# SMART SYSTEMS FORECAST



Report Prospectus





# Smart Systems Global Forecast 2012-2016

Evolving Internet of Things and Machine-To-Machine Market Opportunities

New Value At The Intersection

Intelligent device communications and information technology are combining to create new modes of asset intelligence, collaboration and decision making. People, information, and technology are becoming more connected, distributed and pervasive enabling the convergence of physical and virtual worlds. Network awareness will include knowledge, people and things.

This convergence is informing significant new capabilities in which inputs—from machines, people, video streams, maps, newsfeeds, sensors, and more—is digitized and placed onto networks. These inputs are integrated into systems that connect people, processes, and knowledge to enable collective awareness, creativity and better decision making. We have now entered the age when everyday objects will communicate with, and control, other objects over a global data network—24/7/365.

This global network is the Internet. The objects are everything from consumer appliances to the elevator you've been waiting for. It's not "the future," it's now—this year, next year—and thus it is vitally important that business leaders understand this phenomenon, its effects on their business, and what they should do right now to position themselves for opportunities that are literally just around the corner.

The intersection of Information and Communications Technology (ICT) and device connectivity creates value at two disparate ends of the business spectrum. New IT technologies like cloud computing are moving to the enterprise and rapidly being embraced. Managed IT services will increasingly dominate ICT systems and networked services development.

At the other end of the spectrum, the rise of the M2M and the "Internet of Things" has helped transform product companies into value-added service companies. Manufacturers are learning that by putting products on networks they are essentially placing themselves into continuous contact with their customers, thereby enabling them to better understand their customer's needs and act appropriately.

The intersection of these two trends creates an opportunity for new differentiated business models by cleverly combining the potential of both. The two need to be interwoven and mutually supportive, and increasingly, success in either goes to the player that effectively utilizes the combined potential of both.



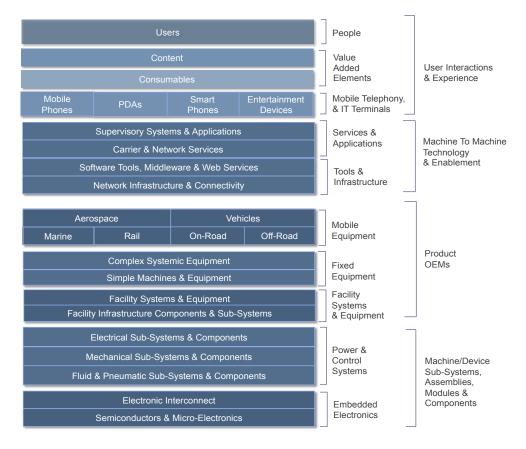
# The Changing Internet of Things Landscape

### **Overarching View**

Harbor expects that Smart Systems and Internet of Things opportunity will continue to shift away from its legacy focus on basic connectivity and communications enablement towards more valuable managed services opportunities. Based on all the knowledge gathered about technology evolution, supplier progress, and customer adoption, here are our overarching observations about the Smart Systems opportunity today:

- Intelligent devices will have rapidly increasing intelligence and functionality. Demand for adaptability, agility and features will grow. Sensors, in particular, will grow significantly in types, applications and capabilities as well as numerous client devices connected to personal, local and wide-area networks.
- Connectivity/Communication will become nearly ubiquitous. Communications options will increase, have greater bandwidth, and be cheaper (free Internet access). Phone lines, Data lines, Power lines, Cable and Fiber Lines, Cellular, Satellite, and Radio Frequency options will abound, all in service to providing communications and connectivity.

#### **Smart Systems Framework & Architecture**





# Research Aims and Key Questions

- Networked devices and systems will be self-adapting. As witnessed by computers beating chess pros and with automatically adjusting car seats, the digital nervous system will increasingly be of service to users, not the other way around. Companies will exist to house, facilitate, and recommend better options for dealing with individual needs and tastes, where people will opt for service contracts instead of buying products outright.
- "Communities" will emerge. Networks of collaborating companies, customers, people, devices, and sensors will be linked together in border crossing relationships that will foster the development of a connected, smart world. Inputs from the constituents listed above will be processed in real time in order to provide instantaneous feedback thus keeping the overall environment/ ecosystem in balance.
- Vertical Smart Systems Solutions. End users will emerge as a force and place greater emphasis on vertical solutions that readily integrate with enterprise systems -- end customers will demand innovative solution design and more effective service and support.

