The Evolution of IoT and Its Impact on Adopters and Technology Providers: A Gartner Trend Insight Report

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Real benefits from IoT are displacing the hype. IoT solution providers are leveraging new technologies and updating go-to-market models, and IoT adopters are working through the challenges of IoT project implementation to deliver compelling business value.

Opportunities and Challenges

- Creating ongoing business value and compelling financial returns from Internet of Things (IoT) investments has been more challenging for IoT solution providers than it has for those organizations adopting IoT.
- As IoT projects move beyond proofs of concept (POCs) and pilots into broader production environments, the full extent of the complexities and challenges with IoT integration are becoming clear.
- Improved data from IoT investments introduces change and disruption for organizations to address, ranging from completely new technologies to significantly different staffing and skill set requirements.

What You Need to Know

- Many IoT solution providers are resetting IoT financial targets and go-to-market (GTM) plans, while simultaneously, IoT adopters are becoming better at specifying clear business objectives and planned ROI before beginning project execution.
- IoT providers are starting to bring much better tools and capabilities to bear for IoT projects, while IoT adopters are beginning to leverage emerging best practices for more successful IoT implementation.
- IoT providers and adopters need plans in place to address the offensive and defensive nature of disruptive technologies as they emerge. Some technology disruptions, like artificial intelligence (AI), will play a pivotal role in delivering IoT benefits, while others, such as blockchain, will likely remain limited in their impact on IoT.

Insight From the Analyst

2018 Is the Year of the "IoT Reset"

Nathan Nuttall, Research Director

IoT had a rougher start for some organizations than originally anticipated. Technology and service providers (TSPs) have struggled to achieve target revenues and growth for IoT solutions, and organizations adopting IoT have contended with IoT's nascent technologies, lack of standards and complex integration requirements. However, there is evidence that, as IoT continues to mature and slide into the Trough of Disillusionment, IoT providers are taking the necessary steps to update product and business strategies and GTM plans (see "Hype Cycle for the Internet of Things, 2018"). And IoT adopters are actually getting much better at extracting value from IoT, even though the road to value is sometimes longer and a bit more challenging than anticipated. In fact, based on Gartner's latest IoT survey data from August 2018, 80% of organizations that have adopted IoT indicated they are achieving better-than-expected results from their IoT projects.

In this latest IoT special report, we will share best practices for how IoT TSPs and adopters of IoT can best take advantage of IoT's opportunities while avoiding some of the common traps. We will highlight how TSPs can evolve their products and solutions, overhaul GTM planning and messaging, and better enable selling efforts. And we will share how organizations adopting IoT — both the makers of the "things" in IoT and the owners/operators of "things" — are implementing and managing IoT projects to extract maximum business value.

Regards,

Nathan Nuttall

Executive Overview

Definition

The considerable hype surrounding IoT is giving way to the practical challenges of IoT project implementation and how organizations adopting IoT are extracting real business value. And we are getting a good understanding of which strategies and GTM activities are working (and not working) for IoT TSPs.

