CES Mobile IoT Briefing

January 2020

IoT Big Data drives Immediate Intelligence on the Edge

Connecting everything became cheaper, but only less 1% data is useful.

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Robotics

Autonomous

Internet of Things (IoT)

**AI and
Deep Learning**

Cheaper Sensor Probes
Down 70%+ in 16 years

Affordable Storage
Down 10^7x in 5 years

Ubiquitous Connectivity
Up 100%+ in 5 years

Faster Processing
Up 10^{14}x in 5 years

Sources:
1. Goldman Sachs
2. Statista, 2021
3. David Rosenthal @ LOCKSS Program; 2018 Mary Meeker @ KPCB
4. Ray Kurzweil

Applications Scale across Multiple Verticals

Supply Chain and Logistics
$10 billion

- Trailer Tracking
- Predictive Vehicle Maintenance
- Fleet Tracking
- Safety and Surveillance
- Field Services
- Dispatching and Routing
- Cargo Tracking
- Asset Management
- Regulatory Compliance

Smart Cities
$9 billion

- City-Wide Connectivity
- Traffic Management
- Smart Parking
- Ride Sharing
- Public Safety
- Video Surveillance
- Smart Buildings
- Education
- Waste and Recycling
- Smart Lighting

Industrial and Manufacturing
$15 billion

- Design and Prototyping
- Machine Automation
- Robotics
- AR/VR-Based Digital Twins
- 3D Printing
- Predictive Maintenance
- Cargo Tracking
- Inventory Management
- Remote Monitoring and Support

Smart Buildings
$16 billion

- Building Occupancy
- HVAC Maintenance
- Water Usage
- Employee Productivity
- Energy Management
- Smart Lighting
- Security & Access Control
- 24/7 Monitoring
- Fire Detection & Alarm
- Meeting Space Occupancy

