



# **A Strategic Imperative for Successful RFID Implementations: *The Network***

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# Agenda

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- **What is RFID?**
- **Industry and Business Drivers for RFID**
- **Why the Network Matters? A Cisco Perspective**

# What is RFID?

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# Industry & Business Drivers for RFID



# Markets and Applications

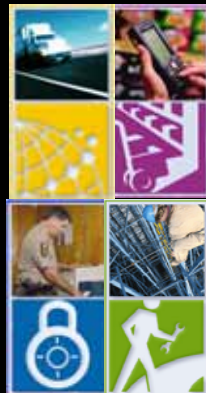
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## RFID—A New Emerging Market

**Industrial Products**



**Government Healthcare**



**Logistics/Trans.**



**Consumer Products**



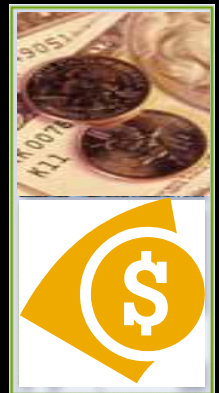
**Retail**



**Homeland Security**



**Financial**



**Supply Chain**

Track Product and Containers Through Supply Chain (Palettes, Cases, Individual Items)

**Asset Tracking**

Efficiently Use Expensive Assets (Tractors, Medical and Manufacturing Equipment)

**Security & Regulatory**

Identify People, Vehicles, and Other Items to Insure Regulatory and Security Compliance

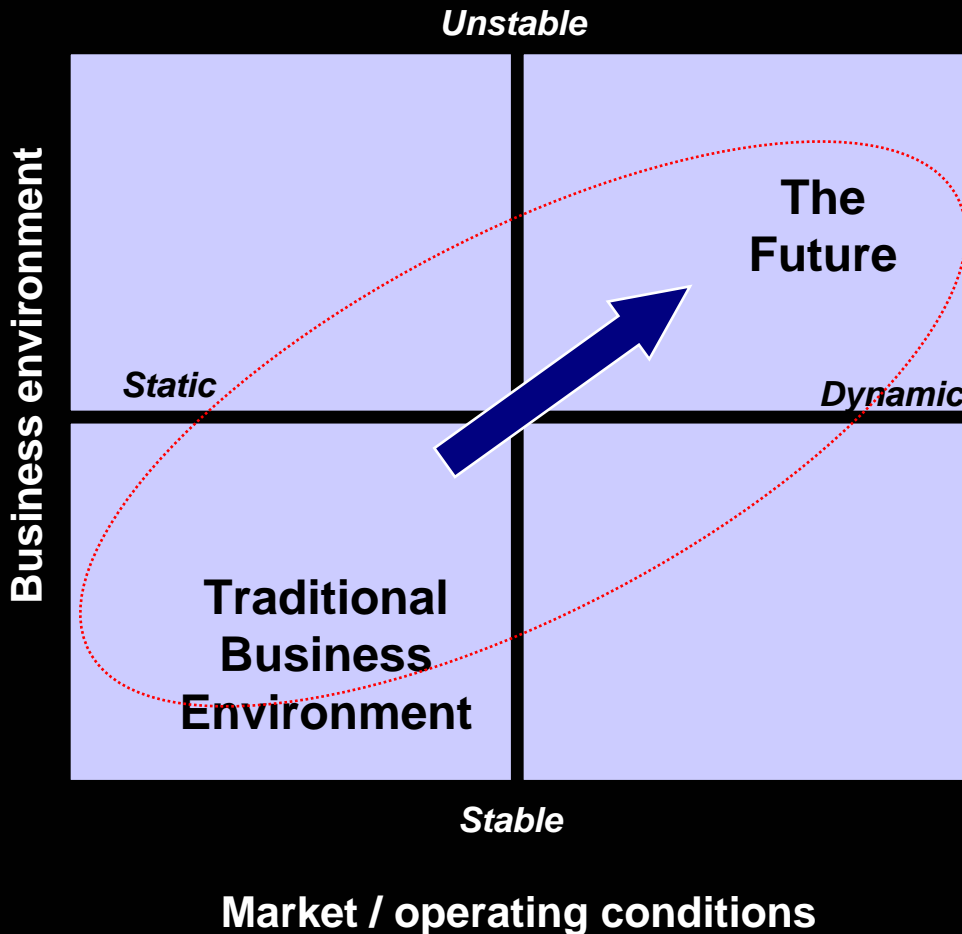
# RFID: The Business Drivers

RFID is a disruptive technology. Can help change operations processes.

- Current Market Development -

- Business environment -

- Outcomes -



- What flexibility do you have to respond to frequent changes across the supply chain?
  - Can you exploit RFID to provide more degrees of freedom?
  - Do you have asset and order visibility?
- Market / operating conditions -
- How do you respond to customer requirements, yet still maintain profitability?
  - Is RFID deployed to deliver improved enterprise profitability?

