance control objects that map to the repeatable patterns in companies’ reference architectures. Control objectives vary significantly from company to company, depending on which industry standards a particular company needs to follow. The challenge is understanding how these standards and regulations map to a specific cloud program.

HPE maps a Cloud Controls Matrix developed by the Cloud Security Alliance to the repeatable architectures on AWS, Azure, and Google™. Determining the gaps in your controls and technologies against accepted best practices is a huge time-saver. Rather than build your security reference architecture from the ground up, you can create a baseline and then adapt to meet your specific needs.

ENSURE CONTINUOUS COMPLIANCE

Organizations moving to the cloud can’t continue to rely on the compliance frameworks they created for their legacy architectures. The tools and processes used for identifying, assessing, and complying in data center environments aren’t well suited for cloud implementations. Using the standard change management and controls
approach doesn’t work. Cloud’s new consumption-based model requires a new level of governance where compliance is managed continuously.

Continuous compliance means automating the compliance chain wherever possible to provide a single view for regulatory and corporate compliance, security, risk, and governance. Operating with real-time monitoring and remediation, a continuous compliance model reduces the number of issues organizations need to address. It provides tighter operational security to give customers better visibility into risks before they become critical.

HPE has channeled its vision for continuous compliance into software that constantly looks at customers’ cloud environments and controls the consumption and usage of services in their cloud. The controls are implemented using “software signatures” that check for specific governance and compliance requirements.

Consider the economics
Many enterprises that push their way into the cloud do so, in part, to save money. Cloud offers clear financial advantages over on-premises environments, based on customers’ ability to dial services up and down depending on need.

But cloud customers should keep a close eye on their bills. They can easily end up spending more if they don’t pay attention. It’s like when you go shopping and you buy a two-for-one special: It looks like a good deal, but you do end up paying more because you bought two items rather than one. With cloud, you can easily buy more services than you need.

Organizations can use various tactics to keep their cloud bills under control. They can reduce the amount they consume by promoting efficiency and right-sizing their computing instances to appropriate levels. One way to reduce consumption is to manage the uptime of your environments more efficiently. Unlike in on-premises environments, where provisioning resources tends to take months, cloud users can deprovision idle resources in minutes and avoid paying for them without negatively impacting productivity.

Organizations can also get price breaks by pre-purchasing capacity up to a level they’re certain they can use. Enabling autoscaling prevents you from overprovisioning for the peaks and reduces costs when there are minimal loads on the application. Storage can be managed, too. Take advantage of cold storage for your archives and limit the use of premium storage for mission-critical production environments.

Stay agile, take control
While there are many tactical actions you can take to control cloud costs, there’s an opportunity to think more broadly. You can take steps to make the most of your investment not only in the cloud, but also in your whole IT footprint, while retaining agility and control.

The world is going hybrid. Certain applications are perfect candidates to migrate to the cloud; others aren’t. Organizations are bursting applications to and from the cloud, and they’re maintaining multiple cloud and on-prem locations. Analytics can be done in one place with reporting in another. Agility is the new norm.

To succeed in this new hybrid environment, organizations need to juggle a lot of initiatives. They must maintain operational discipline, stay compliant, and support an appropriate spend posture. These functions should be automated. It’s hard to do that in one environment—on premises or in the cloud—but even more challenging across environments.

At Hewlett Packard Enterprise, our vision is to bring the cloud experience to your applications and data, wherever they may reside. You should make decisions about where you consume based on what makes most sense for your organization at any given time, around critical factors such as security, latency, governance, and economics.

But wherever your workloads sit, you should have the simplicity, agility, and economic flexibility that has come to be synonymous with public cloud. We call this HPE GreenLake. There are modules for compliance, cost control, and other functions that can help provide visibility and mitigate these concerns. Resources are allocated as a service based on need across environments, on a managed services basis.

Planning for the long term
So you’ve moved to the cloud: Is your work done? Given the considerations outlined above, it clearly isn’t. For many organizations, the pandemic has pushed cloud to the top of their agendas. They’re seeing immediate benefits and pursuing plans to make cloud a bigger part of their business processes going forward. But fast adoption is no substitute for careful long-term planning.

As we prepare for the future, now is the time to ensure your cloud journey is headed in the right direction.
FROM CRISIS TO BRAVE NEW WORLD

BY DEBORAH L. ANTHONY, transformation strategist, HPE Pointnext Services

Operating in the new normal is already a common mantra, but what does it mean? It is only through viewing people, processes, and technology together that decisions should be made about what to keep, what to discard, and what to re-engineer in your organization’s operations.

The storm has subsided, and all the indicators suggest it is time to leave being in the moment and set a course for the future.

Out of great adversity comes great opportunity, or so historians—and playwrights—have recorded. During the course of managing the crisis, organizations apply brute force and high levels of adrenaline to solve problems and adapt to rapidly changing conditions. As the dust settles and an interim sense of stability is formulated, strong leaders:

• Trust management to move ahead and keep the ship on even keel in the interim.
• Take a virtual step back, take a deep breath, and think systemically about the future.

Real-time data is flowing in abundance as the crisis subsides, foretelling of revolutionary changes that are sweeping through the world as a result of the crisis—literally and figuratively. What insights enterprising leaders formulate from that data, what direction they choose, and what actions they take will define the future. Not just a single organization’s future, but that of a broader community. Will the new world be “brave” enough?

By taking in the broad perspective of the impacts of a crisis, organizational leadership will consider these leading questions:

• Based on the perceived impact on markets and on our customer base, what adaptations in our processes and values should be retained moving forward?
• Which of those adaptations should be discarded?
• And in keeping or discarding them, do we return to the former ways of work?
• Does the changing landscape of our industry suggest that we re-engineer?

