



Gemtek

A Leader in Wireless Broadband Access

The Trend of Market & Technology For Mobile Internet

Kevin Yang
Executive Board of Director
Date: March, 2013

Gemtek
Wireless Broadband Anywhere

Overview

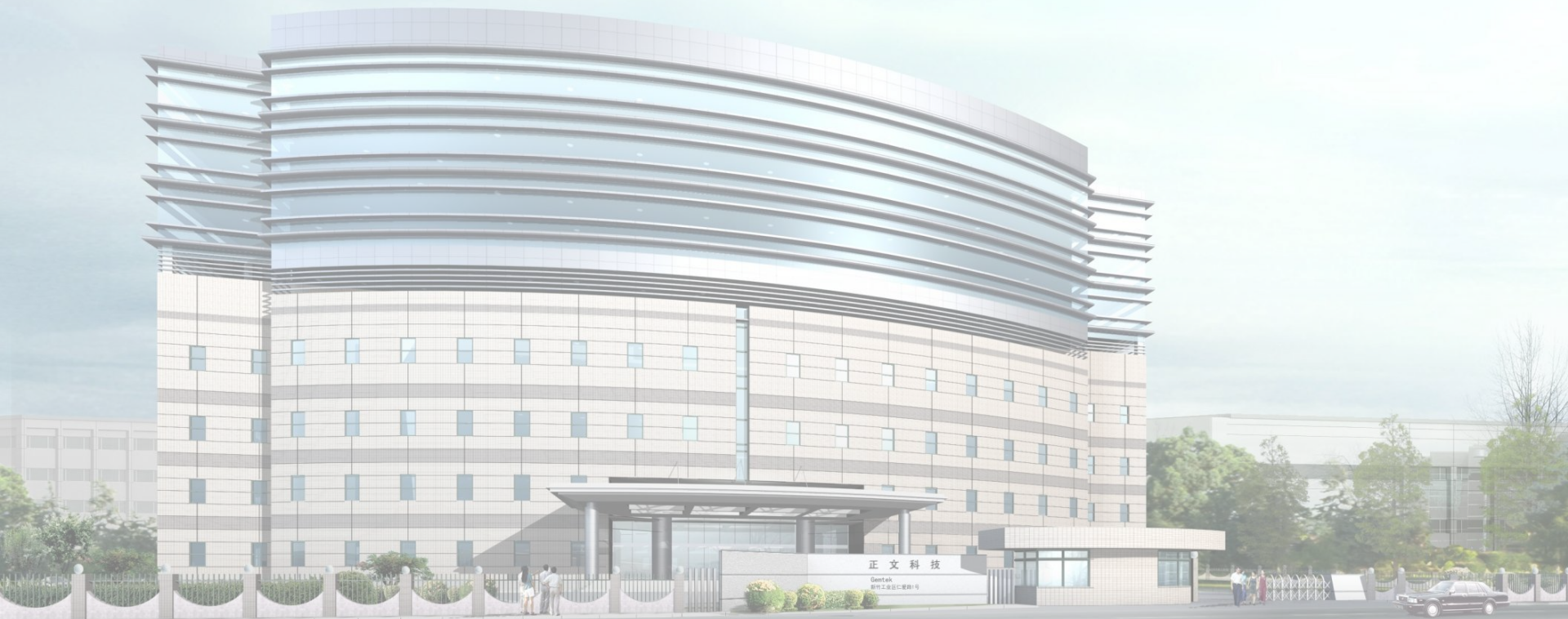
- **Gemtek Intro.**
- **Market Trend**
- **Business Strategies**
- **2013 Prospect**

Corporate Facts

Headquarter: Hsinchu Industrial Park , Taiwan
Total Employee $\approx$ 6,154 (TWN: 1252; China: 4902)

Capital: NT\$3.10 Billion (US\$ 106.3 Million)

Market Capital: US\$408 Million (Feb., 2013)



Global Sites

HSINCHU HEADQUARTER



FLOOR SPACE: 322,000 SQF
LAND AREA: 215,000 SQF



CHANG SHU PLANT



PLANT SIZE : 441,600.SQF
LAND SIZE : 1,635,520.SQF

CZECH REPUBLIC



PLANT SIZE: 102,000 SQF

CERTIFIED SITES:

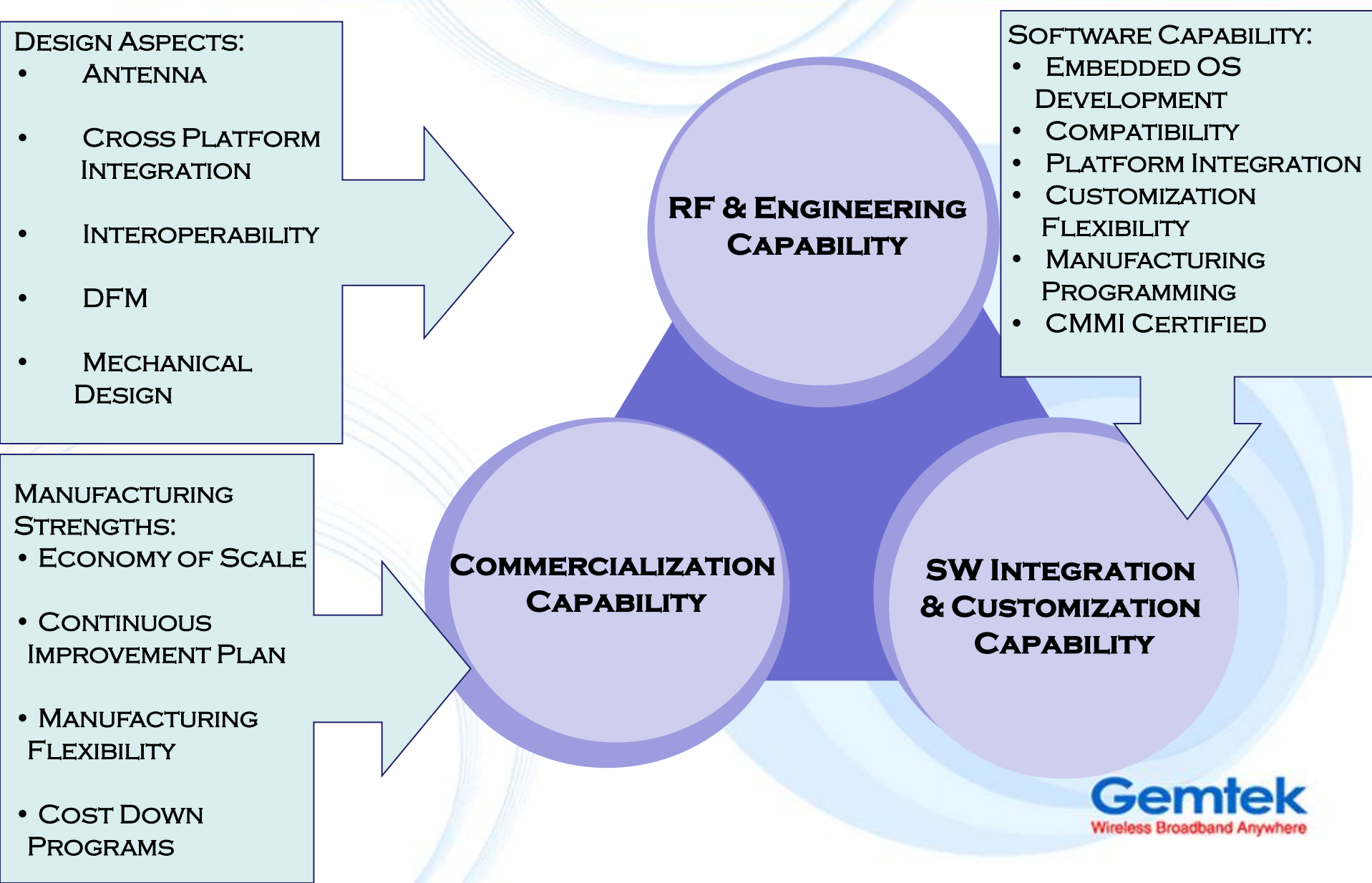
ISO 9001
ISO 14001
OHSAS 18001
TL9000
C-TPAT

