



Turnkey IoT

Bundled solutions promise to reduce complexity and accelerate ROI

By Avinav Trigunait, Steve Atkins, and David Schatsky

The effort to deploy an Internet of Things (IoT) solution can be massive: Developing and deploying enterprise-grade IoT solutions may involve thousands of sensors, disparate networking and communication technologies, and integration with legacy IT systems. An emerging trend is taking aim at this complexity, however. Vendors are working to meet demand with IoT solutions that bundle and pre-integrate sensors, analytics, a sensor management and data ingestion platform, and user interface tools—and increasingly offering them as a service. While enterprises still need to configure and integrate these bundled solutions with legacy systems, these offerings help streamline the complexity and accelerate ROI for IoT projects.

Signals

Venture capital investments in bundled IoT solutions providers increased 85 percent in 2015 versus the prior year, totaling \$2.2 billion and accounting for 61 percent of total IoT venture funding.¹

Several large technology companies, including Amazon,² IBM, Microsoft,³ and Hitachi,⁴ launched bundled IoT solutions within the past year.

Telecom companies, including AT&T,⁵ Rogers,⁶ and Verizon,⁷ are also introducing bundled IoT solutions.

Dozens of enterprises across sectors, such as online⁸ and offline⁹ retail, insurance,¹⁰ and consumer products,¹¹ have deployed bundled IoT solutions over the last 12–18 months.

The challenges of IoT complexity

Architecting an IoT solution can be daunting, requiring the architect to select from among: hundreds of different types of sensors and devices, at least a dozen commercially available IoT integration platforms, multiple networking technologies, and various communications protocols. The architect then needs to integrate the solution with

legacy IT systems and business intelligence tools. (For more of Deloitte's thinking on IoT technology and applications, see the Deloitte University Press collection of articles at <http://dupress.com/collection/internet-of-things/>.)

Buying and integrating these technologies is only part of the challenge: Conceptualizing the use cases and architecting solutions requires expertise in multiple technology domains to pilot and iterate until successful. Maintaining these systems means additional capital and operating expenditure commitments. For companies looking to deploy IoT applications, realizing ROI can seem risky and a long way off. It makes sense, therefore, that enterprises would welcome solutions that eliminate much of this complexity.

The bundled IoT solution

These challenges have created an opportunity for technology vendors, which are increasingly bringing bundled solutions to market. Systems integrators, too, have an opportunity to help enterprises connect those bundled solutions with legacy systems to enhance the level of business insights or achieve greater automation.

What do you get when you buy a bundled IoT solution? Vendors pre-integrate sensors, a sensor management and data ingestion platform, analytics, and user interface tools to work together. This reduces the time, effort, and costs of identifying, developing, and integrating individual technology components. And it reduces the time required to realize value from the deployment. The technology components may be sold directly to the client, but increasingly vendors are offering as-a-service models.

Note that even comprehensive IoT bundles aren't exactly turnkey solutions: Getting optimal value from bundled solutions may require additional systems integration. This could include ingesting data from internal or external sources and combining these with sensor data to generate better insights. Or it could mean using the insights to take actions such as controlling machines or

automatically generating trouble tickets when a threshold is breached. Some change management may also be required to properly embed the new solutions within the organization and ensure that people are using them effectively.

VCs have invested in bundled IoT technology for the last few years.¹² But support has expanded dramatically recently, increasing 85 percent in 2015 over 2014, to an annual total of \$2.2 billion. To capitalize on the growing importance of bundled solutions, some IoT technology vendors are changing their go-to-market strategies, pivoting from offering technologies to pre-integrated IoT solutions with as-a-service or pay-as-you-go payment models. The idea is to appeal to enterprises that prefer to pay for outcomes rather than technology.¹³

For example, Airware, a drone software company that raised \$39 million in 2016, recently changed its strategy to include hardware, offering a bundled solution on a subscription basis.¹⁴ Enlightened, an energy-management-as-a-service provider, offers clients the option of sharing energy savings over a defined period in lieu of deployment costs.¹⁵

Some vendors are also incorporating connectivity into their bundled solutions. This makes it easier for enterprises by eliminating the need to negotiate separate connectivity contracts with telcos. For example, Enevo, a Finland-based waste-management-as-a-service provider, bundles connectivity from Finnish telecom operator DNA. Some 145 customers in 35 countries are already deploying Enevo's solutions, according to the company.¹⁶

Bundled solutions can create the same value as customized solutions

A review of bundled IoT use cases and vendors shows these solutions to be broadly applicable across sectors. Some are "horizontal" solutions for cross-industry issues such as energy management, supply chain monitoring, and predictive maintenance. Others target specific industries such as health care, retail, industrial, and automotive.