**Improved asset utilization and responsiveness**

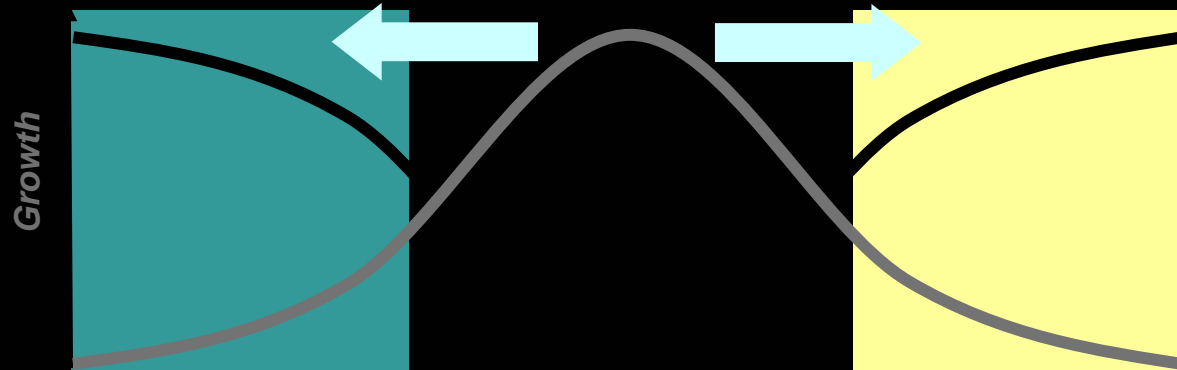
**Security**

**Cost efficiency**

**Operations efficiencies**

# Supply Chains are Transforming To Recognize and Respond No Longer Generic but “Fit for Purpose” and Consumer Driven

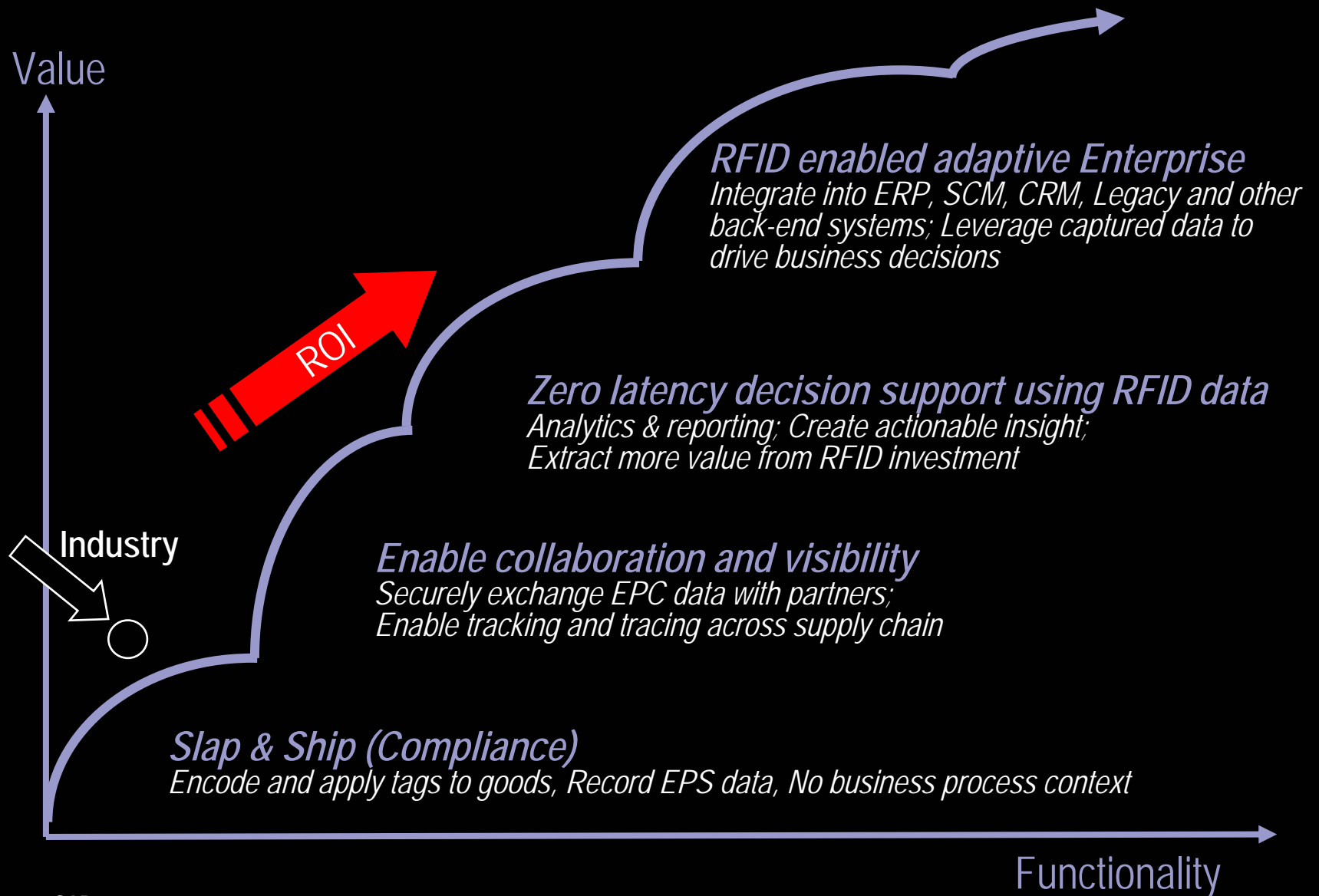
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Value driven supply chain	Consumer sense and respond
High volumes and velocity	Lower volume and velocity
Low cost and service, High efficiency	High cost to serve
Large range/assortment	Smaller range, more innovation
High reliability	Highly responsive, flexible
Static	Highly variable
Lights out management – automated	High touch
<b>Low cost with appropriate service, to meet core needs of the consumer</b>	<b>Maximise value &amp; innovation, providing high level of service at a premium</b>

