



ORACLE®

Taking Development to the Edge

Henrik Stahl

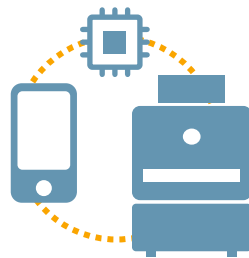
Senior Director – Java Product Management

MAKE THE
FUTURE
JAVA

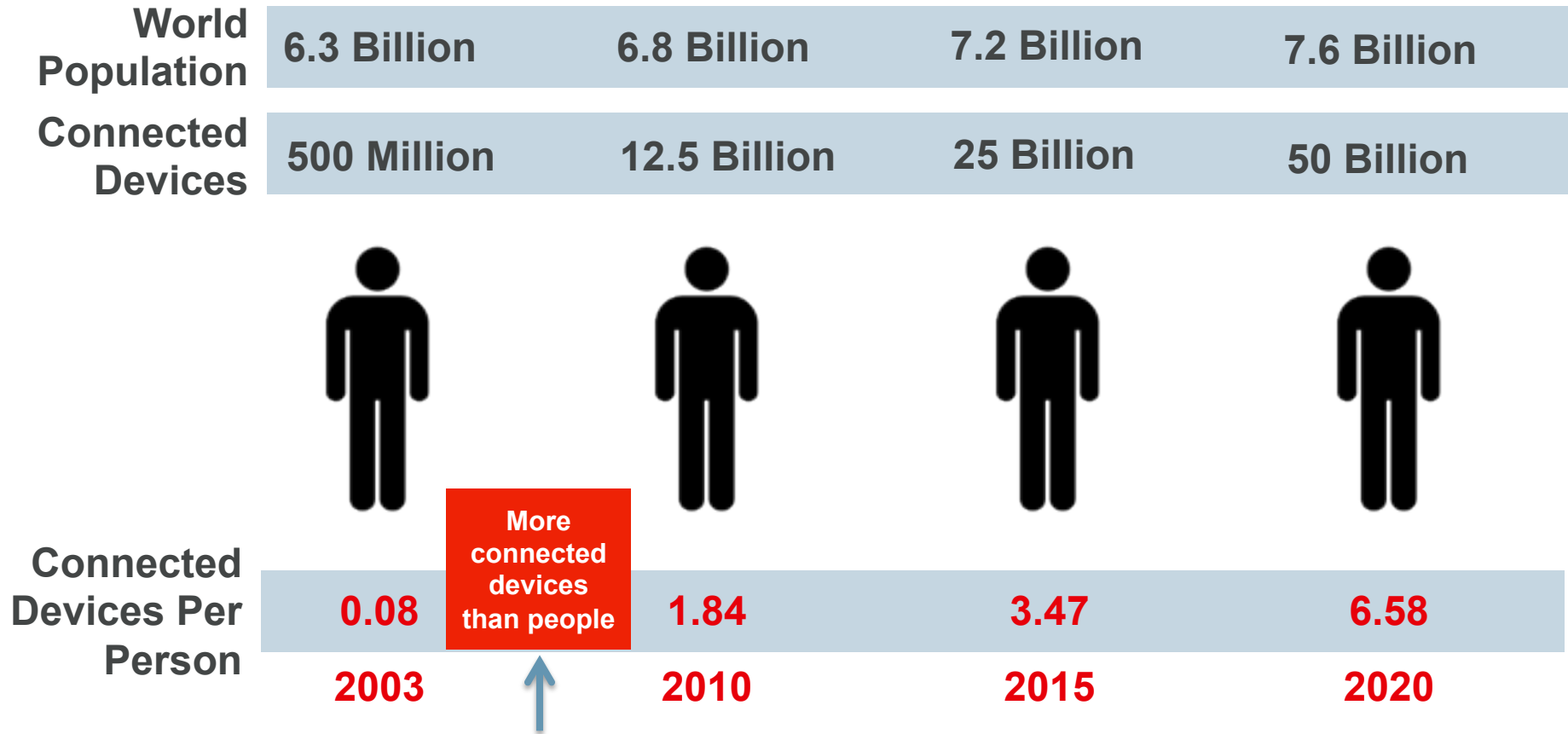


The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.

