



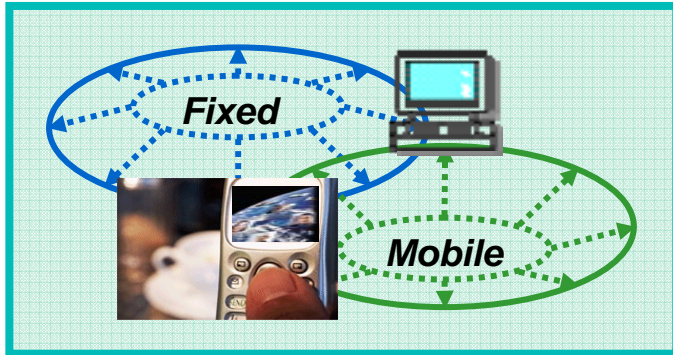
III's solutions for energy efficiency – EMS and AMI systems

Smart Network System Institute
Institute for Information Industry



SNSI Technologies Focus

Broadband Wireless



Intelligent Living Environment



➔ Mobile Multimedia

- Audio/ Video, Streaming, DVB-H, VoIP/SIP
- 3D Graphic, IPTV, TV-Widget, Widget-based TV UI/Payment/DRM
- MID, Android Phone

➔ Next generation wireless

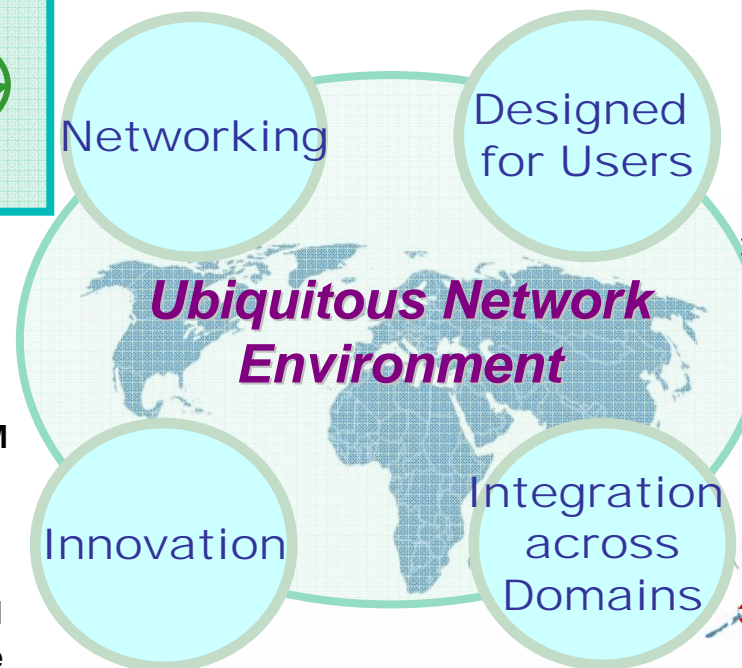
- WiMAX, IMT-Advanced, FemtoCell
- Communication protocol software
- Communication standards
- Testing services (RCT/PCT/IOT)

➔ Wireless Sensor Networks

- Home Energy Saving and Management System
- Energy Information and Communication Architecture (AMI)
- Location Base Service applications
- Green Building Technologies