*Moving from a push-based supply chain to a pull-based one*

# The Current Industry Dilemma



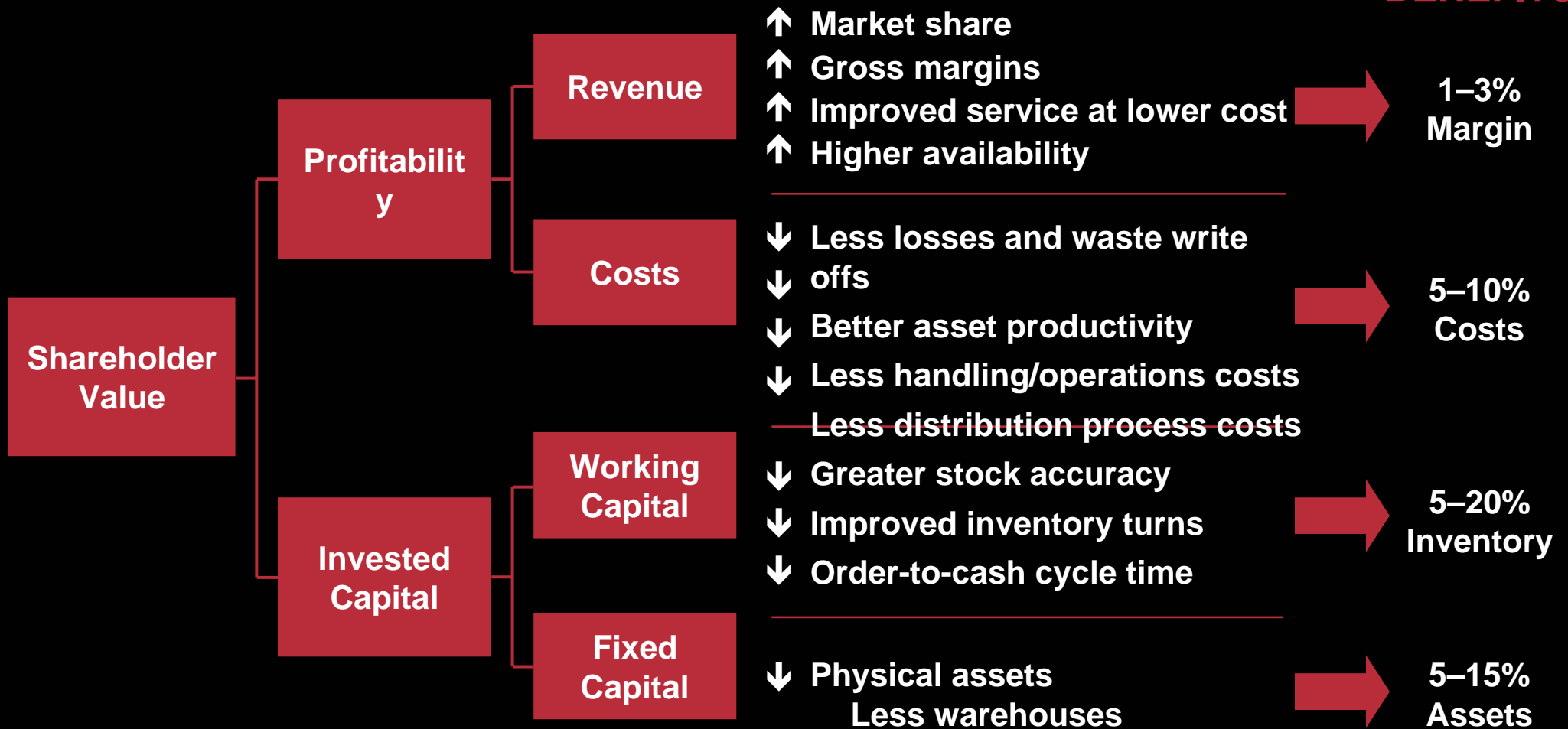
# The Promise Reduce Supply Chain Costs by 3–5%

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## SHAREHOLDER VALUE TREE

## RFID IMPACT

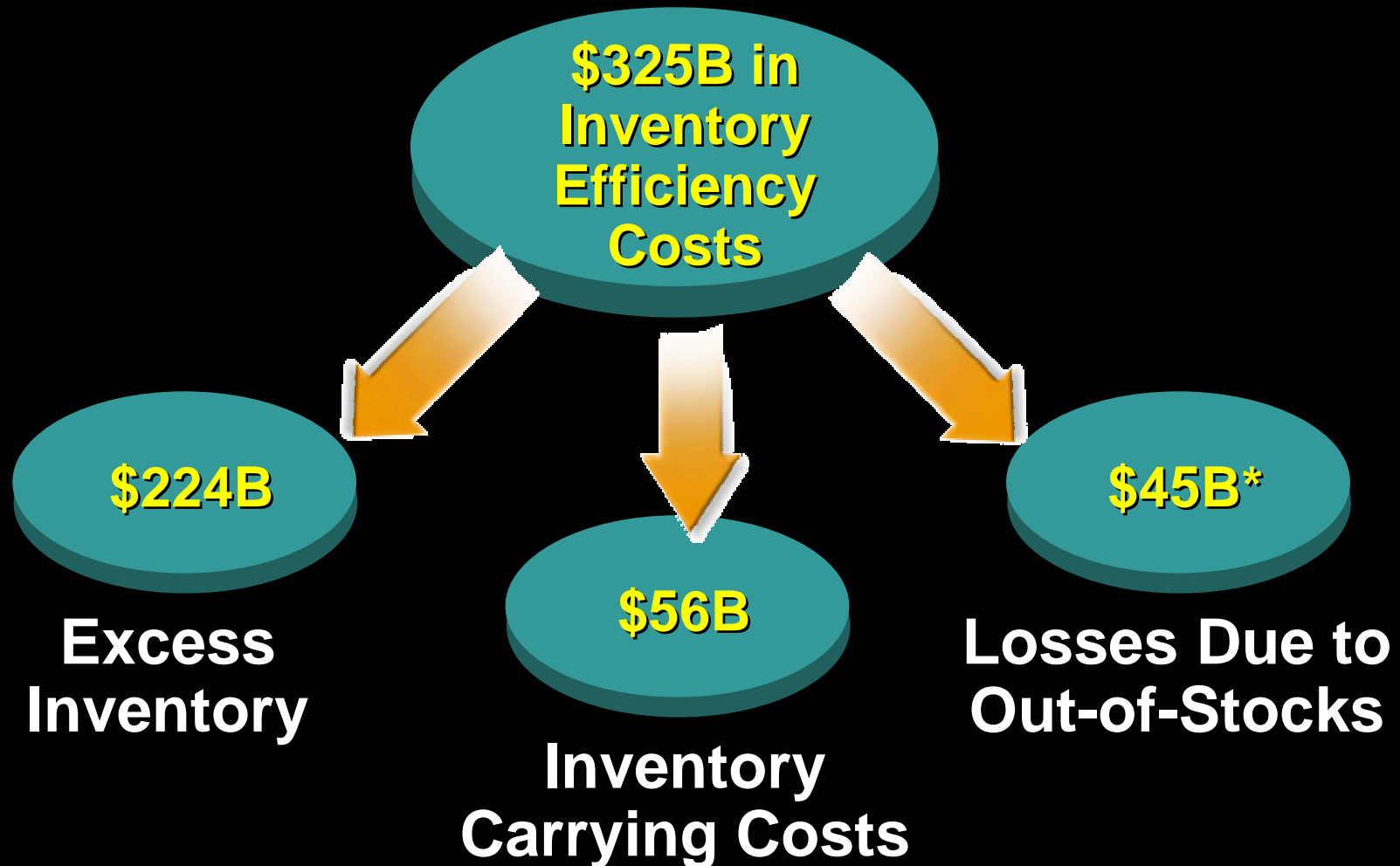
## TYPICAL TARGETED BENEFITS



\*AMR + Wal-Mart Strategy Statement October, 2003

# Significant Opportunities Exist

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***\$325B represents 3% of Global Retail Sales***

