Business Benefits of the Internet of Things: A Gartner Trend Insight Report

Published: 22 September 2017 **ID:** G00333540

Analyst(s): Venecia Liu

IoT rollouts continue to move from trials to full deployments. IoT is providing business benefits, such as operational efficiency and workforce productivity. IoT solutions must demonstrate measurable benefits and business value for success.

Opportunities and Challenges

- The challenge for companies to move beyond the IoT proof-of-concept stage stems from a failure to tie quantifiable metrics and demonstrable business value.
- Thing commerce (IoT-enabled digital commerce) generates a large amount of data that can identify transient customer behavior and patterns to present new business opportunities.

What You Need to Know

- The most significant external benefit of IoT usage is that customer care is more tightly integrated with product performance and customer usage.
- While IoT data is perceived to present revenue opportunities, companies have yet to either generate huge revenue gains or strike the right business model, causing investment concerns.

Insight From the Analyst

Show Me the Money: Demonstrate Business Value

Venecia Liu, Research Vice President

Previous Gartner Internet of Things (IoT) special reports, and much of our early research, have gone into hypotheticals and potential opportunities from IoT. That research has evolved into deeper

discussions around the business benefits and the quantifiable measures to justify IoT implementation costs.

To move beyond proofs of concept, CIOs and CEOs want to see evidence of hard returns on investment for how IoT improves business processes, optimizes operations, enhances workforce productivity, increases revenue, and drives customer loyalty in a quantifiable manner. Several companies remain coy about publicizing their returns, perhaps to maintain a competitive advantage or due to the early-stage nature of their projects.

In this report, we include the latest 2017 IoT survey findings and compiled research to examine how IoT benefits organizations. We divide the report into three sections:

- How IoT is creating internal benefits, such as driving operational efficiency and workforce productivity
- How IoT is creating external benefits from new customer experiences and opportunities presented by thing commerce
- How IoT is creating new revenue opportunities and forming new business models

The IoT journey will continue to uncover tangible and intangible benefits as it becomes the technology foundation for digital business.

