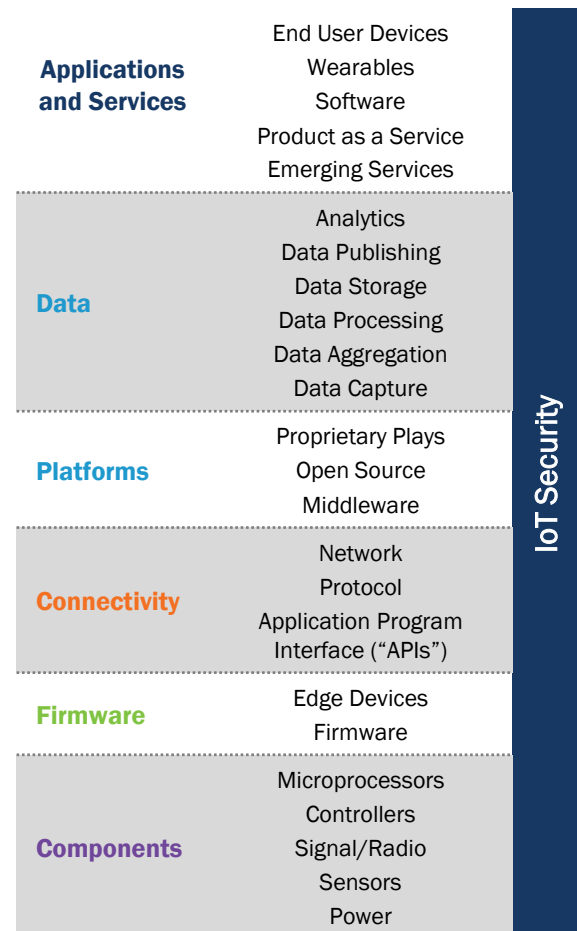# IoT Driven M&A

The IoT M&A Landscape

Through Q3 2016, more than 150 Internet of Things ("IoT") companies were merger and acquisition ("M&A") targets — making 2016 on track to nearly double 2015, which was itself a record breaking year. IoT M&A targets during 2016 have been spread across the stack (**Exhibit 1**) with a total disclosed value of $51.6 billion compared to just $31.9 billion a year earlier. Overall within 2016 high-tech M&A, significant activity has been seen within the semiconductor sector (total disclosed value of $54 billion) and computers/electronics and software/software as a service ("SaaS") (total disclosed value of $46.1 billion).Traditional non-tech companies and original equipment manufacturers ("OEMs") adding capabilities accounted for 39 percent of total corporate M&A transaction while the remaining 61 percent came from high-tech companies adding capabilities, vertically integrating or conducting preemptive strikes.[1]

Over the past several years, there has been a lot of buzz surrounding IoT. Recent M&A transaction values and volumes indicate IoT is a firmly entrenched part of mainstream growth strategies, and companies are looking at it as a long-term driver of significant commercial value. IoT is real and here to stay — a 2015 survey of 795 executives at companies with an average revenue of $22 billion found that 79 percent of them had invested in IoT initiatives.[2]

EXHIBIT 1:
The IoT Stack

Applications and Services	End User Devices / Wearables / Software / Product as a Service / Emerging Services
Data	Analytics / Data Publishing / Data Storage / Data Processing / Data Aggregation / Data Capture
Platforms	Proprietary Plays / Open Source / Middleware
Connectivity	Network / Protocol / Application Program Interface ("APIs")
Firmware	Edge Devices / Firmware
Components	Microprocessors / Controllers / Signal/Radio / Sensors / Power

IoT Security (vertical band on right)

1 Ernst & Young, Global Technology M&A Report, December 2015
2 Tata Consulting Services, TCS Global Trend Study 2015 – Internet of Things: The Complete Reimaginative Force

IoT transaction values averaged about $1.2 billion in the second half of 2015.[3] The competition for IoT targets has intensified with traditional high-tech companies and OEMs bidding for targets and driving higher valuations.

The evolution of technologies such as cloud and big data have changed the face of the industry and created multiple opportunities to grow revenue streams. As a result, it is widely believed that most value realization will be obtained at the software and service layers. According to the McKinsey Global Institute, software and services will account for between 60-85 percent of total IoT spend.[4]

The lines between traditional high-tech companies and non-tech players are fading as new business models emerge around analytics, data, applications and services. Companies are pursuing new business models to move higher up the stack, with some companies trying to subsidize or fund hardware by monetizing subscriptions, services, advertisements and software.