\* Per annum

Source: Cisco IBSG, Dec. 2004

# RFID and Sensor Solutions Define the Future for Industries and Consumers

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**Intelligent  
RFID  
Solution**



**200K US Patient Deaths Per Year**



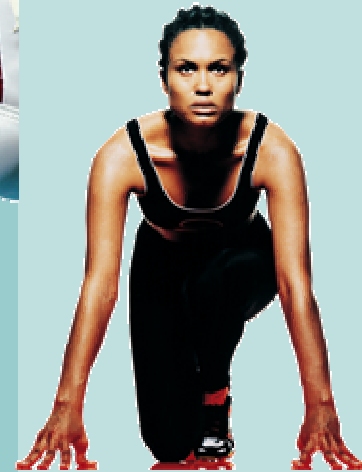
**Intelligent  
RFID  
Solution**



**Counterfeit \$ Multi-B Problem**

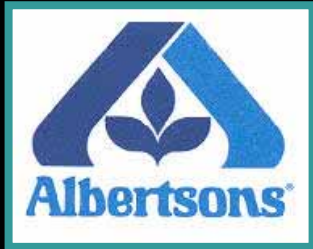


# Why the Network Matters? A Cisco Perspective



# Market Demands for RFID

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“RFID will be the differentiator between have’s and have not’s. The **network** is the **source of competitive advantage..**”

Bob Dunst, EVP/CIO Albertson's



**Scalability** is a function of **network architecture**, not simply a matter of adding routers and switches, and **it must be planned.**

IDC Feb 05



“... It’s time to consider the impact of **this technology (RFID) on your network...**”

Burton Group, Nov 04

# Cisco Influencing the Standards and Industry

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- Cisco Systems is an EPCglobal member
- Mohsen Moazami on the board of governors



invent



# Cisco's Place in the RFID Ecosystem

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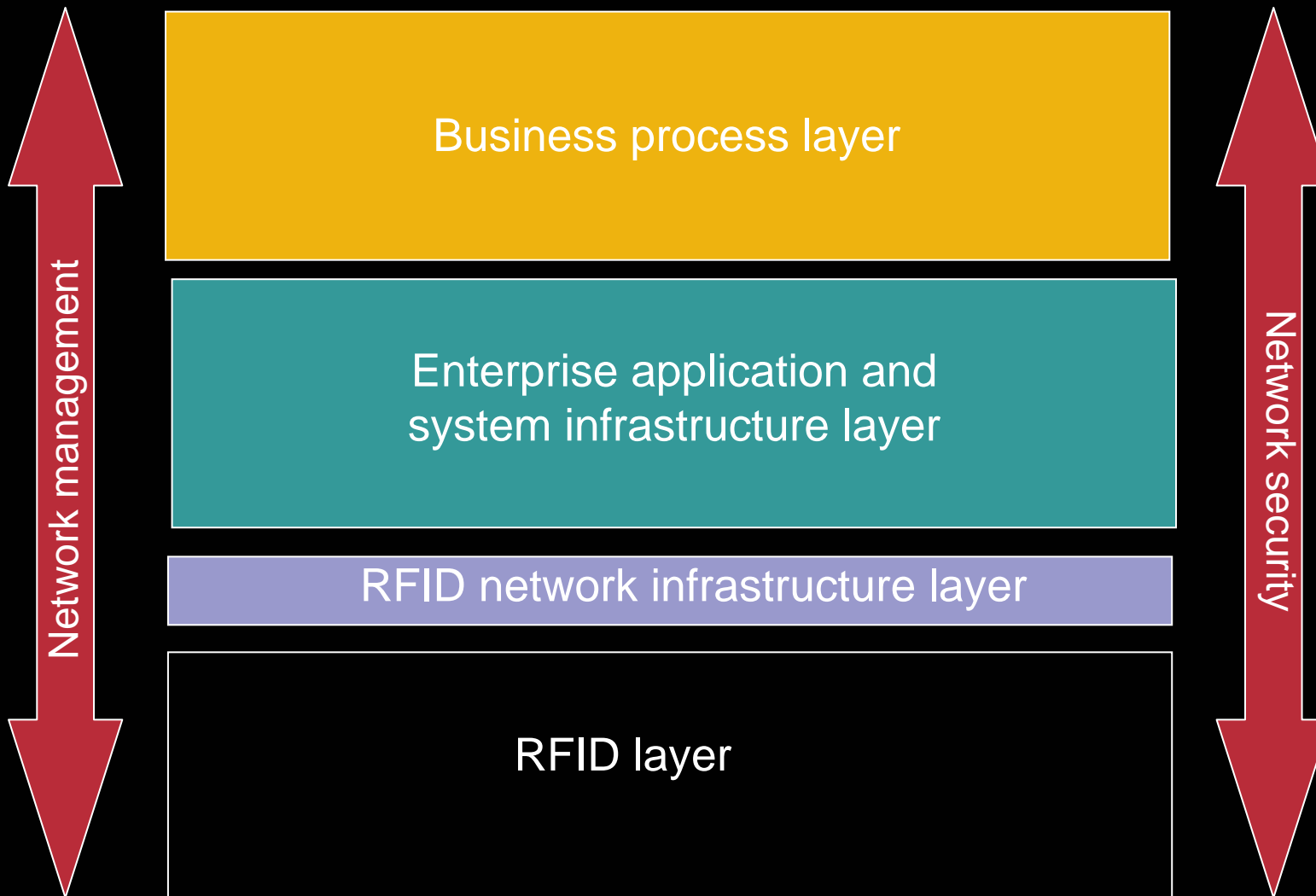
## System Integration