➔ Network security

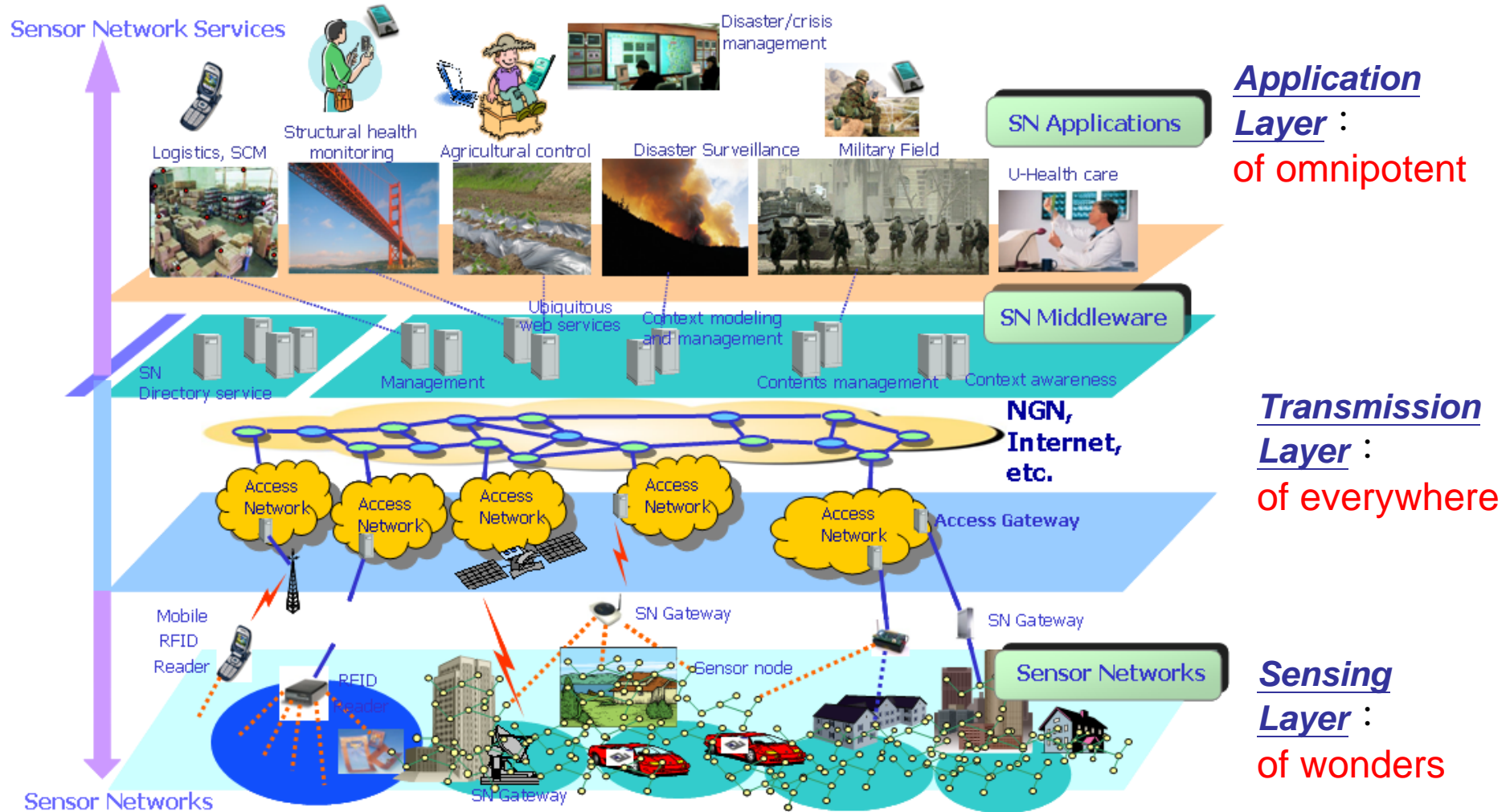
- Network vulnerability scanning
- Web Application Protection Tool
- Security Information & Event Mgt.
- Security Sandbox
- Cloud computing security



Core Technology & Market Strategy



IOT – System Architecture





Application example 1. Taipei Port container terminal

Wireless Sensor Network technology was applied to Taipei Port Container Terminal (TPCT)

- Develop and deploy a wireless sensor network based container terminal management system.
- System Architecture: Terminal operation System (TOS), Truck Dispatching System (TDS), Yard Wireless Sensor Network (TWSN) etc.
- Deployed 100 Container Car Access Points for positioning in Yard Sector, and 500 ZigBee LBS Tags.



Truck Dispatching System



ZigBee LBS Tag



Container Car Access Point



Application example 1. Port container terminal (cont'd)

Private Sector: Taipei Port Container Terminal Corp
Evergreen Marine Corp, Wan Hai Lines, and Yangming Marine Transport Corp.

Public Sector involvements:

- An expressway connecting the Port of Taipei to Freeway and the Greater Taipei area was opened to the public. Construction costs for the expressway topped US\$ 1 billion level.
- Funding support from Ministry of Economic Affairs for related Wireless Sensor Network technology development