In addition, the IoT stack is getting crowded. There are numerous established and emerging companies engaged across the spectrum — with offerings ranging from embedding chips into manufactured products, creating firmware, establishing platforms, enabling connectivity, driving analytics and offering ancillary services — while also finding niche vertical and horizontal plays.

Types of IoT M&A

Companies across industries are evaluating the impact of IoT within their landscapes and identifying what capabilities are needed to be competitive. As a result, many companies are investigating and exploring partnerships, consortiums, joint ventures ("JVs") and M&A transactions — all of which require executive-level vision, a sound strategy, execution rigor, investment and commitment. When it comes to IoT-centric M&A, there are six primary types that we have outlined and identified in **Exhibit 2**:

EXHIBIT 2

Type	Focus	Description	Example(s)
Rapid Stack Expansion	Concurrent vertical and/or horizontal acquisitions	Performing acquisitions in parallel to quickly solidify positioning and creating opportunities to play across the value chain	Google acquired DeepMind, NEST Labs and Boston Dynamics
Stack Mobility	Vertical integration-moving up the stack	Extending capabilities to de-risk commoditization and creating unique value propositions	CalAmp acquired Wireless Matrix; Amazon acquired 2lemetry
	Vertical integration-expanding down the stack	Enhancing value chain to reach new markets (industry verticals) or adding capabilities to enhance existing products and services	
Consolidation	Horizontal integration-expanding existing zone on the stack	Scaling existing products or services into new verticals or customer segments	Digi International acquired Etherios
Defensive Plays	Consolidating position	Merging to protect position in value chain de-risking scale and reach of larger players (e.g., smaller IoT firms)	Jawbone acquired BodyMedia
Preemptive Strikes	Adding product capabilities	Enhancing existing offerings to accelerate use cases, and keeping competition from acquiring the capability	ARM acquired Sensinode; GE Wurldtech Security Technology
Roll-Ups	Venture capital ("VC")/private equity ("PE") firms buying platform companies	Buying mature, well-established players who can serve as roll-up platforms (e.g., fleet management)	Elliott Management Corporation investment in SIGFOX

3 *Forbes*, The Internet of Things Dominates Recent Mergers & Acquisitions, November 2015
4 McKinsey Global Institute, Internet of Things: Mapping The Value Beyond The Hype, June 2015

IoT M&A Characteristics

Consumer and industrial IoT are evolving differently, both use cases and business models differ. Wherein consumer IoT is focused on delivering experiences and self-improvement opportunities, industrial IoT is driven by cost reduction, efficiency improvements and data-driven decision-making capabilities. Regardless, companies playing in consumer IoT or industrial IoT must decide whether they intend to own their respective ecosystems, provide the platform for the ecosystem or simply operate within it.

Technology companies tend to look to expand across the IoT stack. They want to acquire capabilities like analytics/data capture, device interface management, product design, contract manufacturing and interconnectivity APIs to the cloud.

Traditional technology companies like Google, Apple and Amazon are adding hardware products to their software and internet stack, whereas traditional manufacturers and OEMs are adding technology to their core capability hardware products.

Industrial companies tend to move up the stack – they want capabilities such as device interface/management, data processing/management, analytics, security, application enablement, enterprise integration, business process intelligence and simulation.

Enhanced capabilities underpinning these IoT expansions (e.g., improved data acquisition/management, power consumption and connectivity) are demanding new technological breakthroughs (e.g., embedded sensors, low power design, low cost processors, software integrated with a product cloud to store and analyze data), which is accelerating the need

for organizations to acquire these solutions through M&A.

In general, strategic investors are willing to pay a premium price for targets and often make multiple parallel acquisitions in order to fill capability gaps in their value chains. Traditional M&A considerations, such as immediate revenue growth or cost cutting, do not appear to be primary drivers.

