Red Hat and Atos Partner to Help European Governments Embrace Digital Transformation

IN THIS PARTNER SPOTLIGHT

This IDC Partner Spotlight analyzes the latest trends in government digital transformation (DX) and advises government executives on the key issues, which IDC has broken down into five main "dimensions," to consider when starting or progressing along the digital transformation journey. It discusses how European governments leveraged the Red Hat Atos partnership to start the journey toward digital transformation and the technology and organizational change lessons they learned along the way.

GOVERNMENT DX: THE NEW ERA OF CITIZEN EXPERIENCE

In a few decades, government information technologies have transitioned across three service delivery platforms:

- From the 1st platform – mainframes supporting the government back office to keep records of purchases, tax collection, and welfare payments.

- To the 2nd platform – front office where contact centers and web portals started to provide eservices to constituents and client-server applications enabled civil servants to automate middle-office processes, such as approving a building permit or determining eligibility to a grant program.

- To the 3rd Platform – technologies including mobile computing, social media, cloud computing, and Big Data and analytics are digitally transforming nearly every aspect of the lives of citizens (taxpayers, voters, patients, students, businesses, tourists, and communities); government employees (civil servants, military personnel, first responders, clinicians, teachers); and government partners (other governments, private companies, and non-profit organizations supplying products and services to the public sector). The next round of technology breakthroughs, entailing robotics, natural interfaces, 3D printing, the Internet of Things (IoT), cognitive systems, and next-generation security, will further accelerate digital transformation.

Elected officials and mission executives face the challenge of moving their governments to this next level of digital transformation. They will have to employ 3rd Platform technologies coupled with organizational, operational, and business model innovation to create new ways to improve the citizen experience while increasing operational efficiency and complying with regulations.

Digital transformation is also profoundly changing the role of IT. Government IT executives that want to embrace digital transformation must adopt innovative ways to procure, deploy, and consume IT in order to combine performance, efficiency, reliability, agility, and security. Government IT executives that fail to understand the new role of IT will enter a vicious cycle of cost cutting, reduced quality of service, and bigger security threats.

The Drivers of Digital Transformation

3rd Platform technologies enable government IT executives to experiment with new service delivery models as they respond to the consumerization of access to data and services, the decentralization of decision making, greater process collaboration across boundaries, and more agile provisioning of IT capabilities.

But more than that, 3rd Platform technologies are unleashing the latent demand that is coming from political, economic, and social transitions.

- **Mounting demand from citizens.** Government officials are confronted with citizens that are demanding a more transparent, participatory, and responsive government that provides seamless digital service experiences similar to the ones they expect from commercial providers. Governments that do not work proactively to respond to citizen demands risk being confronted by disenfranchised constituencies.

- **Social and demographic changes.** The steep rise in chronic disease rates, due largely to a surge in lifestyle health risk factors, including poor diet and a lack of physical activity, is changing the demands on healthcare services. In Europe, these health problems are exacerbated by the aging population. Disadvantaged communities in some areas tend to live in a vicious cycle of exclusion from work, dependence on multiple, uncoordinated welfare programs, worsening health and mental health conditions, and sometimes involvement in criminal activities. This vicious cycle requires additional efforts from government entities, so that disadvantaged groups absorb a large share of public resources if targeted preventive efforts are not applied.

- **Public budget constraints.** Although the austerity pressure that followed the financial crisis has eased somewhat, governments are still under pressure to increase productivity and cut waste. This, for example, means that governments cannot simply rip and replace their legacy systems and processes – they need to transform incrementally by proving the value of new technology for specific use cases and then scale quickly.

- **Digital transformation is altering business and society.** Every business of every size risks fundamental disruption because of new technologies, new players, new ecosystems, and new ways of doing business. Most businesses are beginning to invest in digital transformation. In this context, the rise of the data and platform economies are changing sourcing models and service delivery value chains for governments. The intrinsic economic basis of the physical marketplace is scarcity. However, in the digital world – where "scarcity" is being replaced by "abundance" – IDC reports that less than 10% of data is effectively used. The more often a digital asset is "used" to transform data into information, knowledge, and insights to improve user experience, influence decisions, and set directions, the more valuable it becomes.

- **The rise of computer-based intelligence.** Cognitive advances – combined with robotics, IoT, artificial intelligence (AI), augmented reality/virtual reality (AR/VR), machine intelligence, and massive data sets – increase the ability of systems to mimic and enhance human intelligence in real time. This is creating entirely new product categories and industries. AI is also driving a change in the role of the knowledge worker. Clerical work will increasingly be focused on the ability to apply expertise to complex situations and make it relevant to individuals. Technology will become a cognitive companion, rather than a tool to simply automate repetitive tasks. But it will also increase the levels of extreme automation, thus displacing workers, such as government contact center staff.

- **The talent crunch.** As the market shifts and rapidly changing technologies transform businesses and public sector institutions, those that don't have up-to-date, evolving skillsets will fall behind. People with both business and IT skills are currently in high demand – especially leadership, analytics, coding, and managing projects to scale.

