

# **Digital transformation with IoT:**

## How OEMs and ISVs can lead the way

#### **Executive summary**

Digital transformation is providing device manufacturers (OEMs) and independent software vendors (ISVs) with a once-in-a-generation opportunity. Companies have long struggled to establish long-term, profitable customer relationships in an industry characterized by commoditization, deal-seeking, and continual customer churn.

Forget industry consultancies' exhortation to "change or die." For OEMs and ISVs, the mandate is to "evolve and grow." While digital transformation isn't for everyone—the build versus borrow adage comes swiftly to mind the vast majority of OEMs and ISVs will benefit by reinventing their business, products, and services for a digital era. Digital business provides OEMs and ISVs with the tools and insights to develop long-lasting and profitable relationships that provide exceptional value to all participants in the digital ecosystem.

In this white paper, we describe the digital transformation business opportunity for OEMs and ISVs; discuss enterprise goals and needs; and address current industry concerns around IoT, such as device and connected business security. Ensuring end-to-end security will be critical to driving growth and earning the trust of customers purchasing IoT devices, services, and solutions.

#### Why device manufacturers should build a digital business right now

Digital transformation is providing device manufacturers (OEMs) and independent software vendors (ISVs) with an unprecedented opportunity to help reshape industries—and define their own marketplace trajectories. Pervasive connectivity, vastly scalable computing power, and cheap sensors and hardware have made it possible to connect just about everything, gaining new visibility into enterprise opportunities and operations. Cloud computing has changed the way software and services are developed, provisioned, and used, enabling powerful, predictive analytics on vast, ever-growing amounts of data. The always-connected mobile consumers have changed the way products are bought and sold with their restless quest for information and innovation. The customer experience is the new battlefield and is fast becoming more important than price.

OEMs and ISVs can help enterprises reinvent themselves for a digital era, but the opportunity is time-limited. Companies that move swiftly and are willing to experiment to capture the opportunity will create insurmountable advantage over laggards. They'll become expert at helping customers navigate digital transformation, as real-time data analytics informs their every strategic and daily operational decision. Just as Six Sigma has turned operational excellence into a game of inches, the new kings and queens of digital will rule niche markets, capture micromoments, and know their customers better than they do themselves.

Industry analysts have projected that there will be 30 billion connected things by 2020,<sup>1</sup> increasing the IoT market to \$1.3 trillion in addressable opportunity.<sup>2</sup> In their 2016 predictions report, Gartner says that spending on IoT hardware will exceed \$2.5 million every minute, and by 2021, 1 million IoT devices will be bought and installed every single hour.<sup>3</sup> Industry is changing so rapidly that analysts are calling this era the Industrial Revolution 4.0.

Since sensors and connected devices release a continuous stream of real-time data, big data is rapidly turning exponential. Just 1 percent of potential IoT connectivity has been unlocked to date,<sup>4</sup> meaning that there are nearly limitless business opportunities abounding.

"Digital business is the creation of new business designs by blurring the digital and physical worlds," states Gartner.<sup>5</sup> The blue-sky nature of digital business can prove anxiety-producing, because what it means for each company is necessarily different. OEMs and ISVs can use this opportunity to reposition their companies as strategic partners in navigating this time of change and complexity. Since both OEMs and ISVs have been mired in the commodity trap, digital transformation couldn't come at a better time.

OEMs and ISVs are also engaged in a transformation journey. Instead of making one-time device or product sales, they can package their goods with ongoing digital content and services. The data provided by connected devices and apps is inherently more valuable than the product itself, enabling a wealth of ongoing services that enterprises want—from remote monitoring and maintenance to predictive analytics they can use for decision making. Services based on IoT data and predictive analytics link OEMs and ISVs tightly to their customers, creating an ongoing loop of virtuous benefits for all participants in the digital ecosystem.







#### 12 REASONS to bank on digital transformation now

Here's why OEMs and ISVs should become experts at digital transformation.

The market expects it. More than one in two companies think IoT is strategic, and one in four believe it is transformational.<sup>6</sup>

In the digital now, the only constant is change itself. Cloud computing has removed the traditional barriers to market entrance, enabling companies of all sizes to create digital products and services, including enterprise software.