> 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

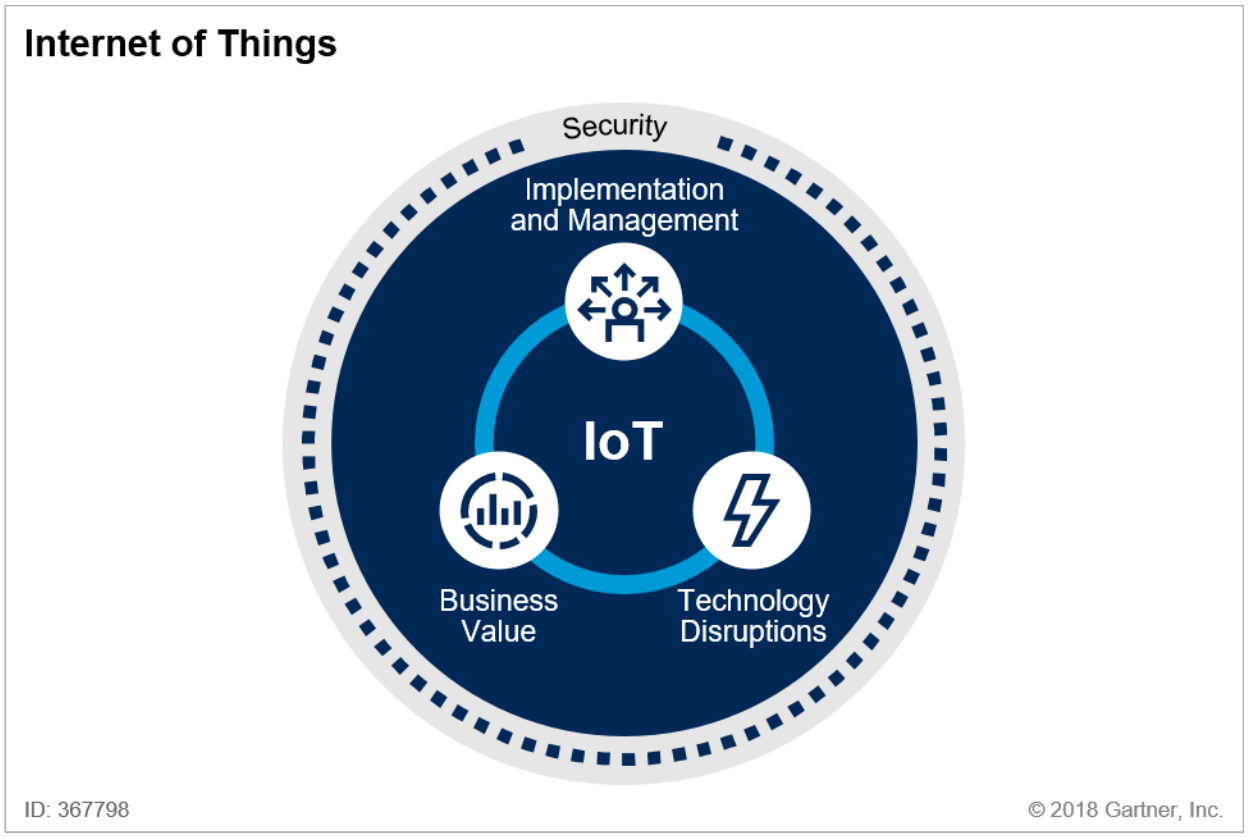
general-purpose devices, such as smartphones, tablets and PCs.

Gartner observes two overarching trends in terms of achieving successful business outcomes from IoT: Providers have largely been struggling to meet financial targets, whereas IoT adopters (providers' customers) have seen better-than-expected results.

TSPs have struggled to monetize their IoT products and services, with a majority telling Gartner that the bulk of their IoT customer engagements have been trapped in the POC stage, unable to move forward to broader deployment. As many of these POCs were "free" to customers and underwritten by the providers, these "stuck" POCs have hindered provider financial performance. And it's clear that IoT adopters took advantage of multiple free POCs from multiple vendors, further reducing individual IoT providers' chances for broader deployment projects. However, we are starting to see the POC logjam free up as providers get better at executing projects and managing customers' expectations while covering POC costs. And opposite to IoT providers' struggles, IoT adopters are faring much better with IoT. Results from Gartner's 2018 IoT Strategy and Implementation Trends Survey indicate that the majority of organizations that have already implemented an IoT project report achieving better-than-anticipated results from IoT.

In this special report, we have included relevant research that addresses how IoT is impacting both TSPs and IoT adopters. We have highlighted how to build the business, implementation and technology foundations as securely as possible to continue to foster IoT growth and impact (see Figure 1).

