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# Digital Government Is a Journey Toward Digital Business

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To navigate the multiple definitions of digital business and digital government, we provide a model that can be used to understand trends and clarify the peculiarities of digitalization across government domains.

**Gartner foundational research is reviewed periodically for accuracy. This document was last reviewed on 2 September 2015.**

## Key Findings

- Digital business is the creation of new business designs by blurring the boundaries between the digital and physical worlds due to the convergence of people, business and things.
- Digital government is government designed and operated to take advantage of digital data in optimizing, transforming and creating government services.
- Earlier e-government programs often did little more than digitize existing services and processes, without any radical transformation. The next phase will be the end-to-end digitalization of government processes and operations, leading to completely new service delivery and business models.
- Different government programs and services exhibit a different relative weight between people, processes and things in their journey to full digitalization. This balance will change over time as the impact of the Internet of Things increases.

## Recommendations

Government CIOs:

- Help executive leaders understand the potential for true digital business transformation, while realistically assessing the relative weight of people, business and things, and their optimal degree of interaction in service delivery transformation.

- Take an information-centric approach to transformation, focusing on how data coming from different sources can help optimize, transform or create new services.
- Apply open data principles to any data that may be used across traditional process or domain boundaries, while properly addressing privacy and accountability concerns.

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# Analysis

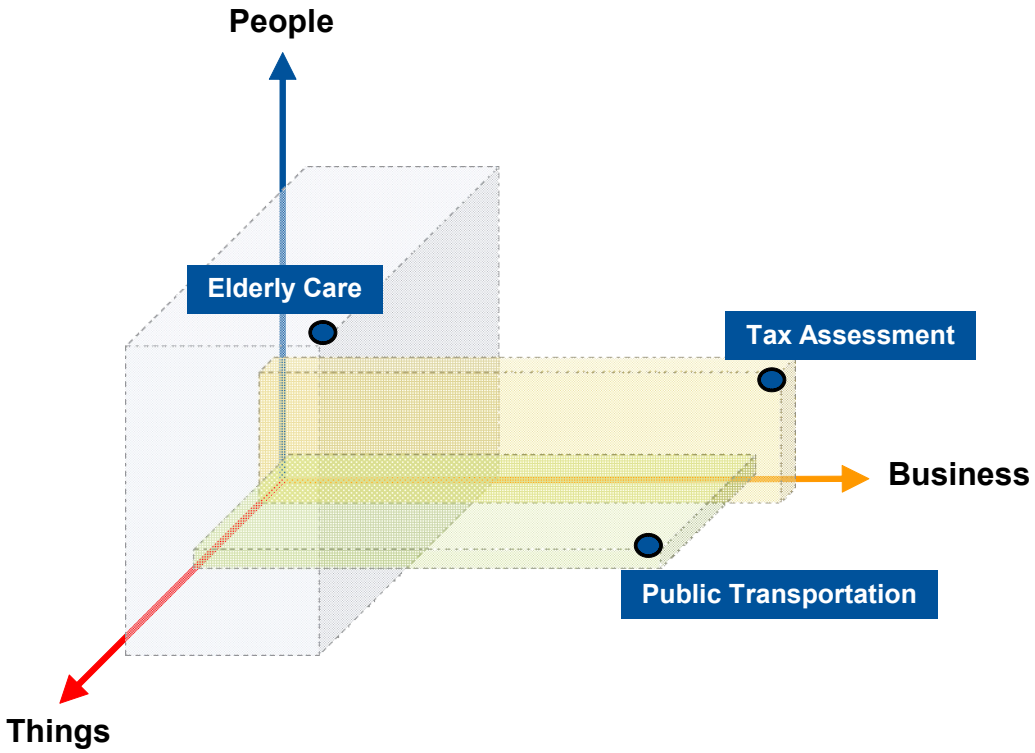
Gartner defines "digital business" as "the creation of new business designs by blurring the digital and physical worlds due to the convergence of people, business and things" (see "Agenda Overview for Digital Business, 2014"). This implies seamless and continuous interactions among business processes, the people who execute or are targeted by business processes, and the things that are used in and influence business processes. Needs are anticipated, probable outcomes are calculated, and data is crossing physical and virtual boundaries in real time.

In different industries, the balance in how digital and physical assets can participate in digital transformation varies considerably. In manufacturing or retail, connected machinery and smart goods can truly revolutionize the way enterprises manage costs, generate revenue in current business models, and reimagine completely new business models. In the financial services sector, the relevance of digitally connected physical assets is probably less than that of the fully digital assets that are already driving digital banking transformation.