KUSHAN PLANT

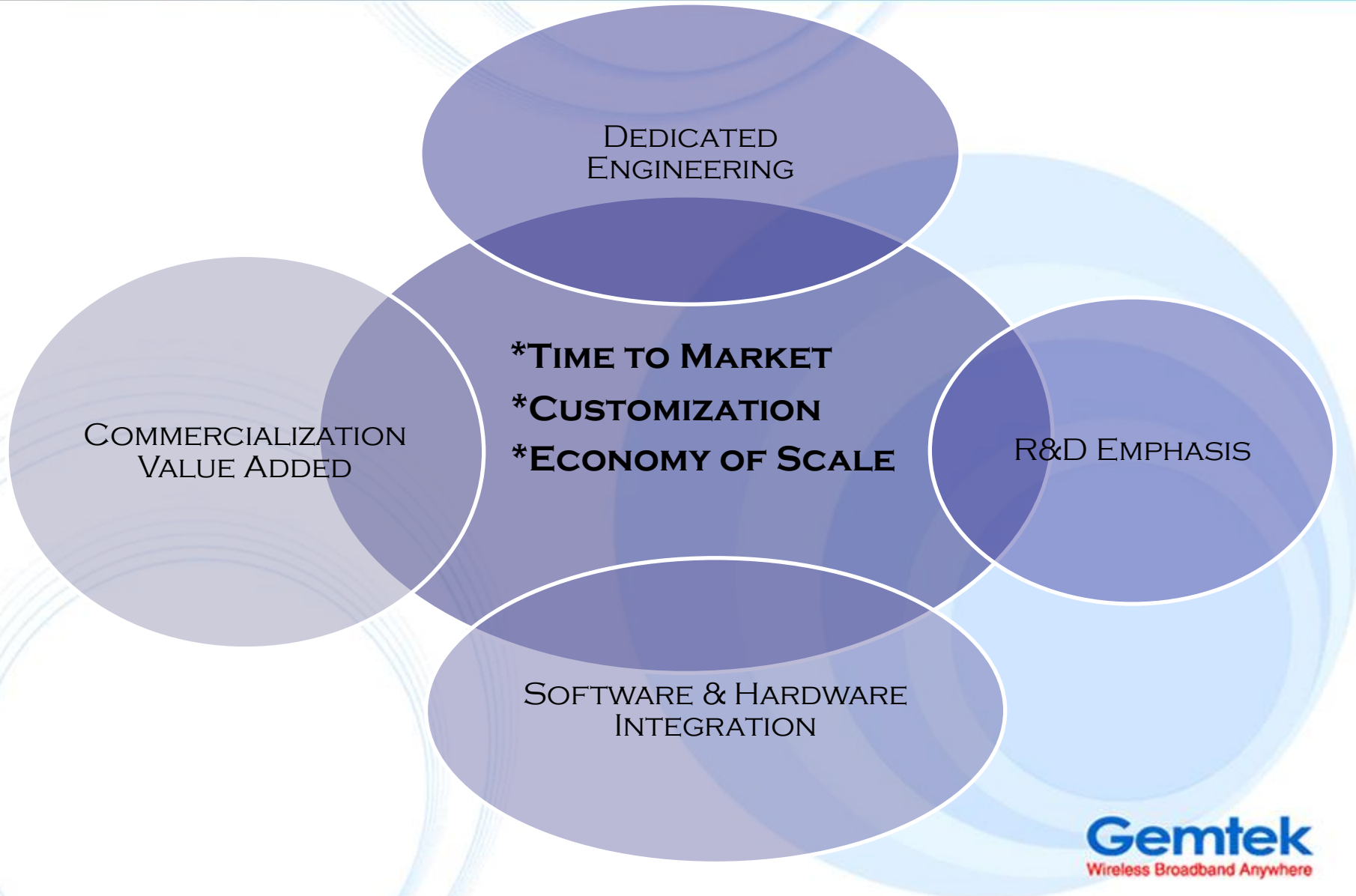


PLANT SIZE: 330,000 SQF
LAND AREA: 150,000 SQF

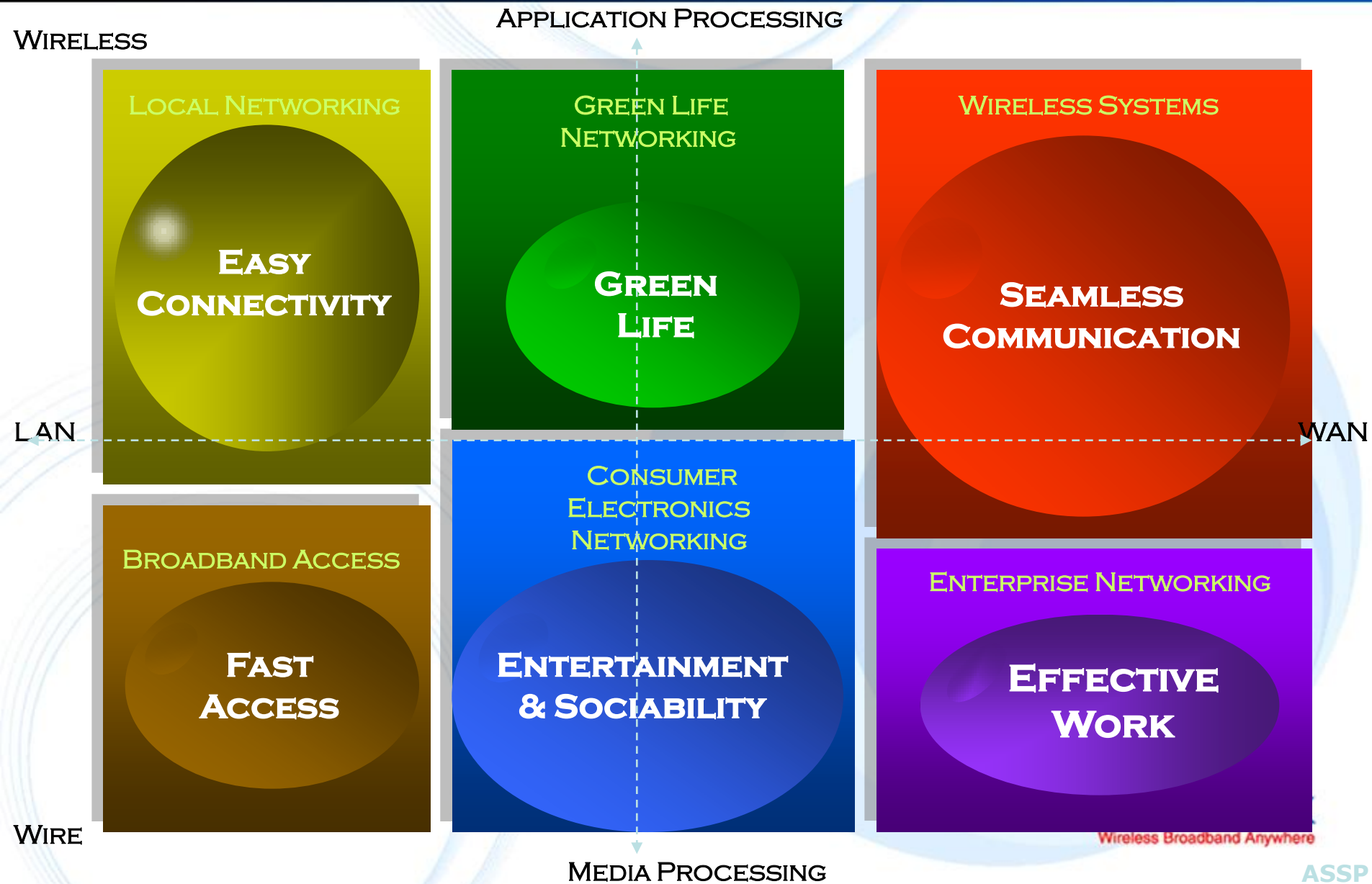
Core Competencies



Professional Wireless Equipment Provider



PRODUCT VISION



Market Segments & Product Lines

SEGMENTS

PRODUCT LINES

SAMPLE PRODUCTS

LOCAL AREA NETWORKING

WiFi AP/RT
W-HDMI/PLC
COMBO MODULES



*INTEGRATED
BROADBAND ACCESS*

xDSL-IAD
GPON IAD
TRANSCEIVERS



WAN SYSTEMS

WIMAX
3G FEMTO
SMALL CELL
LTE



*ENTERPRISE AND SOLUTION
NETWORKING*

OTT
SMB AP/UTM
SMART GRID



*CONSUMER MOBILE
ELECTRONICS*

STB