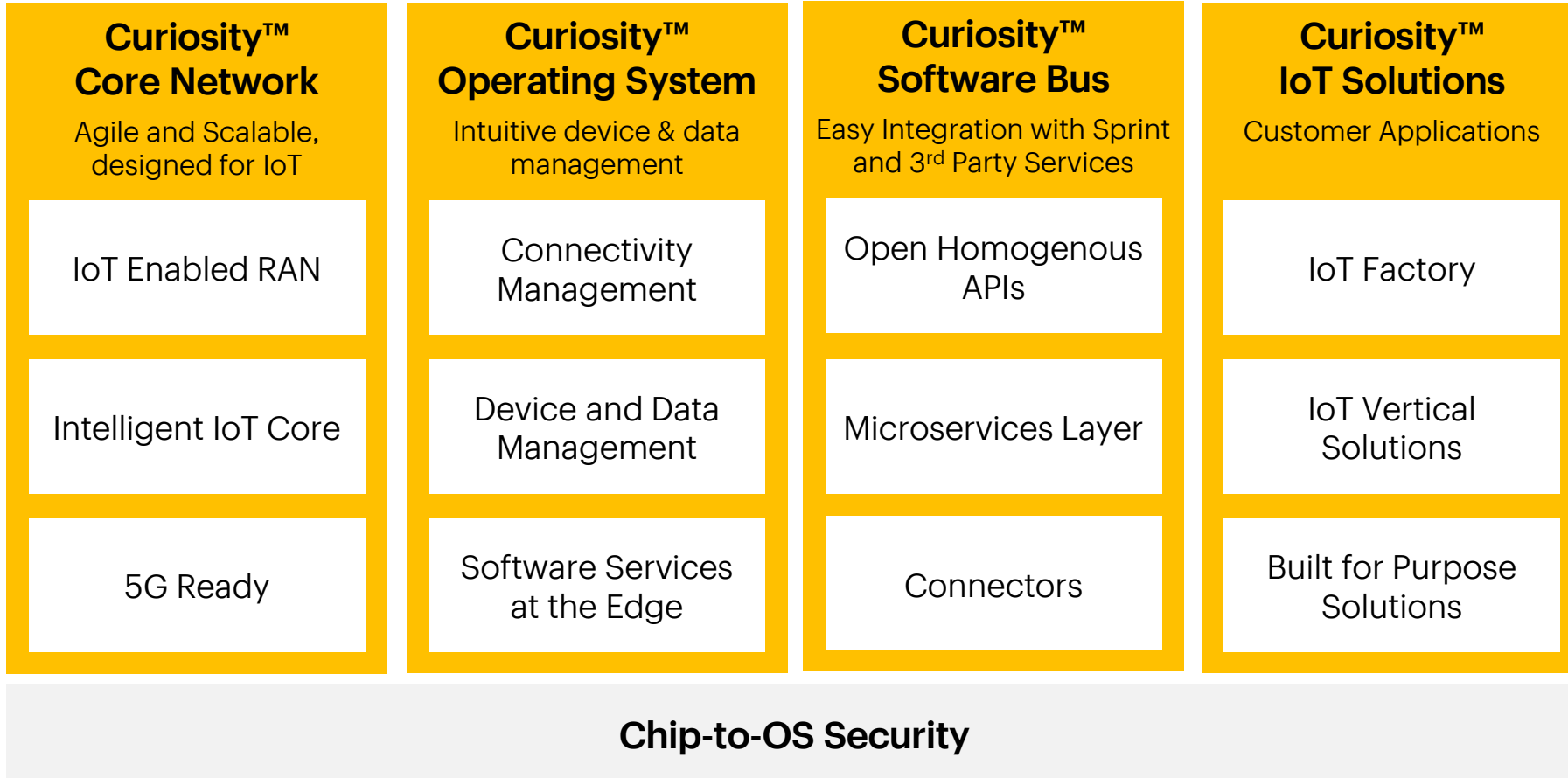## Retail and Hospitality
$5 billion

- Inventory Optimization
- Smart Shelves
- Loss Prevention
- Point of Sale
- Customer Flow
- Shipment Traceability
- Customer Experience
- Refrigeration & Food Safety
- Self-Service Kiosks
- Security & Surveillance
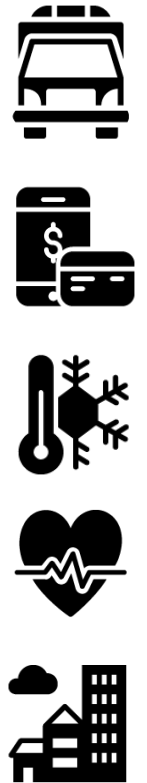
Curiosity IoT: From Data to Actionable Insights

First IoT network for Software. A new standard in how IoT is managed and secured.

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Modules, Devices, & Chips

Customers

Curiosity™ Core Network	Curiosity™ Operating System	Curiosity™ Software Bus	Curiosity™ IoT Solutions
Agile and Scalable, designed for IoT	Intuitive device & data management	Easy Integration with Sprint and 3rd Party Services	Customer Applications
IoT Enabled RAN	Connectivity Management	Open Homogenous APIs	IoT Factory
Intelligent IoT Core	Device and Data Management	Microservices Layer	IoT Vertical Solutions
5G Ready	Software Services at the Edge	Connectors	Built for Purpose Solutions

Chip-to-OS Security

Curiosity Core: Network built for Software

	Massive IoT		Mission Critical IoT	
Radio Access Network RAN				
	■ Low cost ■ Low energy ■ Small data volumes ■ Massive numbers	**LTE-M NB-IoT**	■ High reliability ■ Ultra low latency ■ Very high availability ■ Low jitter	**5G**

	Dedicated	Virtualized	Distributed
Core Network	Core built for IoT traffic with lower latency (2-10 ms.) and higher performance SLAs on dedicated, distributed core	run close to the customer premise using bare metal infrastructure. Faster time-to-market and lower energy consumption	Run at any location, minimizing the distance between data creation and insight