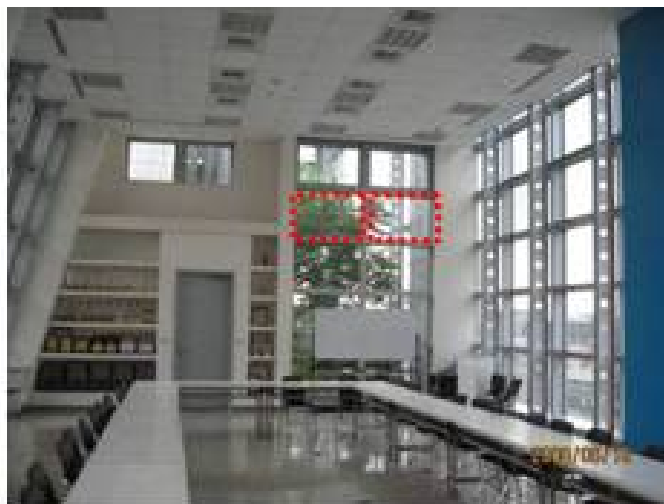
Results:

- Min. 20 % efficiency raise of cargo container load/unload

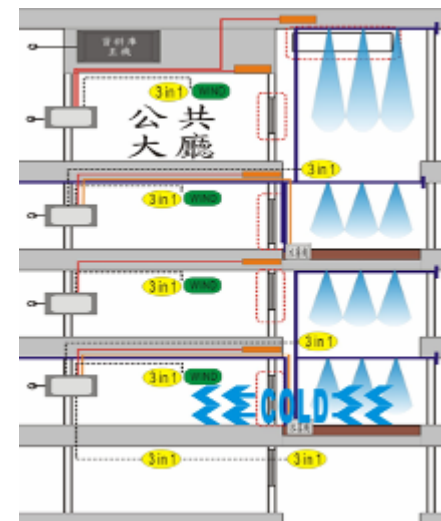
The 1st Metropolitan Smart & Green Building in Taiwan



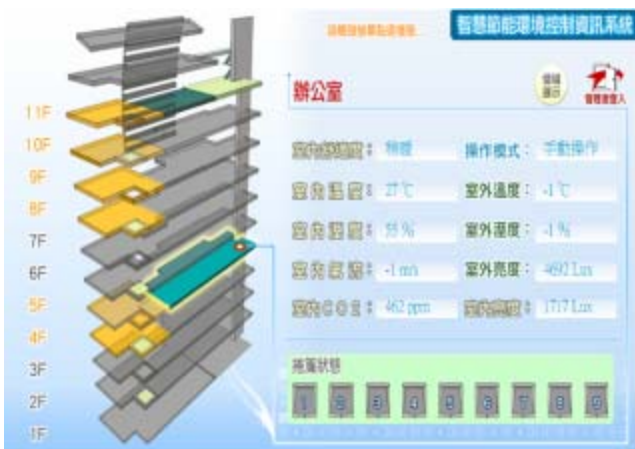
Fu-an Memorial Building



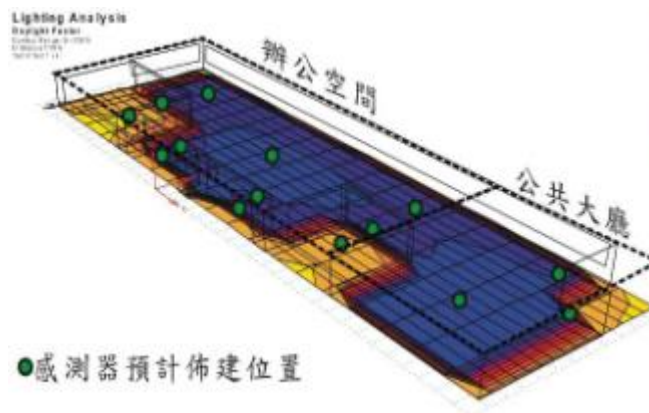
Automated window control



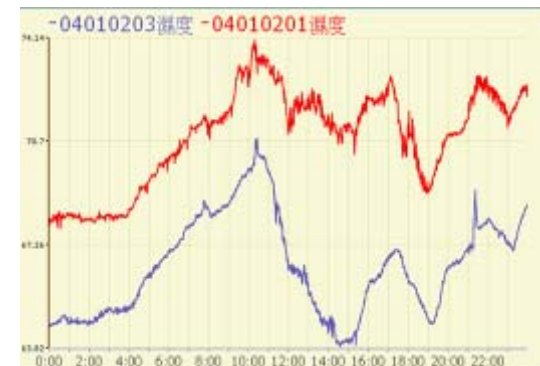
Super-low carbon temperature hydro-control