- **New security and privacy fault lines.** Cyberthreats pose increasing economic, social, and global political volatility risks. The Internet of Things, mobile devices, cloud computing, cognitive, and robotics are bringing new opportunities, but also expanding the perimeter of cyber and physical vulnerability. The availability of personal wearable, mobile, and connected devices in cars, homes, cities, and on people, all linked to cloud-based telemetry and data, is affecting every aspect of our personal, civic, and professional lives. That is changing the boundaries of privacy. The new European General Data Protection Regulation and the Network and Information System Directive strive to strike a new balance between data protection and business innovation achievable through collaboration across government departments.

RED HAT, ATOS PARTNER TO HELP GOVERNMENT EXECUTIVES EMBRACE DX

Red Hat is a global open source software provider with €1.8 billion in revenues. Red Hat's community-powered approach develops operating system, middleware, virtualization, storage, and cloud solutions for IT executives that want to improve the reliability, performance, agility, and cost-effectiveness of their architectures. The government sector accounts for the largest group of Red Hat users.

Atos is a provider of digital services with pro forma annual revenue of around €12 billion and 100,000 employees in 72 countries. Serving a global client base, the group provides consulting and systems integration services, managed services and business process outsourcing (BPO), cloud operations, Big Data and cybersecurity solutions, as well as transactional services through Worldline, a European provider to the payments and transactional services industry. With its deep technology expertise and industry knowledge, the group works with clients across a range of sectors, including defense, financial services, health, manufacturing, media, utilities, the public sector, retail, telecommunications, and transportation.

Atos has deep government industry expertise, gained through decades of engagement with central and local governments globally, making the associated business activities the second largest among the markets addressed by the group.

Red Hat and Atos have collaborated for many years to offer joint solutions to governments in the U.K., France, Germany, and many other European countries. In 2015, Red Hat and Atos strengthened their partnership by signing a memorandum of understanding to create innovative solutions to drive the digital transformation agenda in government.

In particular, the partnership aims to support central and local governments that are increasingly adopting open source technologies to free up resources for digital transformation. Red Hat and Atos are making joint investments in solution packaging, training, certifications, and implementation best practice enablement to offer government IT executives the ability to flexibly and cost effectively leverage 3rd Platform solutions such as software-defined datacenters and cloud computing for:

- Business reinvention: application modernization, service integration, and business process automation
- Citizen experience: simple access to information and business analytics
- Operational excellence: reference architectures and DevOps best practices

IDC looked at several European governments that have worked with Atos to implement Red Hat technology to enable digital transformation and found some common benefits such as:

- Software license cost savings and easier contract compliance compared with legacy proprietary software solutions

- Reduced maintenance, upgrade, and migration costs thanks to lower dependence on proprietary software
- Greater ability to quickly roll out new business capabilities by leveraging 3rd Platform technologies for online and mobile services for citizens and civil servants due to reduced complexity of application architectures
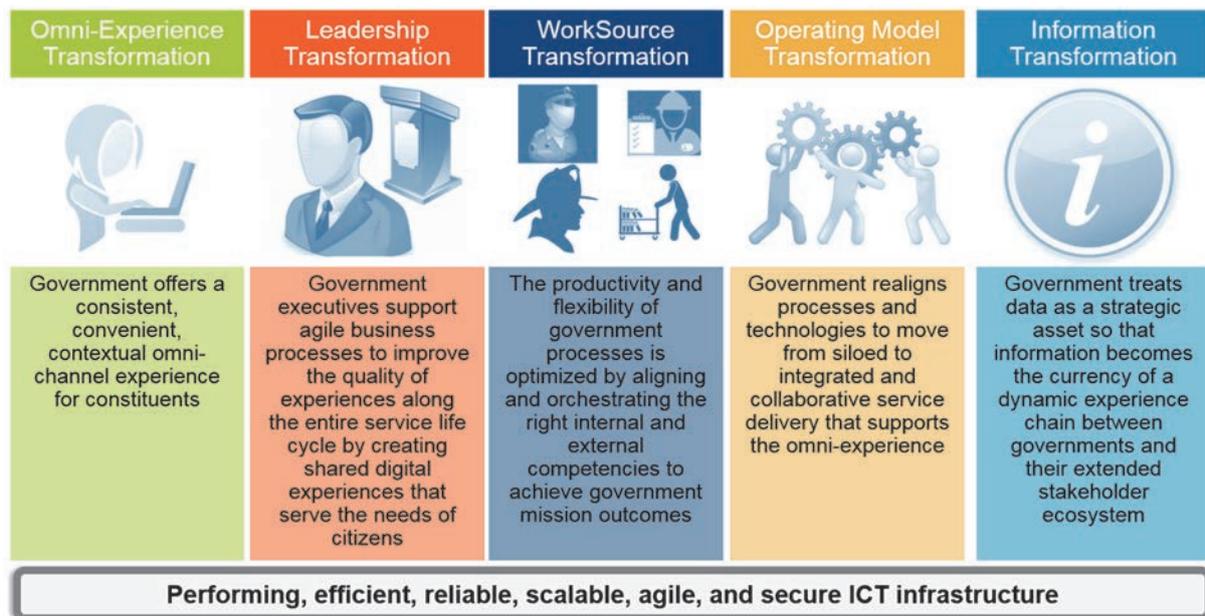
THE FIVE DIMENSIONS OF GOVERNMENT DIGITAL TRANSFORMATION

Digital transformation is not a simple piece of technology that governments can implement to solve all of their challenges. It is not a silver bullet. DX is an approach that government executives will have to embrace to drive business model innovation by leveraging digital competencies across their ecosystems.

