



**ioTrust™**

ENSURING A TRUSTED INTERNET OF THINGS™



## ACCELERATE YOUR IoT SUCCESS

Realize Your Vision of a Connected Ecosystem



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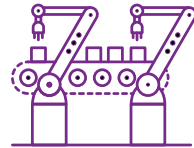
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**50B**  
**Connected  
Devices**  
by 2020<sup>1</sup>



**250M**  
**Connected  
Vehicles**  
by 2020<sup>2</sup>



**24B**  
**Machine-to-Machine  
Connections**  
by 2025<sup>3</sup>

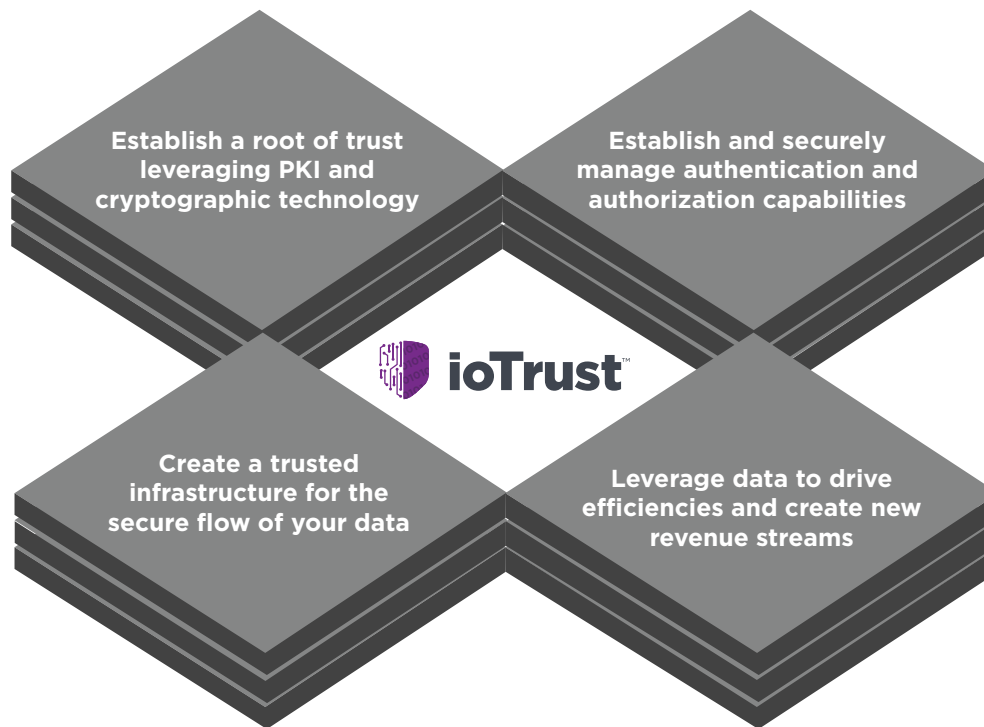
1 Cisco 2016 estimate.  
2 Gartner 2016 forecast.  
3 Machina 2016 research.

THE OPPORTUNITY

**SECURELY UNLOCK THE VALUE OF DIGITAL BUSINESS**

Realize your vision of a connected ecosystem.

The rise of digital business and the Internet of Things presents forward-thinking enterprises with almost unlimited opportunities. Capitalizing on those opportunities and unlocking the value of digital business requires connected and secure infrastructures. You need the ability to collect data and transmit commands securely and reliably across ecosystems comprised of highly trusted devices, applications and people.



**GLOBAL IOT OPPORTUNITY**

IoT initiatives across all markets represent an \$11.1 trillion annual opportunity by 2020, up from \$3.4T in 2014 (32.6% CAGR)<sup>4</sup>. This value will manifest itself in multiple ways.

**Agile Business Models**

Real-time innovation, accelerated time to market and direct connection to customers.

**New Revenue Streams**

Secure infrastructure will allow enterprises to leverage existing assets, create and monetize additional services.

**Mission-Critical System Controls**

The ability to secure, capture and leverage data from devices and processes, optimizing performance and profitability.

**Global Supply Chain Visibility**

Embedding identities at the time of manufacturing will allow for end-to-end supply chain visibility and control.

**Real-Time Business Intelligence**

Access to information from secure endpoints will enable predictive and prescriptive analytics and drive better outcomes.

<sup>4</sup> McKinsey Global Institute 2016.

## ACCELERATE TIME TO MARKET

### BEGIN BY SECURING YOUR INFRASTRUCTURE

Enable secure access to things and data.

Getting your IoT solutions into the market quickly and securely requires a connected ecosystem that is secure by design — from device manufacturing through the entire lifecycle. Following these three guidelines enables you to accelerate deployment and optimize time-to-market. These ideas are essential for building a secure and trusted ecosystem of people, applications and things.

#### 1 CREATE A TRUSTED ECOSYSTEM

**Keep untrusted devices off your network.** Establish trust in all devices – even those on the very edge of your infrastructure.