Figure 1. IoT



Source: Gartner (September 2018)

Research Highlights

Achieving Business Value From IoT

Evolving Market Dynamics Impacting IoT TSPs

Many providers of IoT products and services have recently begun to reformulate IoT offerings and strategies to improve IoT business performance and customer successes. We've seen concerted efforts to fill product and capability gaps, enhance pricing models, adopt outcome-driven engagement models, and much greater focus on delivering value specific to vertical markets and IoT use cases. Additionally, a real cleanup of partner selection and strategies has started taking place. Recent examples include:

- Rockwell Automation investing $1 billion in PTC rather than developing its own IoT platform
- The creation of ADAptive Manufacturing Open Solutions (ADAMOS), a joint venture between DMG MORI, Dürr, Software AG, ZEISS and ASMPT
- Myriad internal reorganizations in an effort to improve IoT business performance

Related Research

"Market Insight: The Future of IoT Services Is Now": As digital transformation expands across all industries, IoT continues as the leading technology enabling digital business solutions. As such, technology product managers of digital professional services must expand their IoT capabilities and the use of IoT assets to avoid being left behind.

"Market Insight: How IoT Creates Business Value in Transportation": Transportation companies demand clear ROI and tangible business benefits for IoT implementations. Technology product marketers selling IoT solutions must demonstrate the business value of IoT.

"Cool Vendors in IoT 'Thingification'": The IoT is reaching out to the most basic of things — tables, doors and tanks of liquid. Technology product management leaders must think beyond traditional electronics to understand how inanimate objects can deliver value, utilizing technologies from these Cool Vendors.

"Tech Go-to-Market: A Practical Guide to Market Segmentation": Identification of ideal groups of customers for your product or service is at the heart of market segmentation efforts. To win in competitive markets, technology product marketers should use this document to more effectively define target segments and focus their sales and marketing efforts.

IoT Adopters Leveraging IoT to Deliver Compelling Business Outcomes

A combination of factors is at work driving improved IoT business outcomes, many brought about simply through more experience, and in some cases, through some painful mistakes and lessons learned. IoT adopters have improved their ability to look beyond the hype of IoT to craft clear business goals and objectives for projects, as well as specifying target financial payback time frames before even beginning an IoT project.

Related Research

"Maturity Model for the Internet of Things": Gartner's maturity model for the IoT provides an evolutionary framework that CIOs can use to understand, track and maximize the business impact of IoT investments across their organizations.

"Avoid the 'Danger Zone' to Achieve IoT Project Payback": CIOs should drive IoT projects to achieve financial payback in less than one year. While projects with payback targets in two to four years may achieve goals, projects with payback beyond five years are in the danger zone and may struggle to achieve the break-even point in that time frame — if ever.

"Leading Technology Trends and Initiatives From the 2018 Supply Chain Top 25": Use of the right technology can be a source for competitive advantage. Leaders responsible for supply chain technology can use this research to learn more about leading technology trends, insights and use cases from organizations eligible for the Gartner Supply Chain Top 25 for 2018.

"Apply Design Thinking to Create Compelling IoT Customer and Partner Experiences": Organizations are radically transforming customer and partner experiences with IoT-enabled

solutions. Applying design thinking principles enables technology product managers to engender engagement and loyalty.

IoT Implementation and Management

GTM Strategies for IoT TSPs to Succeed

IoT TSPs have had a rough time achieving IoT sales goals the past few years. Through a combination of overselling technical features, a lack of customer case studies offering proof of value and too many ill-fated free POCs where customers didn't have "skin in the game," IoT providers struggled to convey and deliver IoT value. However, IoT providers have started to address all these areas. They are now more consistently driving GTM and sales enablement strategies that showcase the real-world value IoT can deliver — whether that is cost savings, efficiency gains, incremental revenue through data insights or even wholesale business model transformations. Furthermore, sales staff have gained a deeper understanding of clients' business objectives and have become better at delivering solutions as opposed to just selling technology components.

Related Research

"Market Insight: Partner With a Consulting Service Provider to Win IoT Engagements and Scale Your Business": Enterprises demand IoT solutions that deliver compelling business outcomes. Technology product managers must demonstrate value-added industry expertise in IoT solutions. Achieve this by partnering with a consulting service provider with strong industry expertise.