They will have to progress along five dimensions: omni-experience DX, leadership DX, worksource DX, operating model DX, and information DX.

FIGURE 1

The Five Dimensions of Government Digital Transformation

Omni-Experience Transformation	Leadership Transformation	WorkSource Transformation	Operating Model Transformation	Information Transformation
Government offers a consistent, convenient, contextual omni-channel experience for constituents	Government executives support agile business processes to improve the quality of experiences along the entire service life cycle by creating shared digital experiences that serve the needs of citizens	The productivity and flexibility of government processes is optimized by aligning and orchestrating the right internal and external competencies to achieve government mission outcomes	Government realigns processes and technologies to move from siloed to integrated and collaborative service delivery that supports the omni-experience	Government treats data as a strategic asset so that information becomes the currency of a dynamic experience chain between governments and their extended stakeholder ecosystem

Performing, efficient, reliable, scalable, agile, and secure ICT infrastructure

Source: IDC Government Insights, 2015

Omni-Experience DX

Omni-experience includes the infinite combination of interactive touchpoints between digitally enabled governments and their citizens, partners, and employees to meet unique and individualized demand. Digital tools, such as social media, mobile and wearable devices, the Internet of things, chatbots, and artificial intelligence, drive expectations from citizens, partners, and employees that governments will enable them to seamlessly choose the most convenient channel depending on the type of service, personal circumstances, and stage of the service experience journey they are in (see Figure 2).

Increasingly it is not only the touchpoints with constituents, partners, and employees that determine the omni-experience, but also the interaction with the IoT, such as smart energy sensors, smart public lighting, intelligent transportation equipment, and so forth, and this is especially true in the case of smart cities.

An integrated approach is required to collaborate across government departments because constituents have multiple touchpoints and use of public services has a systemic effect on the budgets appropriated by departments and local governments. Anyone found guilty of antisocial behavior, for instance, will usually come into contact with criminal justice, probation, social, and education services. Public health authorities are finding that prevention campaigns need to be defined in conjunction with hospitals, primary care, and community and social services to tailor the end-to-end prevention-care-disease management life-cycle for a wide range of patients, particularly those affected by chronic diseases.

Collaboration across departments can also help governments reduce fraud, waste, and abuse, for instance by quickly identifying those citizens that are not entitled to receive welfare assistance under multiple programs.

FIGURE 2

Omni-Experience Is About the Channel That Constituents Find Convenient to Use
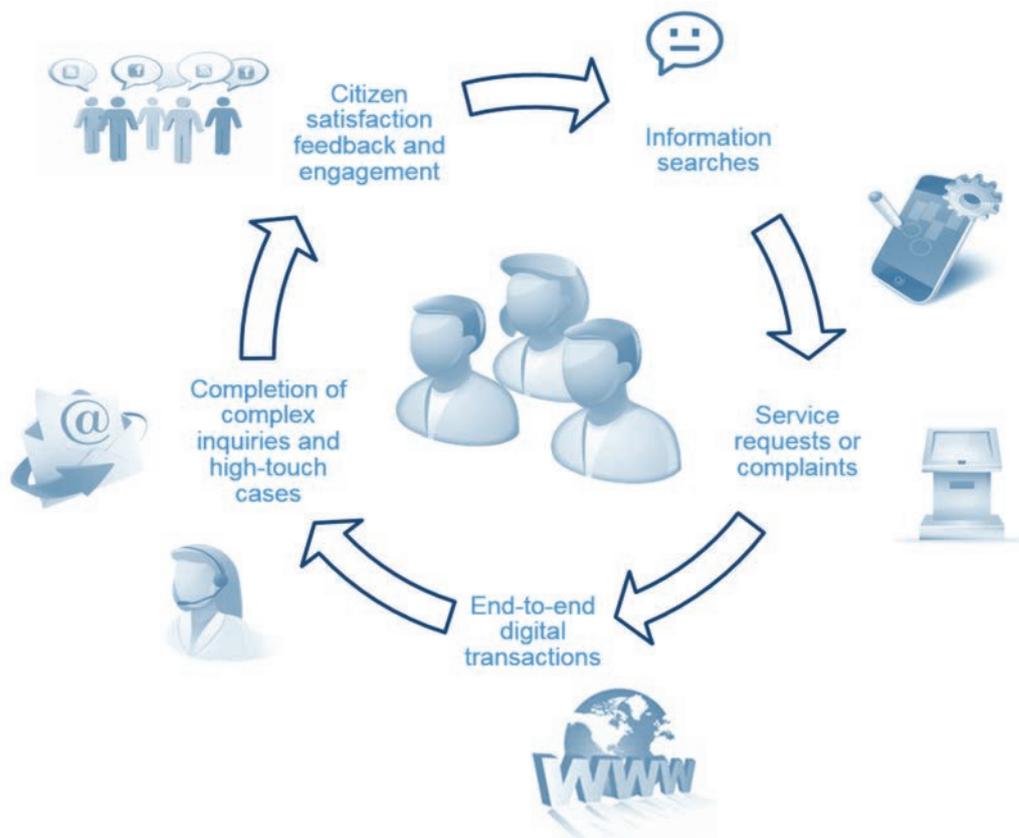
Source: IDC Government Insights, 2015