Regards,

Venecia Liu

Executive Overview

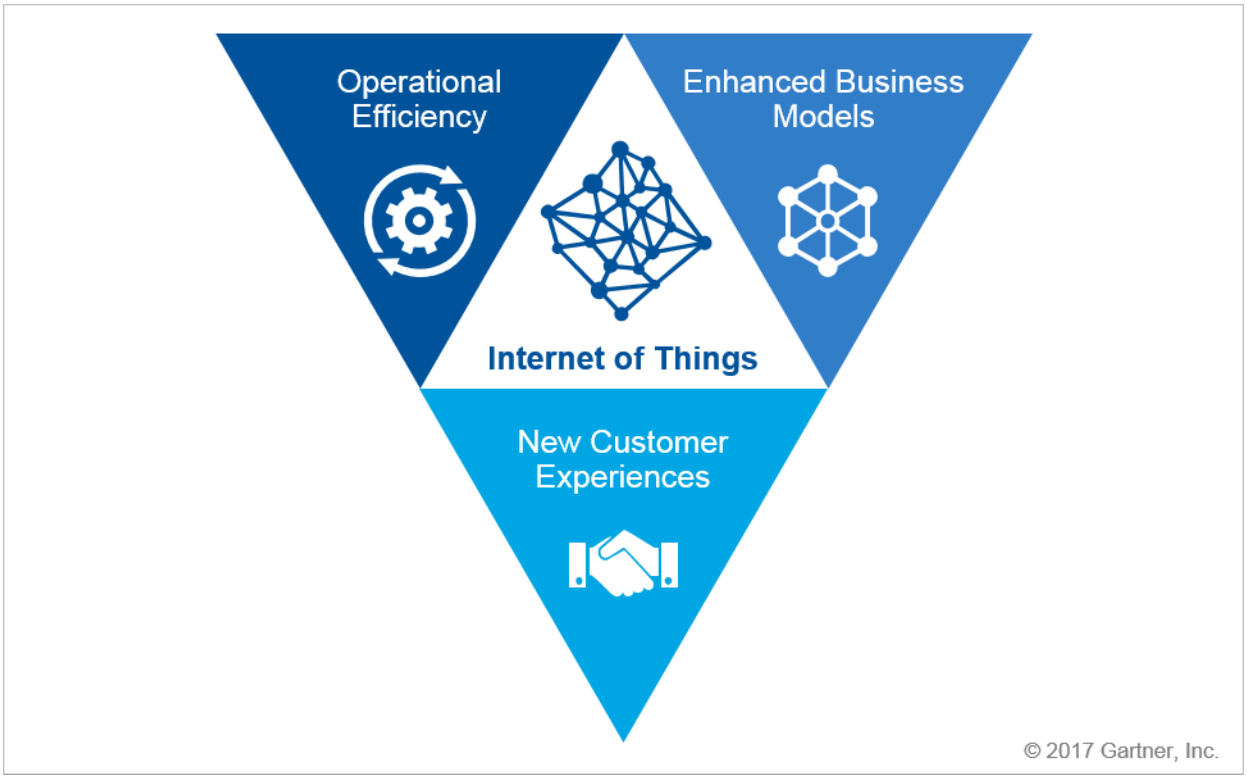
Definition

IoT is a network of dedicated physical objects (things) that contain embedded technology to sense or interact with their internal state or the external environment. This excludes general-purpose devices, such as smartphones, tablets and PCs.

In this report, we highlight relevant research to discuss the business benefits of IoT. We examine three aspects of business benefits impacted by IoT: operational efficiency, new customer experiences and enhanced business models (see Figure 1).

> IoT is creating new customer experiences, formulating new business models and achieving operational efficiency.

Figure 1. Business Impact of IoT



Source: Gartner (September 2017)