PERIPHERALS
MID



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Overview

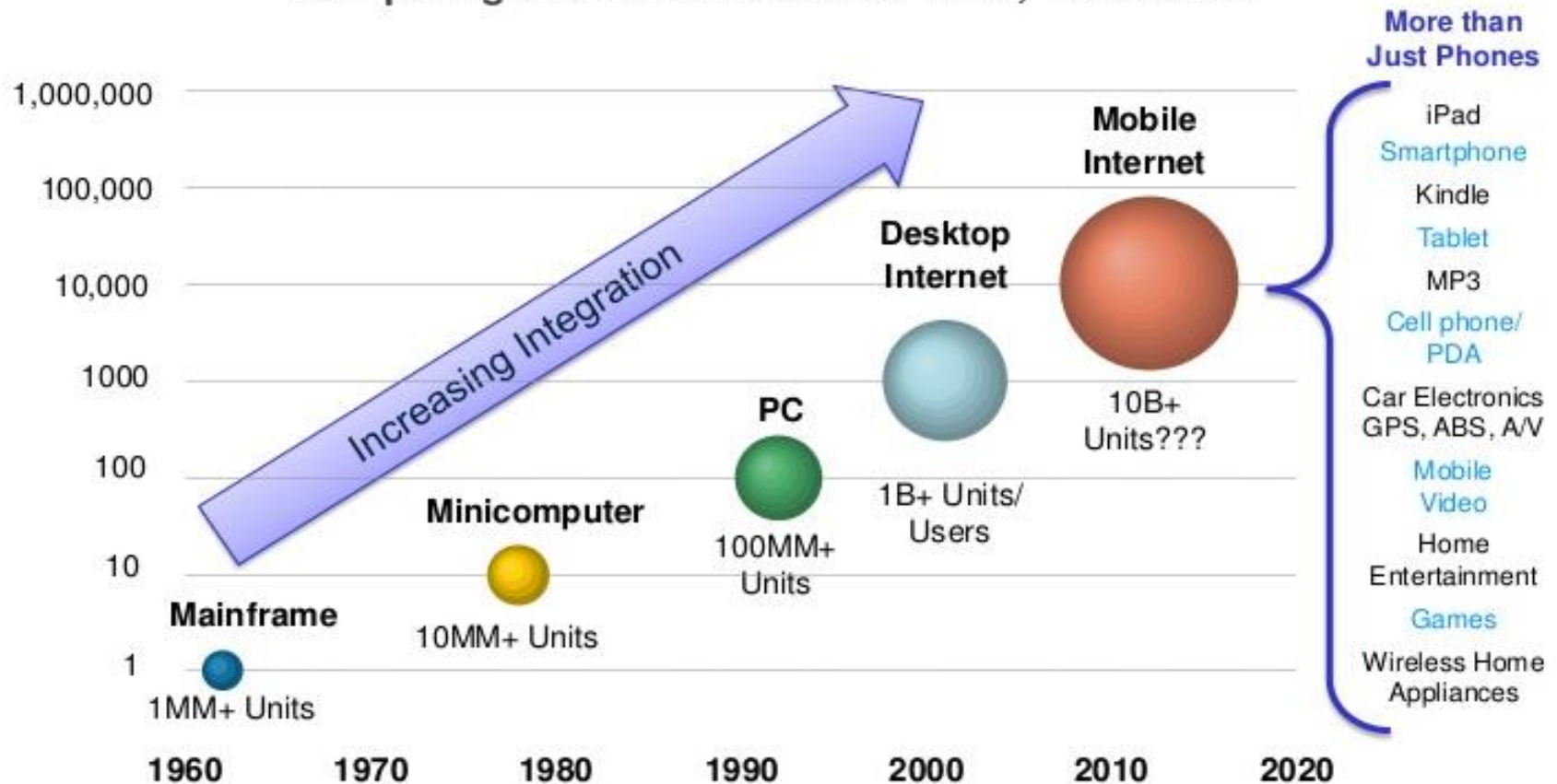
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Mobile Wave

Significant Internet Transition

- Worldwide IP traffic has increased 8 folds over the past 5 years, and will go up 3 folds over the next 5 years.

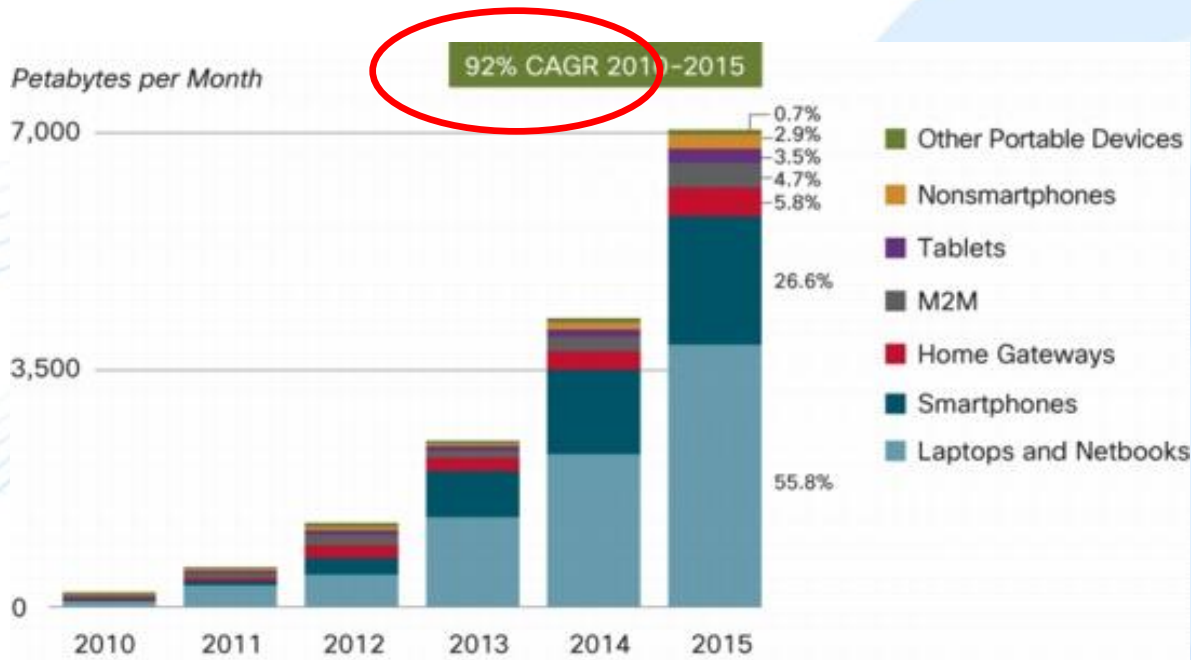
Computing Growth Drivers Over Time, 1960-2020E



Note: PC installed base reached 100MM in 1993, cellphone/Internet users reached 1B in 2002/2005 respectively;
Source: ITU, Mark Lipcis, Morgan Stanley Research.