"Selling for Success: Sales Enablement Strategies for Small IoT Solution Providers": Small vendors must overcome a number of challenges to be perceived as a safe business partner by large organizations. We provide eight tactics to enable technology product marketing leaders at small IoT solution providers to successfully sell to large prospects.

"Edge Computing Challenges Go-to-Market Strategies in IoT": Edge computing is becoming a top priority in the IoT, indicating significant changes to product features and architectures, and adding a new variable to the competitive dynamics between vendors. This document advises technology business unit leaders on how they must address edge computing in their GTM strategies.

"Competitive Landscape: IoT Platform Vendors": Despite its immaturity, the IoT platform market is extremely competitive, with hundreds of companies offering solutions. To succeed, technology product marketing leaders need to sharpen their IoT GTM strategy and evangelize and educate the market on the art of the possible.

Best Practices for Implementation and Management of IoT Initiatives

Adopters of IoT have become much better at identifying opportunities to apply IoT where it can help deliver practical business benefits. They have started to take advantage of best practices for IoT project implementation across architecture, integration and ongoing operations. Critically, this also includes a better sense of how critical IoT security is to the success of IoT implementations, although many are still struggling on how exactly IoT security should be integrated.

Related Research

"Getting Started: How to Strategize, Prepare, Plan and Manage Enterprise IoT Projects": Organizations lack mature IoT delivery approaches. Due to inflated expectations and poor upfront planning, many projects and POCs have not made it into production. CIOs making their foray into IoT should prepare their enterprises by adopting and committing to a shared enterprise IoT framework.

"Use the IoT Platform Solution Reference Model to Help Design Your End-to-End IoT Business Solutions": To succeed with their IoT projects, CIOs and directors of application infrastructure must thoroughly examine and understand the full composition of end-to-end IoT business solutions, the role of IoT platforms within them, and what IT competencies will be needed.

"Use the Service Provider Segmentation Model to Select Your IoT Partners": CIOs are challenged to identify the best-fit IoT service providers, as the service market is inundated with various types of providers all promoting similar IoT offerings and expertise. Understanding how today's providers support these services is key to driving a successful enterprise IoT journey.

"Market Guide for Operational Technology Security": Operational technology (OT) security products and services protect existing and evolving OT for critical infrastructure ecosystems. Security and risk management leaders should gauge the market state and direction to better leverage the different types of OT security providers in this market.

"IoT Solutions Can't Be Trusted and Must Be Separated From the Enterprise Network to Reduce Risk": IoT devices from vertical market lines of business and building automation have started to invade enterprise infrastructures. Infrastructure and operations (I&O) leaders must separate and monitor all IoT solutions from the rest of the network to avoid being hacked or causing havoc on the enterprise infrastructure.

Technology Disruptions From IoT

TSPs Introducing Products Built on New Technologies

TSPs continue to seek the latest technologies bubbling up from IoT that represent both opportunities and threats to their current product roadmap and business strategy. TSPs must choose how to respond to these technologies — offensively by incorporating them into future solutions and services ahead of rivals, or defensively by minimizing the impact and value from those technologies in favor of what they have to offer.

Related Research

"Innovation Labs and Incubators Will Accelerate IoT Technology Adoption": Technology product marketers should use innovation labs, incubators and targeted innovation engagements to bring experts, partners and prospects together to accelerate IoT sales cycles, grow markets and drive innovation.

“Market Trends: New Satellite Constellations Will Provide Revolutionary Opportunities for Connecting the IoT”: Plans for 600 new satellites in low-earth orbit offer communication that is priced like cellular, faster than LPWA, and with global coverage. These new satellites will create an opportunity for technology product managers who are agile enough to take advantage of them.

“Emerging Technology Analysis: Don’t Sell Blockchain for IoT, Sell Business Innovation Using IoT”: Technology product managers who overemphasize the blockchain dimension of their IoT products and services risk being relegated to vanity projects and dead-end pilots. We provide recommendations to ensure that blockchain products will enable customers to deliver genuine business innovation.