At the early stages of maturity of omni-experience transformation, government agencies manage citizen requests that flow in through multiple, independent channels. The limited sharing of information within and across programs is due to organizational history, legislative constraints, and siloed technology implementations. There are no communications with (or training for) government employees regarding the principles of providing a good citizen experience. At the most mature stages of transformation, qualified data about citizens and preferences is used and integrated within and across channels, enabling government programs to offer a consistent and contextual experience for the citizen. Citizen experience is a key component of the government program, and government employees are trained about and employ citizen experience principles.

Consistency and convenience across channels is combined with an increase in the number of people using digital services rather than paper-based services or having to visit government offices in person. According to an IDC survey of 278 government IT executives in Western Europe in September 2016, investments in mobile apps, citizen portals, and social media are important for both central and local governments (see Figure 3). And personalization of citizen services is the top priority use case for investments in Big Data and analytics.

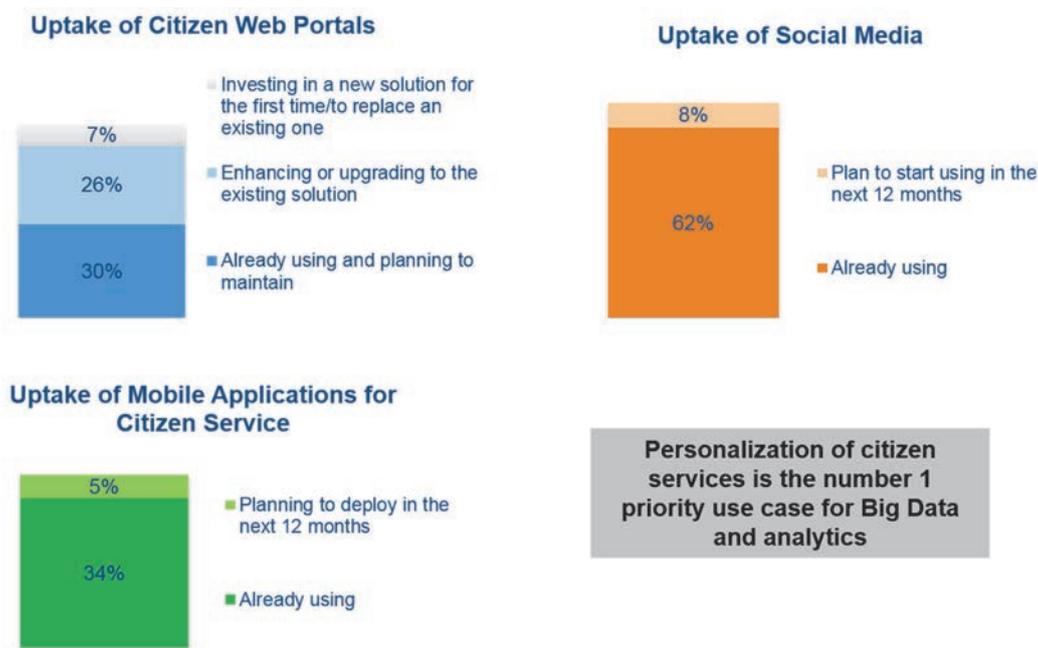## A Real-Life Example of Omni-Experience DX

The Copernic program was a major transformational program completed by the French tax administration (DGFiP) to improve the quality of service provided to French citizens, enhance data integration and quality between systems, increase the efficiency of tax collection (around €250 billion annually), and improve tax agent productivity.

A key component of Copernic was the modernization of the application architecture. Legacy application servers were replaced by Atos with Red Hat® JBoss® Enterprise Application Platform (JBoss EAP) to support around 1,000 application server nodes and 60 Java applications for about 60,000 users, with a mix of client-server and web applications. One of the most important benefits was the ability to scale web self-service to increase the convenience for citizens and reduce processing costs for the administration (in 2013, DGFiP received around 13 million online declarations).

"Red Hat JBoss Application Platform architecture enabled us to increase the agility and availability of support through a dedicated Atos service team, harmonize application servers for all Java applications, and reduce licensing costs and dependence on proprietary software," said Udo Sebald, head of enterprise process integration at Atos.

