

The Internet of Things

Technology integration and innovation are redefining life sciences IT

The Internet of Things (IoT) is impacting the way organizations across many industries deliver products, services and value. Perhaps more than most industries, life sciences organizations manage unprecedented quantities of data available from multitudes of connected devices and social media outlets in the IoT. And the number of devices and sites is growing exponentially, anticipated to reach nearly 26 billion by 2020¹. Knowing where and how to capture and deliver critical information from or about patients and customers, create context awareness that provides predictive insights, and take actions that deliver value involves a well-defined strategy. Chief information officers (CIOs) who implement a strategy that addresses these new sources of information and identifies critical IT investment needs can help position their organizations to leverage the IoT to deliver value and drive growth.

Integrating such enormous quantities of IoT data into the delivery, management and evaluation of health care-related life sciences products can be daunting. New technologies provide the ability to quickly and accurately gather real-time diagnostics, and social media helps gauge patient or customer preferences and behavior patterns. As a result, patients and customers expect similar speed for service delivery. This is driving significant changes in some health care delivery models as the quantity and type of information available to payers, providers and consumers begins to affect things such as pricing strategies. As many payers and consumers demand pricing transparency, new business models will likely reflect pricing and reimbursement structures based on value and outcomes. If properly approached, outcomes-based pricing can benefit the entire health care ecosystem but may also demand increased capabilities to securely capture information and apply advanced analytics.

Key takeaways

- Ongoing growth of connected devices in the IoT can change the way life sciences organizations serve patients and customers, and may significantly redefine the role of the IT organization.
- Many IT organizations will need to manage enormous quantities of data from multitudes of data streams and apply advanced analytics that help enable critical health care decision-making.
- Integration of IoT devices with legacy IT infrastructures, coupled with advance analytics, is critical to providing actionable insights that can drive value.
- Regardless of a life sciences organization's maturity, a CIO's first priority should be to develop a holistic strategy that addresses the full range of life sciences consumers and maximizes value creation across the ecosystem.



¹ IDC, "The Internet of Things Is Poised to Change Everything, Says IDC," October 3, 2013.

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How will CIOs respond to the rapid proliferation of information from the IoT and to the ongoing challenge of determining which investments can enable effective and efficient IT delivery? While there is no simple answer, this much is clear... investments in analytics and data integration are critical, as is the ability to retool IT capabilities to harness the power of information coming from new external sources. Working closely with key stakeholders, CIOs should determine how to drive the most value by integrating available data and innovating around it. Redefining the role of IT can help life sciences organizations leverage current opportunities and prepare for the future.

For life sciences organizations to remain competitive, IT innovation must keep pace with an expanding IoT and the requirements and opportunities it brings. This helps necessitate multidimensional skill sets and agility not typically found in large organizations. New analytics roles such as data scientists are continuing to emerge, but these skill sets are limited in the market. This often leads some CIOs to retrain existing technical teams and staff to address areas like social media, structured and unstructured information management, advanced analytics, and data requirements for regulatory compliance. However, this can be a challenge, and external providers, **joint ventures and partnerships, mergers, or acquisitions** may need to supplement the strategy.

As CIOs confront the many challenges and opportunities created by the IoT, it is important to incorporate considerations around patients, health care providers, regulators, internal stakeholders, and the overall life sciences organization into the strategy. CIOs that methodically build a strategy with defined priorities and a focus on specific outcomes help ensure their IT organizations are positioned to capture opportunities and avoid costly mistakes. When coupled with critical skill sets, a solid strategy can support technology innovation and data integration to help drive meaningful, measurable business results by harnessing the power of the IoT.

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