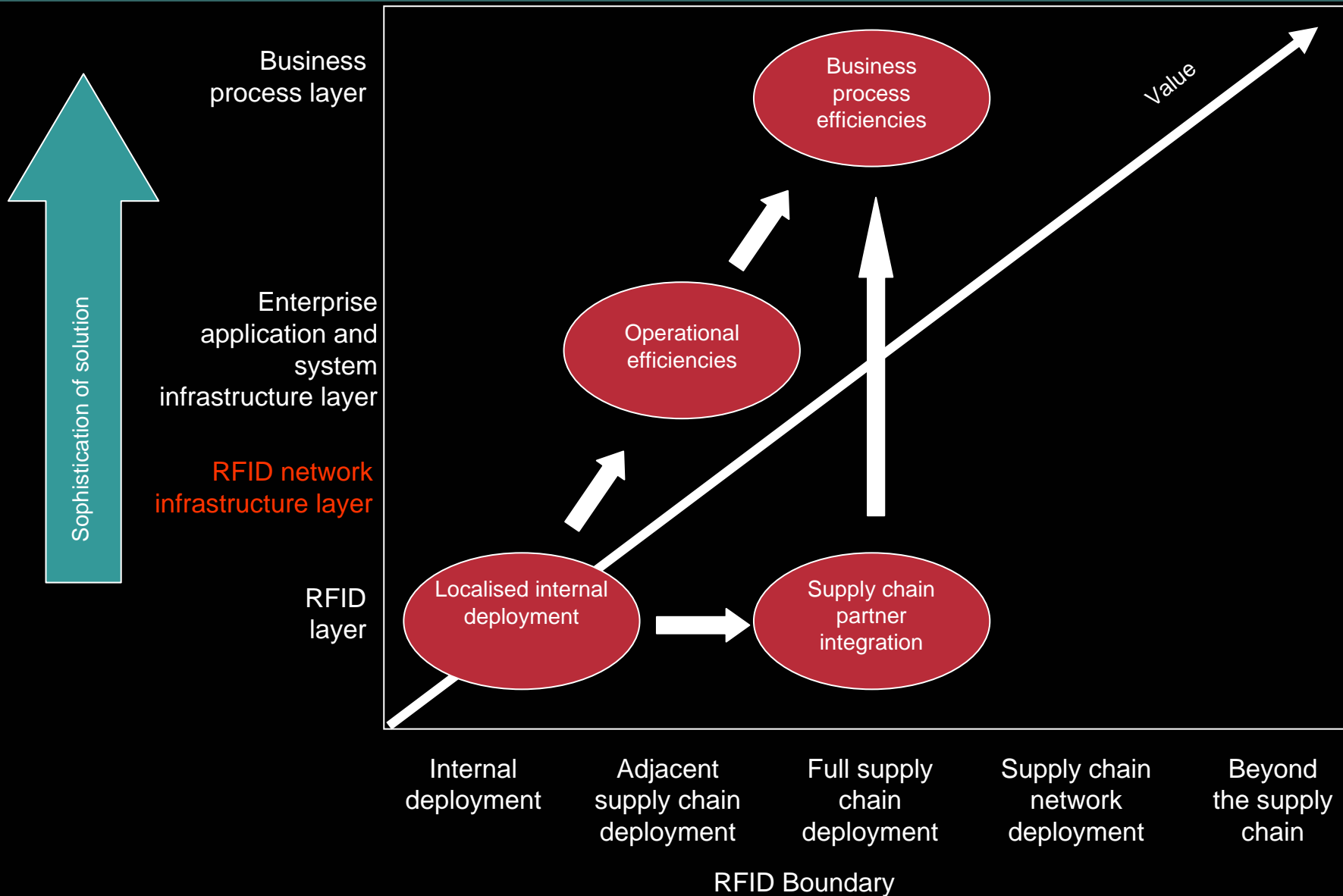


EPCglobal standards (passive)