We strongly believe that the Smart Systems market opportunity is reaching its tipping point for dramatic growth; there is now substantially greater recognition of the technological capabilities and the potential benefits of connecting devices to the Internet. This represents a whole new generation of technology innovation and, if history repeats because certain conditions repeat, we expect to see a significant wave of growth in Smart Systems.

## **Key Research and Analysis Questions**

Our forecast report examines the current state of intelligent device networking, a key element of what we term Smart Systems. We prefer "Smart Systems" over other terms in common use-notably "M2M," which usually stands for "machine-to-machine"—because it captures the profound enormity of the phenomenon something much greater in scope than just machine connectivity.

Harbor Research defines Smart Systems as a new generation of systems architecture (hardware, software, network technologies and managed services) that provide realtime awareness based on inputs from machines, people, video streams, maps, newsfeeds, sensors, and more that integrate people, processes, and knowledge to enable collective awareness and better decision making. Our analysis and research is focused on understanding the strategic business implications of growth within the emerging Smart Systems arena.

We are particularly interested in answering the following fundamental questions:

- What key forces are impacting adoption of Smart Systems, M2M and connected product solutions?
- What devices and applications are driving intelligent device networking?
- What is the size and growth rate of the Smart Systems opportunity?
- What managed services opportunities are developing by vertical market?
- What are the evolving competitive dynamics in the Smart Systems arena?
- What are the biggest unmet growth opportunities and biggest issues and hurdles are there in the market impacting adoption of **Smart Services?**



# Market Opportunity Has Reached Its Tipping Point

## **Organization and Structure**

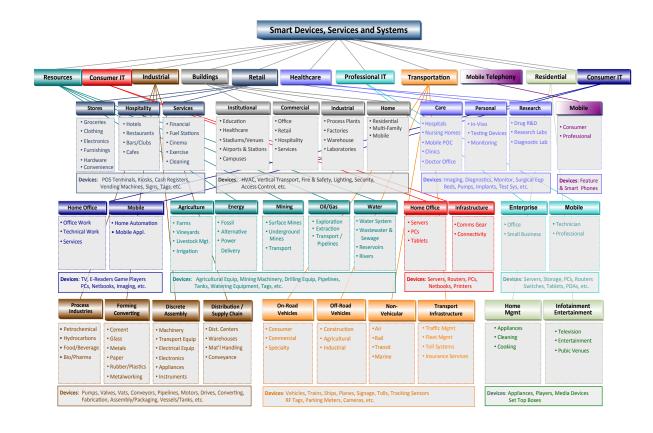
Our analysis and forecast provides comprehensive coverage of the intelligent device networking market. We have interviewed technology suppliers, product OEMs, service providers, experts and users to obtain a complete perspective on the marketplace. This report provides our analysis and forecast that includes all intelligently networked devices, covering both Fixed (Wireline) and Wireless technologies, including WWAN (cellular and satellite), WLAN and WPAN.

Harbor segments the market into eleven key venues as listed below. We analyze each venue and related customer segments, application groups and over 350 specific devices and machine types central to the evolving smart systems arena.

Our venue scope and coverage includes:

- » Resources: Mining equipment, pipelines, agricultural equipment, water/wastewater, and energy production
- » Industrial: Automation, control equipment, and manufacturing capital equipment
- » Transportation: Vehicles, Airplanes, & Transport Systems

#### Harbor Research Venue Segmentation Map





# Smart Systems' Scope

- » Homeland Security: National, border, and public venue security
- » Buildings: HVAC/environmental systems, access control systems, transport systems, and lighting
- » Residential: Consumer appliances, lighting, security, energy systems, and network automation
- » Healthcare: Medical devices, telemedicine, care delivery technology, as well as lab equipment, such as centrifuges, incubators, freezers, and blood test equipment
- » Retail: Point of Sale systems (POS), vending machines (food/beverages, cigarettes, higher value products like CDs), service equipment (petrol pumps, washers/driers, refrigeration, car cleaning), entertainment, signage/ display (billboards, displays), scanners and registers, kiosks, digital signage, lighting, and refrigeration systems
- » Consumer IT: Infotainment technologies in the home, including PCs, tablets, storage devices, cameras, game players, and home office equipment
- » Professional IT: Information and communication in the office including desktop PCs, tablets, netbooks, and traditional laptops as well as infrastructure related assets such as servers, storage devices, and communications equipment
- » Mobile Telephony: mobile terminals

