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EBOOK

Digital Transformation for the Public Sector

Three Essentials for Delivering Better Service to Citizens

Introduction

Many organizations are investing in digital transformation. They want the kind of business-changing advantages that industry leaders (such as Ford Motor Company) and sharing economy companies (such as Uber) have achieved by leveraging back-end data to create compelling consumer-facing digital experiences. But some are paying a high price for transformation efforts that may not be paying off.

Across all sectors, the biggest payoff will come from transforming high-touch human interactions with new, digital experiences that are aligned to customer needs and expectations. When implemented with a customer-first mindset, digital transformation initiatives promise better service and convenience by using all of the data at your disposal efficiently—from your back-end systems to cloud, mobile, analytics, and social media sources.

A common feature of these newer experiences is that they operate at high speed and high scale, managed by teams with the ability to iterate, improve, and deploy quickly. This can present challenges for public sector organizations, which often rely on applications and systems that pre-date the Internet. In many cases, these systems are managed by IT staff who lack the skills or expertise necessary to develop the digital experiences their customers expect.

This ebook presents three essentials that can help public sector organizations overcome their digital transformation challenges. Combined, they provide a flexible, scalable approach to digital transformation that makes it possible to deliver new, competitive experiences that engage citizens and make their lives better, without requiring an IT overhaul.

Digital Transformation: Why Now?

Demographics are changing

- Baby boomers are putting more strain on government agencies and systems as they register for pensions, healthcare, and other benefits.

- Mobile phones are commonplace, but they're virtual lifelines for some citizens such as the homeless, veterans, and recent college graduates.

- Citizens want multiple touchpoints and expect unified, multi-channel experiences.

Digital transformation challenge

Completing a complex Social Security application may best be started online from a home computer and finished with assistance from a clerk on the telephone or online chat (or, eventually, a bot).

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Economics Have Changed

- Hardware costs have declined, while personnel costs have increased. Adding clerks to accommodate customer growth is no longer economically feasible. Employees are expensive, particularly if you need 24x7 coverage and make mistakes; bots and computers can be more cost-effective and offer consistent service at any time.

- Process automation and self-service are a must to accommodate growing (and demanding) citizen populations.

- Rewriting applications is expensive and risky, particularly for public sector applications that implement complex and frequently ambiguous legislation.
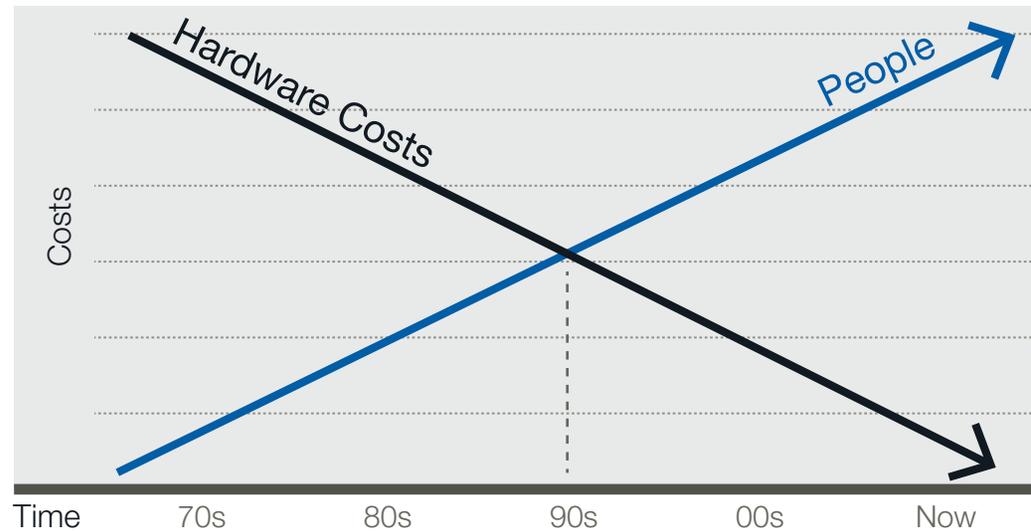
Hardware Versus Labor Costs

Figure 1: Hardware costs are declining as personnel costs increase

Digital transformation challenge

Citizens want to check on benefits using a mobile browser and execute multiple related transactions from a single portal.