It increases company longevity. The average company's lifespan has decreased from 67 years in the 1920s to 15 years today,<sup>7</sup> and one in three industry leaders will be digitally disrupted by 2018.<sup>8</sup> Don't just survive—thrive in today's connected marketplace.

It ends the hardsell. With an exceptional customer experience, OEMs and ISVs can rewrite the rules of engagement. No more transaction selling. Instead, they will align with their customers on achieving strategic goals.

It enables OEMs and ISVs to connect with customers and partners in open digital ecosystems, to share digital insights, collaborate on solutions, and share in the value created. OEMs and ISVs should build devices and software for open platforms that enable customers to connect what they have and assemble IT solutions that meet their unique needs. Closed ecosystems are increasingly a thing of the past.

Competitors are doing it.

According to IDC, 70 percent of global discrete manufacturers will offer connected products by 2016.9

It's where the money is. Digital product and service sales are growing and will represent more than \$1 of every \$3 spent by 2021.<sup>10</sup>

Enterprises are overwhelmed by data. They already struggle to manage the data they have, and IoT will expand it exponentially. They need help finding the insights in the vast stream of data they manage.

Enterprises are overwhelmed by assets. The average enterprise has 588 applications<sup>11</sup> and may suffer from "shadow IT"—unknown and unmanaged systems, devices, and applications. Customers need help knowing what to maintain, what to upgrade, and what to eliminate.

Drive consumption. Digital services easily prove their own worth. Bundle products with digital services and content to make it easy for customers to consume them. Upsell and cross-sell with a few clicks, rather than navigating long enterprise decision-making cycles.

Understand customers better.
Use integrated channels, big data, predictive analytics, and machine learning to uncover, predict, and meet customer needs, increasing loyalty and revenues.

Future-proof the business. Make the right strategic bets for the company, product and service portfolio, and future investments using IoT data, analytics, visualization, and machine learning.

#### When digital transformation doesn't make sense

While digital transformation will provide business prospects and growth to most OEMs and ISVs, it may not be appropriate for all. Companies that provide commoditized components or limited integration services, for example, may prefer to partner to build digital businesses rather than build digital products and services independently.

So digital transformation will be big business. But what do enterprises need—and where should OEMs and ISVs place their bets? In the following section, we look at the strategic opportunity OEMs and ISVs have to help enterprises navigate digital transformation and achieve their four primary goals. We also examine how three industries—healthcare, manufacturing, and retail—are adopting connected devices to revolutionize the way they do business.

#### It's about the (digital) strategy

Digital transformation is happening so fast, that CEOs and their leadership teams need help. Some 86 percent of CEOs say technology will transform their business,<sup>12</sup> but many struggle to develop a comprehensive digital strategy. A large part of the problem is that vital data is mired in organizational silos and disparate legacy systems, meaning that senior leaders have difficulty developing a full picture of their business and uncovering new opportunities. As a consequence, they may be making strategic decisions on incomplete and potentially inaccurate information.

OEMs and ISVs can help share the Microsoft vision for change and partner with enterprises to develop and execute on their digital strategy. Research from Corporate Executive Board has demonstrated that providers who offer a strong point of view that is aligned with customer needs win larger deals, are viewed as strategic advisors, and more easily navigate the complex B2B cycle. Not only are customers conducting two-thirds of their research online, but they're bringing more decision makers to the table for complex sales. An average of 5.4 individuals are now involved in B2B buying decision making.<sup>13</sup>

OEMs and ISVs can help enterprises understand the value of building a connected business and how it will help them deepen their engagement with customers, empower their employees, optimize operations, and transform their business to stay ahead of the competition. OEMs and ISVs can also help their customers exploit the full potential of what they have: existing assets that aren't fully or correctly utilized, siloed data that has untapped insights, and business processes that could yield more value if refined. Digital leaders that have \$3.4 billion in annual revenues can add \$100 million more in operating income each year than those who are digitally reactive. OEMs and ISVs will likely partner not just with the CXO, but also lines of business, which now control 47 percent of all IT spend 15 and work independently with partners.