Research Highlights

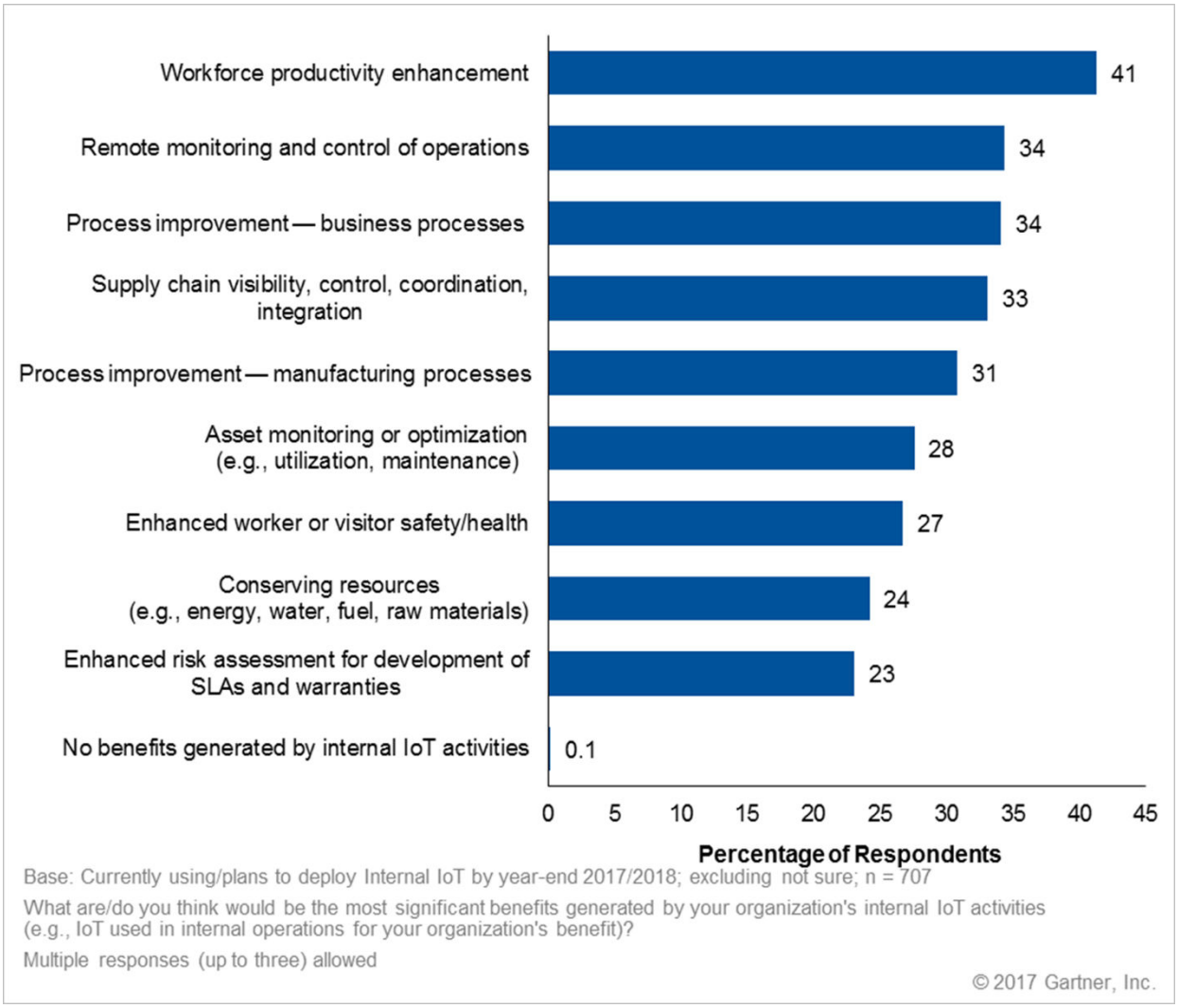
How Is IoT Delivering Business Benefits Within the Organization?

In order for technology providers to successfully sell IoT, it is imperative to focus on the business value. In "Three Best Practices for Selling IoT," Gartner research outlines the best practices for selling solutions.

In Gartner's 2017 IoT Survey, survey respondents indicate that the most significant benefits generated from internal IoT activities is or would be workforce productivity enhancements (see Figure 2), as well as remote monitoring and control of operations (see the Evidence section for details). IoT is proving its worth from IoT-enabled carts following employees in warehouses, pulling up part information from wearable technologies, assisting with asset tracking, increasing supply chain visibility and improving processes.

In this report collection, Gartner research discusses energy savings from use of smart buildings, as well as IoT benefits achieved in hospitals, road tolls and field services.

Figure 2. Most Significant Benefits Generated by Internal IoT Initiatives



Source: Gartner (September 2017)

Related Research

"Use the Internet of Things in Smart Buildings to Achieve Work-Life Ambience": This research demonstrates that engaging personalized experiences are only possible when humans interact with the embedded intelligence and networked connectivity of all objects in a building, including the building infrastructure systems necessary to sustain its longevity. In the same smart building survey, it is not surprising that 93% of executives cited energy savings as the top benefit, but also ranked the intangible benefits of workplace environment as having a huge impact on workers in that environment. The benefits cited were improved workspace (86%), employee satisfaction (85%) and employee productivity (82%).

"Connected Cities: Road Traffic Management — IoT Opportunities Include Road Tolling and Smart Parking": This Application Spotlight shows how city technology strategic planners can use road

traffic management solutions to reduce traffic congestion, pollution and carbon emissions. Implementation is most advanced in developed Asia/Pacific. Smartphones are ousting IoT devices from these solutions.

"Best Practices for Healthcare Provider CIOs to Effectively Manage IoT in the Hospital": Hospitals have been prolific early adopters in bringing new device technologies into their space with medical devices, instruments and monitors. This research outlines how CIOs should confront the new challenges and realities presented by more and smarter IoT devices.