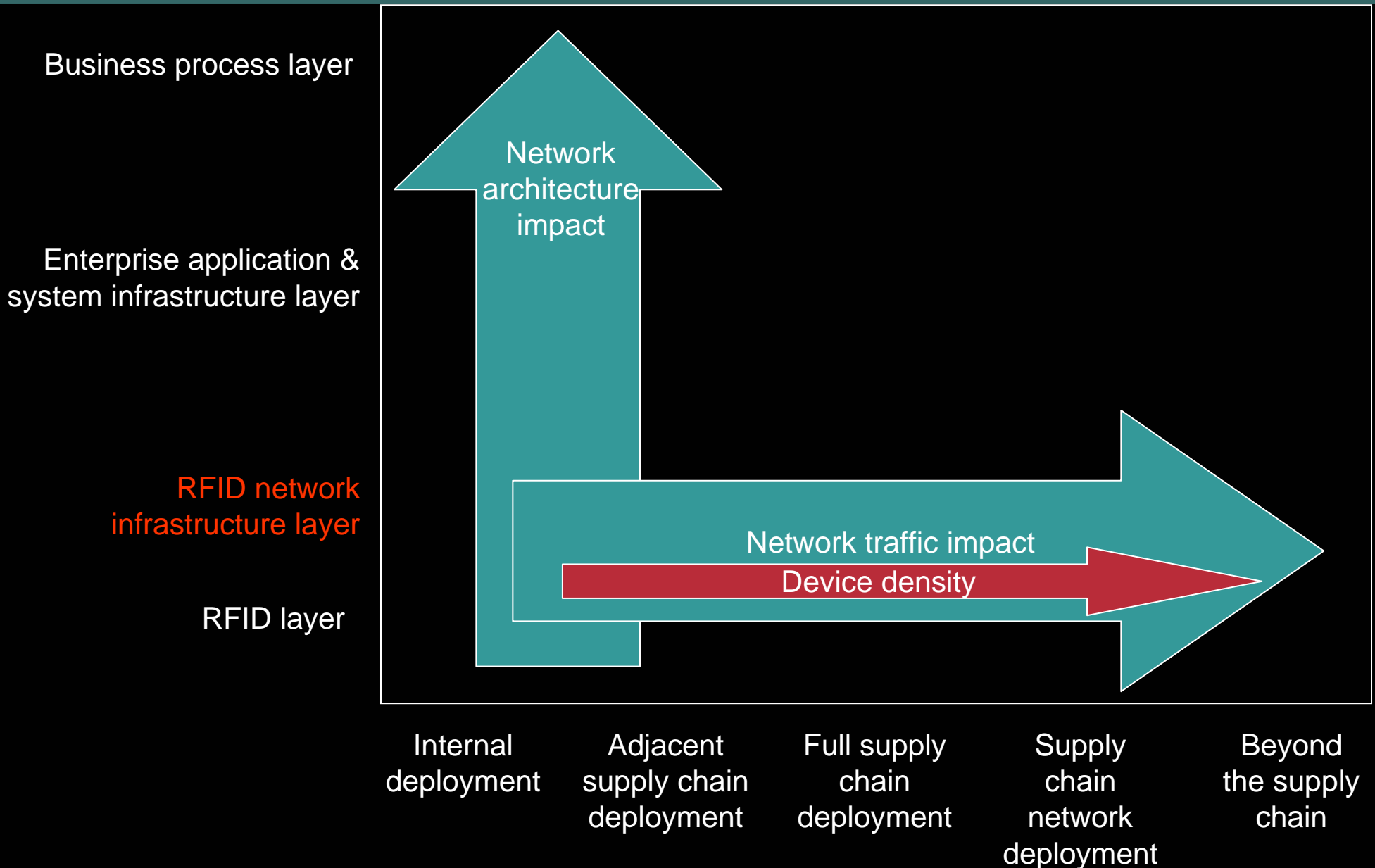
ISO/ANSI standards (active)