#### **Build** a connected business with current assets

CIOs at enterprises today are always hearing about the latest, greatest thing. Their charge to OEMs and ISVs is to help them maximize the value of what they already have. While traditional enterprise is moving toward a cloud-first model, adopting platform as a service (PaaS) and infrastructure as a service (laaS) offerings, they also have IT systems and devices that are tightly integrated with business processes and data.

OEMs and ISVs can help enterprises make the most of what they have by connecting current devices and equipment with sensors, integrating new connected devices, and integrating the wealth of data sources to create a rich, real-time view of performance. Not only does this approach increase the ROI of current investments, it puts digital transformation within reach of a wider array of customers. Reinventing asset management for the digital era will be the focus for the majority of IoT initiatives for the near future.

#### **Engage customers** with insight-driven digital tools

Enterprises are investing considerable resources in creating a 360-degree view of their customers. By doing so, they can deliver a seamless experience no matter what channel their customer is using and use predictive insights to deliver personalization at scale. They also can integrate customer data with other metrics to drive supply chain planning, streamline warehouse and daily operations, and improve staffing, among other goals. "Customer experience is the last source of sustainable differentiation and the new competitive battleground," says Tiffani Bova, Gartner Vice President and Distinguished Analyst. 16 It can help fuel revenue growth, as more than one in two consumers are willing to spend more for a superior experience. 17

OEMs and ISVs can help by building connected devices and applications that improve the customer experience. In retail, enterprises are using IoT in exciting ways to reinvent the shopping and service experience. Digital signage, RFID-tagged goods, smart shelves and dressing rooms, and interactive kiosks engage consumers and provide opportunities for giving rich, contextual information and cross-selling and upselling other merchandise. Beacons and mobile apps can help power personalized marketing offers to in-store shoppers for immediate sales. And sales associates can use mobile POS systems to provide a higher level of targeted service, enhance customer profiles, and streamline checkout.

Telstra, Australia's largest telecommunications provider, wanted to create an innovative store environment that would make it easy and intuitive for customers and employees to interact with its telecom products. With Windows 10 and the Universal Windows App Platform, Telstra and its Microsoft partner Engagis, an end-to-end solution provider, developed innovative NFC-enabled "tap and take" cards that customers can use to build personalized digital brochures by tapping desired products or services on digital kiosks in the store. Telstra also uses Power BI to analyze customer traffic and offer a better mix of products. As a result, 40 percent of all customers who interacted digitally in Telstra's stores continued their interactions online.

### DDoS attack makes IoT security top-of-mind

Cloud and device security should be top-of-mind with device manufacturers, systems integrators, and enterprise customers alike. The massive global distributed denial-of-service (DDoS) attacks on October 21, 2016, were powered by thousands of smart consumer devices, such as home routers and surveillance cameras. Attackers crawled the Internet for unsecured devices with default passwords, infected the devices with malicious code to form a botnet, and disrupted the online operations of multiple online services, including Twitter, Etsy, Pinterest, Spotify, and PayPal.18

Information security is constantly changing. Enterprises want to know that their connected devices and businesses will be safeguarded from security breaches and service disruptions. OEMs and ISVs should need to take an end-to-end approach to security to help enterprises harden their overall security posture. They can use Microsoft solutions to help create and maintain secure devices, ensure secure user identities, and protect data security as it travels over secure connections.

They can also depend on Microsoft to constantly upgrade the Windows 10 platform and other services, protecting against the latest, most sophisticated risks and threats. With more than \$1 billion annually in security R&D spend, Microsoft takes an end-to-end approach to security, so that its OEM, ISV, and enterprise partners can accomplish their digital transformation goals safely and securely.



"Last year, we saw more than half of our service transactions were digital, which has given us the opportunity to think big and redefine the role of our physical stores."