More than any other industry, government is a combination of different domains, where the balance between people, business process and things varies enormously. In domains like defense, public safety and public healthcare, the ability to connect, control and gather data from a multitude of devices is of paramount importance in deeply transforming these sectors. In domains like tax and revenue or education, the first wave of digital transformation has already been characterized by the people component, as tax agents and teachers are empowered to make much better decision because unprecedented amounts and types of data are available every day.

Figure 1 illustrates at a very high level the difference in balance of the three components of digital business in different areas of government.

Figure 1. Relevance of Different Dimensions of Digital Business for Different Government Domains




Source: Gartner (April 2014)

Home healthcare for the elderly already has a heavy reliance on things and devices to remotely monitor the health and environment of the resident: Smart home appliances and connected medical devices are already being deployed to more effectively monitor people affected by chronic diseases and disabilities, such as Alzheimer's.

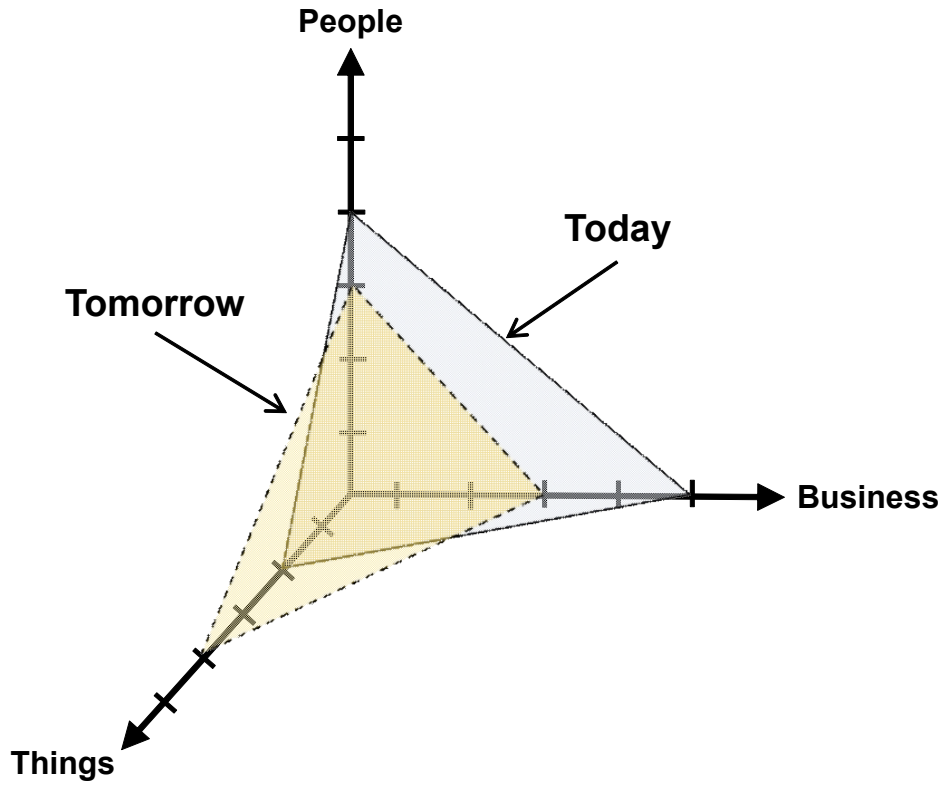
Tax assessment and filing today is a process-heavy activity, while its reliance on government employees has been progressively reduced with increasingly effective online services or the use of data for prefilling or even completing tax forms on behalf of the taxpayer.

In public transportation, the people component (such as drivers and maintenance staff) and the thing component (such as GPS-controlled vehicles, smart tires and RFID-based tickets) are predominant.

Such balance is expected to change over time, as more things become "smart" and interact with people and business.

Figure 2 plots the variables of people, things and processes on orthogonal axes to explore what happens in different environments.

Figure 2. The Evolving Balance of Digital Business Dimensions




Source: Gartner (April 2014)

In general, for any environment and knowledge base, there will be a "productivity plane" that defines the people, things and processes that best fit together to execute government services and operations.

The specific planes will differ for different environments. Business environments in general will differ from government environments, and government environments will differ from each other (as will internal services such as HR and finance, external regulations such as for public safety or environmental protection, and external services such as education and healthcare). Some environments will require relatively more people, some will require relatively more things, and some will require relatively more complex processes.

