Emerging smarter: Digital transformation for healthy and resilient societies

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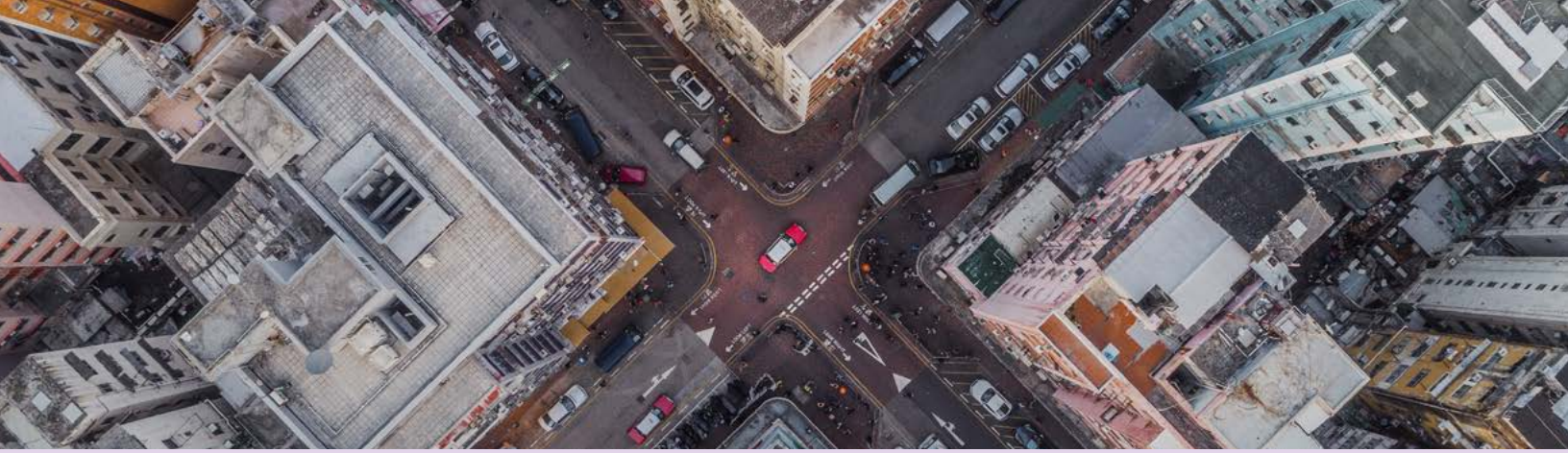

Prior to the COVID-19 crisis, government agencies and healthcare institutions recognized the need to modernize legacy systems and operations to better serve their communities. However, the pandemic created an inflection point. Those known vulnerabilities became amplified and leaders in these institutions moved swiftly to support constituents and build resilience into their operating models. What was once a series of "delayed upgrades," now became requirements to their mission.

During these times of severe and unprecedented challenges, many government offices have taken bold steps forward, even in the face of limited information. As priorities evolved quickly in this complex global health crisis, extreme collaboration has had the greatest impact. In a short period of time, the pace of change has been astounding—in many ways faster than anticipated.

Public sector leaders are realizing the opportunity to become more responsive and resilient to their constituents in three key ways:

- **Better engagement with citizens and improving access to services**
- **Unlocking the value of their data**
- **Transforming core operations and modernizing systems**

Agility, providing flexibility to confidently move fast in high impact situations, can be supported with the embrace of technology and its adoption into the center of new operating models. Reliance on older systems can inhibit agencies and institutions in their ability to deliver care and benefits in times of crisis. Leaders are now confronting these aging legacy systems and incorporating new technologies. This allows them to break down workflows into discrete

building blocks and assess what can easily be moved to the cloud and what must remain in the current IT environment, finding ways to move workloads seamlessly between the two—that is agility.

To emerge stronger, these agencies are starting to embark on full-scale digital transformation. They are moving past introducing new technologies with the objective of improving existing pathways and service delivery models. Instead, they are making the shift to enable broad scale collaboration and innovation to re-define processes and workflows by embracing capabilities like artificial intelligence (AI), internet of things (IoT) and flexible and secure forms of hybrid cloud to enable greater efficiency, flexibility and agility in their systems.

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- Transforming core operations and modernizing systems.

In many instances, these providers act as a safety net to society. Their ability to respond to sustained and future threats while continuing to effectively deliver services to citizens is critical. Employees and leaders at these organizations are embracing their missions to serve by using design thinking, agile development, cognitive process automation and digital reinvention to emerge smarter.

Improve citizen engagement

Making citizens' lives and health better begins with increasing engagement and trust. To foster trust, they must know and believe that their data and privacy are protected. They need to know that the data collected on them is well curated, accurate and only available to those who are authorized to use it.

To facilitate confidence among constituents, government leaders are increasing engagement with them by improving access to services. They are making trusted, accurate data available and scalable through newer technologies such as cloud, analytics and AI, all of which provide an organization with greater data insights and help it emerge smarter.

Scotland's new social services agency is an example of government that is engaging with its citizens and using a cloud-first approach to ensure everyone receives the social benefits available to them.

In 2016, the Scottish government established a new agency to deliver benefits to 1.8 million citizens. They worked with IBM for an open, flexible health and human services platform that could accommodate multiple benefit applications. Social Security Scotland's user-centered case management platform delivers a common user experience for the agency and eliminates the need for customer training on the system.

In times of crises, individuals flood their local organizations with questions and need answers, fast. An initial step for those agencies trying to help is to use chatbot technology to engage with citizens, both to assess and reassure them around how health and social care providers can meet their needs. In 2020, dozens of core service providers launched new technology to get critical information out to the public. Within days, virtual agents or chatbots started to answer questions about every aspect of COVID-19 and its impact on their lives throughout the United States, the Czech Republic, Finland, Greece, Italy, Poland, Spain and the UK.