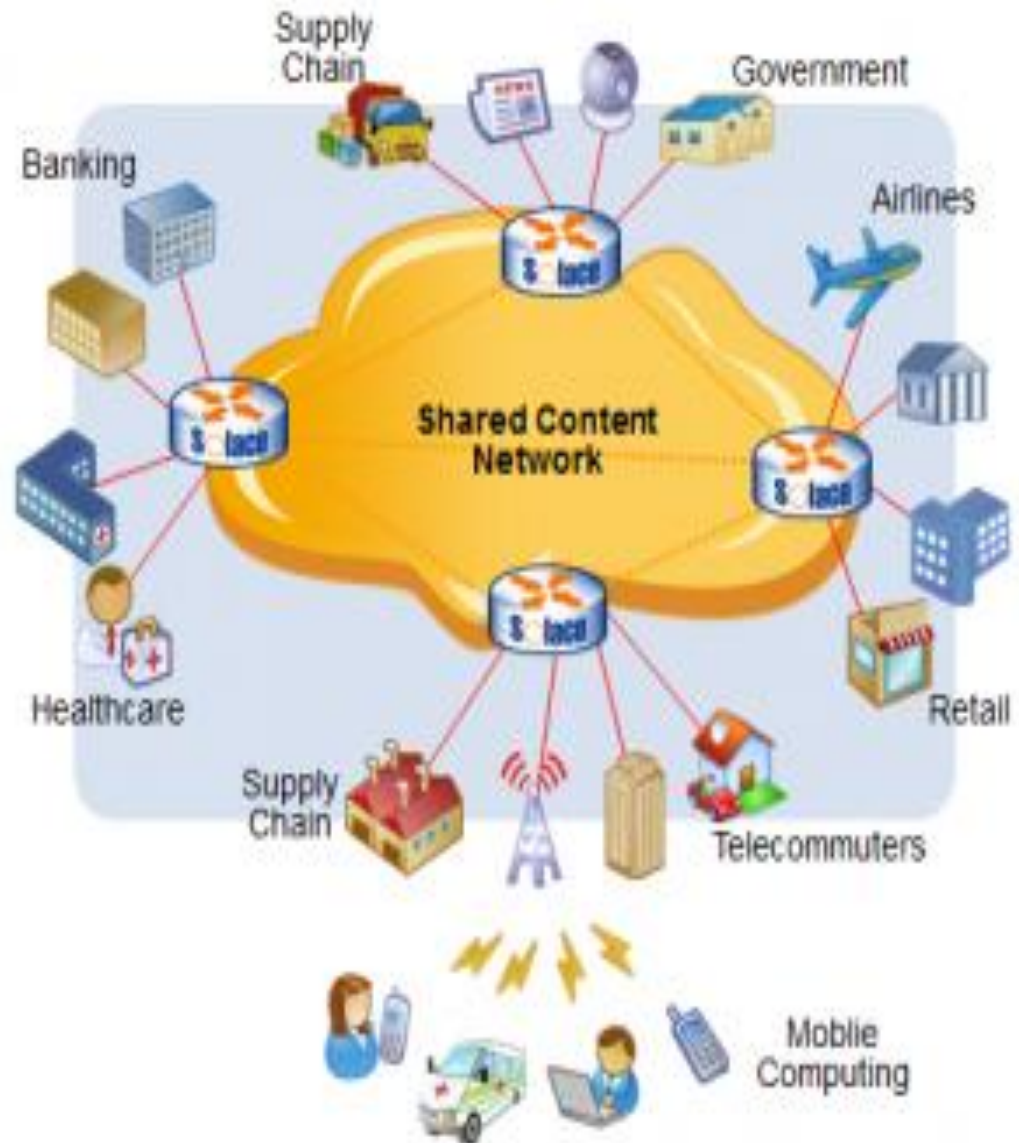
Traffic Boom

- According to Cisco, global mobile data traffic will increase 26-fold between 2010 ~ 2015.
- Mobile network connection speeds will increase 10-fold by 2015.



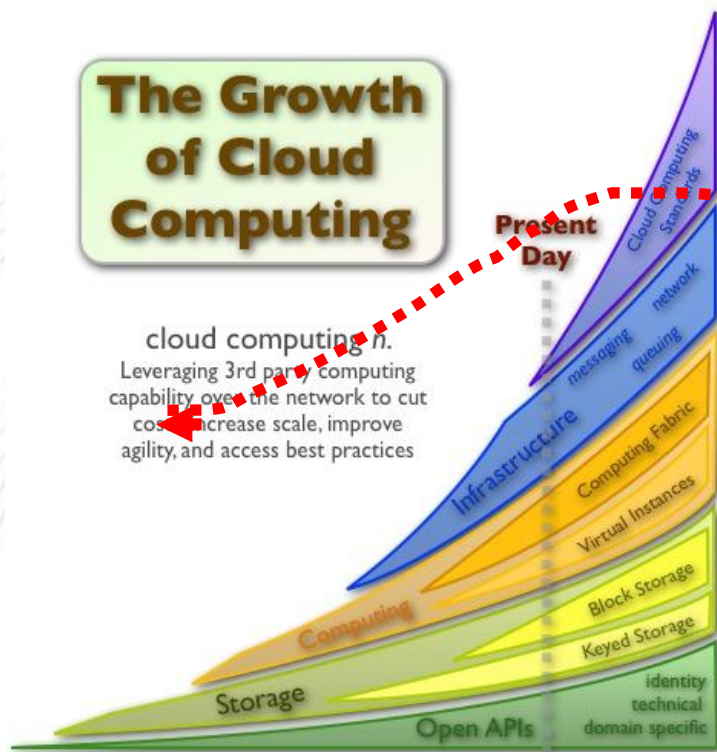
Source: Cisco Visual Networking Index: Global Mobile Data Traffic Forecast Update, 2010-2015

Versatile Applications of Cloud

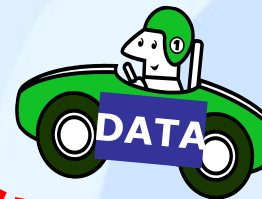


The Cloud

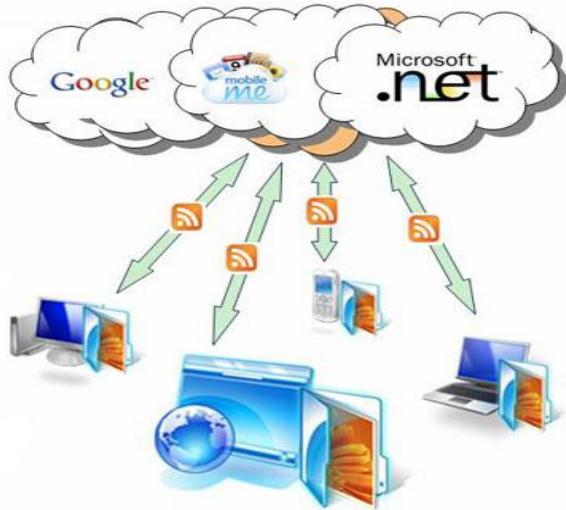
- The expanding cloud universe, reaching 1.8 trillion gigabytes, will drive
 - A. Cloud-friendly basic information infrastructure
 - B. Real-time transmission of “big data” from both fixed gateways and mobile devices.