— Andrew Smith, Director of Retail Operations, Telstra

#### **Empower employees** with mobility and productivity resources

Enterprises are preparing for a cloud-first, mobile-first world. Gone are the days of just equipping senior leaders and road warriors with the best technology and mobile tools. Now, most of the workforce has rich collaboration and mobility tools: from global teams who use video conferencing to innovate strategies and products, to employees who have blended home-office work styles, to field services staff and other workers who spend most of their time on site with clients. By 2020, 1.75 billion workers, or more than 4 out of 10 globally, will be mobile, says Strategy Analytics.<sup>19</sup>

Healthcare organizations want to facilitate collaborative care among teams, so that they can make the best decisions, spend more time with patients, and drive improved outcomes. Connected devices such as tablets, online portals, and kiosks can streamline workflow and make it easy for caregivers to do their best work, by providing a natural and personal user experience and easy access to patient data and imagery, diagnostic tools, and medication and insurance information. Video conferencing tools can help caregivers confer with each other and remote specialists and diagnose patients effectively, reducing patient emergencies and costly readmissions. Driving outcomes is especially key as the industry moves to value-based pricing.

MultiCare Tacoma General Hospital sought to determine the likelihood of readmission of patients with heart failure by implementing an accurate risk prediction solution with a simple-to-use reporting interface. The organization used Azure Machine Learning and a customer mobile dashboard to develop a risk prediction API that relays actionable insights such as suggesting recommended discharge steps.

The risk prediction model aggregates data from sources such as labs, claims, medical records, and psycho-social factors and provides actionable insights that are relayed directly to care teams. The scalable solution can be easily deployed across hospitals and physicians.

"The real benefit of a tool like this is that it really is looking at what we now consider to be population management, which is not just to look at individual patients alone, but to look at individuals in cohort with a whole population of patients. What makes the most difference is that you get to actually see patients getting better."

— Tony Kim, Cardiologist and Director, Heart Failure Programs, MultiCare Health Systems







#### **Optimize operations** in capital-intensive industries

Asset-intensive industries, such as healthcare, manufacturing, and retail, have high capital spend—and need to make the most of their investments, from heavy machinery to handhelds. OEMs and ISVs can help enterprises use connected devices and applications to monitor, run, and maintain assets to drive their performance, throughput, and safety, among other gains.<sup>20</sup> In addition, connected devices are location-aware, making them less vulnerable to theft and diversion. Role-based authentication, advanced lockdown, and remote wiping capabilities further protect devices.

OEMs and ISVs can work with enterprises to build systems of intelligence that use customer, asset, partner, and IoT data, among other sources, to enable strategic and day-to-day decision making. In manufacturing, just-in-time inventory ordering reduces the cost and waste of unused or aging material. Meanwhile, connected devices can help transform facilities into intelligent factories that do more with less. For example, Fujitsu has created an intelligent dashboard for connected factories that runs on an integrated IoT platform powered by Fujitsu and Microsoft and uses the Azure IoT Suite and Cortana.

Enterprises can use robotics, automation, and connected equipment to operate in a smaller footprint, reuse the same technology for diverse products and workflows, and reduce energy consumption—while driving production. Mobile workforces can use connected devices and predictive analytics to enable proactive service of equipment, reducing or eliminating machine downtime while strengthening customer relationships.

OEMs can also use their IoT expertise to transform their own businesses. Jabil makes wearable technology, smartphones, and medical devices for a variety of industries. The company has used Microsoft predictive analytics solutions to predict machine processes that will slow down or fail at an 80 percent accuracy rate. Those insights have contributed a scrap and rework savings of 17 percent and an energy savings of 10 percent.

#### **Transform products** with incisive intelligence

With pervasive connectivity and intelligence, connected devices provide enterprises and their partners with four new sets of capabilities, say *Harvard Business Review* authors Michael E. Porter and James E. Heppelmann:

- **Monitoring**—providing comprehensive information on the product's condition, internal environment, operation, and usage. Monitoring can also alert users when the device is changed.
- Control—enabling users to control product functions or personalize the user experience.
- **Optimization**—algorithms that enhance product performance and enable predictive diagnostics, service, and repair.
- **Autonomy**—ensuring that the device can operate independently and within systems, autonomously personalize and enhance its services, and enable self-diagnosis and service.<sup>21</sup>

OEMs and ISVs can help enterprises by using Azure IoT Gateway SDK to build and deploy modules for edge intelligence. Enterprises can use these solutions and Windows 10 to connect vast networks of devices and things, process data right where it is created, and solve problems in real time at the edge of the network, rather than the back office. Edge intelligence will power better analytics, improve device and network safety and reliability, and enhance profitability with lower monitoring, maintenance, and repair costs. Break-fix will become a problem of the past.