> **Companies are deciding to pursue different types of M&A transactions, in part, based on whether they have an open or closed technology stack.**
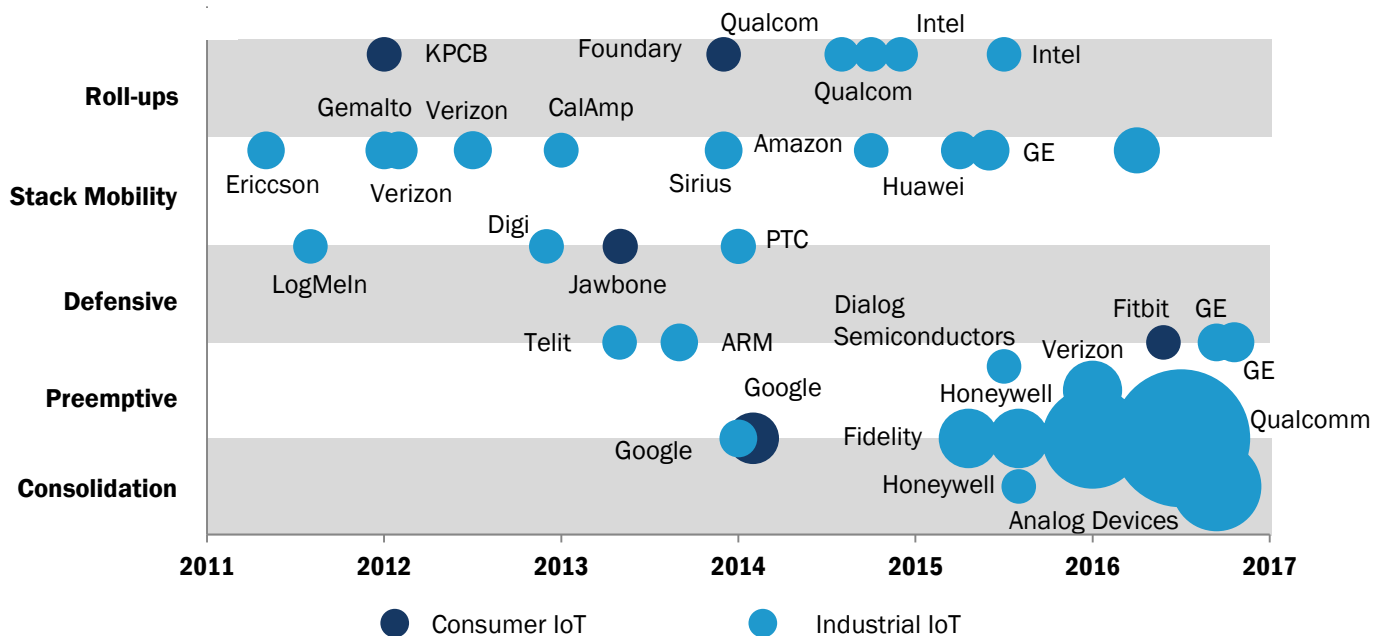
► Open technology stacks tend to attract thousands of third party developers and remain attractive platforms for an IoT ecosystem.

► In contrast, companies with closed technology stacks are more likely to internally develop product capabilities across all layers of the IoT stack.

► Companies developing IoT platforms pursue vertical integrations to obtain the necessary product capabilities across different layers of the IoT technology stack.

► Companies seeking to own or simply play in an IoT ecosystem tend to develop product capabilities internally and execute horizontal integrations when appropriate.

IoT M&A Trends

In both consumer and industrial IoT, M&A activity has been distributed across each of the six M&A types (**Exhibit 3**). Companies of all sizes have pursued vertical integrations to acquire capabilities at both higher and lower layers. Overall, several prevalent M&A trends have emerged across the IoT landscape.

► Hardware companies tend to execute large horizontal integrations to play across IoT ecosystems; and, to a lesser extent, vertical integrations to move further up the stack.

► Software, service and telecom companies with open technology stacks execute vertical integrations to develop and own the leading platform for a given ecosystem.

► Large corporations like Cisco, GE, Intel, Verizon and Qualcomm have been active investors in IoT companies across all ecosystems and layers of the stack.

► Venture capital firms have demonstrated a greater appetite for investing in higher layers and across IoT ecosystems; there has been steady investment in consumer IoT companies at higher levels of the IoT stack.

► Private equity firms appear to be playing a waiting game for targets to mature and become roll-up platforms (targets are scarce today).

► Valuation plays are being justified in the name of preemptive strikes.

► The strength of Western currencies is making emerging market targets attractive.