"Successful Field Service Management Buyers Are Putting Application Flexibility and Employee Empowerment First": This document shows how to begin planning to accommodate new sources of work requests, such as equipment connected through IoT ecosystems. Use of remote monitoring or connectivity stayed exactly the same in this survey, at 21% of respondents, reflecting that IoT solutions are still in their early days for many customers. However, another 30% intend to implement IoT capabilities within the next 24 months. This indicates a recognition that equipment is becoming more connected, and that customers are expecting their field service providers to improve their uptime and SLA offerings as a result.

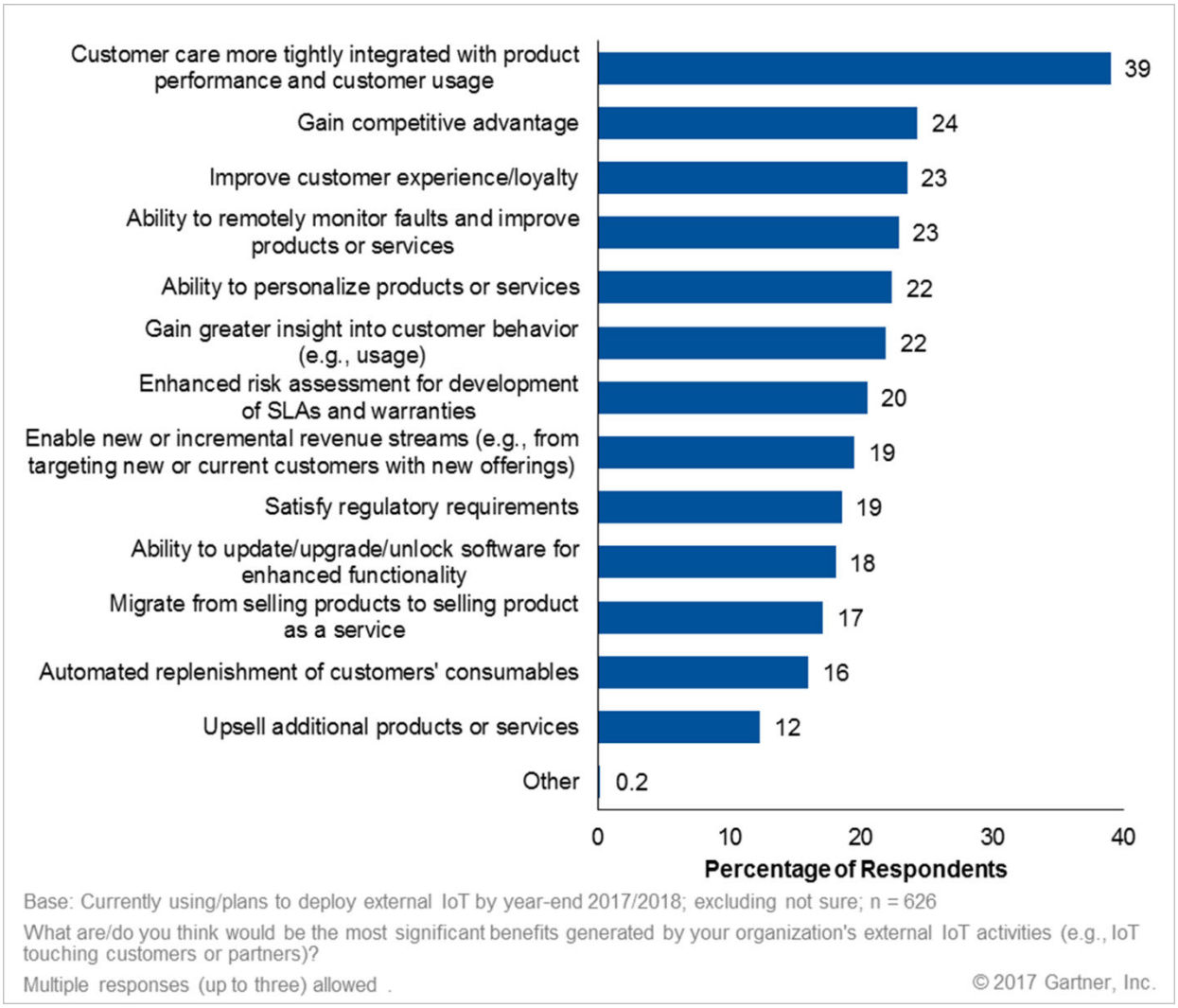
"Market Insight: LoRa Is a Valid Option for CSPs in Selected Low-Power, Low-Bandwidth Use Cases": This document highlights how network connectivity is essential for the IoT, and there are many wireless access technologies currently in use. LoRa provides a viable option for traditional wireless wide-area connectivity in selected IoT use cases and has already attracted more than 440 members into the LoRa ecosystem.