**Adapt hardware and software with platform-agnostic security.** Easily manage a broad portfolio of devices.

**Future-proof your solution.** Secure, remote channels enable on-demand upgrades of security and data model updates.

**Take command by retaining control.** Ensure devices on your network only perform authorized actions.

#### 2 SECURE OUTCOMES FROM A CONNECTED ECOSYSTEM

**Know your data is secure on the device and in transit.** Safeguard data from attack at rest, in transit and in use.

**Ensure the right security level for each device.** Cryptographic protections and strong authorization are critical.

**Meet compliance/privacy requirements.** Enterprise-grade encryption renders data unintelligible by unauthorized users.

**Ensure access only to trusted sources.** Cryptographic controls ensure devices only act on authorized commands.

#### 3 LEVERAGE YOUR ENTERPRISE INFRASTRUCTURE

**Operationalize devices whenever you're ready.** Build in trust anchors during manufacturing along with device information.

**Establish services quickly.** Combine your devices and service with security — quickly establish secure services.

**Trust devices through the entire lifecycle.** Establish security and trust support for the entire lifecycle of your devices.

**Connect to any backend system.** Ensure data arrives securely at data hubs, decision points or cloud services.

### REALIZE BUSINESS VALUE

Looking for a measurable advantage as you deploy your IoT strategies and build your digital business? Our solutions give you that competitive edge where it matters most.

#### Reduce Time-to-Market

Benefit from the value of your data without delay. Quickly recognize trusted devices and operationalize them on your network.

#### Ensure Supply Chain Integrity

Gain visibility into the entire security history of your products, from device manufacture through the entire lifecycle.

#### Deploy Devices Faster

Choosing ioTrust™ security solutions means devices can be quickly connected to your network infrastructure.

#### Choose Any Connectivity

Our solutions support all major connectivity methods, so you are free to deploy with an applicable approach for your environment.

**ENSURING A TRUSTED INTERNET OF THINGS**

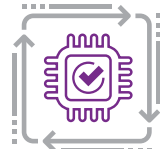
Connecting & securing your infrastructure.

Entrust Datacard® ioTrust™ security solutions give you the power to bring connected devices and secure infrastructures to life. Our offerings, which are based on enterprise-grade encryption technologies, establish trusted identities for devices across IoT infrastructures. So, you can create secure ecosystems and transmit data from devices in the field to your value engines — efficiently and securely.



**IDENTITY  
ISSUANCE**

You want to consistently provide added value to your products and bring devices to market faster and more securely — while increasing supply chain visibility. This means you must accelerate provisioning of trusted identities for new products in order to optimize time-to-market. This will allow products to be validated as authentic by other manufacturers.



**IDENTITY  
MANAGEMENT**

You want to operationalize devices into your ecosystem to safeguard access to critical systems and ensure integrity of data. Scalability is achieved by leveraging the secure identity lifecycle that can begin early in the supply chain or post-manufacture. After scalable enrollment, devices, applications and people can securely identify themselves, enabling strong authentication and authorization, which is managed from a dedicated console. This secure ecosystem gives you full visibility into the operational environment, including how individual parts interact from the sensor level to the enterprise data hub.

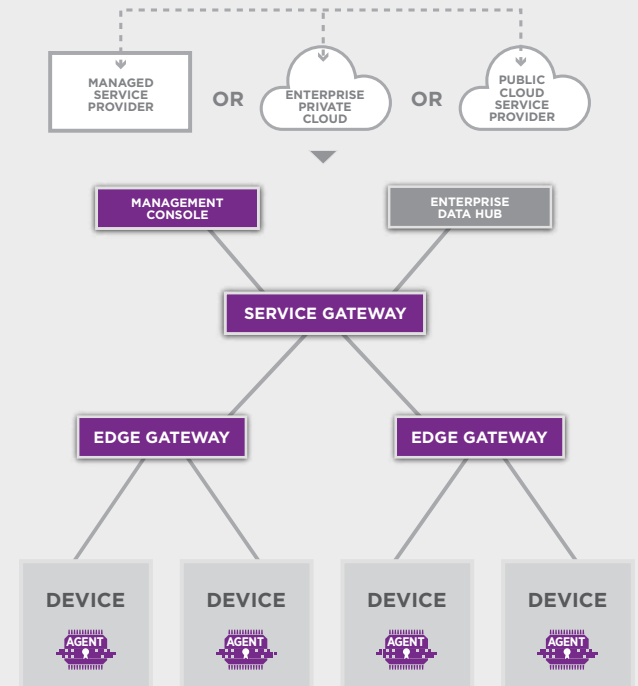


**IDENTITY &  
DATA SECURITY**

You want to leverage IoT strategies to enhance service offerings, improve user experiences and enable new business models. Your investments in technology should help you realize IoT value by securely delivering on the promise of connectivity and automation. Our solutions enable you to take granular control of the policy definitions that will enable secure interactions within your operational environment, as well as the integrity of the associated data.

**OUR SOLUTION  
ILLUSTRATED**

ioTrust™ security solutions unlock business value by enabling secure access to IoT data. We leverage decades of expertise in cryptography, embedded systems and trusted infrastructures to ensure the right security for every device, application, system and user.