Important Trends



- More Devices, Connected with Increased Capabilities
- Infrastructure extending to include Edge Devices
- Enormous amount of net new data
- Value-added services based on this data/connectivity



Source: Cisco, April 2013

Everything Connected



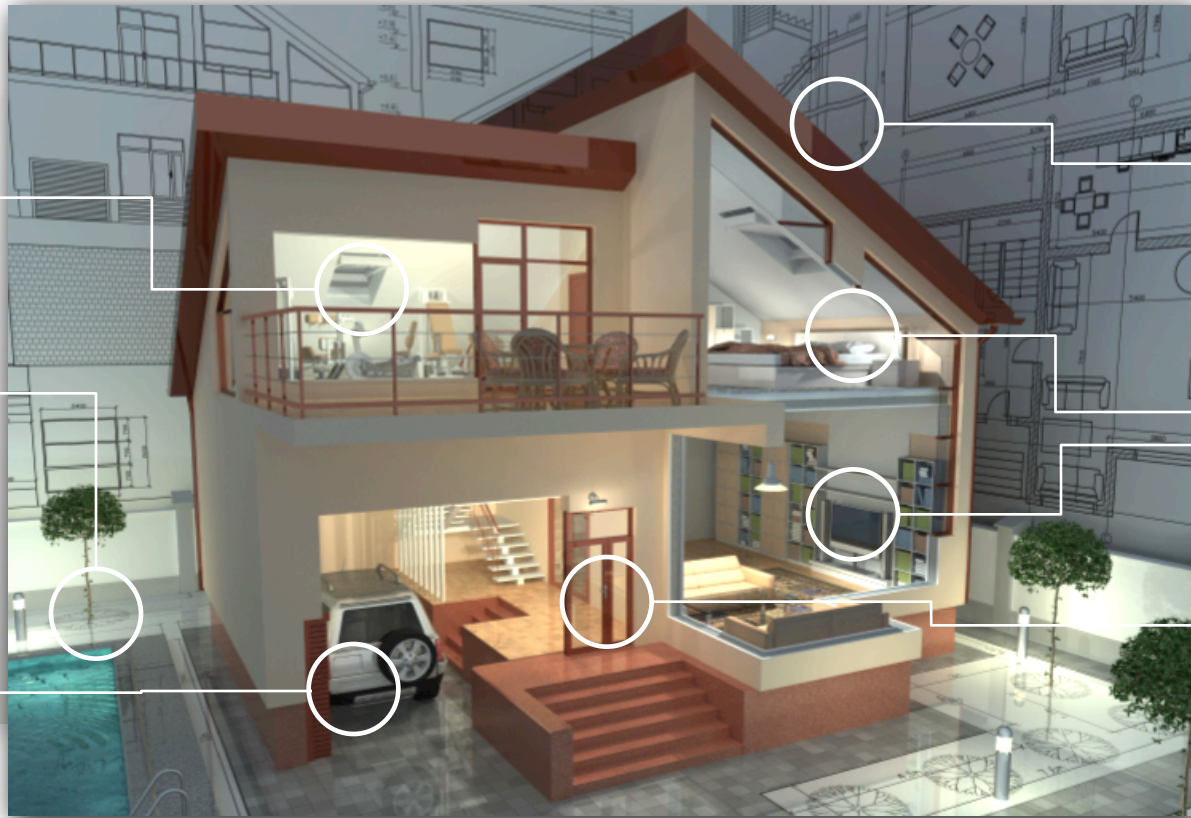
Source: Cisco

Example: Smart Homes

Smart thermostat connects to the utility's demand-response system

Automatic water usage metering enables conservation

Real-time pricing enabled via smart meters with adaptive intelligence for carbon footprint reduction