The planes are also likely to change their orientation over time.

Historically, greater knowledge has resulted in each individual person using more things as part of more complex processes. At the present time, our "things" are getting "smarter." Where the coordination of people and things within work processes is used to take separate and explicit steps by people to produce and manage the information required, many tools now collect and process their own digital information to control themselves and, beyond that, to communicate and coordinate with other elements of the digital ecosystem.

Therefore, in the future, the greater availability of data from objects will lead to a transformation of business processes that will in most cases lower the need for people's involvement. For example, in the case of elderly care, today's challenge is mostly to empower individuals and their caregivers to be more effective and efficient. However, the deployment of even more connected objects (such as GPS transmitters in shoes or motion sensors throughout the house) at an elderly person's home would create an opportunity to increase self-sufficiency, requiring fewer services from the relevant agency and less involvement from caregivers.

Beyond this, much greater data availability from people, processes and things will challenge the existing way of solving problems or delivering services, as well as creating an entirely new breed of opportunities. In the abovementioned example about elder care, data from objects that an elderly person interacts with, such as appliances, cutlery and furniture, will help build behavioral models that lead to better-targeted care or even preventative care.

The potential is quite extraordinary in all government domains — from objects storing and providing data about the supply chain that allows tax agents to determine possible cases of sales or value-added tax evasion, to smart objects carried by students that may help the educator better understand behavioral patterns and lead to more personalized teaching. Even domains that today appear less conducive to embracing true digital business transformation will ultimately be affected.

The common denominator that cuts across the boundaries between physical and digital worlds and makes their blurring possible is data. Although digital business encompasses digitized assets, reimagination of business models, API economies, consumerization, innovation and engagement initiatives, and many more components, the power of data is at its very core.

As a result, to be able to embrace the opportunities offered by the increasing relevance of the Internet of Things in all government domains, government CIOs and strategic planners should focus on data by pursuing a data-centric approach (see "Moving Toward Data-Centric Government"). This implies the need for developing an information architecture even before creating a service or business architecture, and to deal with every type of data as if it were open (as in being accessible through an open API, as opposed to the public).

Therefore, what many call "digital government" is nothing else than the journey that transforms governments into a digital business. Unfortunately, the term digital government is generally focused on the service delivery components or on the fact that digital is the primary or only delivery channel. However, digital government is both about the full-scale digitalization of business operations and the use of digital data that is generated by those operations to continuously improve government performance:

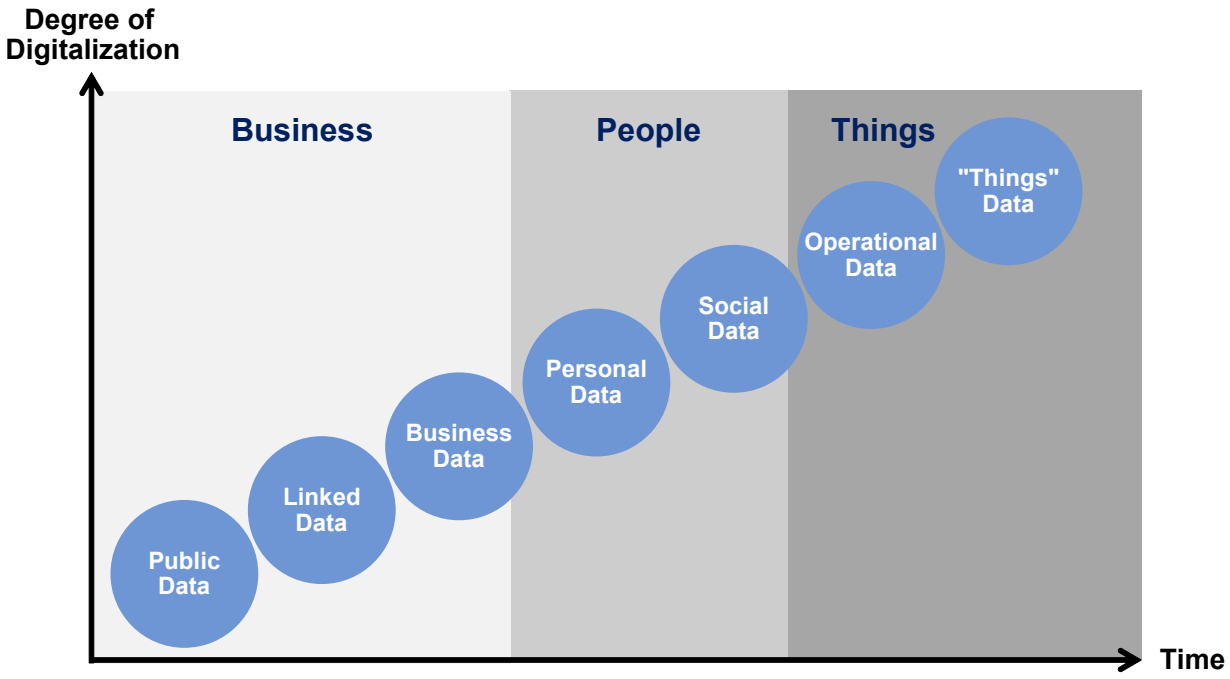
> *Digital government is government designed and operated to take advantage of digital data in optimizing, transforming, and creating government services.*