User friendly UI



Domain know how building thermal and lighting simulation

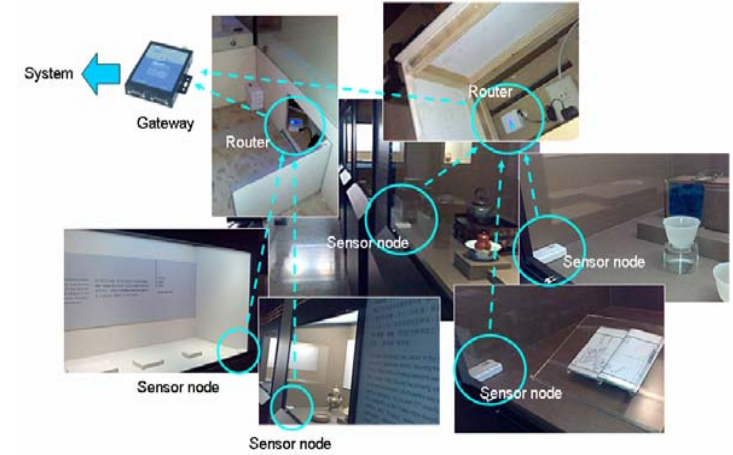


Environment quality analysis tool



Application example 3. Taipei National Palace Museum

Sensors with Temperature and Humidity, Router Coordinator, Gateways are deployed.
Interactive and multimedia guidance systems are provided



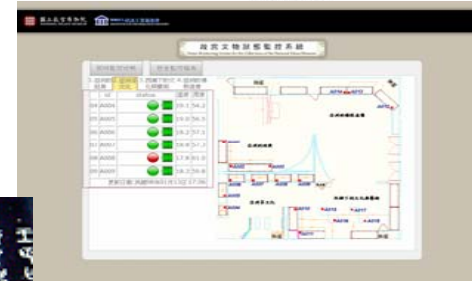
Private Sector:

Innova Tech & Management Consultant, Inc., Bright Ideas Design Co., Ltd., etc.



Tour guide and education

Public Sector: National Palace Museum



Humidity & temperature monitor and control



Application example 4: LED light & control in parking lots

- **Public Sector**
 - Ministry of Economic Affairs, Sanchong City government
- **Private Sector**
 - LiteOn Technology Corporation
 - Peng-Pei Co. Ltd



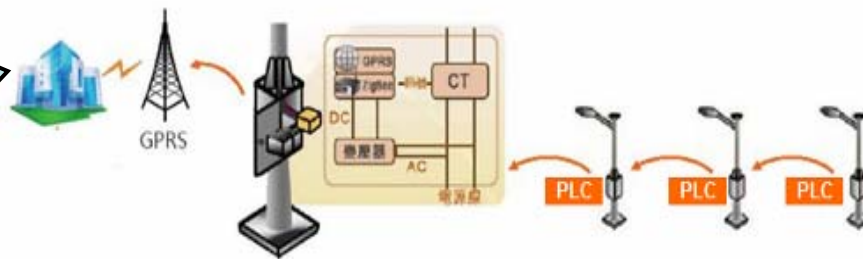
Parking lots in Sanchong City

Results:

- **Power saving**
- **Better safety**



Lighting control



ITRI AC LED street lights



Today's focus -- III's Solution EMS (Energy Management System)



In-Snergy



智慧綠能感測與辨識系統
Intelligent Green Management System



In-Snergy-2011 R&D 100 Awards

- R&D 100 Awards identify the 100 most significant, newly introduced research and development advances in multiple disciplines.
- Winning one of the R&D 100 Awards provides a mark of excellence known to industry, government, and academia as proof that the product is one of the most innovative ideas of the year, nationally and internationally. In-Snergy
- In-Snergy thanks the Ministry of Economic Affairs for funding both technology development program and innovative technology application program to support this project.

2011 R&D 100 Award Winners

Wednesday, June 22, 2011

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R&D Magazine 2011 R&D 100 Winners



Email Print

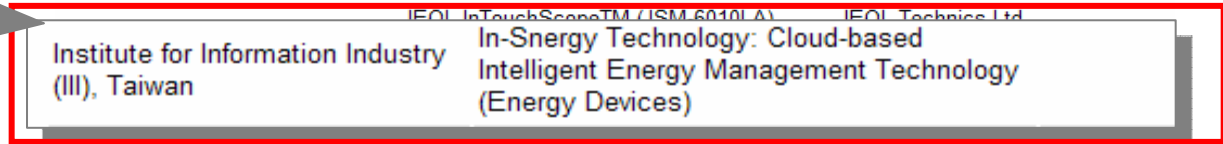
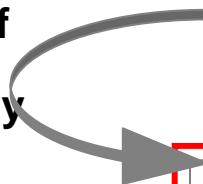
1 tweet

retweet

Press release: [R&D Editors Announce 2011 R&D 100 Awards](#)

The 2011 R&D 100 Award Winners are listed below in alphabetical order by the name of the primary developer company.