FIGURE 3

Western European Government Investment Plans in Digital Services

Uptake of Citizen Web Portals

- 7% — Investing in a new solution for the first time/to replace an existing one
- 26% — Enhancing or upgrading to the existing solution
- 30% — Already using and planning to maintain

Uptake of Social Media

- 8% — Plan to start using in the next 12 months
- 62% — Already using

Uptake of Mobile Applications for Citizen Service

- 5% — Planning to deploy in the next 12 months
- 34% — Already using

Personalization of citizen services is the number 1 priority use case for Big Data and analytics

Number of respondents = 278

Source: IDC Government Insights, 2017

Leadership DX

Government leaders that want to realize the benefits of an omni-channel citizen experience need a comprehensive approach to redefining the citizen journey. To do this, they will need to reconcile several conflicting but inextricably linked views:

- The government mission executive view that aims to leverage IT to reduce expenditure through self-service and improve public perception. Self-service, however, sometimes overlooks the end-to-end service life cycle and interdependencies with other missions and drives standardization too far for types of services that benefit from personalization.

- The technologist view that aims to web-enable, mobile-enable, cloud-enable, and social-enable transactions. Such a tool-centric view, however, can lock the enterprise architecture into a rigid solution, build "taller" silos, and marginalize non-IT-literate users.

- The service manager view that aims to minimize the number of unnecessary interactions with citizens and prevent complaints and rework. An agent view, however, can drive standardization too far for those types of service that benefit from personalization, as well as underestimating the cost and complexity of IT solutions, and undervaluing the role of partners enabling digital services.

- The citizen view that would like governments to know their needs beforehand, use the most convenient channels, and have the service available now. This may overlook cost concerns, fail to consider organizational boundaries, underestimate regulatory compliance and security risks, and fail to take into account the cost and complexity of IT.

Building an organizational culture that integrates these points of view is a challenge for governments that have been historically risk averse, bound to regulatory compliance, and

constrained by organizational and technology silos. Government leaders must establish new models of governance that combine bureaucratic structures to maximize operational efficiency, with networks and teams to experiment with bottom-up and middle-out innovation. They should reward employees and managers that align with citizen experience improvement outcomes, share knowledge and learn across teams, avoid stigmatizing mistakes and fixating on process compliance, and favor independent and data-driven decision making, all supported by real-time analytics at every touchpoint of the constituent journey.

Digital transformation makes available agile and affordable architectural building blocks, such as software development kits (SDKs), application programming interfaces (APIs), mobile apps, web widgets, and containers. Combining these tools in a platform-based approach to enable use of data and microservices across multiple channels to enable omni-channel experience requires the right IT governance and management. This transformation in IT management practices is what IDC calls "leading in 3D" or "L3D." This leadership model identifies three main dimensions or phases in the pursuit of digital transformation. The first phase – innovate – pertains to developing the corporate elements of innovation. The second phase – integrate – is about infusing innovation elements across the organization. Finally, the third phase – incorporate – depicts how infrastructure, services, user experience, and data can be applied to sustain this transformation.

A Real-Life Example of Leadership DX

A Dutch central government department needed to align with the governmentwide mandate to reduce IT costs through governmentwide datacenter consolidation and with the government digital strategy (i-strategy) program to build a government cloud where some departments would provide the infrastructure service layer and other agencies could provide reusable software components. The department decided to develop a platform as a service (PaaS) to offer a catalog of services to other ministries, including 3rd Platform technologies, such as PostgreSQL and Elasticsearch.

To build the PaaS, the ministry adopted agile development methodologies by engaging an Atos team of 10 DevOps professionals, which helped the ministry implement three-week development sprints. The department took a pioneering role and was the first to develop platforms that can be reused and adapted to future needs. This forward-looking approach followed the general aim of the government cloud computing strategy to develop a flexible platform that can be used across government departments (with vision and future-proof execution alignment).

"We are building a standard platform that will help speed up rollouts by reducing the complexity of the architecture," said Jeroen Heikens, practice manager DevOps at Atos. "The Red Hat open source JBoss product provides us with a cost-effective solution for the underlying application server."

Worksource DX

Worksource transformation is about orchestrating talent across internal and external sources, and leveraging digital interactions and collaboration, connections, relationships, and tools, including machine intelligence, cloud, and social media, to do so. Governments are changing the way they achieve business objectives by effective sourcing, deployment, and integration of internal (full-time and part-time employees) and external (contract, freelance, commercial, and non-profit partner)

resources. Worksource transformation optimizes the productivity and flexibility of the internal and external contributors, identifies the right resources to achieve government mission outcomes, drives outcomes by creating a modular and agile structure, facilitates relationships, and maximizes the productivity of interactions with citizens and across the ecosystem.

Worksource should go beyond the partisan views of governments that have either outsourced too many IT and business processes, while losing the ability to affect mission strategy and innovation, or have internalized everything to maintain political control of every decision. It also goes beyond pure short-term fiscal austerity measures that in recent years aimed to cut the number of civil servants and contractors to the minimum but ended up generating major knowledge gaps, forcing departments and agencies to rehire some of those employees and former contractors as consultants.