While IoT applications will vary across industries, common IoT applications include security and access control; device monitoring, control, warranty, and maintenance services and upgrades; raw material, energy, and supply chain control and optimization; and logistics, including goods authentication and protection, item location, environmental control, and route control.<sup>22</sup>

#### How to triumph and win at digital transformation

Use this roadmap to ensure digital transformation success.

- Place the right strategic bets. With the Microsoft Cloud, Windows 10 devices and apps, and Azure IoT at the core of the solution, OEMs, ISVs, and enterprises can identify new business opportunities. Gain enterprise-wide visibility into marketing, sales, and operations, from a global level to industry and individual product-line performance. Collect, analyze, and use structured, semistructured, and unstructured data to predict future demand, allocating investments and personnel appropriately to innovation efforts. Reconfigure business around customers, using data visualization, digitalized processes, APIs, and more to enable new product and service models. Enable new device scenarios with streamlined activation.
- Create a digital ecosystem. IoT doesn't just connect devices, it connects people. OEMs and ISVs should build partnerships with other companies to deliver connected systems, to solve real problems. Component manufacturers can partner with device manufacturers, who can partner with ISVs and systems integrators (SIs). B2B customers don't want to assemble individual products and services; they want connected systems that easily integrate with what they have and continuously improve their business. "The new power brokers will be the master orchestrators that place themselves at the center of these digital ecosystems. These leaders will quickly master new digital relationships with their customers, end users, suppliers, alliance partners, developers, data sources, makers of smart devices, and sources of specialty talent," says Paul Daugherty, CTO of Accenture.<sup>23</sup> Microsoft believes that the solution aggregators will be the kings and queens of the digital elite.

As digital connectors, OEMs and ISVs will be in a unique position to identify new opportunities: Not only can they enhance existing products and services, but they can take learnings and apply them to new markets and industries. Microsoft HoloLens, a VR tool that creates immersive worlds, can be applied to both B2C and B2B markets, for example. Lowe's Home Goods is using HoloLens to make the case for large-scale home purchases by showing them in context.

- Build a platform business. Just as cloud services have decoupled technology systems, digital transformation enables OEMs and ISVs to run and grow their businesses in a new way. Gartner recommends taking a platform approach to business—creating a flexible, agile foundation where internal and external resources, such as people, assets, material, and intelligence, are used in a dynamic way to promote discovery of new ideas, integration of new resources, and rapid scaling of promising ideas. Companies can use social media and self-service tools to engage with customers, online talent pools to augment the workforce, partners to run critical technology infrastructures, and crowdsourcing platforms and startups to drive product innovation.
- Create and build on a solid, yet flexible IoT foundation. Microsoft, a proven leader in the enterprise space, has a long-standing commitment to helping its partners and enterprise customers build on their existing technology assets, devices, and data to derive business value from IoT. Many companies already use a wide variety of Microsoft devices and services. By building devices on Windows 10 IoT, OEMs can help enterprises maximize the value of their assets as they evolve their digital strategies to become mobile-first, cloud-first businesses. The Windows 10 IoT product family—Windows 10 IoT Enterprise, Windows 10 IoT Mobile, and Windows 10 IoT Core—offers three editions to meet the full range of device manufacturers' needs, from devices with robust functionality to single-purpose edge devices. By Azure-certifying devices for IoT, OEMs ensure that they can help enterprises unlock the power of the data these devices will create.
- Unlock more potential from existing investments. Device manufacturers have made sizeable investments in building IT infrastructure and product lines. Reap the full benefits of those investments with Windows 10, which provides interoperability and communication across IoT devices. Provide device-as-a-service (DaaS) offerings with device telemetry, configuration and updates, and access to Microsoft productivity solutions. Help customers reap the benefits of Microsoft Azure and the Microsoft Cloud platform, with anywhere, anytime access to their data and resources, increasing their agility and responsiveness.