From <http://blogs.zdnet.com/Hinchcliffe>



Thin Client + Cloud

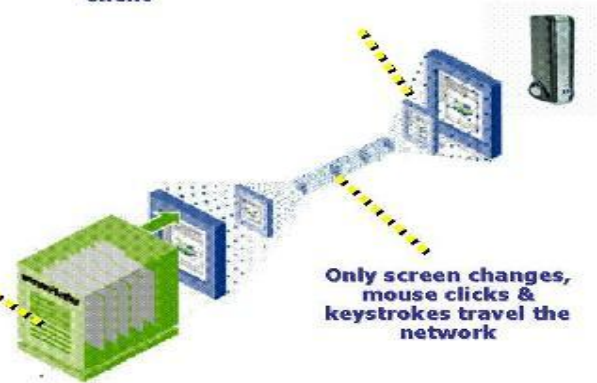


Thin Client / Server Based Computing Model

Applications Accessed From Thin Client

Desktop Applications Installed & Execute on Terminal Server

Only screen changes, mouse clicks & keystrokes travel the network



LOW POWER + HIGH PERFORMANCE



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Wireless Broadband Anywhere

Cloud & Business Scopes



SERVER

PLATFORM



CLOUD
BROKERS

INFRASTRUCTURE

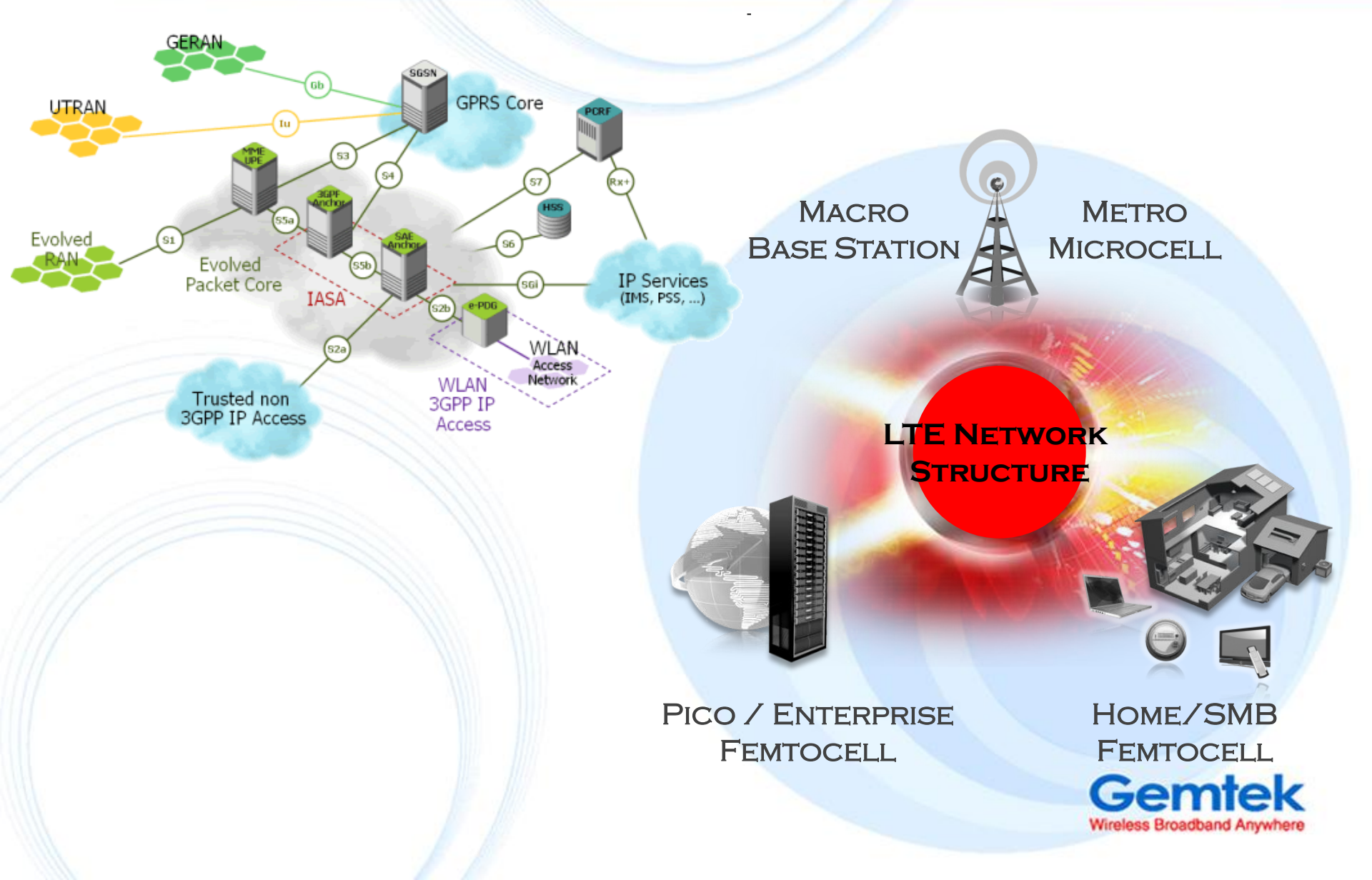


SOFTWARE

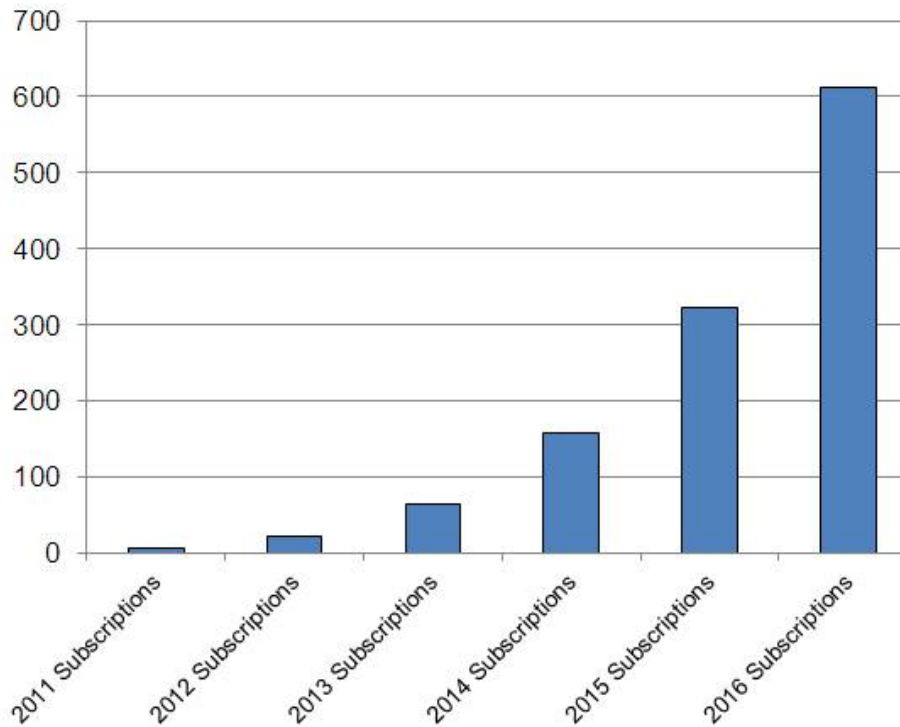
HARDWARE

Telecom Infrastructure

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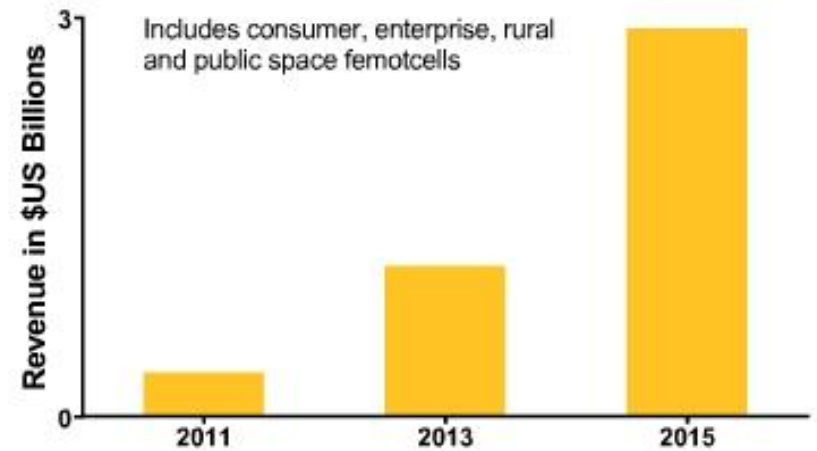