The U.K. government is now leading the way in Europe when it comes to orchestrating resources and competencies across boundaries. For instance, in the IT space, as more contracts, processes, applications, infrastructures, and operations are broken down to be purchased as a service, the need for better orchestration across multiple providers increases. In fact, the UK Government Transformation Strategy 2020 aims to "build better *workplace* tools and processes to make it easier for public servants to work effectively, including sourcing, governance, workplace IT, businesses cases, human resources processes, common technology across the public sector and better digital tools for civil servants." Other European countries are taking note of the lessons from the U.K.

A Real-Life Example of Worksource DX

A German regional tax authority needed to seamlessly migrate from a legacy application server and the JBoss Community Version to Red Hat JBoss solutions to cut licensing costs, reduce the complexities of commercial license compliance, and move to an integrated platform that enables it to align with a national initiative to harmonize tax management systems.

The collaborative model established between the internal IT department and Atos smoothened the transition. The tax authority IT leadership owned the knowledge of the existing applications and the business users, while the Atos team contributed the expertise to set up a centralized service desk, supported training for developers and administrators, applied best practices to assess the legacy environment, optimized the build process toward continuous integration, identified target configuration, and carried out the actual migration.

The strong relationship between Atos and Red Hat enabled Atos to act as a single point of contact and expertise to harness the benefits of the Red Hat solution, which was particularly helpful at the early stages of the project to help the customer gain knowledge about the product.

Operating Model DX

Operating model DX defines "how" work gets accomplished in terms of digital transformation. It describes the ability to make operations more responsive and effective by leveraging digitally connected services, assets, people, and partners. Maturity in operating model DX enables governments to spend more of their time and energy focused on tailoring services by integrating the digital connections to citizens and partners with the internal digital processes and projects.

Governments that embrace digital transformation need to realign processes and technologies to move from siloed to integrated service delivery that supports the omni-experience. So, for instance, a small business that owes VAT but has a corporate income tax credit should be able to offset the two rather than dealing twice with different units of the tax agency.

Integrated and collaborative operating models can take the form of vertical convergence along the service life cycle, from back-office resource management, to citizen relationship, and horizontal collaboration across organizational boundaries. Horizontal collaboration can improve the efficiency of back-office shared services, such as those provided by Consip in Italy in public procurement, and can rationalize front-office citizen portals, such as the mon.Service-Public.fr citizen portal in France. It can also entail a more profound transformation of organizational and financial models, such as the Whole Place Community Budgets program in the U.K., aimed at redesigning an affordable local public sector and rewiring public services around people and communities rather than bureaucratic functions.

Bigger transformation projects like this will encounter the greatest technical, organizational, and regulatory challenges. The U.K. National Audit Office's (NAO) assessment of the Whole Place Community Budget program concluded that by operating in a more integrated way, government could reduce inefficiencies in public services and deliver better service to citizens by focusing on outcomes; benefits are sometimes hard to achieve, however, because implementation challenges have been underestimated and there is a lack of incentives for bodies to work together. In many European countries, collaboration is being extended beyond government boundaries, as often the most convenient and trusted touchpoints for citizens can be commercial or non-profit organizations. The Italian government inaugurated the concept a few years ago with the launch of the "Reti Amiche" program that allowed citizens to ask for information and apply, obtain, and pay for government services through post offices, banks, and other commercial businesses. The U.K. government is trying to take the concept to a new level with the government-as-a-platform approach, by ensuring that every new digital service is available via an open application programming interface as well as web browser to encourage private sector innovation.

> **A Real-Life Example of Operating Model DX**
>
> Over 30 Dutch municipalities delivering services to 1.3 million citizens joined forces to develop and deploy an omni-channel service platform. Operated as a shared service, Dimpact leverages the Atos eSuite platform based on Red Hat open source JBoss server and including a constituent portal with personal citizen account; access via web, call center, counter, email, mail, and mobile; a searchable service catalog that makes navigation easier for constituents and civil servants; intelligent eforms; case management; an employee portal; contact center; and data management and distribution, including geographical information.
>
> "The municipalities are benefiting from reduced cost of IT infrastructure and eservices applications due to the shared environment and the agility to respond to increasingly pressing requests to streamline citizen services, as each municipality retains the ability to configure the look and feel of online service and workflows," said Niels De Schutter, global head of public and health solutions at Atos.

Information DX

Transformed governments treat data and information as a valuable asset so that information becomes the currency of a dynamic experience chain between governments and their extended stakeholder ecosystem. Governments that want to realize the benefits of digital transformation should review five key elements of their information management framework (see Figure 4): strategic intent, process and governance, people, data, and technology.

