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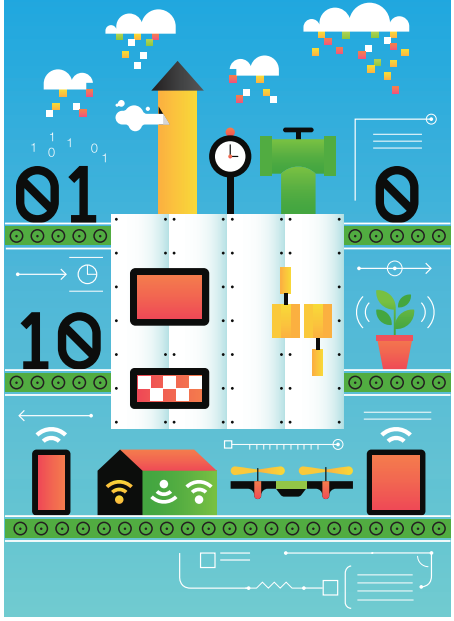

Ambient computing

Tech Trends 2015: The fusion of business and IT
A public sector perspective

When sensors are woven together with analytics, data integration platforms, and strong security, significantly greater business value can be achieved. This combination – ambient computing – creates a fabric that provides contextual intelligence with business purpose. It is a trend that many businesses are exploiting for competitive advantage. In the public sector, early adopters are already experiencing greater improvement in performance and efficiency.

Public sector perspective

The graphic above represents the trend's potential relevance, timing (short, medium, or longer runway), and overall readiness (low, moderate, or high) of the public sector to adopt this trend. These broad ratings are based on the professional opinions of some of the authors and may not reflect your organizations unique situation.

The business purpose of government, in the view of many, is to protect the homeland, detect fraud, waste and abuse, and improve the lives of citizens. Ambient computing can help accelerate performance in each of these areas. Here's what's happening:

Intelligence-driven agencies, such as the Department of Homeland Security, have been on the bleeding edge of ambient computing for years, adding more computing power to sensors in the field to send back intelligence for processing later. The "connected border agent" is one example, but there are many more.

In other domains, ambient computing contributes to the quality of life in ways large and small. The city of Boston, for example, has implemented sensor networks to help manage traffic. In addition, Boston has deployed solar-powered benches that not only give citizens a place to rest but also measure air quality.[1] Washington, D.C., is cutting down on violence by using remote monitors that detect gunshots.[2] The city of Seattle has modernized its existing electric meters with sensors that help customers understand their energy consumption patterns and also allow utility companies to provide better service when outages occur.[3]

For some agencies, this may sound more like science fiction than a capability that is central to the agency mission. Some may not see the immediate value and may be hesitant to adopt it. Technology standards and reference architectures are still evolving. Nonetheless, there is enormous potential in the number of sensor and data collection channels already in place in government, such as traffic signals, telecommunications towers, or even citizen-owned devices like smartphones. Adding computing capability and advanced analytics to existing infrastructure could make adoption of this trend much more manageable.

Yet while the infrastructure might be ready to use, the reason for adopting such technology may not be obvious for some government entities. Mission areas that require constant monitoring or the need to extend capabilities of assets "in the field" may conjure up a number of use cases. When operational efficiency or public safety is the focus, ambient computing can play a game-changing role.

Agencies can approach ambient computing in collaboration with the industries they monitor or regulate. For example, the Department of Transportation could create incentives for stakeholders (states, contractors, civil engineers) to embed sensors into infrastructure and public works. In doing so, government could help enable new industry standards around security, reference architectures, and data models critical to growth and more unified adoption. Agencies also have the opportunity to embrace "open government" by sharing nonsensitive monitoring data with peers and the public at large, allowing creative public use ideas to flourish. Organizational barriers to sharing data can be resolved when the reward exists.

Moving forward

- **Pilot high-value use cases.** Start by identifying a labor-intensive effort where ambient computing could drive major value. Identify a few use cases and nudge them into proof of concept with a handful of sensors.
- **Learn from public sector peers.** Technology leaders at every level of government have already taken the first steps toward ambient computing capabilities. One good conversation with those leaders could help you jump-start your own ambient computing initiative – and avoid big pitfalls along the way.
- **Don't reinvent the wheel.** Take advantage of existing infrastructure, data streams, and communication channels before building anything new.

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Endnotes

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[3] Reis, "5 U.S. Cities Using Technology To Become Smart and Connected."

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