# **Startups And Small Vendors Are Driving Innovation In The Internet of Things**

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Much of the **innovation** in the Internet of Things (IoT) is being fueled by young, dynamic companies, and the "maker generation." In fact, **Gartner** predicts that by 2017, 50 percent of IoT solutions will originate in startups less than three years old.

Recent startups, highly focused on one or two products or services, are competing with traditional giants to bring IoT products to business and consumers. They use cloud services by default to provide data analysis, interactivity and customer services, and interact with users through smartphone apps to minimize costs and maximize flexibility.

There is substantial growth in makers (companies or individuals who leverage 3D printing and other technologies to create their own markets within the IoT). As a result of modern IT infrastructure, easy access to engineering services, and simpler supply chain lines to Asian manufacturers almost anyone can create IoT solutions driven by either market need or pure imagination to create new niches and address consumer or business needs.

## The Internet of Things Will Affect All Businesses

Much of the **innovation** around IoT comes from startups focused on the consumer market; however, the majority of the technology developed by these companies can find use in other sectors, including commercial and industrial IoT applications.

Many companies remain unprepared for the IoT, both in terms of the opportunities it provides and the threat of disruption it could pose to many businesses. The increasing fragmentation of technologies also brings security problems which are amplified by the increased speed at which IoT solutions are being implemented.

## Be Prepared to Construct Prototypes and to Experiment

One of Gartner's key predictions for IoT is that through 2018, there will be no dominant IoT ecosystem platform. This means IT leaders will need to construct IoT solutions from multiple providers.

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The growth of smaller vendors helps to fill some important technology gaps, but this raises a number of issues for enterprises. Through 2018, half the cost of implementing IoT solutions will be spent integrating various IoT components with each other and with back-end systems. Enterprises should look to larger vendors to integrate the offerings of smaller vendors into their solutions. To differentiate their offerings, vendors must provide software for specific verticals to help enable IoT technologies, rather than generic solutions.

Privacy concerns are also a major inhibitor; therefore, existing cybersecurity policies and procedures will need to undergo changes to support the IoT. Increased competition is driving enterprises toward rapid adoption of IoT with shorter procurement and sourcing cycles, leaving less time for sourcing executives to address cybersecurity.

# Businesses Must Understand the Landscape, Practicalities and Ethics of IoT

With the <u>loT</u> comes a new generation of ethical and technical hurdles for business to overcome. These risks increase with greater proliferation of loT development activities throughout the enterprise.

The use of smart machines that can learn, for example, will lead to a new level of decision making from CIOs and other board members, focused on how to develop or adopt ethical programming, and what impact that will have. As greater degrees of automation are enabled by IoT, and autonomous functioning is allowed, consideration must be given to these issues. After all, we are fast approaching the day when devices will start buying and selling on our behalf in a digital business.

#### The Impact of the Internet of Things

The decisions we make today could affect strategies and outcomes years down the line. Those currently planning <u>smart city</u> solutions, for example, will require a clear understanding of market evolution to assess long-term sustainability. Planners will require multiagency models to form policy, plan the IT infrastructure and create goals to reduce pollution, improve traffic flow and the lives of citizens.

How CIOs manage this potentially massively expanded role and array of technology is critical. Investment in technology and data repositories are just two issues, while handling a legislative avalanche of security, compliance and environmental issues will also tax time and resources. Licensing will also increase in complexity as "things" demand more software and proprietary services to manage them.

Makers must leverage this opportunity to create ecosystems and create packaged solutions to thrive in a competitive market. They need to move beyond the "box" mentality, and consider the extra revenue opportunities from licensing-controlled embedded software and applications. At the same time, major players will need to partner, acquire or invest in startups to remain competitive and inventive.

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