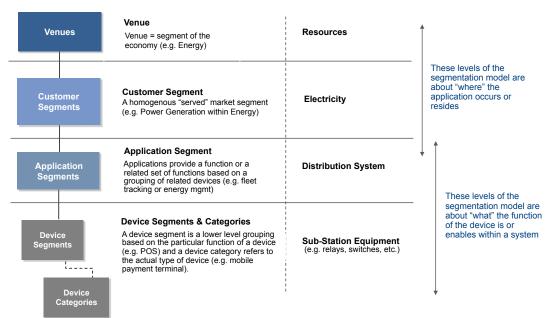
connected to a terrestrial cellular network, including smart phones, and feature phones

We further organize and segment opportunities into four key layers as follows:

- » Network Hardware: the wireline or wireless module attached to or embedded in each machine to be connected.
- » Network Services: the communication medium used to receive/send machine data

- including configuration and provisioning, network service charges, and support services.
- » System Applications: System Applications include status/monitoring, diagnostics, configuration management/upgrades, control/automation, and location/tracking.
- » Value-Added Application Services: application delivery services, including asset management, energy management, supply chain and customer support.

### Forecast Model Segmentation Schema





# Methodology

Harbor combines a comprehensive top-down and bottom-up approach to ensure the most accurate forecast possible. All levels within the forecast are linked.

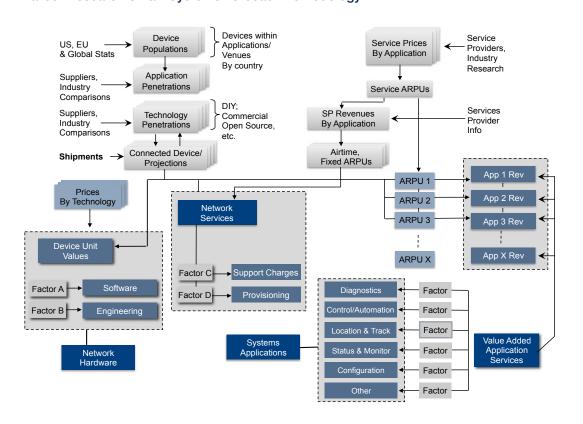
Device populations have been determined from government statistics and related market analysis on output and installed base across a very diverse range of networked device segments. Data for over 350 device categories in Harbor's eleven key venues have been researched in this way in order to cover all areas where Harbor sees potential smart device and systems opportunities. These numbers are cross-checked against data and analysis from alternative sources such as expert interviews, industry publications, academic analysis, market research reports, and other sources.

Networking penetration of these device populations has been assessed from Harbor's analysis, based on input received from device suppliers and industry comparisons across device segments. At the same time, device categories have also been assessed for the alternative technologies that might be used to network them. This approach seeks to minimize the potential for double counting of devices

using different connection technologies. The results of these assessments have then been cross-checked against actual connection module shipment data received from silicon and module

suppliers, network equipment suppliers and channel participants such as distributors.

#### Harbor Research Smart Systems Forecast Methodology





# About Harbor Research

Harbor Research has more than twenty years of experience providing strategic consulting and research services to product manufacturers, services organizations and core technology clients. Harbor's strategy and business development work is organized around emergent and disruptive opportunities, with a unique focus on the impact of the Pervasive Internet—the use of the Internet to accomplish global device networking that will revolutionize business by unleashing entirely new modes of system optimization, customer relationships, and service delivery - what we call "Smart Systems & Services."

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# Report Structure and Content

# Introduction and Overview

Introduction

**Defining Smart Systems** 

**Key Questions** 

Report Structure and Organizing Schema

# Forces and Trends

Smart Systems Forces & Trends Overview

Key Technology Drivers & Forces

Competitive Forces

Customer Forces

Socio-Economic Forces

Success Factors

# Smart Systems Forecast

**Smart Systems Market Forecast** 

Organizing Schema & Methodology

Venues and Markets

Venue Definitions

Applications Vs. Technologies

Market Potential

Network Hardware Revenues

**Network Services Revenues** 

System Application Revenues

Value Added Applications Services

Device Shipments by Network Type

#### Venue Profiles:

- » Resources Venue
- Industrial Venue
- Transportation Venue
- Homeland Security Venue
- » Buildings Venue
- Residential Venue
- Healthcare Venue
- » Retail Venue
- » Consumer IT Venue
- » Professional IT Venue
- » Mobile Telephony Venue