Bundled solutions can pull the same value levers as fully custom solutions:

- Revenue improvements, by improving customer experience (retail in-store customer navigation, real-time promotions and discounts), creating new services (medication adherence, equipment-as-a-service), or reducing stock-outs (supply chain, reordering services)
- Cost reductions, via improved visibility into operations (switching off machines and equipment when not in use, managing capacity, collecting waste only when required), supply chain efficiencies (reducing inventory and spoilage), and cutting overhead expenses (reducing energy usage)
- Asset utilization improvements, by reducing downtime (predictive maintenance on equipment), better load management (through better scheduling), and adding tracking (location tagging on expensive, movable equipment)
- Risk reduction and pricing, by collecting additional insights (asset management, vehicle monitoring)

Vendors generally offer bundled solutions to handle processes that are not considered core competencies (for example, energy management or predictive maintenance on machinery) or to enhance a core capability such as claims processing in home insurance through use of drones. But, as with fully custom solutions, bundled solutions can be employed to differentiate a company from its competitors. For instance, solutions are available to retailers to improve customers' in-store experience; vehicle monitoring insight solutions enable insurance companies to offer usage-based insurance.

Implications for enterprises

The potential benefits of bundled IoT solutions are clear: faster implementation with less effort and more rapid ROI than either in-house development or piecing together solutions from multiple component vendors. But as always, outsourcing

technology carries risks, and companies evaluating bundled IoT solutions need to consider a number of issues:

Data governance and security. As bundled IoT vendors enable new ways of capturing and using data¹⁷—think of insurance companies using data shared by smart home service providers to factor risk—enterprises must exhibit extra caution and lay down strong data governance and security policies to ensure safe storage and fair usage.

Risk mitigation. As with any significant IT purchase, buyers should plan ahead to cover the eventuality that a bundled IoT vendor could go bust or get bought—or that the CIO may want to switch to a different or better technology someday. Consider engaging providers that use open standards and publish their data models to retain access to data; failing that, contract for the right to the code in case the vendor goes bust, and for continuity of service in case the firm is acquired.

Competitive advantage. Develop custom analytics on top of bundled solutions and embed them into key decision-making processes to create differentiated, semi-custom solutions. When developing new services or capabilities, enterprises may want to explore including clauses to protect the IP and restrict bundled IoT vendors from replicating or developing similar products or capabilities with competitors.

The growing importance of bundled IoT solutions has implications for specific types of companies as well:

Technology and telecommunications companies may want to explore partnering with or acquiring vendors in order to offer bundled IoT solutions that promise to deliver specific outcomes—for instance, lower stock-outs in retail through intelligent sales tracking and automated reordering. Verizon partnered with rfXcel to launch the Verizon Intelligent Track and Trace solution for pharmaceutical companies; IBM acquired the Weather Company, then launched a weather insights service for insurance providers. Offering new business models for bundled

IoT solutions, with low upfront investments along with flexible payment options, can also help drive adoption and create recurring revenue streams.

IoT start-ups should evaluate the opportunity of either creating bundled solutions or becoming part of one. Not only are VCs channeling ever more funds toward these solutions—enterprises are likely to show increased willingness to buy bundled IoT solutions to get going faster and at lower risk.

Opening the door to IoT technology's next phase

As has been widely noted, the Internet of Things has the potential to create enormous business value. But this rapidly evolving domain, still short on standards and long on complexity, presents obstacles that cause some enterprises to delay adoption. The emergence and proliferation of bundled solutions present an opportunity for enterprises to pursue the benefits of IoT technology with less complexity and lower risk.

Endnotes

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