FIGURE 4

IDC Information Management Framework for Governments
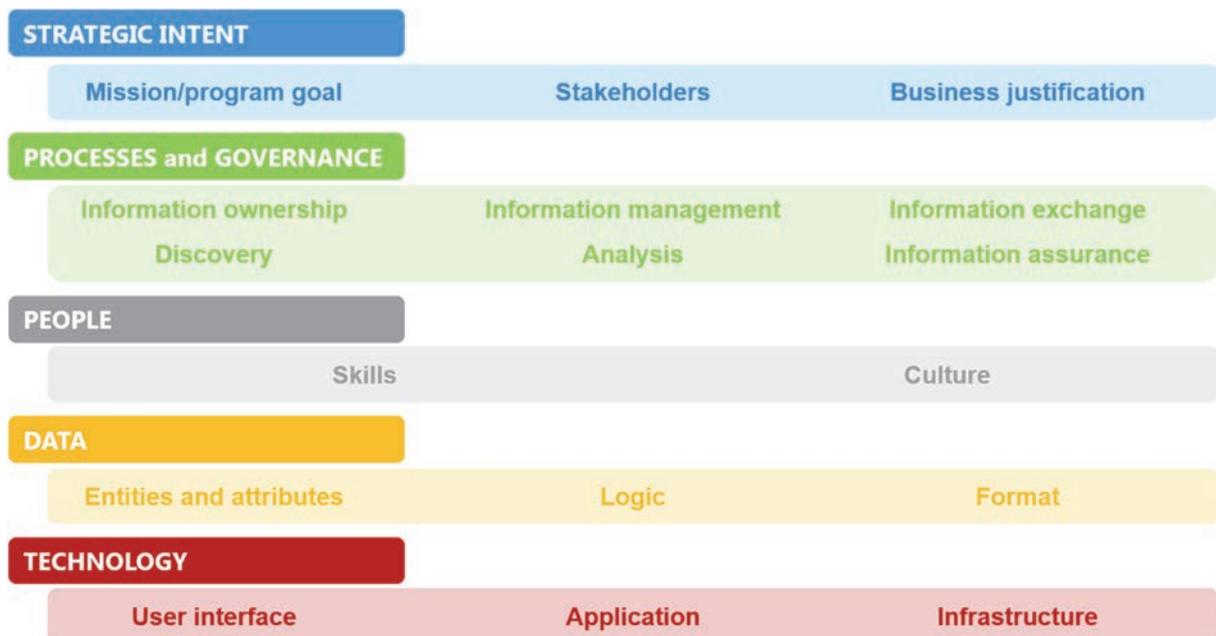
Source: IDC Government Insights, 2015

Strategic Intent

Governments should focus on using information to optimize services by more closely analyzing the input-output-outcome relationships, enabling every stakeholder to make better decisions to proactively orchestrate omni-channel citizen interactions, prevent risks, reduce fraud, and react in real time to events. Governments should also look at monetizing data through open data initiatives. Despite investments in open data across Western Europe, however, with only 36% of 278 government IT executives that responded to an IDC survey in 2016 having invested in open data and with no plans to do so, commercialization of government data is moving slowly. A more targeted approach to identifying valuable data, enhancing its quality, reducing legal constraints, and defining a sustainable financial model must be taken.

Process and Governance

Digital transformation requires data sourcing, sharing, and usage processes to occur seamlessly across the entire ecosystem of stakeholders to bring new insights to light, make those insights available at the point of decision, and embed them into machine-learning algorithms. All decision makers must be aware of the importance of data as a strategic asset at the point of collection, sharing, and, most importantly, use. Information assurance should safeguard data integrity, availability, authenticity, non-repudiation, and confidentiality at the time of collection, data exploration, visualization, and analysis.

People

Collecting, storing, protecting, retrieving, and, increasingly, analyzing data can be automated at an affordable cost, so the ability to make decisions based on solid insights becomes the most important skill. To deploy a new information management style and culture of trusted collaboration, governments are creating new roles, such as chief digital officers, that can act as stewards of key data assets and related competences.

Data

Government digital transformation is characterized by data entities and attributes that are the representations of experience maps and systemic models, and that leverage an extended range of formats, such as video, audio, images, and locations. It is important to note that any data concept can be both an entity and an attribute, so for instance by analyzing the work orders (entity) for highway maintenance to measure the performance of repair crews, a public works officer might uncover certain locations or dates (attributes of the work order) when maintenance requests come in more frequently from citizens. By turning things around and analyzing the location and dates as the main data entities, the officer can deploy crews for preventive maintenance.

Technology

N-tiered event-driven architectures that leverage the power of hybrid cloud for data management will be necessary to decouple data from application logic, to scale Big Data and analytics to automate decision management, and to deliver information and insights on any device, including mobile and wearables, at the right time and location (context) for analysis and decision making.

The U.K. Skills Funding Agency (SFA) is an executive agency that funds skills training for further education in England. The SFA is responsible for giving colleges, training organizations, and employers the right funding to help adults, young people, the unemployed, and people with low skill levels to get the skills they need for employment. The SFA is helping the National Careers Service (NCS) to synchronize data across 12 partner organizations by deploying a new Customer Data Service (CDS). CDS acts as a hub that centrally stores and shares customer, reference, and operational data between the SFA, partners, and stakeholders, and makes relevant management information available when and where it is required. The SFA plans to use CDS to perform quality checks to support and ratify payment to the partner organizations which in turn retain ownership of the information to maintain the quality of information in real time.