A continuum of capabilities to support varied IoT use cases

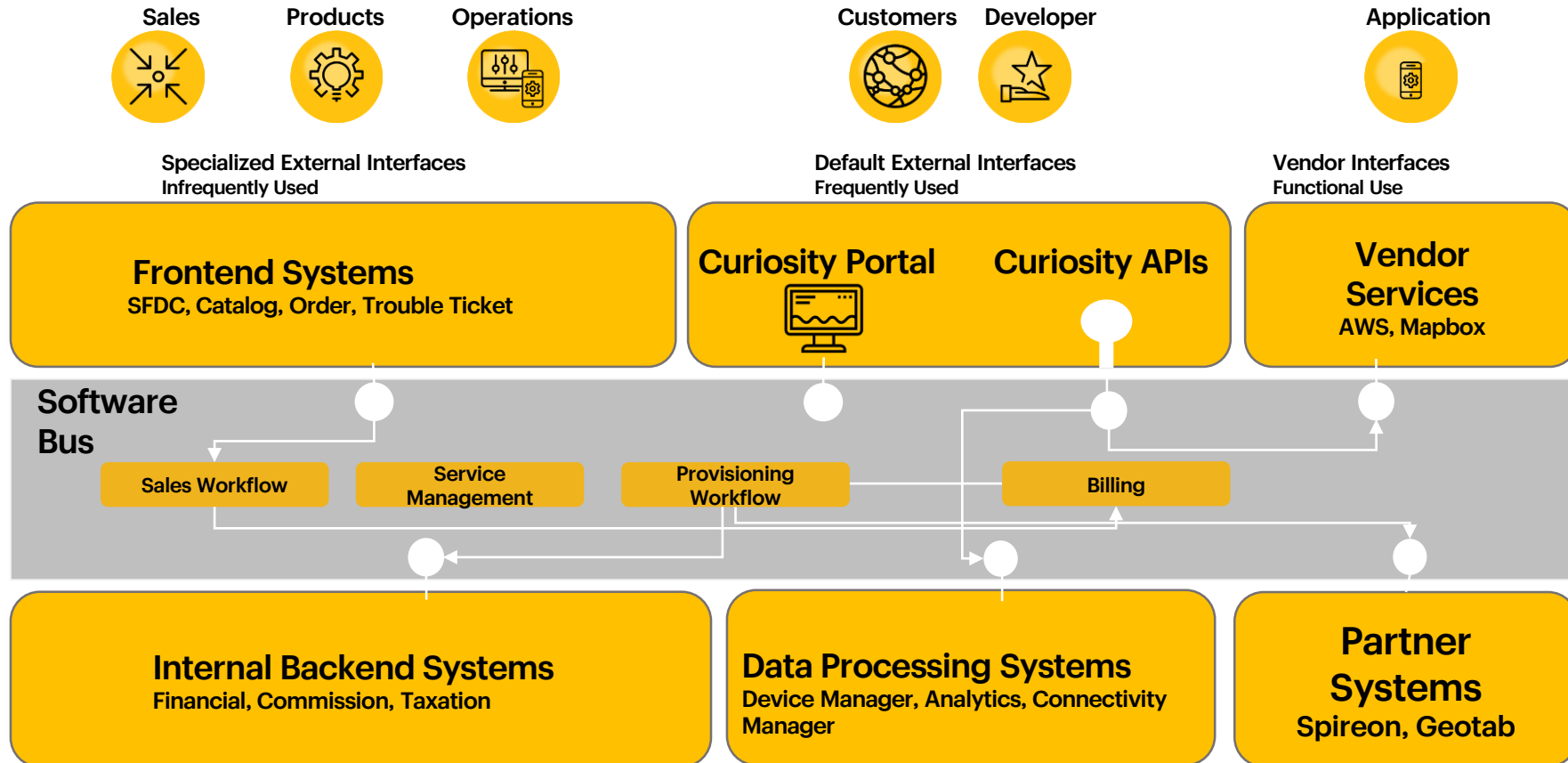|	NB-IoT	LTE-M	4G/5G
LATENCY	High	Low	Very/Ultra Low
MOBILITY	Limited	Full	Full
INDOOR COVERAGE	Maximum	Good	Low
VOICE/SMS	Not Available	Possible	Supported
DATA RATES	Low	Medium	High
BATTERY LIFE	Maximum	Very Long	Low
MODULE COSTS	Low	Medium	High
USE CASES	Irrigation and Agriculture Home Monitoring & Alarms Smart Cities and Metering Connected Appliances Vending Machines ...and more	Asset Tracking Remote Patient Monitoring Smart Wearables Smart Home and Cities ...and more	Fleet Management & Telematics Autonomous Vehicles Smart Video Analytics ...and more

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Curiosity OS: Mobile IoT Data to Actionable Insights

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Sales

Products

Operations

Customers

Developer

Application

Specialized External Interfaces
Infrequently Used

Default External Interfaces
Frequently Used

Vendor Interfaces
Functional Use

Frontend Systems
SFDC, Catalog, Order, Trouble Ticket

Curiosity Portal

Curiosity APIs

Vendor Services
AWS, Mapbox

Software Bus

Sales Workflow

Service Management

Provisioning Workflow

Billing

Internal Backend Systems
Financial, Commission, Taxation

Data Processing Systems
Device Manager, Analytics, Connectivity Manager

Partner Systems
Spireon, Geotab

Case Studies: Access to meet Customer Requirements

Curiosity IoT Supports Licensed and Unlicensed Mobile IoT Technologies.

Remote Condition Monitoring	Fleet Management

Curiosity IoT Recognized by Experts

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IoT Connectivity

Commercial 5G Solution of the Year

Overall Wireless Broadband Solution of the Year

Next gen Wi-Fi Operator Deployment of the Year

Most Innovative 5G Strategy

IoT Innovation and Enablement

Smart 50 Awards for Smart Mobility

2019 Internet Of Things 50: 15 Coolest IoT Software And Services Companies

IoT Enablement Company of the Year for the Enterprise Market

Most Innovative IoT/M2M Strategy