LTE Adoption



LTE SIGNALS AND SYSTEMS
GROWTH RATE TREND 2011-2016 (F)

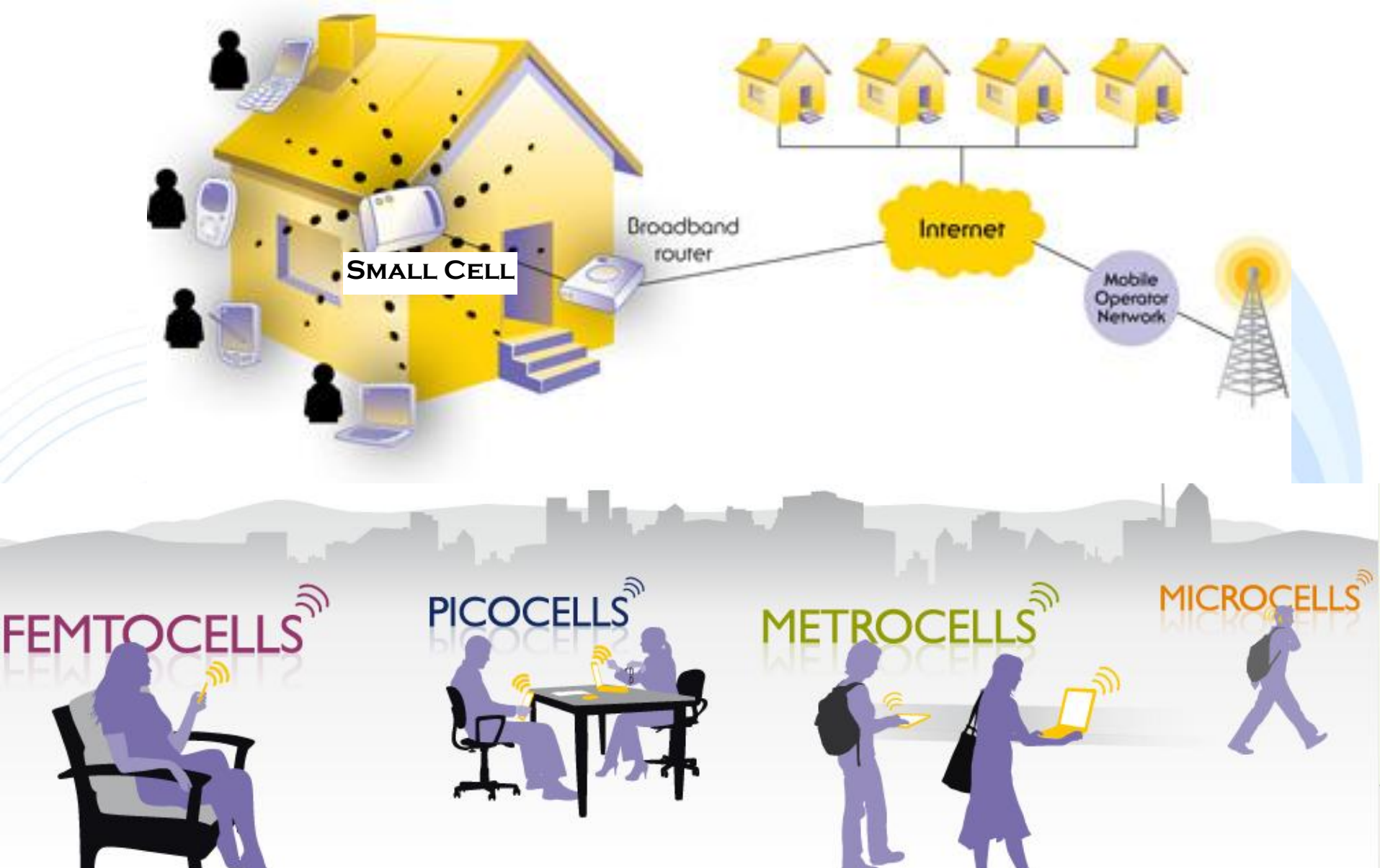
2G/3G/4G Global Femtocell Revenue Forecast



© Infonetics Research, 2G/3G/4G Femtocell Equipment, Dec. 2011

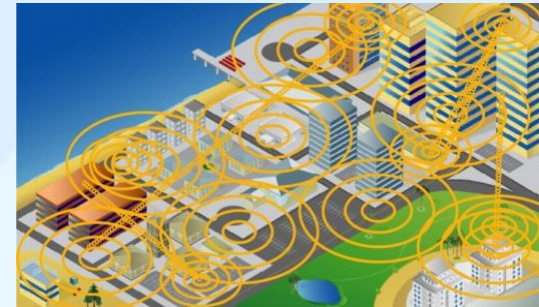
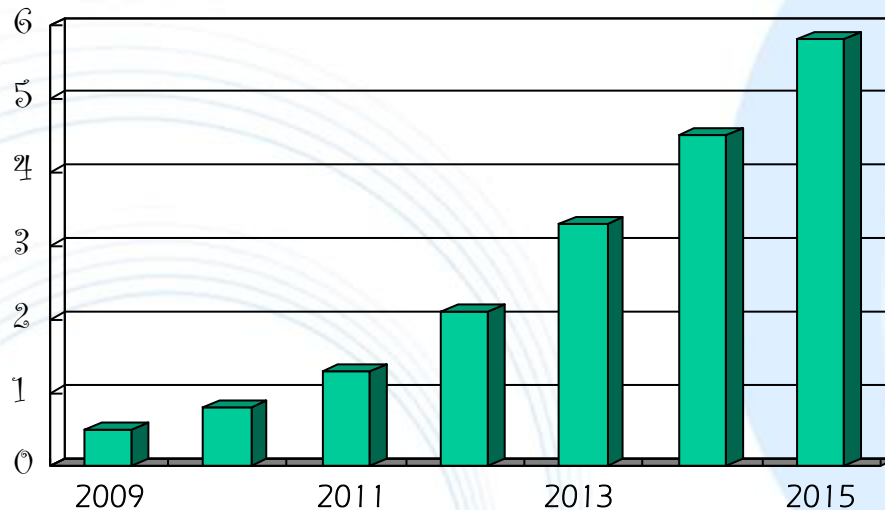
ALL TYPES OF FEMTOCELL MARKET GROWTH
2011-2015 (F)

Small Cell Application Scenario



Infrastructure Market : WiFi Hotspot

- According to WiFi Alliance, there are 750,000 WiFi hotspots worldwide. Until recently, mobile operators view the unlicensed spectrum and WiFi as an extension of cellular business.