How Is IoT Delivering Business Benefits Externally and New Customer Experiences?

Organizations are achieving business benefits from their external IoT activities. According to the recent 2017 Gartner IoT study, nearly 40% of the survey respondents indicate that the most significant benefit they receive or will receive from IoT is a tighter integration of customer care with product performance and customer usage (see Figure 3).

Gartner research highlights how to use IoT to extend customer experiences, how to apply design thinking, how to listen to the voice of things, and how customer experiences change.

Figure 3. Most Significant Benefits Generated by External IoT Initiatives



Source: Gartner (September 2017)

Related Research

"How to Use IoT to Extend Customer Experiences": This research calls on IT leaders to take ownership of IoT-driven customer experiences (CXs) through new thinking, building a culture of collaboration, and owning customers across sales, marketing, customer service and IT. They should strive to improve the CX by looking at the "goals" instead of just looking at what "things" can be used to collect additional information. As an IT leader, it's important to look holistically at how you are using things today and how this would differ with IoT-enabled devices.

"The Next Frontier of Insurance Customer Experiences Requires a New Model and Technology Innovation": This document explores how the insurance industry should identify key stakeholders in customer experience and work collaboratively with them to evaluate the emerging demands of the channel network. This involves a review of customer journey maps to identify channel gaps,

interaction problems and unmet customer needs. It offers five strategies to assess IT strategy to prepare for future customer experience requirements.

"Apply Design Thinking to Create Compelling Internet of Things Customer Experiences": This research considers how technology product management leaders view "design thinking" as pivotal to innovation. Differentiating customer experiences is a prime objective of design thinking, and it can create competitive advantage for technology companies focused on the IoT. It encourages them to pilot and apply design thinking to improve the CX for IoT products.

"Market Insight: The Future Personal Technology Buying Experience Will Change": This report considers how the buying experience is becoming a key differentiator for technology and service providers (TSPs) facing challenges with increasing competition and commoditization, led by technology maturity.

"What's Hot in Digital Commerce for Marketers in 2017": This document condenses all of these themes and trends and explores how marketing leaders should align trends to their business goals and digital commerce strategy, before making an investment. The use of data-driven customer insight can identify areas where new techniques can improve digital commerce results and enhance the end-to-end customer experience.

"Strategic Considerations on Zero-Touch UI Design for a Superior Customer Experience": Looking more to the future, this document focuses on how interactions with wearables or IoT endpoints in smart environments, such as the connected home, car or smart workplaces, will be driven increasingly by no-screen UIs aided by virtual personal assistants (VPAs). Technology strategic planners must shift to a multimodal design approach to create a superior customer experience.