# Evolving Market Opportunities

**Evolving Market Opportunities** 

Internet of Interactions

Challenges for Technology Players

Challenges for Network Services Players

Challeges for IT Systems Players

**Customer Challenges** 

Required Smart Systems Tools



# Smart Systems Forecast Exhibits

Figure 3.10 System Application Revenue Potential

by Venue (\$ millions)

### Chapter I

Jiiaptoi i					
igure 1.1 \	/enue Segmentation Map	Figure 3.11	Value Added Application Services	Figure 3.31	Value Added Application Revenue
igure 1.2 Forecast Methodology			Revenue by Venue (\$ millions)	Figure 3.32	Residential Venue - Global Revenue
		Figure 3.12	Value Added Application Services		Streams (\$ millions)
Chapter II			Revenue by Venue (\$ millions)	Figure 3.33	System Application Revenue
Figure 2.1 Smart Systems Framework Figure 2.2 Intelligent Device Hierarchy Figure 2.3 Smart Systems Innovation Map		Figure 3.13	Wireline Shipments 2016	Figure 3.34	Value Added Application Revenue
		Figure 3.14	WWAN Shipments 2016	Figure 3.35	Healthcare Venue - Global Revenue
		Figure 3.15	WLAN Shipments 2016		Streams (\$ millions)
		Figure 3.16	WPAN Shipments 2016	Figure 3.36	System Application Revenue
		Figure 3.17	Resources Venue - Global Revenue	Figure 3.37	Value Added Application Revenue
Chapter III			Streams (\$ millions)	Figure 3.38	Retail Venue - Global Revenue
igure 2.4	Evolving Industry Value Structure Smart Systems Segmentation Taxonomy	Figure 3.18	System Application Revenue		Streams (\$ millions)
igure 3.1		Figure 3.19	Value Added Application Revenue	Figure 3.39	System Application Revenue
igure 3.2	Applications Versus Technologies	Figure 3.20	Industrial Venue - Global Revenue	Figure 3.40	Value Added Application Revenue
igure 3.3	3 Smart Systems Revenue Streams		Streams (\$ millions)	Figure 3.41	Consumer IT Venue - Global Revenue
igure 3.4		Figure 3.21	System Application Revenue		Streams (\$ millions)
Figure 3.5 Network Hardware Rev (\$ millions) Figure 3.6 Network Hardware Rev	Network Hardware Revenue Potential	Figure 3.22	Value Added Application Revenue	Figure 3.42	System Application Revenue
		Figure 3.23	Transportation Venue - Global Revenue	Figure 3.43	Value Added Application Revenue
			Streams (\$ millions)	Figure 3.44	Professional IT Venue - Global Revenue
	Venue (\$ millions)	Figure 3.24	System Application Revenue		Streams (\$ millions)
igure 3.7	Network Services Revenue Potential	Figure 3.25	Value Added Application Revenue	Figure 3.45	System Application Revenue
	(\$ millions)	Figure 3.26	Homeland Security Venue - Global	Figure 3.46	Value Added Application Revenue
igure 3.8	Network Services Revenue Potential by		Revenue Streams (\$ millions)	Figure 3.47	Mobile Telephony Venue - Global
	Venue (\$ millions)	Figure 3.27	System Application Revenue		Revenue Streams (\$ millions)
igure 3.9	System Application Revenue Potential by	Figure 3.28	Value Added Application Revenue	Figure 3.48	System Application Revenue
	Venue (\$ millions)	Figure 3.29	Buildings Venue - Global Revenue	Figure 3.49	Value Added Application Revenue

Streams (\$ millions)

Figure 3.30 System Application Revenue



# Appendices

## **Network Summaries**

#### **Devices Forecast**

Figure A.1	Total Devices Shipped by Technology - Worldwide
Figure A.2	Total Devices Shipped by Geography - Worldwide
Figure A.3	Total Devices Shipped by Venue - Worldwide
Figure A.4	Installed Device Base by Venue - Worldwide
Figure A.5	Total Network Hardware Revenue by Technology -
Figure A.6	Worldwide Total Network Hardware