- Ignite continuous innovation. Microsoft has scanned more than 100,000 drivers to create a universal driver API set for device manufacturers. One universal driver targets all Windows 10 IoT editions, and enables devices to access a larger ecosystem of peripherals. Scale quickly and reap higher ROI by selling or using the same components across all Windows 10 IoT editions. Benefit from a steady cadence of Windows 10 IoT innovation that will keep smart devices at the leading edge of capability and performance. Use Windows 10 IoT to manage for optimal results, while reducing overhead.
- Choose the trusted cloud. Microsoft is the leading trusted, flexible, and open-cloud platform. Today, the Microsoft cloud infrastructure supports more than 1 billion customers in more than 140 countries. With this unique experience and scale, Microsoft cloud services can achieve higher levels of security, privacy, and compliance than customers can on their own. Azure has received more compliance certifications than any other cloud provider, including major global, national, regional, and industry standards and regulations. The PaaS, laaS, and SaaS services can enable business growth when and where it's needed. Scale up and down as needed, minimizing cost and ensuring business continuity and effectiveness.
- Build devices on one common platform. Windows 10 provides one universal app platform, one security model, one management approach, one unified experience that scales across devices from the smallest sensor to the largest, most powerful devices. OEMs can reduce the cost and complexity of running their business and empower their developers with one common developer platform, and service teams with enhanced security, management, a store, and more across the broadest range of devices. Enable ISV partners to make a wealth of apps for multiple devices, knowing that each app can be deployed across all Windows devices without modifications. Authorize approved apps to manage IoT devices easily, with a standardized device management API. Make it easy and intuitive for enterprise customers to use devices, integrate them into their infrastructures, deploy apps of their own, and acquire immediate and ongoing benefits.
- Accelerate time to value. With Windows 10, one common and universal platform, it is easy for developers to do their best work. Build and deploy apps using the same tools and code for PCs, phones, and other industry devices. Enable developers to use their existing skill sets, doing more with existing staff. Reduce the training time for new hires, improve image design time, and meet market demands for new device types. With faster development, release a steady stream of updates to enhance device capabilities and help ensure security.
- Reduce product investments with extended lifecycle support. Develop new product and service lines knowing that Microsoft stands behind its partners. Microsoft offers 15 years of product availability, 10 years of support, no-cost security updates, and premier account management to its OEM and ISV partners.
- Help ensure end-to-end security. For a device manufacturer building smart devices, a retailer selling devices, or an enterprise using Azure, protecting each and every endpoint from the smallest sensor to the cloud is a top priority. Device manufacturers are using Windows 10 IoT, the most trusted Windows ever, to build smart devices. Windows 10 IoT takes intelligence to the edge, with Secure Boot and Trusted Boot, to help ensure device integrity; integrated Windows Defender, to help keep devices safe from malware and other threats; BitLocker and TPM support, to help keep user and device data safe; Credential Guard and Windows Hello, to ensure user authentication across all devices using the latest biometric applications; and Device Lockdown, to enhance device security in event of theft or diversion.

Enterprises benefit by deploying Windows devices that are secure by design, provisioned to connect to the trusted cloud, and provide automatic updates. Azure Active Directory (Azure AD), a world-class identity management solution, provides enterprises with self-service tools that empower employees to access cloud services, but maintain robust controls and provide ongoing security monitoring and alerts.

Data is secured at rest with industry-leading Microsoft full-disk encryption technology that encrypts the entire system volume and any partitioned data volumes on Windows 10 IoT devices. Data is secured in transit with multiple encryption technologies as it is shared between users whose access privileges have been determined with Multi-Factor Authentication. More information about the Microsoft commitment to transparency, privacy, compliance, and security can be obtained at the Microsoft Trust Center.