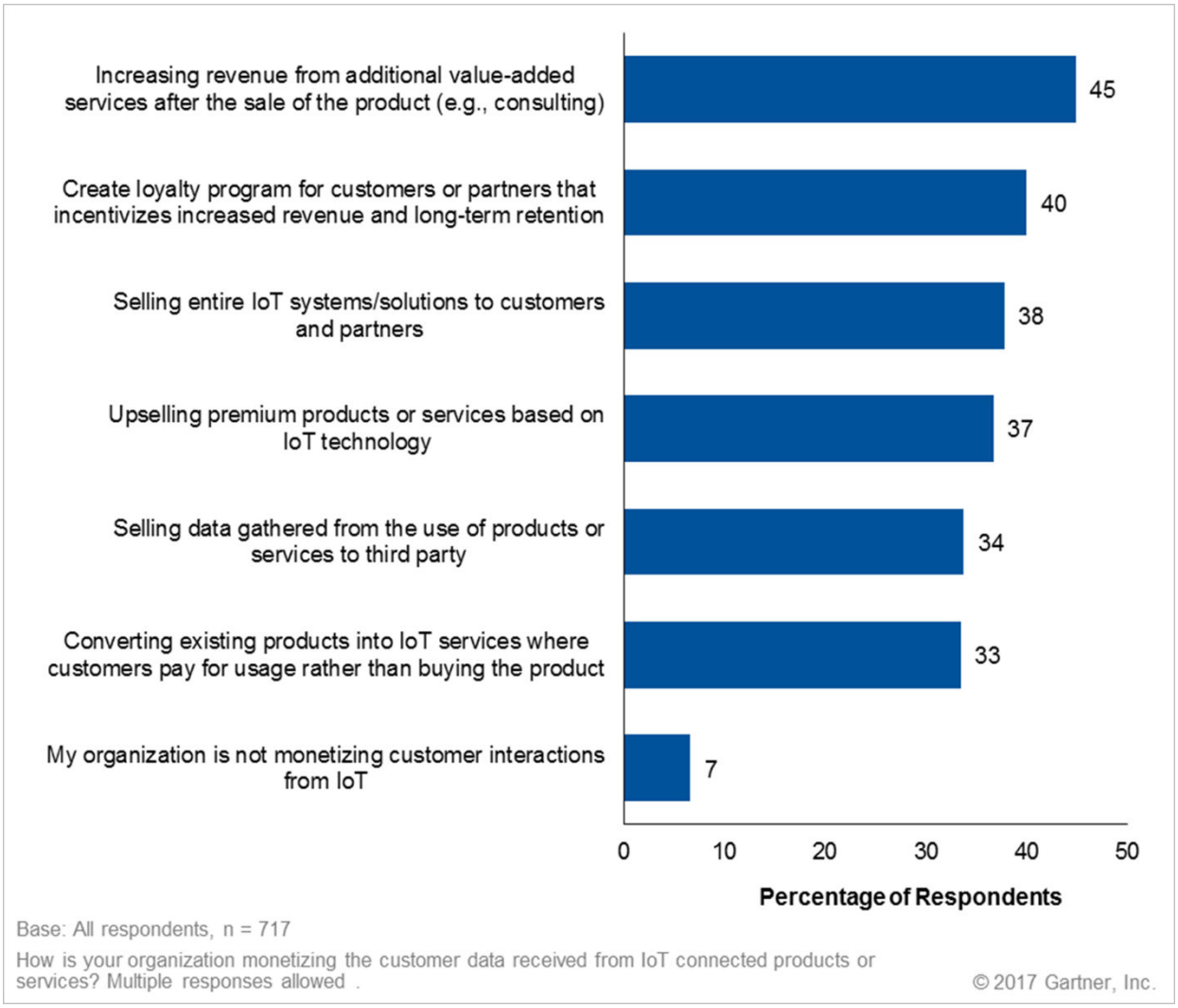
"Preserve Privacy When Initiating Your IoT Strategy": This document highlights the absolute importance of the security issue for IoT. IoT devices generate an unprecedented amount of data, which often includes sensitive personal data. Security and risk management leaders focusing on IoT will need to harness the information gathered for responsible use and distinguish between consumer and business risk.