#### Worldwide Total Network Hardware Figure A.7 Revenue by Venue -

Revenue by Region -

Worldwide

#### **Network Devices Forecast**

Figure A.8	Network Services Revenue by Venue - Worldwide
Figure A.9	Network Services Revenue by Technology - Worldwide
Figure A.10	Network Services Revenue by Venue - N. America
Figure A.11	Network Services Revenue by Venue -Europe
Figure A.12	Network Services Revenue by Venue - AsiaPac
Figure A.13	Network Services Revenue by Venue -ROW
Figure A.14	Network Services Revenue by Technology- N. America
Figure A.15	Network Services Revenue

by Technology - Europe Figure A.16 Network Services Revenue by Technology- AsiaPac Figure A.17 Network Services Revenue by Technology - ROW

# Device Demographics

#### **Each Device Segment Includes:**

- Devices Shipped by Venue
- Installed Device Base
- Network Hardware Revenue by Venue
- Managed Service Revenue by Venue

#### **Each Device Segment** Includes:

- Wireline Worldwide Forecast
- Wireline Regional Forecast
- WWAN Worldwide Forecast
- WWAN Regional Forecast
- WLAN Worldwide Forecast
- WLAN Regional Forecast
- WPAN Worldwide Forecast
- WPAN Regional Forecast

## Venues

#### **Each Venue Category Includes:**

- Devices Shipped by Technology
- Installed Device Base by Technology
- Revenue Streams
- Network Hardware Revenue by Technology

#### **Global Venues:**

- Industrial Venue Forecast
- **Buildings Venue Forecast**
- Retail Venue Forecast
- Transportation Venue Forecast
- Professional IT Venue
- Healthcare Venue Forecast
- Homeland Security Venue Forecast
- Resources Venue Forecast
- Residential Venue Forecast
- Consumer IT Venue Forecast
- Mobile Telephony Forecast

## Managed Services

#### **Managed Service Forecast**

Figure D.1 Managed Service Revenue by Venue - Worldwide

Figure D.2 Value Added Service Revenue by Venue -Worldwide

Figure D.3 System Application Revenue by Venue -Worldwide

#### Value Added Services Forecast

Value Added Services is broken down according to each Venue, and the System Application Revenue Breakdown and the Value Added Service Revenue Breakdown measures are presented for each

Figure D.24 System Applications Revenue Breakdown -Worldwide

Figure D.25 Value Added Service Revenue Breakdown -Worldwide



## **Device Demographics**



#### Resources Venue

#### Minina:

- Resource Extraction:
- » Mobile Mining Equip Surface
- Fixed Mining Equip Underground
- Mining Tools
- » Materials Handling

#### **Electricity/Power Systems:**

- **Power Generation**
- » Central Stations Nuclear/Fossil
- Alternative Gen Wind Turbines
- Alternative Gen Solar
- » Alternative Co-Gen
- Transmission & Distribution
- Sub-Stations
- Re-Closers Power Distribution Relays Power Distribution
- Switches & Heavy Switchgear
- Electricity Pylons & Towers
- Premises Equipment
- » Back-Up Power Equip
- Meters
- » Energy Monitoring/Display

#### Agriculture:

- Farming Equipment
- Tractors & Farmyard Machines
- Harvesters
- Agricultural Infrastructure
- Irrigation Equip
  - Sprayers Sprinklers & Pumps

#### Oil & Gas:

- Off-Shore
- **Drilling Rigs**
- Floating Production Systems
- Drill Ships
- Submersible Rigs/Systems
- On-Shore
- Oilfield Monitoring/Service Equip
- Compressor Stations
- Pumps
- Monitorina Equip
- Meters

#### Water:

- Water/Wasterwater Processing
- **Drill Rigs**
- Desalinasation
- Pipeline Systems/Equip
- Meters



#### Industrial Venue

#### Discrete Manufacturing:

- Machine Control

  - » CNC / Motion Controlllers » Drives AC / DC / Variable Speed » Human Machine Interfaces
- Motors & Actuators
- Programmable Logic Controllers Sensors & Switches Discrete Manufacturing
- Special Industrial Machines
- » Assembly/Test Stands

#### Process/Converting:

- Control Systems
  - » Distributed Control Systems» Instruments Process Control
- Stand-Alone Controllers
- Valves & Actuators
- » Analytic Instruments
- Process Masurement/Analytics
- » Process Analytical Instruments
- Flow Measurement
- Level Measurement
- Pressure Measurement
- Temperature Measurement
- **Process Variable Transmitters**
- Telemetry/RTUs (Remote)
- Temperature Controllers
- Position Sensing
- Air Compressors
- Chillers
- Final Control/Actuators
- » Valves
- Pumps
- » Motors