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Today's IT Lacks Flexibility

- Back-end transactional systems, processes, and data are entwined with their host platforms and plodding development methodologies.

- Public sector applications are often static. Newer digital, customer-facing applications need to be dynamic, requiring faster development methods and timeframes.

- Engineers and administrators who support 20- to 30-year-old systems often lack the skills to create digital experiences from these platforms. With many of these programmers nearing retirement age, retraining may not make economic sense.

Digital transformation challenge

Typical public sector systems were funded and built to translate specific, complex legislation and related rules into software—making them virtually impossible to duplicate in a rewrite.

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A Scalable, Flexible Approach to Digital Transformation

A multi-speed IT architecture separates the environments for current, transactional back-end systems, and new interactive front-ends, optimizing each piece individually in the delivery of new customer experiences. Software bridges traditional lower-speed IT with new, high-speed IT so that the two coexist—without ripping, replacing, or recoding current IT infrastructure.

This common-sense solution solves three big problems:

- Your transactional systems are well known and well supported by current staff. They house complex, time-tested applications and data; leave them as is and in place.
- Web portals, mobile apps, and other interactive front-ends require new skills and faster development methods your team may not have experience with. By making your data and processes immediately usable by any application programmer, you can find and utilize front-end programmers with these skills to adapt these newer technologies to your systems.
- By giving interactive developers easy ways to access host-based systems, you eliminate the need for them to learn how to code for those systems. Instead, the two groups of programmers can each focus on what they do best.

> " A two-speed IT architecture will help companies develop their customer-facing capabilities at high speed while decoupling legacy systems for which release cycles of new functionality stay at a slower pace. "
>
> – McKinsey & Company

Three Essentials to Success

Three essentials—steps that can be taken at your own pace—provide a logical path to success.

- Take a "data first" approach, to unlock all data from current applications
- Create an "API Economy" model, to unlock process and business logic from applications
- Deploy real-time analytics broadly, by moving analytics to the data

Your lower-speed IT continues to operate as is, but feeds high-speed IT.

Lower-speed IT	⟫	High-speed IT
Static, transactional systems		Dynamic, reusable services
Internally-facing applications for workers		Multichannel/self-service applications for citizens
Siloed data sources		Fully accessible data sources
Bespoke, operational reporting		Real-time analytics, opportunistic reporting

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Essential #1: Take a "Data First" Approach

The fastest, easiest way to create new citizen experiences is by unlocking the data trapped in your transactional applications. Data virtualization makes your data immediately available to high-speed IT.

Using data virtualization leaves the original data in place, but makes it accessible in real time to other applications, using common interfaces such as SQL or RESTful services. Once data is uncoupled from and unfiltered by host applications, virtualized sources can be used, mixed, and matched at will to create new data sources and so on—all with no additional programming effort.

Once data is virtualized, it can be reused again and again with little management overhead (virtualize once, use many). Because the source data stays in place (on your transactional systems), you avoid the

time, cost, and error involved in moving data before users can access it.

Data virtualization breaks down data silos, turning them into fully-accessible data sources. It's both a logical first step and a sustainable, scalable best practice.

Essential1

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Essential #2: Create an "API Economy" Model for Applications

There's incredible economic value trapped in your host-based applications, just waiting to be extracted.

Instead of rewriting or reprogramming those applications, simply create reusable services from key application processes and business logic, and make them broadly accessible as RESTful services with open APIs. Downstream developers can use the services without having to know any of the underlying technical or platform details.

Creating services and APIs does take some work by people knowledgeable about the data and programming. However, it's much faster than traditional application development, and requires no rewriting or recoding of source applications.

Feed high-speed IT by publishing your APIs for internal or contract developers, or to the outside world to encourage even broader use.

