Digitizing the delivery of government services

An agile development approach was critical in a European agency's launch of a new online system for registering businesses. Here's how the agency moved from paper to pixels.

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Government agencies around the world are under internal and external pressure to become more efficient by incorporating digital technologies and processes into their day-to-day operations.

For a lot of public-sector organizations, however, the digital transformation has been bumpy. In many cases, agencies are trying to streamline and automate workflows and processes using antiquated systems-development approaches. Such methods make direct connections between citizens and governments over Internet systems more difficult. They also prevent IT organizations from quickly adapting to ever-changing system requirements or easily combining information from disparate systems. Despite the emergence of productivity-enhancing technologies over the past decade, many

government institutions continue to cling to old, familiar ways of doing business.

A few, however, have been able to change mind-sets internally, shed outdated approaches to developing new processes and systems, and build new ones. Critically, they have embraced newer techniques such as agile development and have succeeded in accelerating the digital transformation in core areas of their operations.

The Danish Business Authority is one of those organizations. This agency is charged with registering corporations that do business in Denmark. With the world economy teetering in 2009, it decided it could no longer maintain a largely manual registration process. It believed that replacing paper forms sent by mail with a simple online process was crucial to keeping

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Takeaways

Government agencies are being pressed to improve efficiency with digital technologies, but old-fashioned approaches to systems development have hindered this digital transformation.

Replacing old methods with agile systems development is helping public-sector organizations get projects moving, address problems swiftly, and keep up with citizens' ever-changing needs.

The experience of a European agency illustrates how the switch to agile development succeeds when leadership prioritizes the change, the focus is on users' needs, and a well-planned, flexible development process delivers early benefits while reducing risks.

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the country economically vibrant. Specifically, a new digital-registration process would show domestic and foreign companies that doing business in Denmark is easy, help the government track money laundering, and better identify companies that haven't reported income or paid taxes on it.

Initial efforts to build the digital-registration system stalled under the agency's traditional waterfall approach to systems design and development. But the project gained steam in 2011, when the IT organization deployed an agile approach to systems development—accepting new systems requirements late in the development process, delivering software for parts of the system early to break design logjams, and having one team of businesspeople and software developers, rather than throwing requirements over the wall between functions.

By 2014, the system was nearly complete, and by 2015, the number of registrations requiring agency support for completion had dropped from 70 percent to 30 percent. More broadly, the registration system has helped Denmark rank high among European countries in helping new companies launch their businesses. How did the Danish agency make the shift from waterfall to agile? This article outlines the agency's steps. The story provides important lessons for government agencies that need to build critical digital systems.

Rebooting the systems-development approach

The Danish Business Authority sought to overhaul its business-registration system in 2009, using the same waterfall approach to systems development it had been using for years. The waterfall method is so named because a plot of its steps resembles a

series of waterfalls, from requirements gathering to process analysis to coding, and so on. The development team cannot proceed to the next step until it has completed the prior one.

But by 2011, this approach wasn't working. The team charged with planning the system struggled to pin down complex and ever-changing requirements. Team members were involved only part-time in the project; each had other systems priorities. This dynamic contributed to long decision-making cycles, even for minor issues. Meanwhile, big decisions could take weeks to make because senior managers at the agency had other priorities and because the issues at hand were so complex. The team was mired in analysis paralysis.

A new director general was brought in to run the agency in 2011 and became a catalyst for change. One of her first priorities was getting the digital-registration project back on track. The director general and the senior team's review of the initiative revealed the potential benefits of agile systems development— particularly if the development approach were based on seven critical elements: a focus on the customer; strong governance and swift decision making; an IT architecture that enables gradual changes in the system; a clear systems-development road map comprising small, manageable projects; an organization that embraces agile and the processes that support it; use of multiple partners, rather than relying on just one or two; and a culture of trust.