The focus of this definition is on digital data, regardless of where it comes from. As soon as government CIOs and enterprise architects start building new services from the data from the ground up, rather than exclusively from the business requirements down, they will unleash the potential of data to create new avenues for transformation. This will apply in domains that are already ripe for taking advantage of data coming from objects, as well as in domains where the

most immediate opportunities come from an easier and more transparent approach to data about the business or the people.

Figure 3 illustrates different types of data that are at the foundation of digital government.

Figure 3. Progression of Data Digitalization




Source: Gartner (April 2014)

Data about the business includes publicly available open and linked data, as well as data concerning the execution and management of business processes (such as the status of a case, evidence from a crime scene, a purchase order, and so forth). Data about people includes both personal data (covered by privacy laws), as well as any data that constituents decide to make available via social media platforms. Data about things includes operational data from equipment and devices (such as video cameras, traffic lights and air quality sensors) that are supervised, managed or operated by government and data from smart objects that are owned, controlled or operated by different stakeholders (such as constituents, businesses or nongovernmental organizations).

Although for several government domains, digitalization is likely to follow the progression in Figure 3, in some sectors (such as transportation or traffic management) operational data already plays a more crucial role than, say, social data.

Once the principle is established that digitalization is primarily about how to extract value from data and combine it in completely new ways, the exact progression to digitalization becomes almost irrelevant as the focus can shift to how to establish a common foundation for data management, regardless of where the data comes from.

*Recommendations for government CIOs:*

- *Help executive leaders understand the potential for digital transformation.* Different domains, processes and services today suggest a certain relational role between business processes, people (employees and citizens) and things. However, it is important to push the envelope and show what would be possible once the collapsing cost and increasing power of technology allow the exchange of information with otherwise passive objects. CIOs in every domain should develop examples of "digital business moments" showing what is conceivable and giving a glimpse of how their agency may become a true digital business. At the same time, they should socialize a road map — also using a sequence of digital business moments with a changing balance between the three components (business, people and things).
- *Take an information-centric approach to transformation.* Although the mantra of digital government transformation tends to be very service-oriented, CIOs should put much greater emphasis on modeling their information and data architecture first and develop services by emphasizing the role of data in facilitating the integration and sharing of services. However, this should not lead to the massive metamodeling exercises that were unsuccessfully conducted in the early days of e-government, but should focus on adopting standards leveraging previously modeled data with a bottom-up approach.
- *Apply open data principles to any data.* In order for data to be truly at the center of transformation and for it to be neutral regarding where it comes from — be that business, people or things — it needs to be dealt with as open data (that is, accessible through a Web API), which allows any service or application to access that data within the boundaries of its access rights. Often, the concept of open data is equated to public data: CIOs need to shift that perception and clearly state the principle that any data can be open, but its Web API determines by which services it can be accessed (see "Moving Toward Data-Centric Government").

## Gartner Recommended Reading

*Some documents may not be available as part of your current Gartner subscription.*

"Moving Toward Data-Centric Government"

"Government Context: 'Master the Six Essential Elements of a Digital Strategy'"

### Evidence

The U.S. Digital Strategy focuses on information centricity by assuming that all content must be dealt with as structured data and made accessible through Web APIs to maximize interoperability and openness.

The Danish government report, "Good Basic Data for Everyone — A Driver for Growth and Efficiency," provides hints of an extension of open data beyond the realm of public data.

Client conversations in countries as different as Norway, the United Arab Emirates and Spain indicate that governments have a growing appetite for leveraging existing government data in ways that lead to identifying new government services.

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