## FOR GREENFIELD & BROWNFIELD ENVIRONMENTS

Secure data. Secure command & control.

Devices that comprise the modern industrial facility were not purpose-built for IoT connectivity. So, they pose serious connectivity and security challenges. ioTrust™ security solutions address this challenge — and allow you to build trusted identity into new devices as they are integrated in your facilities.



### SOLUTIONS FOR MANUFACTURERS

We can help you embed trusted identities into devices at the time of manufacturing, which allows for exceptional supply chain integrity. This root of trust allows for fast IoT deployment. Our approach allows you to quickly operationalize systems and securely collect and transmit data. You can also quickly operationalize devices and provide authorized users with command and control capabilities in the post-manufacture environment.



### SOLUTIONS FOR ENERGY & UTILITY ENTERPRISES

Energy and utility companies face a variety of critical business challenges and opportunities in their operational systems. To realize that potential, risk mitigation and data integrity are critical. We offer the expertise and technology required to ensure ecosystems are secure and reliable. Our expertise in encryption and constrained environments mitigates security risks and unlocks the value of digital assets within operational environments.

## KEY CHALLENGES FOR INDUSTRIAL IOT

Enterprises that solve their fundamental IoT challenges will gain strong competitive advantages in their markets — and strengthen their digital business strategies.

### Secure Data

Securely transporting data between industrial control systems and the enterprise data hub.

### Secure Control

Using identity-based controls to ensure only authorized people, device or apps issue or respond to commands.

### Reliability & Availability

Ensuring secure systems with unfailing uptime across the entire secure ecosystem.

### Constrained Devices & Networks/ Industrial Protocols

Keeping both greenfield and brownfield environments secure, regardless of the protocol approach you choose.

## AUTOMOTIVE MARKET

### ACCELERATE YOUR AUTOMOTIVE IOT STRATEGIES

Internal & external domain solutions.

Increased connectivity in consumer and commercial vehicles requires serious risk mitigation. ioTrust™ security solutions for the automotive industry span from the supply chain to internal automotive components to service delivery platforms. They're designed to mitigate security risks within vehicles and enable entirely new revenue opportunities across internal and external domains.



#### SUCCESSFUL AUTOMOTIVE IOT BEGINS WITH IDENTITY

We embed trusted identity early in the automotive supply chain to create a trusted foundation for secure communication, as well as secure command and control of vehicles. Our approach mitigates risk of attacks in the context of increasing connectivity. Trusted identities at the ECU and head unit level enable secure IoT strategies from supply chain through manufacturing and from initial ownership through the entire lifecycle of the vehicle.



#### REALIZE VALUE FROM ENHANCED CONSUMER EXPERIENCES

ioTrust™ security solutions allow OEMs and manufacturers throughout the automotive supply chain to create a device ecosystem that is secure by design. Managed identities enable secure channels for service delivery, ranging from remote diagnostics to customized media consumption to ridesharing. Only authorized users, devices and applications are able to interact or consume data.

## DRIVING NEW IOT OPPORTUNITIES

Automotive IoT will generate approximately \$8T in new revenue between now and 2021. This represents an astounding 35% CAGR<sup>5</sup>. Here are some of the opportunities our IoT solutions enable:

#### External Domain

- Vehicle Infrastructure
- Personalized Media
- Vehicle to Vehicle
- Diagnostics
- Ride Sharing
- Vehicle as Payment Platform
- Change of Ownership

#### Internal Domain

- Driver Behavior Analytics
- Vehicle Performance Metrics
- OEM Service Delivery
- Third Party Service Delivery

<sup>5</sup> Business Insider (BI) Intelligence 2016.

### CONNECTING TELCOS WITH IOT OPPORTUNITIES

Think beyond basic connectivity. Think content.

Potential value awaits telcos in offering more data and selling SIM cards to connect more and more machines. Simply increasing the size and number of pipes and pushing more data through them is one strategy. But commoditization is likely to escalate quickly, which will impede margins and growth. We understand that managing data and providing analytics services holds much greater potential for telcos.



#### A VALUABLE IOT PARTNER FOR TELCOS

Offering a range of profitable IoT services requires trusted device identities, secure gateways and advanced encryption technologies. We provide telcos with all of that and more. We embed trusted identities into devices across networks and ensure data is only usable by authorized devices, apps or people.



#### OPTIMIZE YOUR IOT REVENUE OPPORTUNITIES

ioTrust™ security solutions empower telcos to rise above the basic role of connectivity. Our trusted identity and data security solutions enable a wide range of services from secure connectivity to full end-to-end capabilities of content-based service delivery.

## KEY CHALLENGES FOR TELECOM

How do telcos capitalize on opportunities driven by layering application and solution value on top of existing infrastructures?

#### Take a Bigger Piece of the Value Chain

Capitalizing on opportunities beyond basic connectivity requires new solutions.

#### No One-Size-Fits-All Solution

IoT security solutions will need to be scalable, adaptable & agnostic.

#### Secure Data

Ensuring data integrity at rest, in transit and in use across the entire ecosystem is critical.

#### Secure Command & Control

Identity-based controls will be needed to ensure only authorized people, devices & apps issue or respond to commands.