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Move beyond connections to intelligence. By offering technologies such as Power BI, Cortana Analytics, and Azure IoT Suite, Microsoft helps enterprises apply advanced technologies to business challenges once deemed too costly or complex to solve. For example, Microsoft industrial IoT capabilities enable organizations to ingest data from any source or format, apply machine learning models and data visualization, and integrate those results into collaboration and work-process solutions. This drives informed actions, as individuals take advantage of tailored, actionable insights to make better business decisions and deliver better business outcomes.

OEMs can enable customers to connect devices, analyze previously untapped data, and integrate business systems, transforming their company by uncovering new business models and revenue streams.

Azure IoT Suite enables application innovation—for web and mobile, IoT, data management, and micro-services.

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Team with the best partners. Microsoft has a broad ecosystem of more than 640,000 prominent OEMs, systems integrators, ISVs, and other partners spanning 170 countries worldwide. This ecosystem is adept at maximizing existing technology investments and offers the flexibility to select the best solutions for each business. Our partners design and deploy innovative, industry-focused solutions built on a Microsoft foundation, coupling best-in-class technology with deep industry expertise. No other technology provider offers a comparable end-to-end portfolio as well as an open and flexible approach. Together, it's this unique perspective that helps Microsoft drive digital transformation across all aspects of an organization and change the way a company optimizes operations, empowers employees, transforms products and services, and engages with customers.

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Invest in education. Train and certify teams on Azure, providing them with the opportunities to innovate and propel the industry forward. Top talent seeks new opportunities, and OEMs and ISVs need to continuously challenge, empower, and educate their teams to retain and grow the best IT developers and leaders. Create the place where people want to do their best work.

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Start today. Azure IoT empowers OEMs, ISVs, and enterprises alike with preconfigured solutions for the most common IoT scenarios. Innovative teams can start developing in five minutes, using Azure IoT Suite to connect any device, operating system, data source, software, or service, and trusted cloud services to scale and grow. Why wait? Digital transformation can start today.

## Use Windows 10 to power digital transformation

OEMs and ISVs can build smart devices and apps on Windows 10, the most trusted platform ever, with tools to help ensure device and data integrity and protection, authenticate users, and provide lockdown capabilities in the event of threats.

Enterprises benefit by using devices that are secure by design, connected to trusted cloud services, and enhanced by robust identity and access management services, automatic updates, and other services such as remote monitoring and predictive analytics.

Enterprise IT decision makers know that every platform they deploy should have its own unique security provisions and meet key legal and compliance requirements and international standards, as Microsoft does with all of its services.

Digital transformation begins now.

**Learn more at:** *InnovateOnWindows10IoT.com* 

Andrew Burger, "IDC: Internet of Things Base to Reach 30 Billion in 2020," Telecompetitor, November 7, 2014, http://www.telecompetitor.com/idc-internet-of-things-base-to-reach-30-billion-in-2020/.

<sup>2</sup>"Internet of Things Spending Forecast to Reach Nearly \$1.3 Trillion in 2019 Led by Widespread Initiatives and Outlays Across Asia/Pacific," IDC Press Release, BusinessWire, December 10, 2015, http://www.businesswire.com/news/home/20151210005089/en/Internet-Spending-Forecast-Reach-1.3-Trillion-2019.

<sup>3</sup>Daryl C. Plummer, Martin Reynolds, Charles S. Golvin, Allie Young, Patrick J. Sullivan, Alfonso Velosa, Benoit J. Lheureux, Andrew Frank, Gavin Tay, Manjunath Bhat, Peter Middleton, Joseph Unsworth, Ray Valdes, David Furlonger, Werner Goertz, Jeff Cribbs, Mark A. Beyer, Alexander Linden, Noah Elkin, Nick Heudecker, Tom Austin, Angela McIntyre, Fabio Chesini, and Hung LeHong, *Top Strategic Predictions for 2017 and Beyond: Surviving the Storm Winds of Digital Disruption*, Gartner, October 14, 2016, https://www.gartner.com/doc/3471568?srcld=1-7484470122.

<sup>4</sup>Imagining the Digital Future: How Digital Themes Are Transforming Companies Across Industries, EY Research Report, February 2015, page 7, http://www.ey.com/Publication/vwLUAssets/EY-imagining-the-digital-future/\$FILE/EY-imagining-the-digital-future.pdf.