Agility delivers

The agile approach proved to be much more effective than the waterfall method. Emphasizing customer
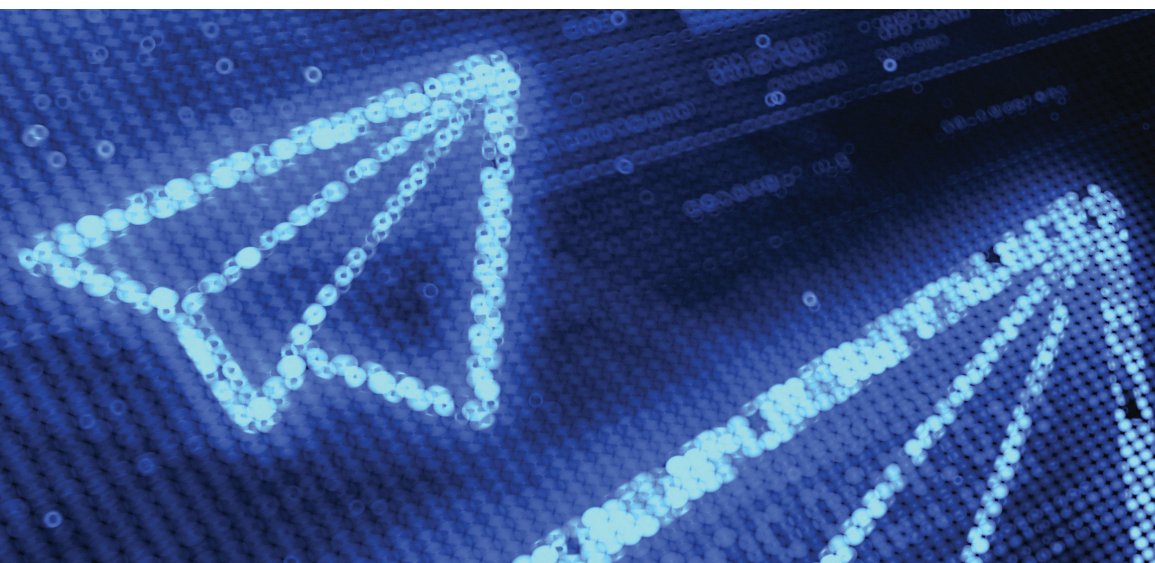
needs, for instance, gave project-team members clearer priorities and a common vocabulary. Initially, the digitization program had focused largely on the agency's internal registration requirements and less on those of the Danish businesses that would be using the system. That all changed under the agency's agile-development approach. Rather than forcing businesses to enter registration information into 14 different systems, for instance, the agency designed just one system, which has saved the businesses considerable time.

In a significant governance change, the CIO's responsibilities were reshuffled so this executive could put more time and attention into the digital initiative, and the CEO also became part of the project-governance team. The project team held weekly meetings to discuss its progress, which enabled the multitude of subprojects to stay on track because issues were monitored continually. These weekly sessions, chaired by the CEO, allowed the project team to bring outstanding issues to the table and have them resolved much more quickly.

The agency also introduced a more flexible IT architecture for the registration system, dividing the system into more than 30 components. New features could therefore be implemented and launched piecemeal, rather than all at once, which reduced the risk and complexity of implementing system changes. The architecture also called for a single database, which eliminated the requirement that the agency's people manually reenter information from one database to the next. There is now one "source of truth," with all the information on a company stored in one place. What's more, internal and external users (companies seeking to do business in Denmark) all see the same interface. There is an overall atmosphere of collaboration: members of the digital-registration project team include business and IT professionals, as well as vendor staff. They are located in the same place, reducing the chance for miscommunication and allowing team members to speak up early and often.

The digital-registration system is already having a substantial impact. For instance, the average time it takes to resolve customer issues by phone has dropped from 16 minutes to 5 minutes, and the time it takes to train new employees has declined from five months to one month. What's more, the system has helped Denmark maintain its image on

the world stage. The World Bank compiles an index on the ease of doing business in 189 economies. In 2016, Denmark ranked third overall on the ease-of-doing-business list, trailing two countries outside of Europe (Singapore and New Zealand).[1]

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Government-systems specifications today are a fast-moving target, and many traditional systems-development approaches simply can't accommodate such rapid change. In this environment, an agile approach to design and development can help government—and other—organizations transform their operations to facilitate digital technologies and introduce major efficiencies and service improvements for citizens. ■

[1] World Bank Group, "Economy rankings," Doing Business project, doingbusiness.org/rankings.

Download the full report on which this article is based, *From waterfall to agile: How a public-sector agency successfully changed its system-development approach to become digital*, from McKinsey.com.

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