Primary Developer	2011 R&D 100 Winning Technology (Category)	Co-developers/Contributors
Institute for Information Industry (III), Taiwan	In-Snergy Technology: Cloud-based Intelligent Energy Management Technology (Energy Devices)	
Intel, USA	The 2010 Intel Core Processor Family (Information Technologies)	
Institute for Information Industry (III), Taiwan	In-Snergy Technology: Cloud-based Intelligent Energy Management Technology (Energy Devices)	IEOL InTouchSense™ (ISM 6010LA), IEOL Technics Ltd.
Laboratory, USA	(MRMI) (Imaging Technologies)	
Lawrence Berkeley National Laboratory, USA	Nanostructured Antifogging Coatings (Materials Sciences)	
Lawrence Livermore National Laboratory, USA	Serrated Light Illumination for Deflection-Encoded Recording (SLIDER) (Imaging Technologies)	





In-Snergy Supported Applications

- Energy Management
 - Convenience Chain Store
 - Hotel Building
 - Factory / Office
 - School / Dormitory
- Environment Monitoring
- Street Lighting Management
- Renewable Energy Generation Monitor





In-Snergy - Street Lighting Application Cases

Remote maintenance and Management

智慧能源感測與辨識系統
Intelligent Energy Management System 經濟部技術處 科專計劃研發成果

Language: 正體中文 / English Hi, billion Logout

Lights Devices

Home Page > Lights > Light Map

燈具資訊 電力資訊 燈具控制

Group: BILLION
Location: 盛達電業
Device ID: BN3200000000000000392
總數/異常: 1 / 1
Device Status: Offline
安裝日期: 2011-05-11 11:21:28.765

群組清單

Event List

更新時間: 2011/4/26 15:28:122

1 2011-05-25 17:33:40.0
BN32000000000000000001

2 2011-05-25 17:32:53.0
BN32000000000000000001

3 2011-05-25 17:28:36.0
BN32000000000000000001

4 2011-05-25 17:28:28.0
BN32000000000000000001

5 2011-05-25 17:28:06.0
BN32000000000000000001

6 2011-05-23 10:25:25.0
BN32000000000000000002

7 2011-05-23 10:08:12.0

查詢設定

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Street Lighting On/Off/Dimming Control

經濟部技術處 科專計劃研發成果

Language: 正體中文 English Hi, billion Logout

Lights Devices

Home Page > Lights > Event List

Event List

Group	*Show All*	Device ID	Device Status	*Show All*	Search	Clear
回報時間	Device ID	Device Type	回報狀態	Group	Location	
2011-05-11 09:58:04.0	BN32000000000000000001	Light		BILLION	105台灣台北市松山區民生東路四段80巷11弄17號	
2011-05-11 09:58:04.0	BN32000000000000000002	Light		BILLION	盛達電業	
2011-05-11 09:58:04.0	BN32000000000000000003	Light		BILLION	盛達電業	
2011-05-11 09:58:04.0	BN32000000000000000004	Light		BILLION	盛達電業	
2011-05-11 09:58:04.0	BN32000000000000000005	Light		BILLION	盛達電業	
2011-05-11 09:58:04.0	BN32000000000000000006	Light		BILLION	盛達電業	
2011-05-11 09:58:04.0	BN32000000000000000007	Light		BILLION	盛達電業	
2011-05-11 09:58:04.0	BN32000000000000000008	Light		BILLION	盛達電業	
2011-05-11 09:58:04.0	BN32000000000000000009	Light		BILLION	盛達電業	



Today's focus -- III's Solution EMS (Energy Management System)