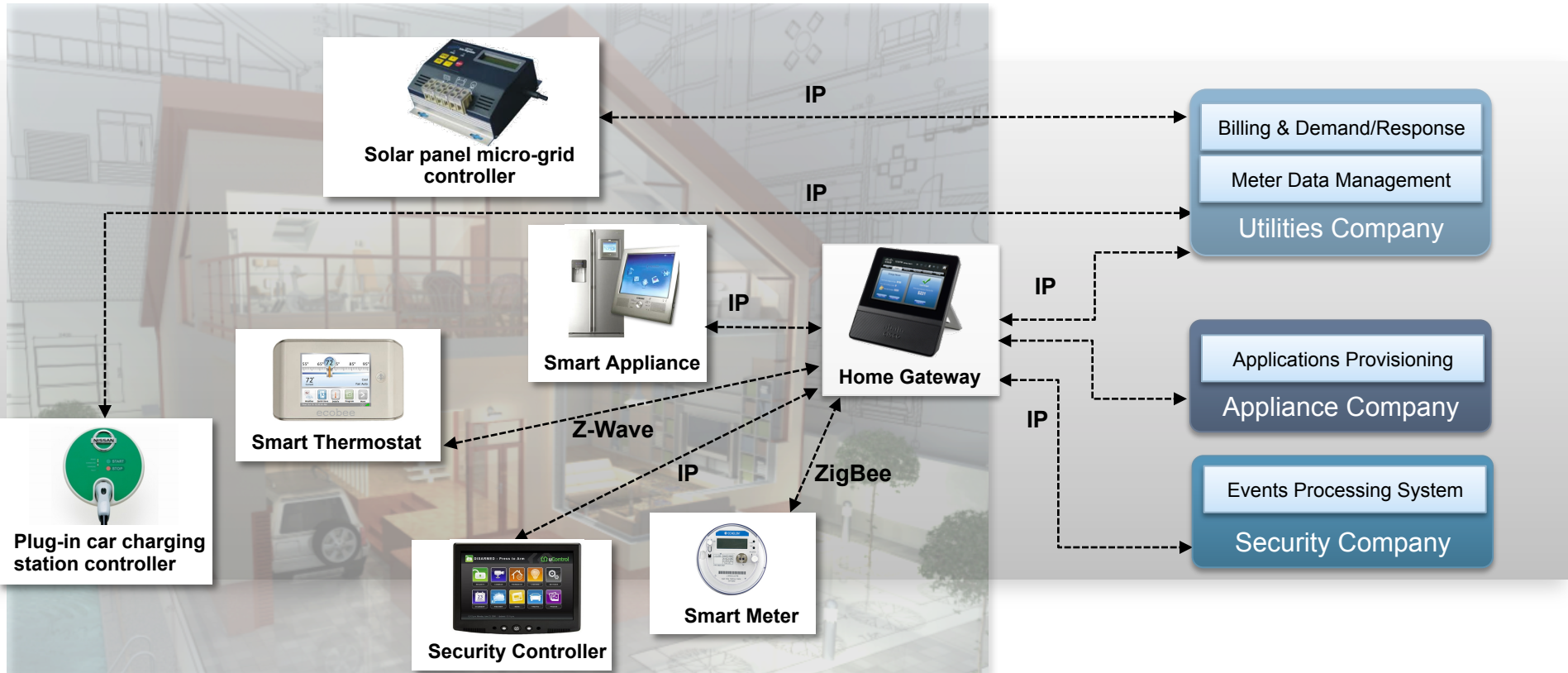
Smart solar panels connected to the micro-grid

Smart appliances communicate with internet-based services for value-added features

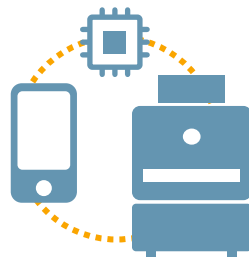
Remotely monitored security system

Looking Behind the Covers

Complex network of smart devices communicating with business applications



Challenges



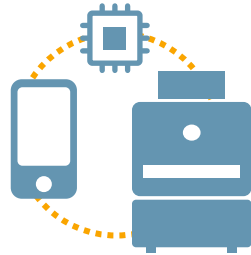
- Custom Proprietary Solutions
- Lack of Platform Standards
- Hardware Fragmentation
- Limited Developer and ISV eco-systems
- Insufficient Network Bandwidth

So what do all these...

have in common with this?



Java Delivers Technical Value



- Standards based
- Vast developer base
- Mature development and run-time environment
- Supported on small to large devices
- Seamless integration with backend services: filtering, data movement, data management, analytics, security
- Provides a complete end to end platform to develop standards based services

Java Delivers Business Value

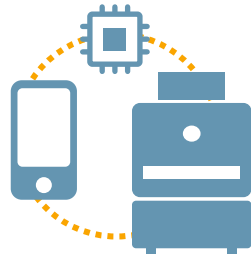


- Extend Product Lifecycle
- Competitive Advantage
- Innovation
- Increase Market Reach



- Portability
- Shorter Time-to-Market
- Reduce Risk and Support Cost
- Standards-based