#### Electronics:

- Semiconductor Fab Equip
- Auto Test/Assembly Equip

#### Supply Chain:

- Material Handling Equip
- Auto ID (Bar Code, RFID)

#### **Transportation** Venue

#### Vehicles:

- On-Road Vehicles
- » Passenger
- SUV/Light
- Commercial Medium
- » Commercial Heavy
- Motorcycles/Bikes
- Military
- Off-Road Vehicles
  - » Construction
  - Agriculture
- Recreational
- » Military

#### Aerospace:

- Commercial
  - » Airliners & Cargo Planes
  - Helicopters
  - » Light Aircraft
- Military
- » Cargo Planes & Bombers
- Helicopters
- » Fighter Jets
- » Unmanned

#### Marine:

- Commercial
- » Passenger Ships
- Ferrrys & Fishing Vessels
- Cargo Craft & Tankers
- Military Naval
- Aircraft Carriers
- Cruisers/Destroyers/Assault

- Recreational » Pleasure Boats
- Jetskis

#### Rail:

- Rolling Stock
- » Passenger Trains
- Freight
- Sub-Wavs & Light Rail
- Locomotion
- » Locomotives Heavy
- » Locomotives Light
- **Transportation Infrastructure:** Tolls/Tariffs
- Tracking/ID Systems



#### Homeland Security Venue

#### **Entry Systems:**

- » Airports & Public Transit
- » Inspection Equipment
  » Identification & Recogition Systems
  » Surveillance Systems & Devices
- Ports
- » Surveillance Systems & Devices
- Intruder Detection Devices
- Inspection Equipment
- Borders
- » Inspection Equipment» Identification & Recogition Systems
- » Surveillance Systems & Devices

#### Public Infrastructure:

- » Electrical Grid
- » Monitoring Systems » Surveillance Systems & Devices
- Intruder Detection Devices
- Water/Wastewater
- Surveillance Systems & Devices
- » Intruder Detection Devices
- Pipelines/Telco Infrastructure
- » Monitoring Systems Surveillance Systems & Devices
- » Intruder Detection Devices





## **Device Demographics**



#### **Buildings** Venue

#### Commercial / Industrial Buildings:

- » Building Transit Systems
- Elevators. Escalator, Walkways
- » Electrical Distribution Equipment
  - Load Center & Panel Boards Breakers, GFCI/ RCD Devices
  - Power Outlets, Wiring Devices
  - Switchgear, Control Gear
  - Power Quality Systems
  - Back-up Power Systems
- » HVAC Systems » A/C Units
  - Blowers & Fans
  - Boilers, Chillers
  - **Combustion Controllers**
  - Cooling Towers, Pumping Equip
- Variable Air Volume Controls
- » Lighting Systems & Components
- Lighting Systems, Fixtures
- Light Sockets, Ballasts, Lamps
- » Light Switches & Dimmers
- » Safety and Security Systems
- Smoke, Chemical, Gas Detectors
- Fire Sensors and Alarm Panels
- Intercoms, Notification Devices
- Access Controls
- » Security Alarms» Security Cameras

#### **Residential Buildings:**

- » Electrical Distribution Equipment
  - » Consumer Units & Load Centers
  - » Miniature Breakers, GFIC/ RCD Devices & Fuses
  - Power Outlets, Spurs & Wiring Devices
  - Switchgear, Isolators & Control
  - HVAC Systems & Components A/C Units & Comfort Cooling

  - Boilers, Heat Pump
- » Lighting Systems & Components» Lamps, Bulbs, Tubes, Sockets
- » Light Switches & Dimmers
- » Lighting Ballasts» Trays & Light Fixtures
- » Power Quality Systems
- Transient Voltage Surge Suppression Devices
- » Safety Systems & Components
  - Carbon Monoxide Doctors
  - Access Controls
  - Security Alarms



#### Residential Venue

#### Appliances:

- » Large Appliances » Dishwashers
  - Refrigerators
- » Freezers » Ovens
- Stoves
- Washing Machines
- » Dryers
- » Small Appliances
- » Vacuum Cleaners
- Microwaves/ Toaster Ovens
- Small Kitchen Appliances
- Trash Compactors
- » Humidifiers, Space Heaters