Using IBM Watson Assistant for Citizens, powered by AI, these chatbots can apply data from external sources such as the Centers for Disease Control and Prevention, and local sources, like links to school closings or documents from state websites. They are trained to understand and respond to common questions about the outbreak as well as specific queries in a given area, such as “Where can I get tested?” or “How long are schools shut down?”

In addition to communicating pertinent information to constituents, organizations have also identified a need to assess, direct and intervene appropriately for deferred elective treatments and effectively manage chronic diseases. Managing deferred elective treatments could be tied to the slow release of hospitals’ capacity, redesign or redesignation of patient flow across a network, and by prioritizing clinical need. Payers and providers are starting to invest in cloud-based analytical capabilities that can help drive that action. Citizens need this safety net now more than ever, and this is a prime time to transition legacy workflows and processes to more person-centric services and care, across the entire continuum of needs.

Unlock the Value in Data

Public sector leaders are increasingly unlocking the value of their data and putting it to work as they embrace digital transformation. The need to pivot quickly when faced with a crisis has emphasized the need to securely store, collect and organize data, facilitate interoperability and break down data siloes across the enterprise. Advanced analytic solutions can help governments identify patterns. Health services and clinical practices will also find increasing value in data as a resource and AI as a tool for gaining insights. Operations managers will be the first to look to using data and AI as they adopt optimization and automation tools to underpin their services. Clinicians will follow by harnessing data to gain insights for their practices and address the shortcomings of the current systems.

Highmark Health in Pittsburgh, PA, illustrates the potential for AI to help save lives and money. Using IBM Cloud Pak for Data to analyze insurance claims data, Highmark launched an integrated platform in just six weeks and developed models to identify high-risk patients for sepsis. By scoring and identifying patients likely to develop sepsis, care managers, nurses and doctors could intervene early with preventive measures and keep patients at highest risk out of the hospital. The new platform from IBM also allows the team to incorporate new research findings as the pandemic evolves and impacts people's sepsis risk.

Using technology to help employees reenter the workplace is another area in which data can help better serve citizens. In just three weeks, Sonoma County launched an app that assesses whether an employee is safe to go to work based on their temperature and key questions. Their next iteration, built with IBM, integrates a chatbot that understands COVID-19 questions in voice or text and provides answers in natural language. The Sonoma County COVID-19 Health Check app allows businesses to operate safely, a critical factor to restoring economic vitality to communities and the country.

Modernize core systems and operations

Government agencies and healthcare institutions have been exploring transitions to more capable, nimble systems with a modern approach to workflows, data and security—where citizen data could be more readily available, easy to access and shareable across organizations. Those transformations now need to accelerate. In an environment of growing demands and limited resources, technology solutions can play a significant role in the ability to address today's challenges while embracing opportunities for the future to enable—and realize—a new normal.

NHS Digital, the technology arm of the United Kingdom's National Health Service, transformed its cybersecurity systems because cyber threats aren't just an IT risk—they endanger patient-facing services that can affect clinical safety and the ability to deliver timely care to patients.

The team established a security operation center with the support of IBM Services that proactively detects, responds to and remediates security events more effectively and efficiently. The system monitors more than 1.2 million NHS devices for cyberthreats and vulnerabilities. It has already blocked more than 2 billion malicious emails this past year. The cybersecurity platform has also been critical to navigating COVID-19 and the dramatic swell of citizens trying to access healthcare and services digitally—and the corresponding increasing amount of cybercrime.

In Europe, a national social-security agency for family care is modernizing its allowance benefits system to deploy benefits more quickly while lowering operating costs. Seeking a more secure and resilient system, the agency contracted for a hybrid cloud solution that manages hundreds of databases, using IBM's Cloud Pak technology on the Red Hat OpenShift platform. In addition to up to 70% in TCO savings and reducing the DevOps cycle by six weeks, it now has a flexible platform that can accommodate ongoing innovation.

Globally, as the need to protect the health and safety of populations, drive lower costs and improve the quality of care has been exacerbated by the current crisis, the public is starting to see government agencies, healthcare providers, payers and policy makers responding more quickly. The pandemic is forcing the opening up of new delivery models, services and opportunities for optimizing workflow execution and reducing waste. Secure portability of data enables new ways of doing things to support workflow transformation and remote services. Core service providers and their social services counterparts are working hard to reduce gaps in care and disparities across populations, as it has now become an economic imperative for governments and key to long-term sustainability.

“At IBM, we believe this moment constitutes a moment for change; an opportunity to not just rebuild, but to build back smarter, making our world more resilient, more equitable and more sustainable.”

—**Jim Whitehurst**, IBM

Diverse public-sector institutions share a common mission: they aim to deliver core fundamental services to society. Recent events have shown that many organizations have had the courage to take steps towards application modernization and new technology adoption. They have reprioritized efforts to accelerate digital transformation. And in many cases, these institutions have worked with IBM to get there.

Addressing current and future challenges requires the flexibility of hybrid cloud and the agility of new intelligent workflows—all supported with cognitive intelligence and analytics. IBM can help public sector professionals leverage the unprecedented amounts of data to create more personalized services for their citizens.

Successful leaders are using the hard lessons learned to build a foundation for even stronger and more resilient government agencies and healthcare institutions, ones ready to meet future challenges. Leadership is defined by the courage to take a bold first step in creating a smarter, healthier and more resilient society.

IBM Garage for the Public Sector: A virtual garage framing session with IBM that delivers a personalized way for organizations to kick-start their digital transformations.