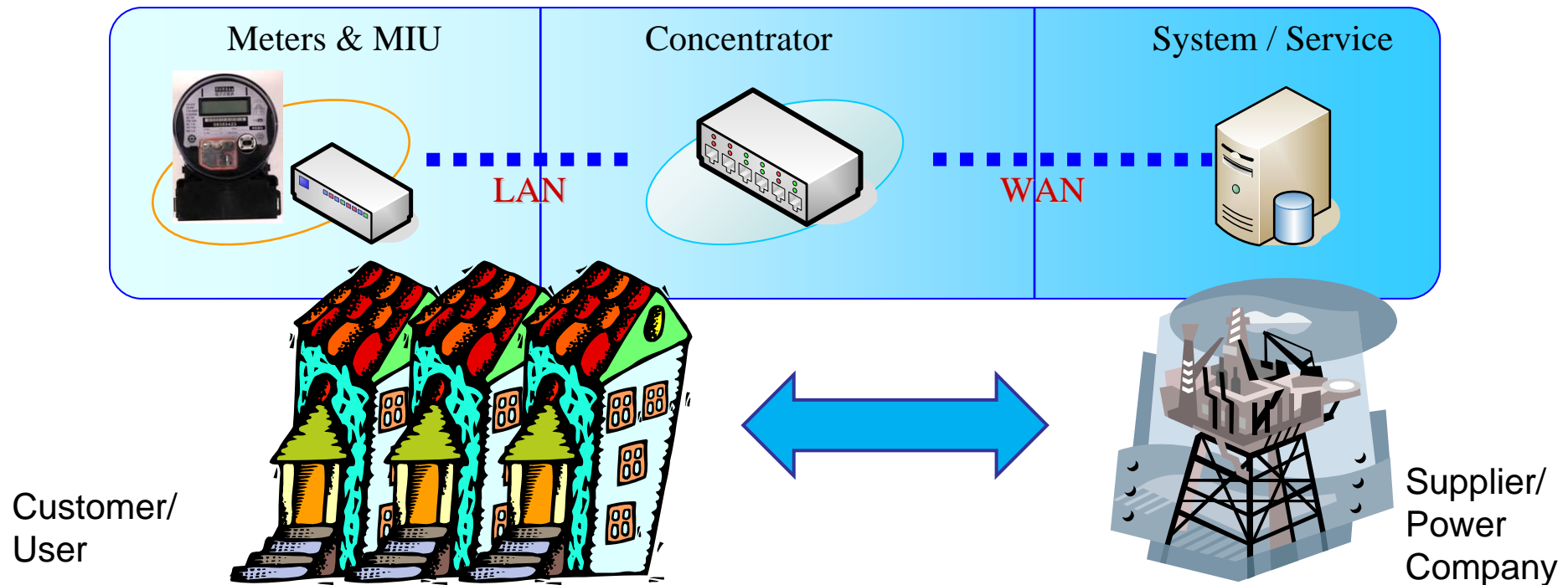
Polar Bear





About AMI -- definition

- AMI Definition from Federal Energy Regulatory Commission (FERC) Staff
 - A metering system that records customer consumption hourly or more frequently *and that provides for daily or more frequent transmittal of measurements over a communication network to a central collection point ...*





What can we expect from AMI

- AMI can provide large operational cost savings to a utility
- Customers can reduce system resource costs by reducing demand, especially at times of high system demand
 - time-varying pricing and demand response programs
 - CPP (Critical Peak Pricing)
 - TOU (Time of Use)





AMI provides operational cost savings to a utility

- Remote meter reading
- Remote disconnection/reconnection (electric only)
- Identification of outage locations
- Improved tamper detection
- Improved capacity utilization
- Grid voltage and phase monitoring
- Better load data for planning purposes



System functions

Menu - Microsoft Internet Explorer

檔案(F) 編輯(E) 檢視(V) 我的最愛(A) 工具(T) 說明(H)

網址(D) http://localhost:8080/Web/?wicket:interface=39:::

TMAP

客戶管理 | 系統管理 | 讀表管理 | 即時資訊 | 電量分析 | 事件分析 | 群組管理

回首頁 線上教學

- Customer info.
- System config.
- Meter management
- Real time info.
- Meter data analysis
- Event analysis
- Group

新增電表

時間	表號	
2008-07-24 19:32:04	00000001	編輯
2008-07-21 20:45:56	11111111	編輯
2008-07-24 19:45:50	00000000	編輯
2008-07-24 19:27:57	00000000	編輯
2008-07-25 11:22:19	00000001	編輯
2008-07-25 11:32:12	00000001	編輯
2008-07-25 11:35:16	00000001	編輯
2008-07-25 12:29:30	00000001	編輯
2008-07-25 13:39:07	00000001	編輯
2008-07-24 19:28:58	00000001	編輯
2008-07-24 19:42:46	00000001	編輯
2008-07-24 19:30:01	00000001	編輯
2008-07-24 19:34:08	00000001	編輯

事件通知

時間	事件	
2008-07-25 11:35:16	MIU重新連線	00000001

完成

WICKET AJAX DEBUG

近端內部網路



Thanks for your attention!