How Is IoT Enabling New Business Models and Revenue Streams?

IoT presents an opportunity for providers and end users, and it has the potential to tap into new revenue sources. IoT affords companies the ability to morph into a new type of company. Product companies are evolving to become service companies. Enterprises are expanding their role in the digital ecosystem to run a platform business to earn digital revenue. The data generated by IoT can provide much insight and hold significant economic value for others. Gartner predicts that by 2020, 10% of organizations will have a highly profitable business unit specifically for productizing and commercializing their information assets.

In the 2017 Gartner IoT survey, we asked survey participants how they are monetizing customer data received from IoT-connected products or services. According to 45% of survey respondents, they are increasing revenue from additional value-added services after the sale of the product (see Figure 4).

Figure 4. Monetizing Customer Data



Source: Gartner (September 2017)

Gartner research explores how companies can monetize data, how communications service providers (CSPs) and IT services providers are expanding into platform business models and how digital commerce or thing commerce is generating data for monetization.

Related Research

"Six Ways to Earn New Digital Revenue": This document explains how businesses should study the financial structure of startups and other companies offering new digital products and services for indicators of the new financial norms and economic models in their industry.

"Market Insight: Tap Into the Energy Efficiency Ecosystem to Drive Adoption of Your Smart Building IoT Solutions": This document demonstrates early use cases for smart lighting and how businesses are changing their models through IoT. In addition to selling their equipment directly to end users,

suppliers for energy management efficiency, including equipment, software and IoT platform services, can pursue partnerships with energy service companies to open channels for their products.

"Create New Opportunities by Exploiting Thing Commerce Data": This document discusses how thing commerce, which generates a large amount of data, can identify transient customer behavior and trends and, thus, lead to new business opportunities.

"How to Monetize Digital Through Anything-to-Anything Business Models": This document examines how consumers, businesses, governments, bots and things will create millions of commercial physical or digital transactions with each other. This report advises IT services providers on how the ownership of information and relationships create opportunities.

Digital services such as cloud, IoT and analytics can be monetized through platform-based business models. "Market Trends: Four CSP Implementations of the Platform Business Model" examines four CSPs seeking to generate incremental revenue through adopting platforms. "Market Insight: Designing New IoT Services for IoT Platforms Becomes a Priority" discusses the reality of what could be achievable for profitability and fair economic returns from IoT platforms. The report suggests that revenue from IoT platforms and middleware will not constitute a significant portion but will provide constant streams of revenue globally from $136.6 billion to a level of $235.8 billion by 2025.

"Digital Twins Will Impact Economic and Business Models": This document provides a framework for how digital twin provides business value and considerations for digital twin business models.

"Master Software and SaaS Pricing Principles to Monetize New Digital Business and IoT Opportunities": This document explores financial models of software and SaaS pricing principles that could be applied to digital business and IoT.

"How Becoming an IoT MVNO Enables Faster Time-to-Solution and More Value": This document discusses how new technologies are enabling a class of mobile virtual network operators (MVNOs) to offer broad capabilities and increased value to IoT. Technology strategic planners focused on building IoT MVNO strategy must consider becoming IoT MVNOs in order to gain end-to-end IoT value chain control.

"Market Insight: Five Emerging Digital Business Models for TSPs": This document outlines the elements of a business model and outlines five models: cloud-enabled, digital consignment, a tiered-value partnership, spinoff/diversification and confederation.

Related Priorities

Table 1. Related Priorities

Priority	Focus
Succeeding With Semiconductor-Based Technology	This initiative enables technology providers to improve their competitiveness by using products and services out of the semiconductor and electronics industry, and investing in emerging technologies.
Delivering Effective Identity and Access Management Capabilities	The delivery of effective IAM capabilities involves tools and best practices that manage identity, privileges, access and trust to facilitate security, risk management and business imperatives.
Building and Expanding a Digital Business	Digital business is the creation of new business designs by blurring the digital and physical worlds. Digital business involves the interaction of people, businesses and intelligent "things."
Supply Chain Strategy, Leadership and Governance	Designing strategy, optimizing networks, developing the organization and managing performance must work interdependently to execute an efficient demand-driven supply chain.