# RFID Ecosystem





# Network impact

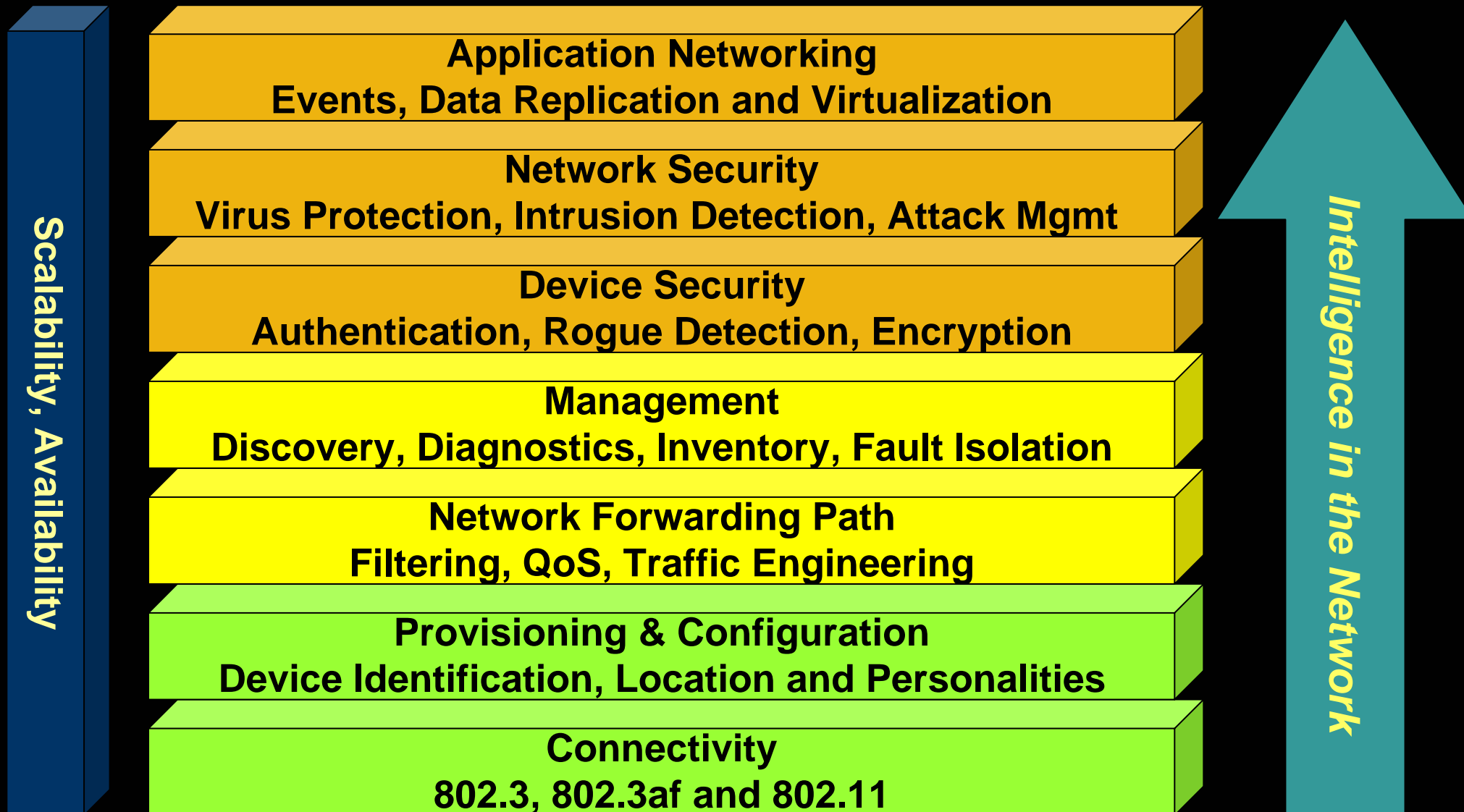


# Key issues and priorities as RFID deployment evolves

<p><b>Business process layer</b></p>	<p>Plan business process improvements</p>	<p>Identify business process bottlenecks. Redesign processes to drive RFID deployment</p>	<p>Business information soars. Deploy network intelligence to avoid overload</p>	<p>RFID is commoditised. Seek competitive advantage through intelligent event routing</p>	
<p><b>Enterprise application and system infrastructure layer</b></p>	<p>Plan scalability of storage, network capacity &amp; device management.</p>	<p>Identify infrastructure bottlenecks. Extend scalable infrastructure as needed</p>	<p>Bandwidth consumption soars. Maintain QoS of data &amp; voice services</p>	<p>RFID information flows saturate the network. Deploy application-aware network capability</p>	
<p><b>RFID network infrastructure layer</b></p>	<p>Plan for proliferation. Consider appropriate RFID standards</p>	<p>Security is a priority. Assures data and physical boundaries</p>	<p>Device density soars. Device management becomes critical</p>	<p>Tags and readers pervade via a universal standard</p>	
<p><b>RFID layer</b></p>	<p>Internal deployment</p>	<p>Adjacent supply chain deployment</p>	<p>Full supply chain deployment</p>	<p>Supply chain network deployment</p>	<p>Beyond the supply chain</p>

# The Role of the RFID-Ready Network – Providing Services to Devices, Middleware & Applications

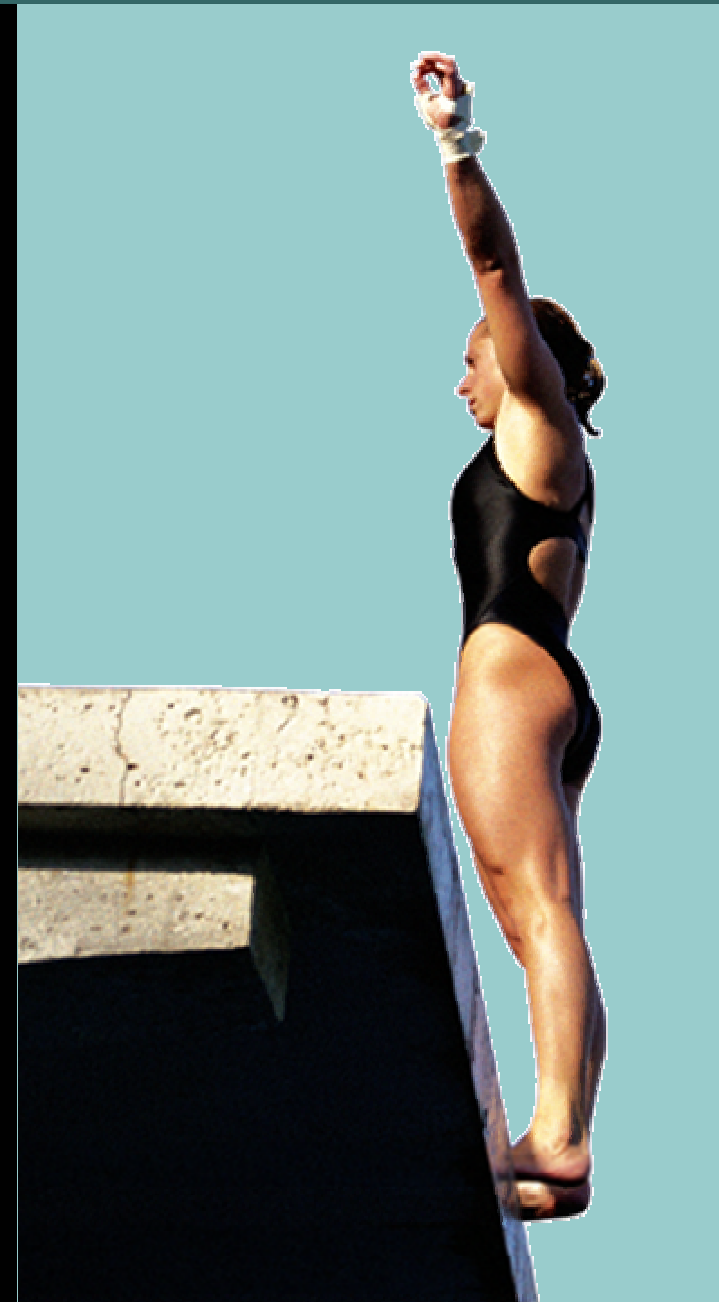
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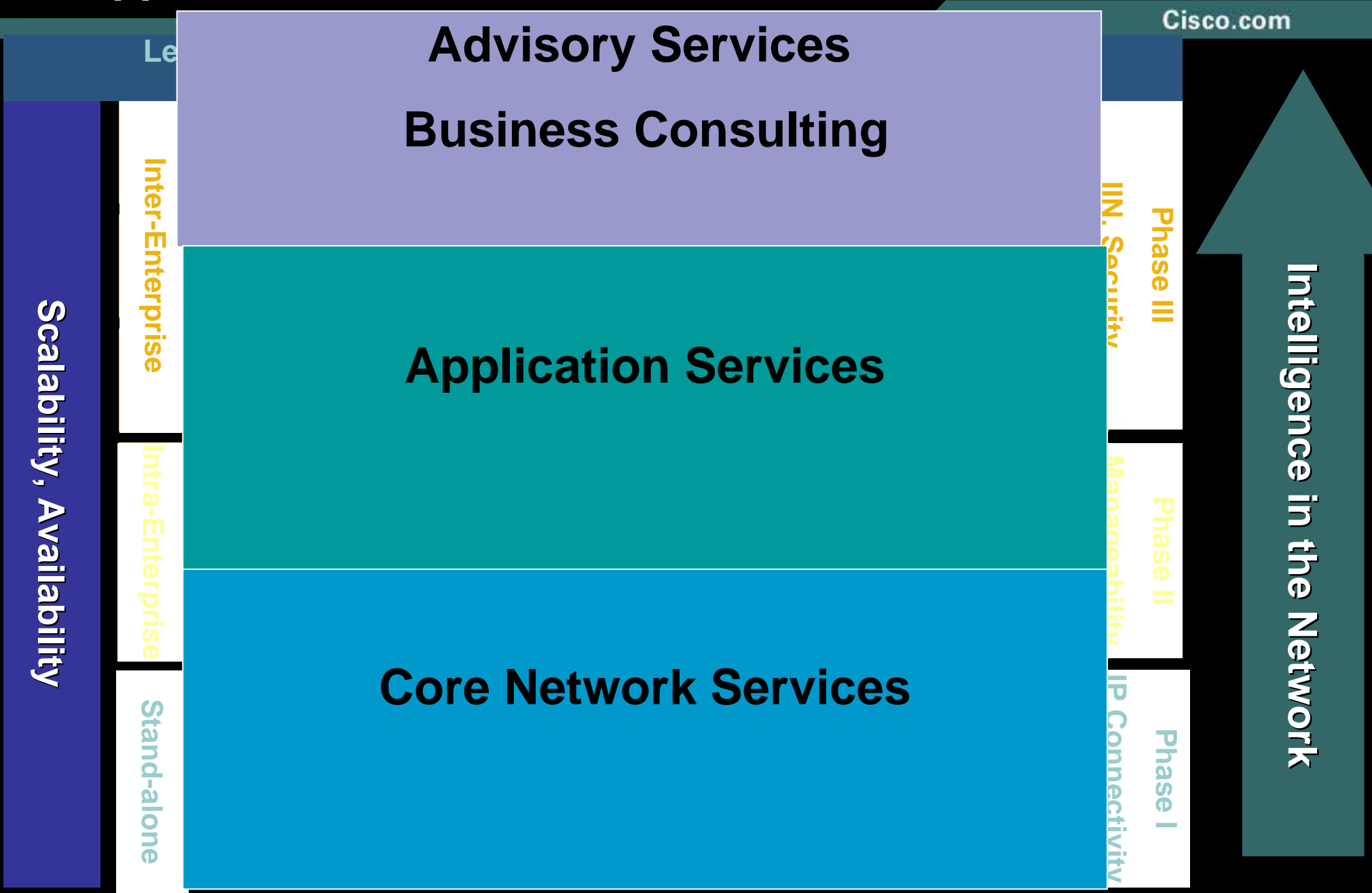
# Definition: RFID-Ready Network