Java Embedded Strategy and Vision

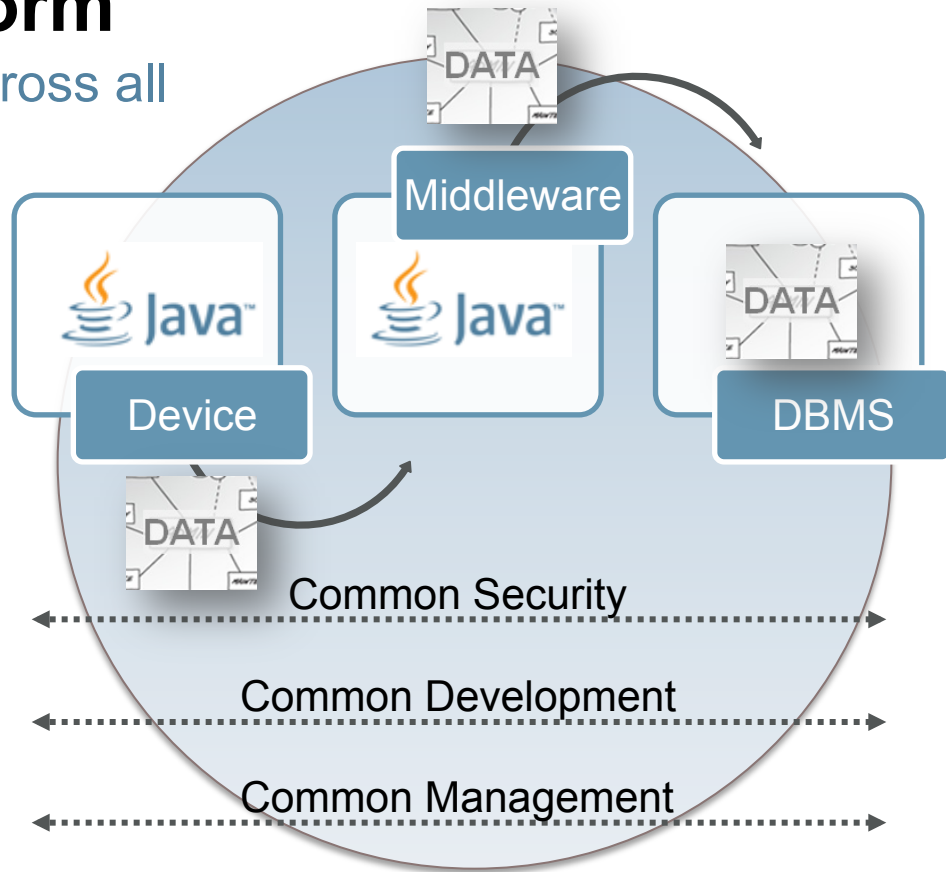


- Make Java the #1 Platform for Embedded
 - Any device, any size, any market
- Unified development experience across all of Java
- Provide complete embedded runtime, middleware, security, management and tooling
- Grow Java embedded ecosystem: developers, partners, system integrators, standards bodies

Java-based IoT Platform

Single development platform across all domains

- The Device is a key component for the Internet of Things revolution
- Java enables it to be more intelligent, scalable, and supportable
- It's ultimately about the Data



Spectrum of Java Embedded

Example of devices powered by Java

SMALL



- RFID Readers
- Parking Meters
- Intelligent Power Module
- Smart Meters

MEDIUM



- Routers & Switches
- Storage Appliances
- Network Management Systems
- Factory Automation Systems
- Security Systems

LARGE



- Multi Function Printers
- ATMs
- POS Systems
- In-Flight Entertainment Systems
- Electronic Voting Systems
- Medical Imaging Systems



Current Embedded Releases

Java ME Embedded 3.2

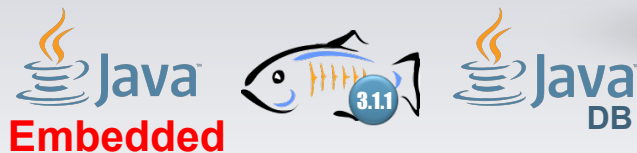
Runtime for small embedded devices: Microcontroller class platforms