Essential **2**

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Essential #3: Deploy Real-Time Analytics

Transactional systems weren't designed with analytics in mind; customer-facing applications in the digital world are. Fully-accessible data enables those analytics. You'll want to analyze data about what the customer is doing (new behaviors driving transactions) and what the customer did (analytics on interim results from transactional data)—often together, and in real time.

Host-based data virtualization brings the analytics to the data, eliminating the need for data warehousing and the associated analytics latency. You can do analytics "out of band" to:

- Fine-tune citizen experiences as they happen
- Locate additional opportunities for efficiency

- Identify and prioritize the need for new services and APIs
- Imagine entirely new applications from your data—and make them real

Self-service business intelligence (BI) tools enable real-time and ad hoc reporting on virtualized data sources. Beyond proactive and predictive market intelligence, you can get real-time operational intelligence—for example, intelligence that protects government data and business processes in a digital world.

Essential 3

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Simplify Digital Transformation

Rocket Digital Transformation is a software suite that gives organizations the power to transform applications and data from transactional IT systems into assets for new citizen-facing applications at scale—without replacing, rewriting, or recoding your current infrastructure. It includes the software you need for the three essentials.

Rocket Digital Transformation builds on:

- Rocket's leadership in optimizing and extending IT infrastructure by connecting it to newer applications— cloud, mobile, social media, analytics—without recoding.

- Our strong partnership with IBM. We have decades-long working relationships with IBM® z Systems®, IBM® Power®/IBM i®, and analytics groups (among others). We also partner with IBM at various levels to ensure their customers continue to be served.

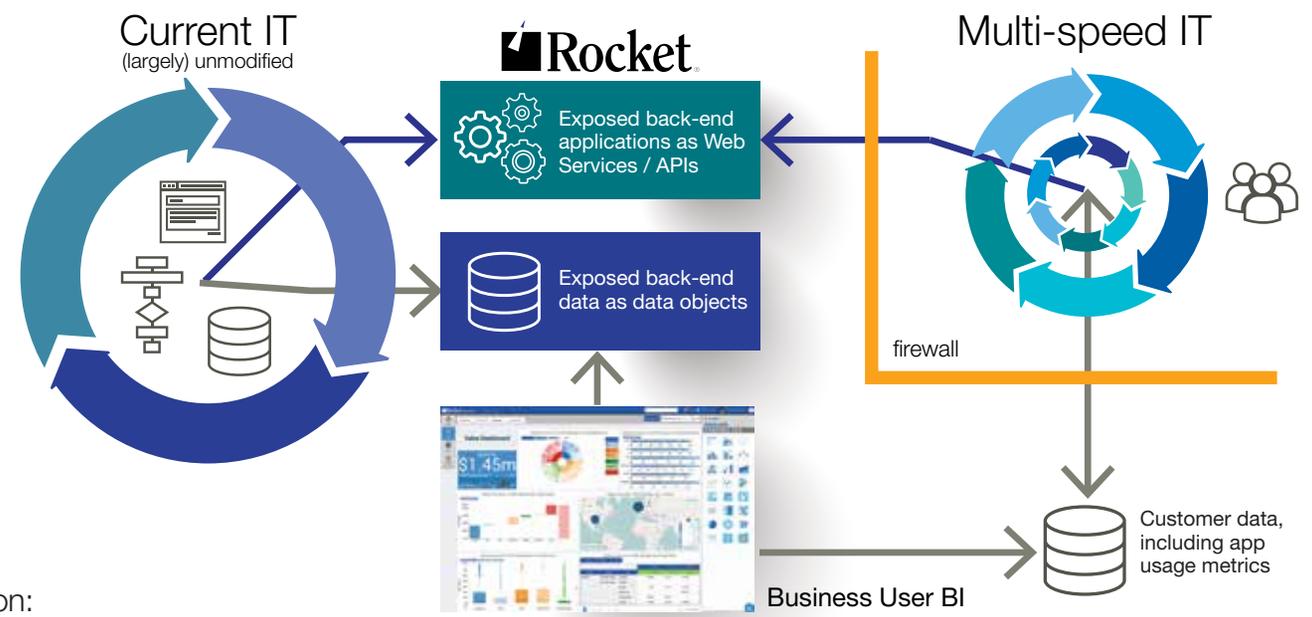- Our established customer relationships in the public sector.