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- A network that is ready to support any given application is one that meets its application's requirements
- An **RFID-Ready Network** is a network that is adequate to support the RFID Application by meeting the following goals:
  - Security
  - Reliability
  - Flexibility
  - Manageability
  - Scalability
  - Device Integration
- Future – Intelligence at the edge



# The Role of the RFID-Ready Architecture: Providing Services to Devices, Middleware and Applications



# Cisco Technology Developer Program

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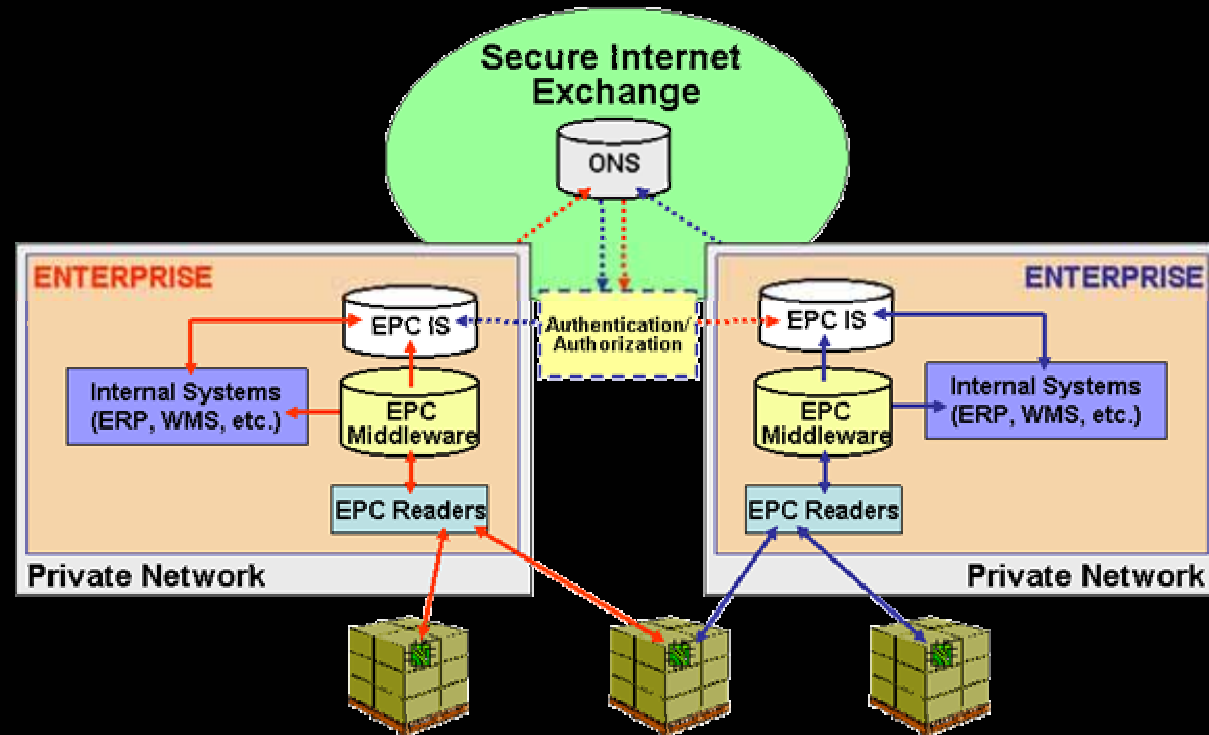
- Now include RFID solution
- Provide customers a tested interoperable RFID solution
- Evolve with the market as it matures
- Drive network enhancements to benefit RFID deployments



<http://www.cisco.com/go/ctdp>

# Key Messages

- RFID is another application on the IP network - like voice
- Customers need an integrated, secure, manageable end-end IP network optimized for RFID traffic
- An open, standards-based, converged network provides the lowest total cost of ownership



Thank You