EDGE DEVICES

Java Embedded Suite 7.0

Pre-integrated full featured Java Embedded Platform

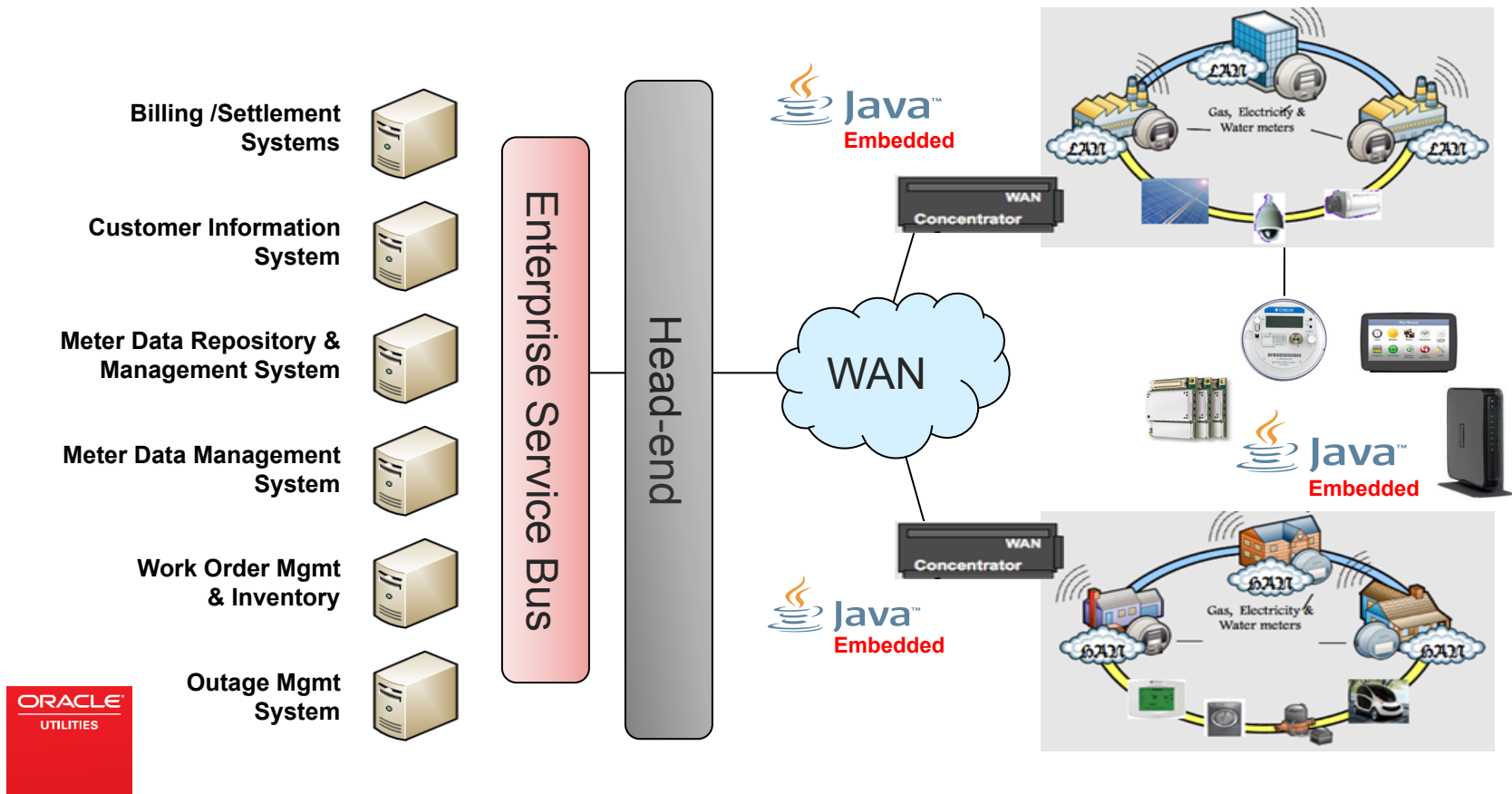


GATEWAYS/CONCENTRATORS

Enterprise Data & Applications



Java Embedded in Smart Grid



ORACLE
UTILITIES

Java Embedded in Healthcare

Patient's Home



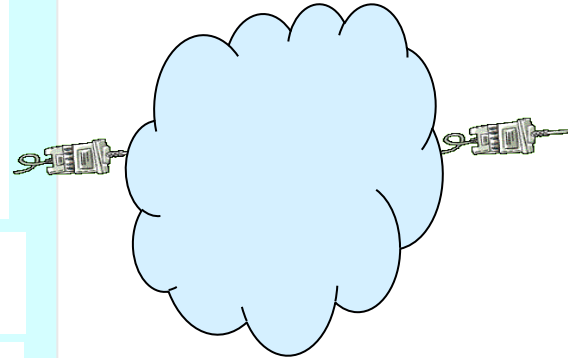
Pulse Oximeter



Glucose Meter



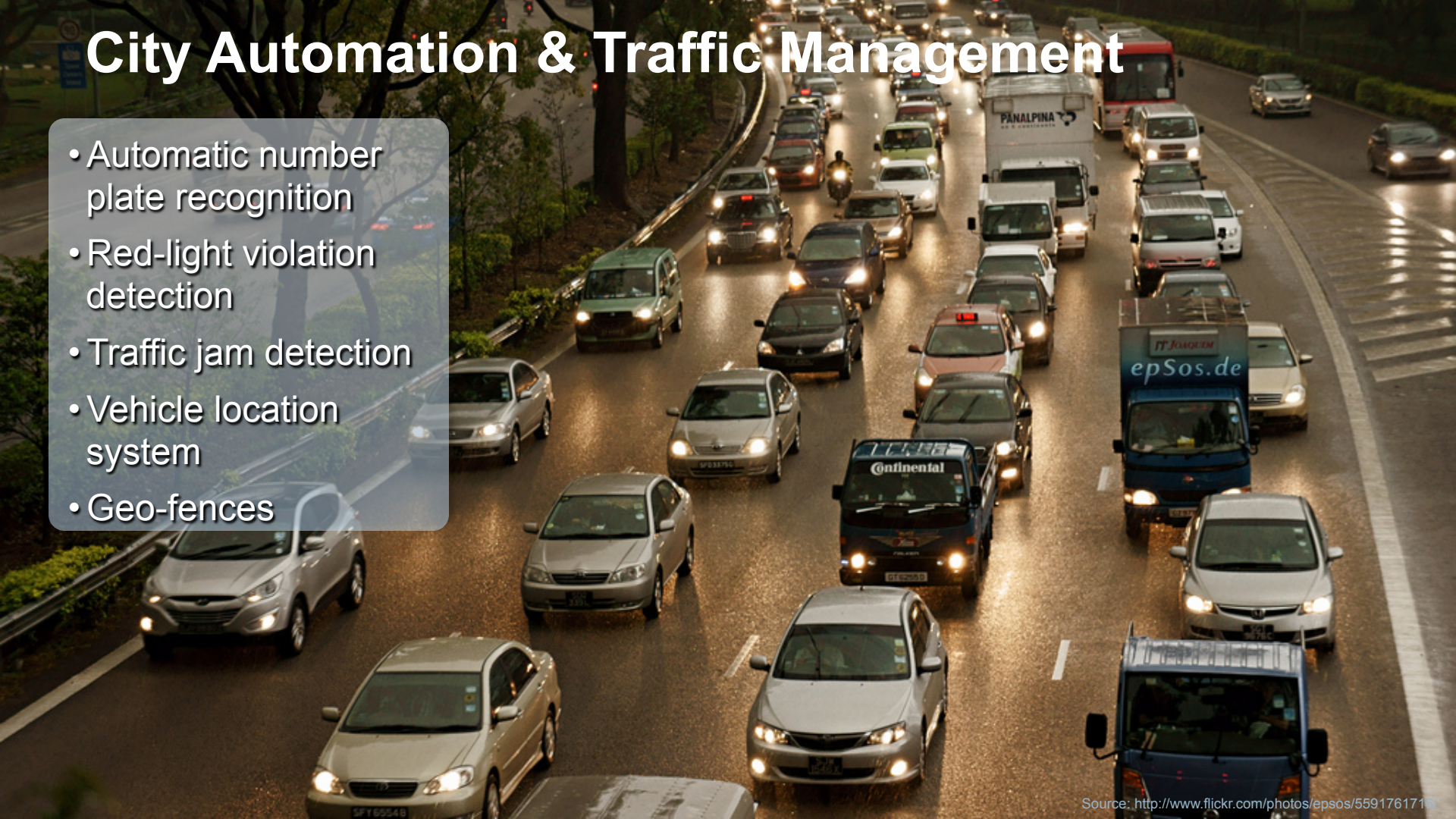
Data Concentrator



Hospital

City Automation & Traffic Management

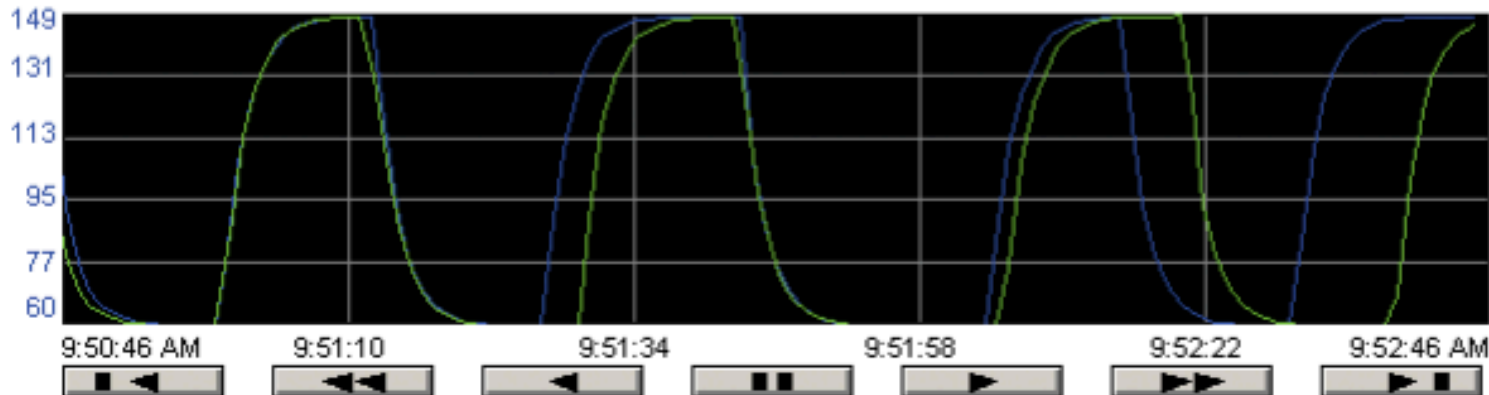
- Automatic number plate recognition
- Red-light violation detection
- Traffic jam detection
- Vehicle location system