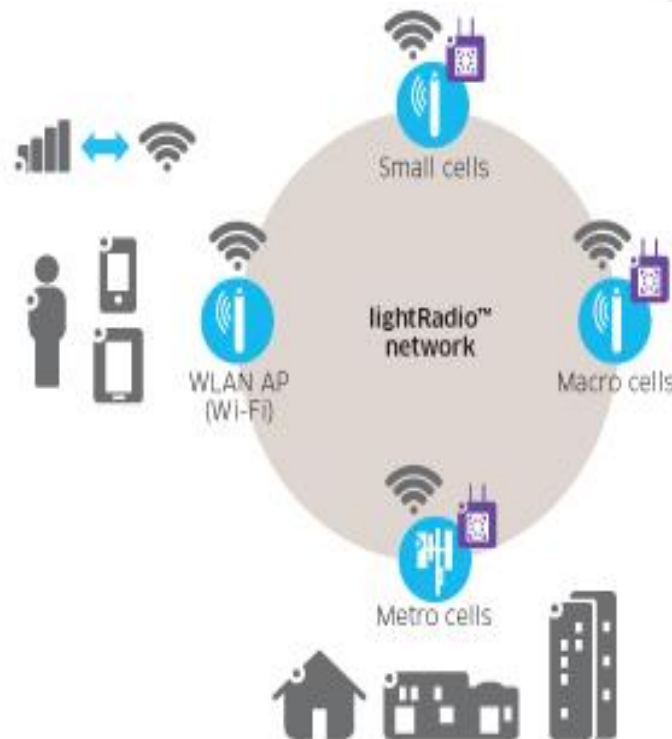


PUBLIC HOTSPOTS (M/U)

**GLOBAL NUMBER OF PUBLIC HOTSPOTS,
2009-2015 (INFORMA)**

WiFi Hotspot 2.0 & 11u Facts

- Converge with mobile network and offer the following functions:
 1. Network discovery and automatic selection
 2. Streamline network access with SIM cards without users' involvement during the internet access process
 3. Security (WiFi certified WPA2-Enterprise)

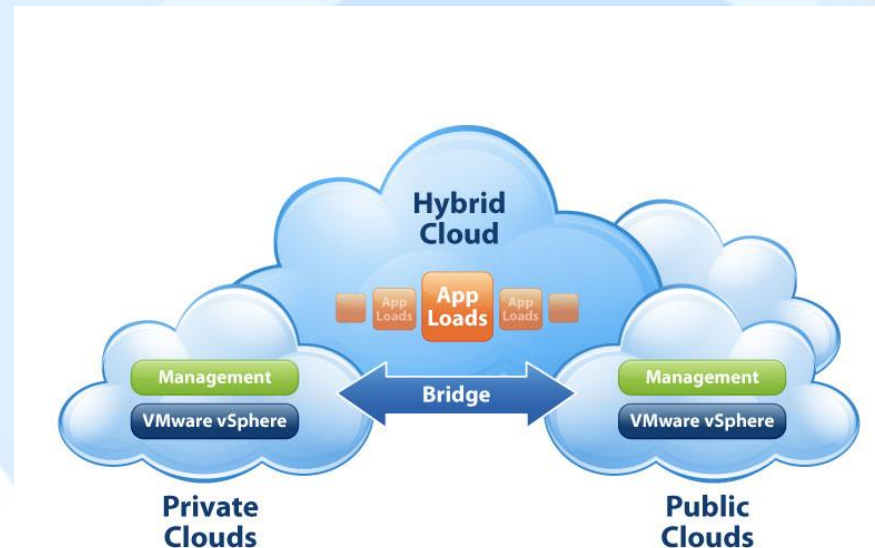
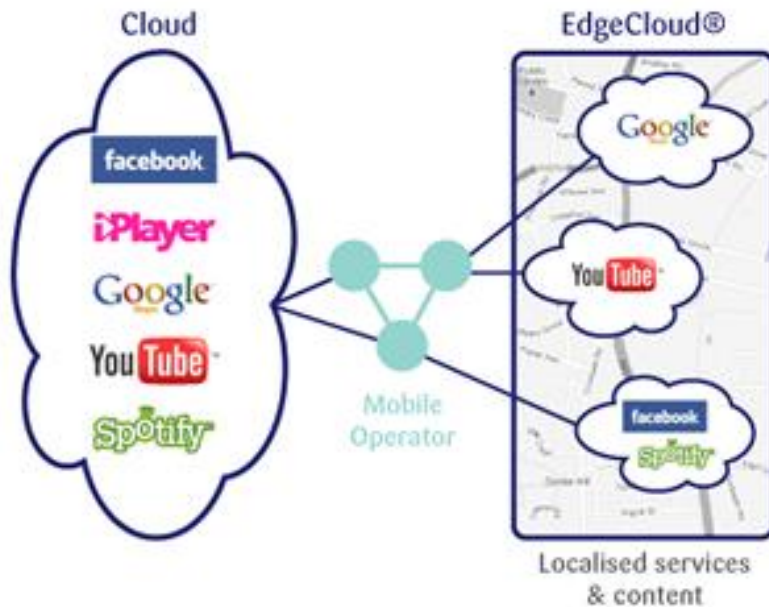




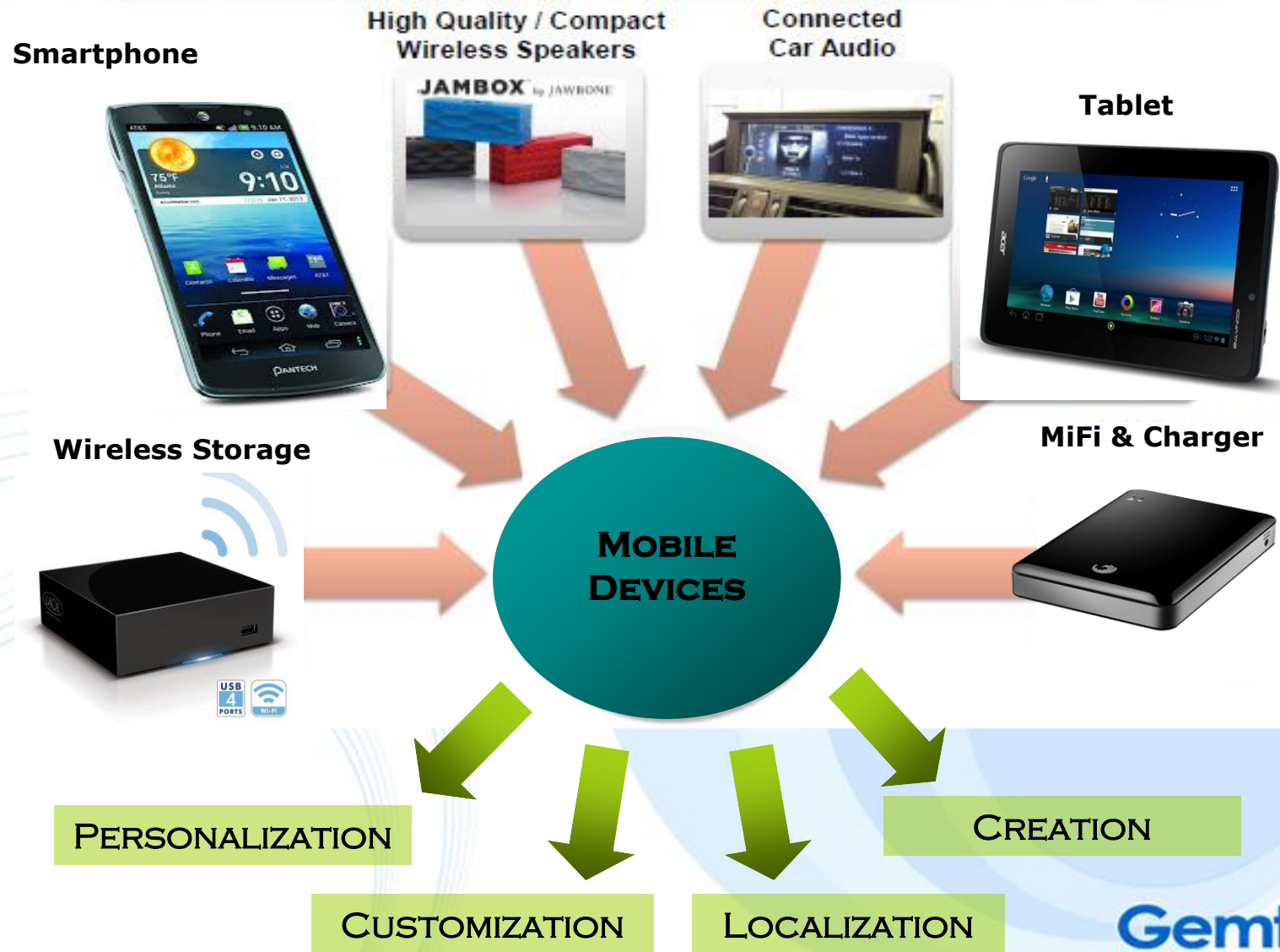
Customized Services Are Integrated with Hardware