<sup>5</sup>Jorge Lopez, Gartner, Inc., "Digital Business is Everyone's Business," Forbes, May 7, 2014, http://www.forbes.com/sites/gartnergroup/2014/05/07/digital-business-is-everyones-business/#49a1e5fc2d66.

<sup>6</sup>Lynne Dunbrack, Simon Ellis, Vernon Turner, Leslie Hand, and Kimberly Knickle, *IoT and Digital Transformation: A Tale of Four Industries*, IDC White Paper, March 2016, page 2, http://www.digitalistmag.com/files/2016/03/IDC\_IOT\_white\_paper\_Mar2016.pdf.

7Kim Gittleson, "Can a Company Live Forever?", BBC, January 19, 2012, http://www.bbc.com/news/business-16611040.

810T and Digital Transformation, a Tale of Four Industries, ibid, page 2.

<sup>9"</sup> Trends that Drive Discrete Manufacturing (by IDC)," SlideShare, http://www.slideshare.net/mheiligman/digital-transformation-for-manufacturing-industries.

<sup>10</sup>Building the Digital Platform: Insights from the 2016 Gartner CIO Agenda Report, page 1, http://www.gartner.com/imagesrv/cio/pdf/cio\_agenda\_insights 2016.pdf.

<sup>11</sup>Ben Kepes, "Latest Enterprise Application Use Survey Results—More Use, More Risk," *Forbes*, July 31, 2014, http://www.forbes.com/sites/benkepes/2014/07/31/latest-enterprise-application-use-survey-results-more-use-more-risk/#5ea70a446d12.

<sup>12</sup>Digital Transformation, PWC webpage, undated, http://www.pwc.com/us/en/ceo-survey-us/digital-transformation.html#readmore.

<sup>13</sup>The Consensus Sale, CEB webpage, undated, https://www.cebglobal.com/marketing-communications/mobilizer.html.

<sup>™</sup>Keystone Strategy interviews, October 2015-March 2016. Based on interviews with 340+ leading enterprises comparing data platform maturity with business performance, controlling for company size and industry. Incremental operating income of \$100 million is based on median company revenue of \$3.4 billion.

<sup>15</sup>"Technology Purchases Funded by Line of Business Budgets Are Approaching Parity with IT-Funded Purchases, According to IDC," IDC Press Release, February 16, 2016, https://www.idc.com/getdoc.jsp?containerId=prUS41026616

<sup>16</sup>Vala Afshar, Chief Digital Evangelist, Salesforce, "50 Important Customer Experience Stats for Business Leaders," Huffington Post, October 15, 2015, http://www.huffingtonpost.com/vala-afshar/50-important-customer-exp\_b\_8295772.html.

17 Ibid.

<sup>18</sup>Stephen Cobb, "10 Things to Know About the October 21 IoT DDoS attacks," WeLive Security, October 24, 2016, http://www.welivesecurity.com/2016/10/24/10-things-know-october-21-iot-ddos-attacks/.

<sup>19</sup>Gina Luk, Global Mobile Workforce Forecast, 2015-2020, Report Summary, Strategy Analytics, November 3, 2015, https://www.strategyanalytics.com/access-services/enterprise/mobile-workforce/market-data/report-detail/global-mobile-workforce-forecast-2015-2020.

<sup>20</sup>IoT and Digital Transformation: A Tale of Four Industries, page 2, ibid.

<sup>21</sup>Michael E. Porter and James E. Heppelmann, "How Smart, Connected Products Are Transforming Competition," Harvard Business Review, https://hbr.org/2014/11/how-smart-connected-products-are-transforming-competition.

22"50 Sensor Applications for a Smarter World," Libelium webpage, undated, http://www.libelium.com/resources/top\_50\_iot\_sensor\_applications\_ranking/.

<sup>23</sup>Paul Daugherty, CTO, Accenture, "The Rise Of Digital Ecosystems In The 'We Economy," *Forbes*, March 9, 2015, http://www.forbes.com/sites/ciocentral/2015/03/09/the-rise-of-digital-ecosystems-in-the-we-economy/print.



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