- Geo-fences



Industrial Automation

- High-speed data collection and analysis
- Local storage and historical analysis
- Filtering, correlation and pattern matching of real-world data

Trend Monday, October 15, 2007



Transportation & Telemetry

- Location tracking
- Container contents monitoring
- Intrusion detection
- Temperature and pressure monitoring

MOL EXPRESS
PANAMA

IMO 9251391

Source: <http://www.flickr.com/photos/9979792@N04/2984873350/>

GEMALTO M2M

Enabling a smarter connected world



Axel HANSMANN
2013-02-05

Gemalto M2M connects the internet of everything

GEMALTO

- Gemalto is the leader in digital security
- More than 2 billion SIM cards personalized and shipped p. a.
- Invented cellular M2M in 1994
- Supporting more than 50 million devices in the field
- Active member in standardization
- Helping customers around the world connect their machine

Most of our customers are connecting machines and cities ...

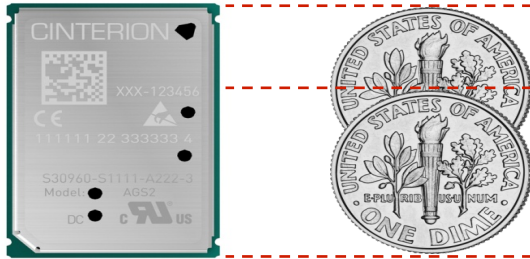


... but now they are connecting trees



Gemalto products brings benefits of JAVA to M2M

Cinterion EHS5 Java Module



- > Java ME embedded 3.2
- > HSPA 7.2M/5.7M connectivity
- > Ruggedized for industrial applications
- > Wide range of interfaces