#### Infotainment:

- » Media
- » DVRs
- » DVD Players
- Set Top Boxes
- Stereo Systems
- » Televisions
- » Edu-tainment
- » Edu-tainment Toys
- » Gaming Console's
- » Learning Devices
- Lifestyle:
- » Lifestyle Devices
- » Digital Picture Frames
- » Health & Fitness Devices
- » Home Energy Displays
- » IP Cameras
- » Adjustable Beds
- » IP Phone Systems

#### Möbile:

- » Infotainment
  - » MP3 Music & Video Players
  - » Portable Gaming Devices
- » Lifestyle
- » Digital Cameras
- » Digital Video Cameras
- » GPS Navigation Devices



#### Hospitals / Health Delivery:

- Patient Care
- » Drug Dispensers
- Dialysis Equipment
- Respiratory Equipment
- Incubators
- Defibrillators
- Beds & Bedside Equipment
- Patient Monitoring
- » Blood Glucose
- **Blood Pressure**
- Dosimeters Fixed
- Drug Dispensers Fixed
- Electro-Cardiac Monitors Fixed
- Intraveneous Monitors Fixed
- Pulse Oximeters Fixed
- Patient Diagnostics
  » Computer Aided Tomography
- Magnetic Resonance Imaging
- Ultra Sound Equipment
- X-Ray Machines Healthcare

#### **Doctors Offices/Out-Patient:**

- **Doctors Offices/Clinics**
- » Blood Glucose Monitors Fixed
- Blood Pressure Meters Fixed
- Dosimeters Fixed Drug Dispensers - Fixed
- Electro- Cardiac Monitors Fixed
- Intraveneous Monitors Fixed
- Pulse Oximeters Fixed
- Remote Patient Monitoring
- » Blood Glucose Monitors **Blood Pressure Meters**
- Electro- Cardiac Monitors Hearing Aid Devices
- Pacemakers
- Dosimeters Portable
- Drug Dispensers Portable Electro- Cardiac Monitors
- Intraveneous Monitors Portable
- Pulse Oximeters Portable

#### Research:

- Laboratories
- » Centrifuges Laboratory» Freezers Laboratory
- Incubators Laboratory
- Microscopes
- Spectrometers
- Weigh Scales Laboratory



#### Retail Venue

#### Retail Stores / Transactions:

- » Kiosks
- » Informational Kiosks
- Ticketing/Transactional Kiosks

- » Point-of-Sale (POS) Systems» Fixed & Mobile POS Systems
  - Weigh Scales
- Barcode/Dotcode/RFD Scanners
- Digital Signage

#### Hotels, Restaurants, Entertainment

- » Appliances and Service Equipment» Commercial Appliances
- Vacuum Cleaners
- Commercial Kitchen Appliances
- Commercial Laundry Appliances » Ice & Water Dispensers
- » Entertainment Equipment» Amplifiers & PA Systems
  - Electronic Instruments
  - Sound Mixing
    Lighting and Display Systems
    Sound Mixing Equipment

- Speakers Gaming/Gambling Machines

# Bowling Systems Digital Jukeboxes Gas / Convenience Outlets:

- » Fueling and Repairs Gas Pumps and Dispensing
  - Systems Air & Water Dispensers Diagnostic Terminals
- Test Equipment
- » Conveniences » Dispensers





## Device Demographics



### **Consumer IT** Venue

#### Home Office:

- » Computing
  - » Desktop PCs » Laptop PCs
- » Netbooks
- » Ultra Mobile PCs
- » Storage
  - Storage Devices
- » Media Servers
- » Networking
- » Gateways
- » Hubs
- » Routers » Switches
- » Printing / Imaging » Printers
  - » Copiers
  - » Scanners
  - » Fax Machines

#### Mobile:

- » Tablets
- » E-Readers» Laptop PCs



## **Professional IT** Venue

#### Enterprise / Commercial:

- » Computing
  » Desktop PCs
  » Workstations
  » Displays
  » Netbooks

- Ultra Mobile PCs
- Thin Clients
- » Pen/Tablet
- » Servers and Storage» Servers, Blades, Racks / Free-
  - Standing

    » Storage Devices

    » Media Servers
- » Networking
- » Gateways
- » Hubs
- Routers
- Switches
- » Printing / Imaging
  - » Printers
  - » Copiers
  - » Scanners
  - » Fax Machines

#### Mobile:

- » Tablets
- » Pen-Based Systems » Industrial PDAs
- » Laptop PCs



#### Telephony:

» Cell Phones

#### **Mobile Terminals:**

- » Feature Phones
- » SmartPhones