Current IT (largely) unmodified

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Exposed back-end applications as Web Services / APIs

Exposed back-end data as data objects

Business User BI

Multi-speed IT

firewall

Customer data, including app usage metrics

Figure 2

The Rocket Digital Transformation Suite

Rocket LegaSuite
Rocket API
Rocket ALM
Rocket Open Source Languages and Tools

Reuse Application Logic by Publishing Services and APIs

Rocket® LegaSuite and **Rocket® API** make data, logic, and processes from transactional systems broadly usable—without rewriting them. The combination bridges the gap between older and younger programming cultures.

Rocket® LegaSuite modernizes green-screen applications found in many enterprise applications, adding HTML 5-based portability and functionality that goes far beyond the usual "screen scraping." Rocket API securely exposes in-place applications and programs as RESTful APIs via HTTP interfaces and JSON data interchange format, enabling easy integration with web or mobile applications. Customers worldwide are using Rocket LegaSuite and Rocket API to unlock data

and applications from IBM i and z Systems, MultiValue databases, and other host-based systems.

Business processes and functions from mainframe and midrange transactional systems are now consumable by modern programming models—without requiring developers to have specialized knowledge or programming skills. You can create an API catalog and automate the aggregation and orchestration of multiple services for use in new, downstream applications. Developers of citizen or customer-facing applications can manipulate the services using their favorite Open Source tools.

Rocket LegaSuite and Rocket API simplify data sharing for a national passport system that includes complex cross-agency and cross-border processes. Citizens have a more pleasing and responsive experience.

Scalable Real-time Analytics, Service Development, and Management

The Rocket® Open Source Languages and Tools Program makes it possible for anyone to program a mainframe using languages they already know. These free tools and languages allow developers throughout your organization to have full access to all enterprise systems and data—even if they're not experienced mainframers. One developer or team can do everything without consuming mainframe administrator resources. In effect, users can leverage R, PERL, Python, PHP and other languages that are in common use today; all they need is a user ID and password on the mainframe.

Rocket® Aldon Lifecycle Manager works with Rocket LegaSuite and Rocket API to facilitate more nimble IT. Rocket Application Lifecycle Management (ALM) tools manage changes to back-end transactional systems in conjunction with the published APIs, so that everything is kept in sync, even across complex environments. For example, Rocket Aldon Lifecycle Manager provides a single project view that spans the current (back-end data and processes) and the new (APIs).

Get Started Today

Digital transformation projects are most impactful when used to transform relationships with customers.

Rocket Digital Transformation speeds translation of your data, logic, and processes—your unique assets—into better, more convenient experiences for citizens. It exploits new, high-speed IT capabilities— cloud, mobile, real-time analytics, social media—by connecting them with your assets.

Rocket Digital Transformation makes your current IT staff and their unique expertise relevant and valuable in the new digital world—all without an overhaul of your current IT.

Trend / Issue	Needs	Solution
From transactional to 2-speed IT	DevOps for new digital delivery	Rocket ALM
		Rocket Open Source Languages / Tools
From clerks to self-service	API Economy	Rocket API
	Legacy Modernization	Rocket LegaSuite
	Service Aggregation	Rocket API
	Service Orchestration	Rocket LegaSuite
From unknown data sources to full transparency		IBM InfoSphere Information Governance Catalog
From manual auditing to threat-detection fraud		IBM Security Guardium

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Thousands of companies around the world depend on Rocket to solve their most challenging business problems by helping them run their critical infrastructure, business processes, and data, as well as extending the value of these assets to take advantage of cloud and mobile computing, advanced analytics, and other future innovations.

Founded in 1990, Rocket Software is headquartered in Waltham, MA, with 29 offices around the world.

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