Global crises imply a wide-ranging and deeper impact on all aspects of an organization and its industry, clients, and employees. That raises the broadest possible question: What should the enterprise be in the evolving future?

Perhaps more daunting: To what degree does the organization wish, by virtue of new insights and knowledge, to help contribute to the future?

When the answer to the latter is an affirmation of a desire to lead, the response to the former is likely to be visionary.
A call to lead will be a call to align people, process, and technology from the perspective that success in the past is not a basis for success in the brave new world.

Enterprise engineering is an integrated set of disciplines for building or changing an enterprise and its processes and systems. The goal is a human-technological partnership of maximum efficiency in which change takes place at every level.

People and culture development
During the crisis, it is likely that business and IT teams worked together differently from general patterns of engagement. The result, hopefully, was faster time to solution with greater accuracy in addressing the problems and challenges. Urgency, a sense of high risk, clearer communications, shared understanding, and a common goal broke down barriers that formerly seemed the only way of doing things. Two key questions are:

- Can the organization leverage this mental model shift on the part of both the business and IT?
- What are the insights gathered from data, listening to customers, and observing the market?

Best practice: Build a culture focused on value, with people empowered to think end to end.

Organizations with greater value generation (that is, greater percentage of profit and revenue than the competition) are architected as a collection of value streams. Value streams are individual end-to-end sets of activities that function together with a clear goal of delivering a product or service to the expectations of the external customer. They have a business outcome.

Value stream teams are concerned with all of the activities and resources that, from start to finish, enable delivery of results and confirmation of met expectations.

Value stream designers search for ways of achieving "outrageous" improvements in critical measures such as speed, cost, quality, and service.

Both teams are intensely focused outside-in, on the expectations of the external customer and the eternal market. Business knowledge and digital information technology expertise is integrated to produce the best designs, influencing the most appropriate processes (workflow) to deliver them.

During the pandemic, a client was observed to behave in just such a partnership—creating value streams to maintain the business. This style of cooperation is known as boundary-less-ness, which requires a different state of mind, as does working within the constraints of a crisis. It will only sustain in a culture of openness and collaboration.

The challenge for organizations that have worked boundary-less during the crisis is to find a means to leverage the achieved breakthrough in barriers, open new mental models, and devise a means of engineering the organization to the new mode of thinking.

Cultural anthropologists observe that cultures change because the stories change. Crises result in changed stories. The future will evolve with the changing stories, and leaders have the opportunity to boldly contribute to the storytelling influencing a preferred future.

Disciple of changing processes
Value streams are not processes. A value stream is a collection of activities that function together with a clear goal of delivering a product or service to the expectations of the external customer. They have a business outcome.

The word process causes misunderstandings. Business refers to the process of accounts payable, order entry processes, or the process of preparing an invoice. IT professionals draw data flow diagrams and procedure runbooks labeling them as processes, which is not to suggest that these activities are not important. Clarity in what is understood as a process is critical to an organization in pursuit of transforming itself for the future. For a future-focused enterprise leveraging a value stream culture, assigning a label of workflow adds clarity.

Workflows (processes) defined systemically are standardized methods of compressing work steps. Ideally, the processes/workflows result in minimum time needed to achieve maximum quality output (service or product) of the value stream. Quality is always defined by the external expectations of the consumer. When observed within a value stream, processes should be seen to eliminate unnecessary work and exemplify pull rather than push handovers between groups.

Best practice: Apply process thinking to value streams to achieve results.

Recently, an award-winning service provider adopted the concept of value streams while pursuing a means of adding cloud services to its portfolio. Simultaneously designing the value stream for a proposed service and thinking about workflow from both the demand (client) side and supplier side of the equation netted unexpected benefits. Expecting to add a new platform to its existing customer-applauded delivery model, leaders were surprised to realize a change to the delivery model instead. The service provider’s clients were surprised to experience unexpected higher quality in existing services.

Digital technology development
As the power, capability, and infusion of digital technologies into business has increased over the past decades, replicated research acknowledges the simple fact that the adoption of new technologies alone fails to yield business value. The message: Do not apply technology without clearly defined value streams. Do not apply...
automation without totally redesigning processes around the end-to-end value streams.

MIT assigns the label of digital mastery to those organizations that have achieved significant value (significantly higher percentage of profit and revenue than the nearest competitor).

**Best practice:** Find the right mix of technologies aimed at appropriately automating value streams.

Best-practice organizations:
- Build human and technology partnerships.
- Build value streams that are fast, fluid, and flexible.
- Use automation tools to:
  1. Design and build effective systematic value stream resources
  2. Provide the best information to value stream workers

Medium and small businesses are not exempt from taking a lead position in an industry. One midsize enterprise’s IT organization saw great potential in replacing aging technology with a dynamic new digital platform. Business was unresponsive until IT helped redefine the business processes and workflows into value streams and translated the cost of unplanned downtime due to aging technology.

**The goal: Move from crisis to brave new world**

Leaders need to rebuild the organization to be highly responsive to the evolving new environment, while having a vision and architecture designed to maximize long-term opportunities. To retain, or gain, a lead position in the industry, an organization must be positioned to be supremely reactive to the fast-changing environment and strategically skilled in telling the new story, re-engineering around value, and mastering digital choreography.

**Themes for the future include:**
- Fundamental uncertainty
- Radical changes in how people work
- Explosive changes in the digital landscape—technology
- Renewed focus on humanity
- Continued acceleration in the rate of change

Are you ready to meet the challenges of creating a brave new world?

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