The SFA contracted Atos to deliver the CDS under the Atos G-Cloud IV Services Framework. The Red Hat-based Atos solution is hosted in the Atos Canopy G-Cloud infrastructure in the U.K.

"Red Hat open source JBoss® Fuse Enterprise Service Bus [ESB] provided the agility we needed to build a platform that can route and synchronize data changes by orchestrating services exposed by the partner organizations, all at affordable costs," said Andres Alosact, architect domain lead at Atos U.K.

IT Operational Excellence: The Groundwork for Digital Transformation

The move from 1st Platform to 2nd Platform and now 3rd Platform technologies is not a painless rip-and-replace evolution. Generations of tools have created layered architectures that make digital transformation difficult to achieve, unless a more agile approach to innovation is applied. Government IT executives that want to innovate must streamline IT service delivery processes, rationalize data repositories and harmonize data quality and models, develop APIs to open up platforms for collaboration, and move to software-defined infrastructures that can help securely leverage the benefits of hybrid cloud environments. These modernization initiatives will enable government executives to evolve the application, information, and infrastructure layers of their enterprise architectures along a roadmap that improves operational excellence in terms of:

- **Performance.** The growing dependence on technology for the delivery of digital services drives demand for real-time processing, for instance when someone fills in an "intelligent eform" that automatically indicates within seconds which fields must be completed.

- **Efficiency.** The need to contain IT costs drives the adoption of standard, componentized architectures that are more cost effective to configure, deploy, maintain, and migrate.

- **Reliability.** Many critical government services – such as defense, intelligence, and first responders – need to operate 24 x 7. With the increasing digitization of services, non-critical services also need to ensure continuity of access outside traditional office hours.

- **Scalability.** Take-up of digital services among citizens, demand from government employees to access services remotely, and demand to share data across departments are putting more pressure on government IT to support a wider and more varied number of users on many workloads.

- **Agility.** The ability to continuously adjust processes and information in the face of political, economic, social, technical, environmental, and legal uncertainty is one of the most pressing demands on today's IT systems. Architectures must reduce the need for point-to-

point application integration, and open up data and services to be shared across organizational boundaries. IDC research indicates that increased investments are being made in the adoption of public and private PaaS, model-driven application platforms to support IoT initiatives, and in support of consumerization tiers on top of application platforms that will help end users build their own applications.

- **Security.** The deployment of 3rd Platform technologies makes government IT more agile, scalable, reliable, and efficient, but also expands the perimeter of vulnerability risks. So, security must be a business priority embedded into every IT management process from software design to the configuration of datacenters.

ESSENTIAL GUIDANCE: A CALL FOR ACTION FOR INNOVATIVE IT EXECUTIVES

CIOs that want to be key influencers in the digital transformation journey should take the following recommendations into account:

What to do in the first three to six months:

- Assess which citizen services the department or agency is offering and map direct and indirect touchpoints. Assess the level of capability for each of the leadership, worksource, operating model, and information dimensions of digital transformation and their alignment with omni-channel citizen experience goals. Start by identifying the right leaders to drive the transformation.
- Make an inventory of application and infrastructure layers in the department/agency IT architecture and look for opportunities to streamline integration points, consolidate duplicate capabilities, and incrementally harmonize them by creating standard components that are cost effective and quick to configure and deploy.

What to do in the next 6 to 12 months:

- Develop a plan to integrate organizational changes, funding, talent management, operations, and information management initiatives that can fill the gap in terms of maturity of the five key dimensions of digital transformation and their alignment. Start to implement those changes through rapid iterations, rather than wait to have a perfect and wholly agreed plan.
- Start to deploy the most reliable, open, scalable, and secure services as reusable components to fill the gaps and rapidly enable innovation, such as mobile services for citizens or APIs that can streamline information sharing across departments.

What to do in the next 12 to 24 months:

- Start to structurally integrate citizen data across agencies, where allowed by legislation, and embed omni-channel service experience in day-to-day culture through training, lines of accountability, and collaboration groups across agencies.
- Launch IT infrastructure modernization programs that include virtualization of the datacenter, rationalization of application and data platforms, and componentization of application services as a prerequisite to securely leveraging hybrid cloud environments.

About IDC

International Data Corporation (IDC) is the premier global provider of market intelligence, advisory services, and events for the information technology, telecommunications and consumer technology markets. IDC helps IT professionals, business executives, and the investment community make fact-based decisions on technology purchases and business strategy. More than 1,100 IDC analysts provide global, regional, and local expertise on technology and industry opportunities and trends in over 110 countries worldwide. For 50 years, IDC has provided strategic insights to help our clients achieve their key business objectives. IDC is a subsidiary of IDG, the world's leading technology media, research, and events company.

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