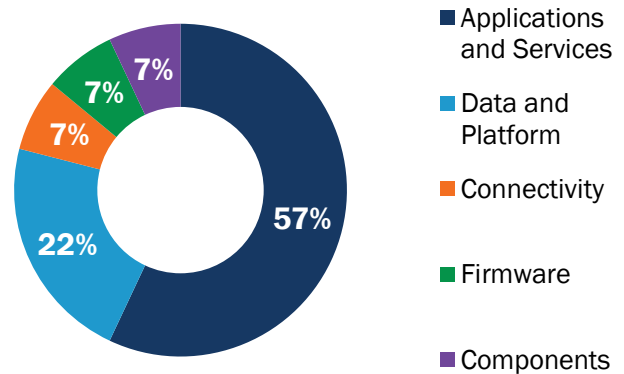**EXHIBIT 3:**
Select IoT M&A Transactions

M&A Activity Across the Stack

IoT-centric M&A activity spans the entire IoT stack. Most IoT M&A volume happens within software and applications/services (**Exhibit 4**); however, larger deal values occur at the lower layers (e.g., component and hardware). The largest transactions have been horizontal integrations in the hardware layers by multinational companies targeting specific IoT technologies with a focus on consolidation within industrial IoT (e.g., smart manufacturing).

The IoT landscape is dominated by application providers, and we expect the IoT M&A trends of the past to continue through 2020. Namely, higher levels of M&A volume at the software and service layers, but higher transaction values at the hardware layers.

Given the high level of fragmentation at the software layers, we expect future M&A activity will drive consolidation across these layers.

EXHIBIT 4:
Percentage of Firms by IoT Stack

- Applications and Services
- Data and Platform
- Connectivity
- Firmware
- Components

Stack Area	Select Acquisitions Across the IoT Stack
Applications and Services	• Google acquired Nest Labs • PTC acquired Thingworx • Jawbone acquired BodyMedia • CalAmp acquired Wireless Matrix USA Inc.
Data	• Fidelity National Information Services acquired SunGard Data Systems • Digi International acquired Etherios • LogMeIn acquired Pachube
Platforms	• Amazon acquired 2lemetry • Huawei acquired Neul • Ericsson acquired Telenor Connexion's M2M Technology Platform
Connectivity	• Verizon Enterprise Solutions Group acquired Hughes Telematics • Verizon acquired nPhase • Cypress acquired Broadcom's Wireless IoT Business, including WICED™
Firmware	• Sony acquired Altair • Andreessen Horowitz acquired Samsara • Cisco acquired Jasper Technologies
Components	• NXP acquired Freescale • Dialog Semiconductor acquired Atmel Corporation • Honeywell International Inc. acquired Elster Group GmbH **IoT Security** • GE acquired Wurldtech Security Technology

(Vertical label spanning the middle column: IoT Security)

Executing the IoT M&A Strategy

Realizing Value from IoT M&A

At each layer of the stack, there are different synergy opportunities, which can be mixed and must be taken into consideration by the acquiring company. Regardless of the type of acquisition and synergy strategy, companies should focus on retaining key individuals and performing cultural diligence early on to identify risks with talent. Synergy focus areas include:

▶ **Revenue and Cost Optimization:** At higher layers of the stack where transaction values are lower, target companies have generally underinvested in IT and back-office functions. This characteristic constrains the value that can be achieved from cost synergies; therefore, acquiring companies should focus on revenue synergies.

At lower levels of the stack where acquisitions are larger in nature, there are often substantial cost synergies to capture. For example, NXP expects to achieve upwards of $200 million in costs synergies through its merger with Freescale.

▶ **User Integration:** At higher layers, acquiring companies are more likely to pursue a user centric integration strategy where value is created by acquiring additional users who create data, or by acquiring data that provides additional value to users. The focus is on leveraging content and data monetization to enable a variety of business models (e.g., advertising, subscriptions, cross-selling, up-selling).

▶ **Product/Platform Integration:** Companies making acquisitions at both high and low layers of the stack may consider choosing a product/platform centric integration strategy, which focuses on creating opportunities for IoT platform development, product bundling, quickly rationalizing products or features and identifying opportunities for new product development as a long-term play. Bundles and pricing can drive a large amount of incremental value if executed well.

▶ **Ecosystem Integration:** Companies may also consider an ecosystem centric integration strategy, which emphasizes driving value through expanding product features and data analytics. A key aspect to delivering value is to make sure that customer segments, brand, products and pricing align quickly to support the ecosystem.

IoT driven M&A requires careful consideration and doesn't guarantee success. Risk factors include early adopter uncertainty, disruptive technologies, unclear or excessive valuation levels and emerging partnership ecosystems/consortiums. However, organizations with strong leadership and a commitment to IoT can successfully achieve their goals and realize healthy returns on their investments by optimizing synergy benefits. Given the expanding presence of connected devices, availability and value of data and continual rapid improvements in technologies, IoT driven M&A should continue to play a large role within corporate growth strategies at both traditional high-tech companies and non-tech players.

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