Source: Gartner

Gartner Analysts Supporting This Trend


Nathan Nuttall, Research Director


Al Velosa, Research Vice President


Godfrey Chua, Research Director


Emil Berthelsen, Research Director

Related Resources

Webinars

"Digital Twins: The Future of Better IoT Fueled Business Decisions"

"IoT's Challenges and Opportunities in 2017"

Articles

"Prepare for the Impact of Digital Twins"

"How to Use Digital Twins in Your IoT Strategy"

"The IoT Effect: Opportunities and Challenges"

Gartner Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

"Three Best Practices for Selling IoT"

"Use the Internet of Things in Smart Buildings to Achieve Work-Life Ambience"

"Connected Cities: Road Traffic Management — IoT Opportunities Include Road Tolling and Smart Parking"

"Best Practices for Healthcare Provider CIOs to Effectively Manage IoT in the Hospital"

"Successful Field Service Management Buyers Are Putting Application Flexibility and Employee Empowerment First"

"Market Insight: LoRa Is a Valid Option for CSPs in Selected Low-Power, Low-Bandwidth Use Cases"

"How to Use IoT to Extend Customer Experiences"

"The Next Frontier of Insurance Customer Experiences Requires a New Model and Technology Innovation"

"Apply Design Thinking to Create Compelling Internet of Things Customer Experiences"

"Market Insight: The Future Personal Technology Buying Experience Will Change"

"What's Hot in Digital Commerce for Marketers in 2017"

"Strategic Considerations on Zero-Touch UI Design for a Superior Customer Experience"

"Preserve Privacy When Initiating Your IoT Strategy"

"Six Ways to Earn New Digital Revenue"

"Market Insight: Tap Into the Energy Efficiency Ecosystem to Drive Adoption of Your Smart Building IoT Solutions"

"Create New Opportunities by Exploiting Thing Commerce Data"

"How to Monetize Digital Through Anything-to-Anything Business Models"

"Market Trends: Four CSP Implementations of the Platform Business Model"

"Market Insight: Designing New IoT Services for IoT Platforms Becomes a Priority"

"Digital Twins Will Impact Economic and Business Models"

"Master Software and SaaS Pricing Principles to Monetize New Digital Business and IoT Opportunities"

"How Becoming an IoT MVNO Enables Faster Time-to-Solution and More Value"

"Market Insight: Five Emerging Digital Business Models for TSPs"

Evidence

The 2017 Gartner IoT Strategies Survey was conducted to gain insight about trends among adopters of IoT. The research was conducted online from June through August 2017 among 717 respondents in four countries: Germany, Japan, the U.K. and the U.S. Respondents were required to have knowledge about their organization's IoT-related business objectives, strategy and benefits. Respondents also were required to have a high level of responsibility in IoT decisions across determining business objectives, setting the IoT strategy and measuring or determining how to measure ROI/effectiveness of IoT initiatives. Quotas were established by country to ensure a good representation in the sample. A good spread of industries and company sizes also was required.

More on This Topic

This is part of two in-depth collections of research. See the collections:

- Creating Digital Value at Scale: A Gartner Trend Insight Report
- Getting Started: How to Strategize, Prepare, Plan and Manage Enterprise IoT Projects

GARTNER HEADQUARTERS

Corporate Headquarters
56 Top Gallant Road
Stamford, CT 06902-7700
USA
+1 203 964 0096

Regional Headquarters
AUSTRALIA
BRAZIL
JAPAN
UNITED KINGDOM

For a complete list of worldwide locations,
visit http://www.gartner.com/technology/about.jsp