“Emerging Technology Analysis: Build Voice-Enabled Technologies Into Manufacturing and Supply Chain Processes”: Health and safety improvements in manufacturing and supply chain operations are possible through the use of voice-enabled technologies that dramatically increase usability and user satisfaction. Technology product management leaders should look to opportunities with these voice-enabled hands-free interfaces.

“Market Insight: 3 IoT Design Imperatives From the Smartphone Industry”: There are many parallels between the smartphone ecosystem and consumer IoT segments gaining volume. Technology product managers at IoT manufacturers must anticipate disruption in these segments by learning lessons from the smartphone market.

“Market Insight: Vision Processing Units — Enabling IoT Endpoints With AI-Based Computer Vision”: AI and real-time image processing are becoming a requirement for a growing range of IoT endpoints, but implementation is not easy. To deliver success, technology product managers must navigate a complex landscape of semiconductor solutions to this challenging problem.

IoT Adopters Leveraging Latest IoT Technologies to Transform Business Models

IoT adopters must identify which new technologies to take advantage of today, which technologies they need a plan to leverage in the next couple of years, and which ones they essentially ignore for the time being. Disruptive technologies can generally be categorized into five areas:

- Sensing: IoT endpoints
- Communicating: IoT communications
- Securing: IoT security
- Understanding: IoT data and analytics
- Acting: IoT AI

These five areas often come together in part or comprehensively to deliver significantly improved user experience (UX). Many IoT systems involve changing customer experiences and relationships, and innovative IoT UX will become a key success factor.

Related Research

"Hype Cycle for the Internet of Things, 2018": The IoT is helping to blend the physical and digital world, and it will transform industries and the way we live and work. This Hype Cycle helps enterprises assess the critical building blocks and the levels of maturity and hype associated with IoT.

"Cool Vendors in IoT Security": Approaches to built-in IoT device security and vertical-specific security requirements for IoT use cases remain few and far between. Security and risk management leaders should use this report and listed vendors to recognize the emerging security priorities in IoT.

"Why and How to Design Digital Twins": Digital twins are proliferating in the IoT and elsewhere because they are useful for many different purposes. Application leaders can use the digital twin design pattern to enable new kinds of applications and reduce the cost and complexity of IoT and other digital business systems.

"Hype Cycle for Drones and Mobile Robots, 2018": This Hype Cycle report includes all technologies used to drive the usage of drones, mobile robots and even human-form android robots, which could be semiautomated or fully automated.

"Magic Quadrant for Industrial IoT Platforms": As the market for industrial IoT (IIoT) platforms matures, vendors will need to address not only a number of issues relating to platform capabilities and features, but also the competitive landscape to serve users better.

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

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Related Resources

Webinars

"IoT Services Strategies to Win Buyers"

"The IoT Scenario: What to Do Next"

"How to Architect the IoT Edge"

"The Top 5 Critical IoT Competencies"

"IoT's Opportunities and Challenges in 2018"

Articles

"How to Listen to the Voice of "Things" in the IoT"

"How to Integrate IoT-Connected Products"

"4 New Roles That I&O Plays in IoT"

"How IoT Impacts Data and Analytics"

Gartner Recommended Reading

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

"Internet of Things Primer for 2018"

"Effective Internet of Things Planning and Design"

"Solution Path for Developing an Internet of Things Technical Strategy"

"Digital Disruptors 2018: Leading the Path — A View Into Disruptive Categories and Companies"

"IoT Implementation and Management — From the Edge to the Cloud: A Gartner Trend Insight Report"

Evidence

The analysis and advice provided in this document are built from constant scanning of the market, as well as from the aggregation of analysts' experience and ongoing interactions with TSPs and end users. We used a range of sources to feed our perspective on the topics discussed in the document:

- Primary market research on IoT across business strategy and execution, architecture and implementation, and the technologies related to IoT
- Gartner client inquiry and conversations
- Discussions between Gartner analysts with expertise in key business areas, technologies and relevant vertical markets
- Previous Gartner analysis of digital business, IoT and related technologies

Gartner analysts also leverage secondary sources of information, including data from government agencies, standards organizations, and so forth.

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