CDG’s M2M Industry Efforts
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Smart Wireless Devices and Services

- **Mission**: Create exposure, expand availability, and grow market share of 3G and 4G smart devices to support a variety of vertical sectors that are deploying machine-to-machine (M2M) services

- **Value Created for Ecosystem – Operators, Module OEMs, VARs**
  - Share case studies, lessons learned, and business models
  - Network with potential suppliers and customers
  - Address ecosystem issues related to numbering, security, roaming and certification
  - Develop input to regulatory proceedings globally to support M2M

Consumer Electronics
Telematics
Healthcare
Energy
M2M Special Interest Group Vision

Application Development and Middleware Platforms
- Open application development APIs
- Guidelines for robust, scalable and efficient middleware platforms

Network Security
- Develop System Security Requirements and Architecture
- Develop Security Requirements for Each Machine / Node

Systems Architecture and Network Planning
- Publish and develop network connectivity guidelines and network planning tools for efficient resource utilization

Modules Testing and Certification
- Establish common module specifications and requirements
- Harmonize standardized testing and certification
- Open modules with RUIM capabilities to support multiple operators

Industry Awareness and Education
- Develop effective marketing programs for industry awareness
- Create a marketplace for buyers and sellers to transact
- Develop Global programs to push M2M in all parts of the world
In 2010, the CDG held its first annual Smart Wireless Awards

http://www.cdg.org/smartawards/

The awards recognize innovation in machine-to-machine (M2M) communications in three categories

- Smart Modules
- Smart Devices
- Smart Services

2010 WINNERS

- Smart Modules: ANYDATA
- Smart Devices: MedApps HealthPAL106
- Smart Services: ZTE Corporation (Partner: China Telecom)
Cellular M2M Market Growth

Harbor Research commissioned M2M White Paper available on CDG.org

Total Cellular M2M Connections Worldwide

(The figure above depicts M2M connections for all WWAN technologies, including proprietary cellular networks.)

Source: Harbor Research, Inc., September 2010
Vision: Accelerate and enable 3G/4G wireless modules market share in the race to 50+ Billion Connected Devices
### M2M Economic Benefits and ROI

<table>
<thead>
<tr>
<th>Case Study</th>
<th>Vertical Market</th>
<th>Key Benefit</th>
<th>2014 Vertical Market Potential ($Billions)</th>
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</thead>
<tbody>
<tr>
<td>American Trash Management</td>
<td>Transportation</td>
<td>Saves customers 25% on waste management costs</td>
<td>$6.5</td>
</tr>
<tr>
<td>DriveCam</td>
<td>Consumer Telematics</td>
<td>Reduces teenage driving car accidents by 75%</td>
<td>$6.0</td>
</tr>
<tr>
<td>CardioNet</td>
<td>Healthcare</td>
<td>Reduces cost of treating cardiac arrhythmia by over $20,000 per patient</td>
<td>$4.0</td>
</tr>
<tr>
<td>Sony E-Reader</td>
<td>Consumer Electronics</td>
<td>Eliminates roughly 50% of publishers’ expenses</td>
<td>$10.0</td>
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<tr>
<td>OmniLink</td>
<td>Remote Asset Monitoring</td>
<td>Can potentially track the location of 800,000 children that go missing each year and 5 million senior citizens with Alzheimer’s</td>
<td>$4.2</td>
</tr>
<tr>
<td>Tata Teleservices</td>
<td>Smart Grid and Metering</td>
<td>Saves the utility 15-20% on bill collection alone</td>
<td>$2.0</td>
</tr>
<tr>
<td>ABB</td>
<td>Industrial and Energy Asset Management</td>
<td>Enables utilities to reduce service time by 50%</td>
<td>$7.0</td>
</tr>
<tr>
<td>Digital Payment Technologies</td>
<td>Retail</td>
<td>Achieves 20-30% increases in parking revenue</td>
<td>$1.3</td>
</tr>
</tbody>
</table>

ROI for M2M applications is primarily based on productivity and efficiency improvements

Source: Harbor Research, Inc., September 2010
M2M SIG: What’s Next

- **Ramp up Industry Awareness**
  - Smart Wireless Awards 2011
  - Active postings on CDG.org/M2M

- **New M2M SIG leadership**
  - Sanjay Srivastava on board from Tata Teleservices
  - Sara Aab Schleutker from Qualcomm to program manage

- **Re-align proposed workstreams to reflect market needs**
  - Pilot of M2M minimum device requirements document implementation

- **M2M Workshop at CTIA – March 2011 in Orlando, FL, USA**

JOIN CDG’S M2M SIG AND CONTRIBUTE YOUR IDEAS!
SMART WIRELESS DEVICES AND SERVICES

CDMA M2M Industry Examples
Smart Devices and Services Connected by CDMA2000
CardioNet pioneered remote healthcare monitoring using CDMA2000

The national average charge per hospital admission is $26,500 versus $1,300 for a CardioNet prescription

Source: Harbor Research, Inc., September 2010
DriveCam has helped save lives and reduce teen driving collisions by 70%.

Source: Harbor Research, Inc., September 2010
CDMA2000 M2M: Transportation

American Trash Management revolutionized trash collection with CDMA2000

On average, the SmartTrash system saves customers 25% on waste management costs

Source: Harbor Research, Inc., September 2010
E-Readers eliminate approximately 50% of publishers’ operational expenditures

Source: Harbor Research, Inc., September 2010
800,000 children go missing in the United States each year and over 5 million elderly adults are suffering from Alzheimer’s disease or dementia.

Source: Harbor Research, Inc., September 2010
Tata Teleservices is changing the way India is powered with electrical energy.

1. Modems talk to meters through optical ports
2. Meters send data to modems which store the data in memory
3. Modems then push data to a Centralized Data Center (Head End)
4. Head End processes data in a readable format and forwards it to a billing engine

Tata’s CDMA2000 solution downloads data in 6-8 hours, whereas their previous solution took 4-5 days to make the same data available.

Source: Harbor Research, Inc., September 2010
For ABB, the cost of developing and deploying this system has had a very short pay-back period — less than eighteen months — primarily driven by on-line handling of over 70% of device alerts which has enabled a 50% reduction in overall service time.

Source: Harbor Research, Inc., September 2010
Cities and companies often see 20-30% increases in parking revenue after installing digital payment stations.

Source: Harbor Research, Inc., September 2010
GM's New Volt to Use CDMA2000 M2M Technology w/ Google's Android Software

GM's OnStar Information system depends on CDMA2000 connectivity
CDMA2000 Smart Grid Solution

www.cdg.org

CDMA2000 is an enabling element of Advanced Metering Infrastructure

A Sempra Energy utility

Local Area Network

Wide Area Network

Electric Meter

Water Meter

Gas Meter

Relay

Transceiver

CDMA

RF

Fiber

BPL

BNC

Ampath

MV-90

SDG&E

More than 600,000 homes depend on SDG&E’s Smart Grid
M2M Special Interest Group @ CDG

- Modules Testing and Certification
- Industry Awareness and Education
- Network Security
- Systems Architecture and Network Planning
- Application Development and Middleware Platforms

www.cdg.org/M2M