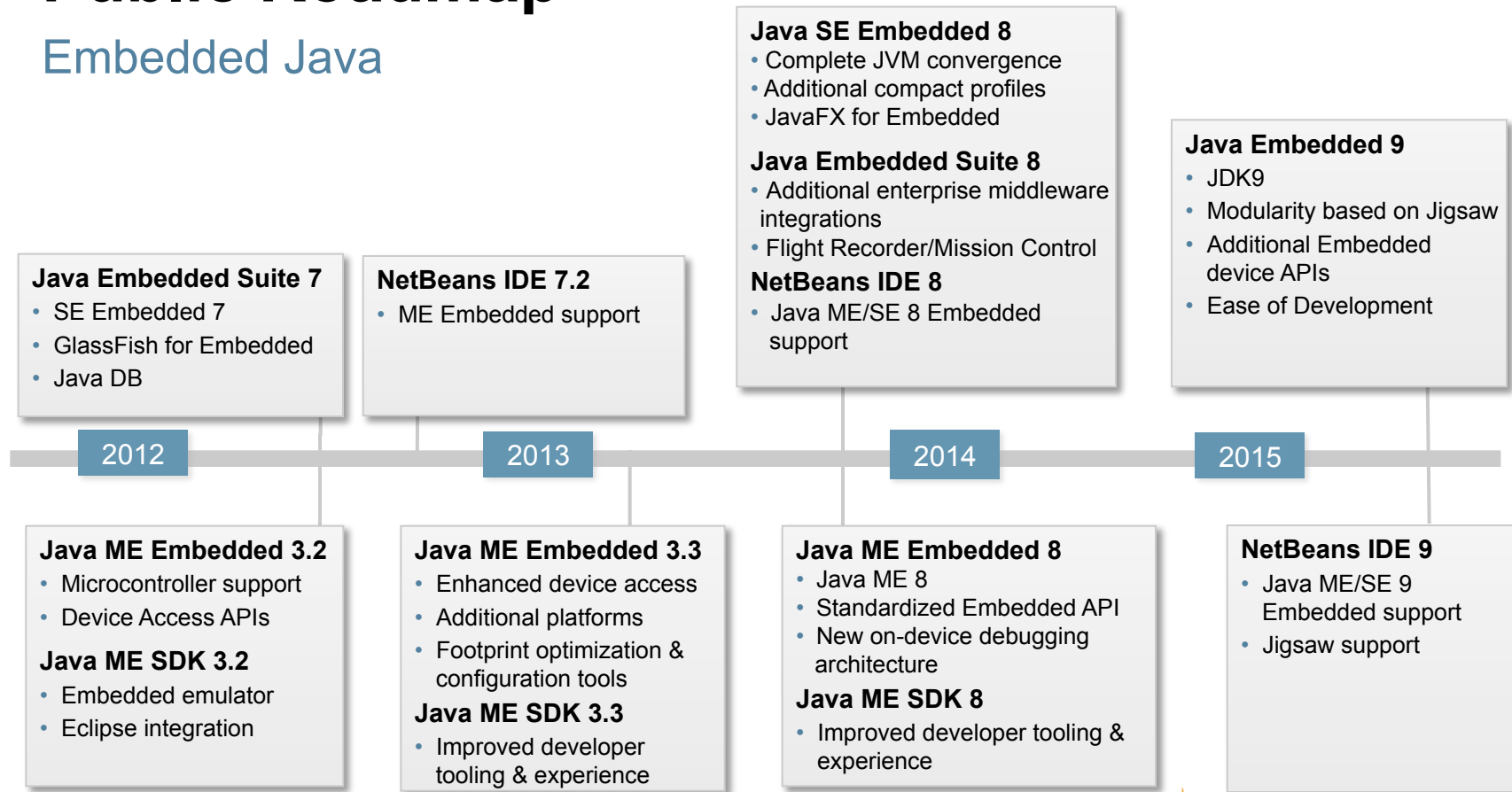
Benefits of Java in M2M

- > Lower Bill of Materials (BOM)
- > More efficient development
- > Enables next generation architectures
- > Higher flexibility in design and development
- > Improved management of the application

Find out more at 13:00 in my session:
**Benefits of Java to the embedded
Ecosystem**

Public Roadmap

Embedded Java



Summary

- Java is a trusted, robust platform ideally-suited to embedded systems where security and reliability are paramount
- The large ecosystem of Java developers, partners, support, and training supports on-time delivery of projects and products
- Delivers a secure, optimized runtime environment ideal for network-based devices
- Supports devices ranging from highly-constrained resources to server-class systems

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Taking Development to the Edge

Sharat Chander

Director – Java Technology Outreach

@Sharat_Chander

MAKE THE
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Oracle Technology Network

The Largest Community of Developers

- Technical Content on oracle.com/technetwork/java
- Java Developer Newsletter (700K subscribers)
- Free Developer Days events.oracle.com

Java Magazine

For Java Developers, By Java Developers



- Free digital publication
- Over 100K subscribers
- Send article proposals to otnfeedback_us@oracle.com

Java.net

The Source of Java Technology Collaboration

- Become a member
- Host a project (over 7,000 active projects)
- Learn from your peers: javaembeddedcommunity.com
- Share your expertise, and ideas – DM me on Twitter: [@Sharat_Chander](https://twitter.com/Sharat_Chander)

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