Driven by the increasingly digital nature of social interactions, the potential for creative uses of internet-connected objects is virtually endless. It ranges from cellular-equipped tractors, monitoring fertilizer and seed distribution, to Bluetooth-enabled teddy bears with built-in medical sensors.

As the internet connected devices reach a critical mass, companies from a wide-range of industries, must solidify strategies to mitigate risks and capitalize on the growing opportunities Internet of Things introduces.
**Automotive**

**RISKS**
- Data Security Risks
- Consumer Privacy and Vulnerability Concerns
- Cost of Failure
  - Disruptions of service and operational failures
- Regulatory Mandates

**OPPORTUNITIES**
- Data Sharing
  - Opens up new business models
- Brand Loyalty
  - New business models
- Remote Diagnostics
- Improved Safety
  - Hazard and risk anticipation
  - Driver/behavior modeling
- New Market Opportunities
  - Advertisement based on driving patterns and destination preferences
  - Insurance based on driver/operator

**Connected Devices**

**Installed by 2025**
- 25.8%
- 1,172,000,000

**New Shipments in 2025**
- 22.3%
- 322,000,000
Industry Communications

RISKS

- Bandwidth Constraints
- CAPEX Investment for Infrastructure
  Pushing more data puts strain on networks
- Fragmentation
  Mixture of technologies and operating systems

OPPORTUNITIES

- Reinforce Smartphone as the Center of the Mobile Universe
- Investment Opportunities
  Apps development
- Infrastructure Growth
  Continual upgrade to meet data demands
  Enables expansion of entire ecosystem
- Market Expansion
  Semiconductor components
  Wireless service
  New vertical markets

Embracing The Internet of Things

CONNECTED DEVICES

INSTALLED by 2025

- 11,192,000,000 Devices
  9.5% Compound Annual Growth Rate 2011-2025

NEW SHIPMENTS in 2025

- 3,345,000,000 Devices
  4.8% Compound Annual Growth Rate 2011-2025
**RISKS**

- **Consumer Spend**
  - Heavily dependent on disposable income

- **Value Proposition**
  - Does investment justify an upgrade?
  - Difficult to quantify ROI

- **Personal Data Security Risks**
  - Data security and privacy
  - As business models evolve, who will own the data?

**OPPORTUNITIES**

- **Market Potential**
  - Shorter replacement cycle drives faster uptake of technology

- **Convenience**
  - Preventative data and remote diagnostics

- **New Market Opportunities**
  - Advertisement based on consumer patterns and data shared from devices
  - Disruption of traditional business models

- **Brand loyalty**
  - Improved customer experience
  - Higher touch

**CONNECTED DEVICES**

**INSTALLED by 2025**

- **18.9%** Compound Annual Growth Rate 2011-2025
- **24,573,000,000** Number of Devices

**NEW SHIPMENTS in 2025**

- **10.1%** Compound Annual Growth Rate 2011-2025
- **4,686,000,000** Number of Devices
Information Technology

**RISKS**

- Cybersecurity
- Data Storage Capacity
  is there enough?
- Cost Management
  Low cost/free cloud computing – who will pay for the services?
  Network architecture - where is the information processed?

**OPPORTUNITIES**

- Market Growth
  Increased data generated drives demand for cloud capacity, servers and data centers
  Increase processing in edge devices
- Investment Opportunities
  Analytics
  Applications
  Platform development
- Expansion in Non-Traditional IT Markets
  Services
  Semiconductor components

**CONNECTED DEVICES**

**INSTALLED by 2025**

- 3,213,000,000
  Number of Devices
  Compound Annual Growth Rate 2011-2025: 6.2%

**NEW SHIPMENTS in 2025**

- 911,000,000
  Number of Devices
  Compound Annual Growth Rate 2011-2025: 5.5%
Embracing The Internet of Things

Industry

Industrial

RISKS

较长的部署和更高的投资成本

- 长期设备更换周期导致需要重新配置

- 安全担忧
  - 入侵、数据泄露、网络攻击
  - 专有数据共享

- 系统互操作性与限制

- 行为因素
  - 经常性监控
  - 效率 vs. 工作安全

- 零售风险

OPPORTUNITIES

- 提高生产力和成本优化
  - 自动化生产
  - 供应链协调
  - 按需生产
  - 动态资产管理

- 库存和履行管理
  - 实时价格调整
  - 零售电子产品
  - 位置库存管理

- 改善安全
  - 访问控制和监控
  - 诊断和预测性维护
  - 远程监控

RISKS

CONNECTED DEVICES

INSTALLED by 2025

- 26.9%
- 34,147,000,000
- 区域
- 2011-2025年复合年增长率
- 数量

NEW SHIPMENTS in 2025

- 25.2%
- 11,566,000,000
- 区域
- 2011-2025年复合年增长率
- 数量
**Industry**

**Medical**

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**RISKS**

- Cost Management
- Regulation
  - Dependent on country, business model and health care system
- Cost of Failure
  - Disruptions of service and operational failures
- Infrastructure and Service Availability

**OPPORTUNITIES**

- Telehealth
  - Increase accessibility and coverage
  - Cost optimization
- Enhanced Care
  - Customized medical services
  - Remote monitoring
  - Real-time diagnostic
- Improved Patient Experience
  - Streamline access to records and transparency

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**CONNECTED DEVICES**

**INSTALLED by 2025**

- **18.5%**
  - Compound Annual Growth Rate 2011-2025
  - **1,084,000,000**
    - Number of Devices

**NEW SHIPMENTS in 2025**

- **16.2%**
  - Compound Annual Growth Rate 2011-2025
  - **224,000,000**
    - Number of Devices
Industry

Military & Aerospace

RISKS

▲ Security Risks
  - Data security
  - System vulnerability

$ Cost of Failure
  - Disruptions of service and operational failures

OPPORTUNITIES

✨ Improved Intelligence
  - Increase reach for military force
  - Improve telemetry for commercial airlines
  - Increase data collection

➕ Improved Safety
  - Reduced risks e.g. drones
  - Better maintenance and monitoring

CONNECTED DEVICES

INSTALLED by 2025

- 13,000,000 Number of Devices
- 17.6% Compound Annual Growth Rate 2011-2025

NEW SHIPMENTS in 2025

- 2,000,000 Number of Devices
- 5.3% Compound Annual Growth Rate 2011-2025