Manufacturing Servicilisation

- To offer customers customised products, ODMs/ OEMs integrate the strength of hardware manufacturing and software design under the goal of servicilization.
- To develop localised telecommunication products: Service content is differentiated with regional culture.
- To develop specific use of telecommunication products: Service content is differentiated with vertical market.



Multiple Mobile Devices



Internet TV/OTT Box

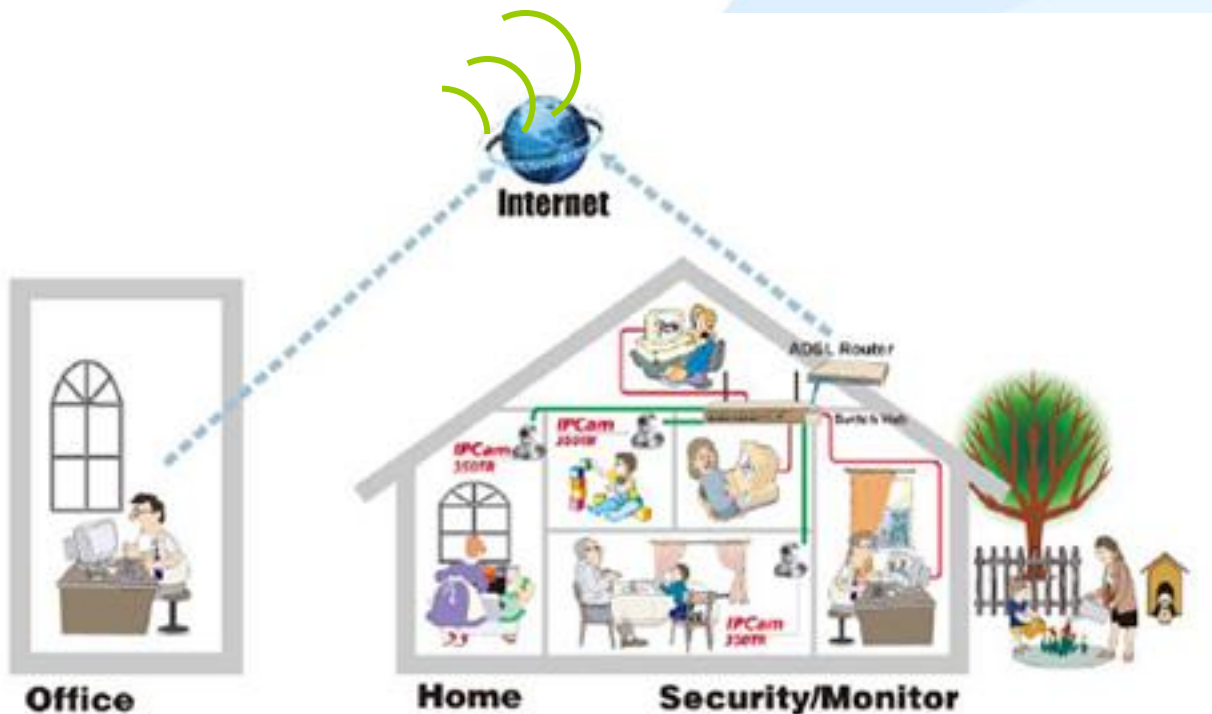
- Cable TV enterprises and operators intend to adopt OTT box as a way to offer their clients a localised and personalised service content through mobile internet under the growing environment of cloud and internet development.
- The role of telecommunication solution provider like Gemtek offers customers an abundant service content platform with a total integrated solution.
- Multirooms, multiscreens, and connectivity become crucial elements to IPSTB features.



Services with Fixed Gateway



IP Cam with Cloud

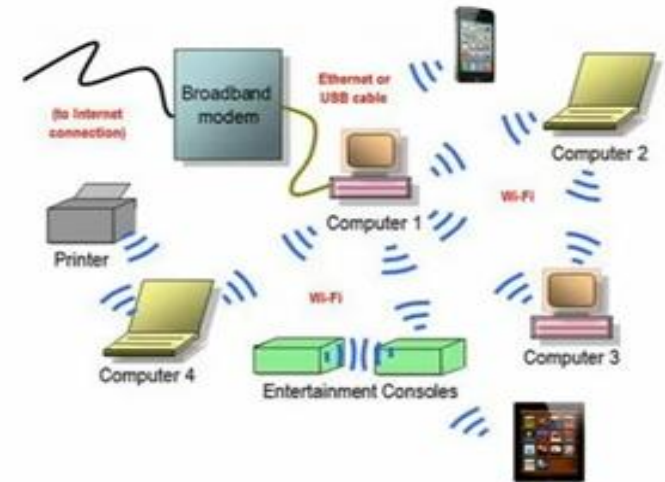


Next Generation WiFi

Next Generation WiFi: 11ac & 11ad Applications

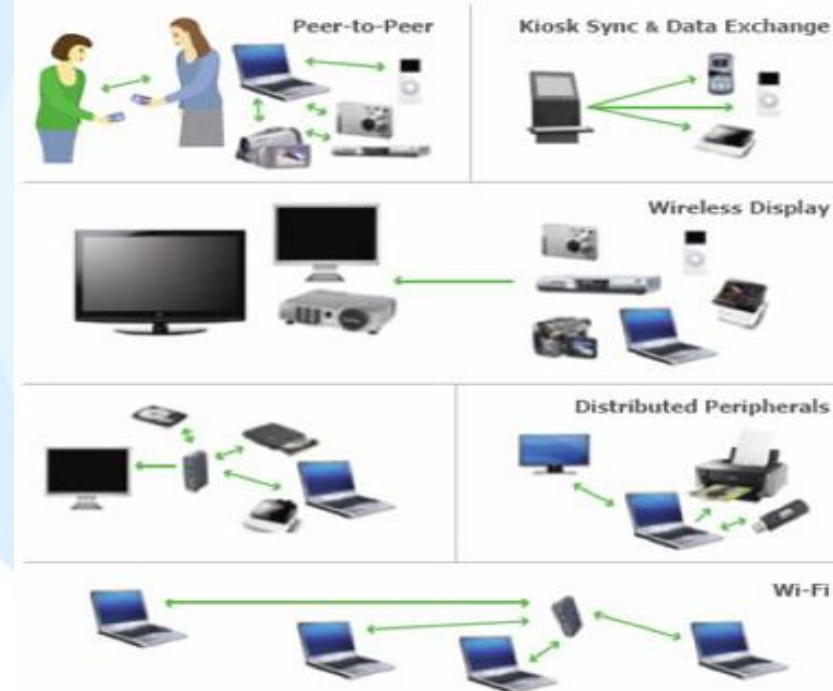
11ac adoption for a “multimedia home”

- ◆ Video streaming & STB
- ◆ Data synchronisation and back-up
- ◆ 3G & 4G offloading



11ad adoption for a “wireless office”

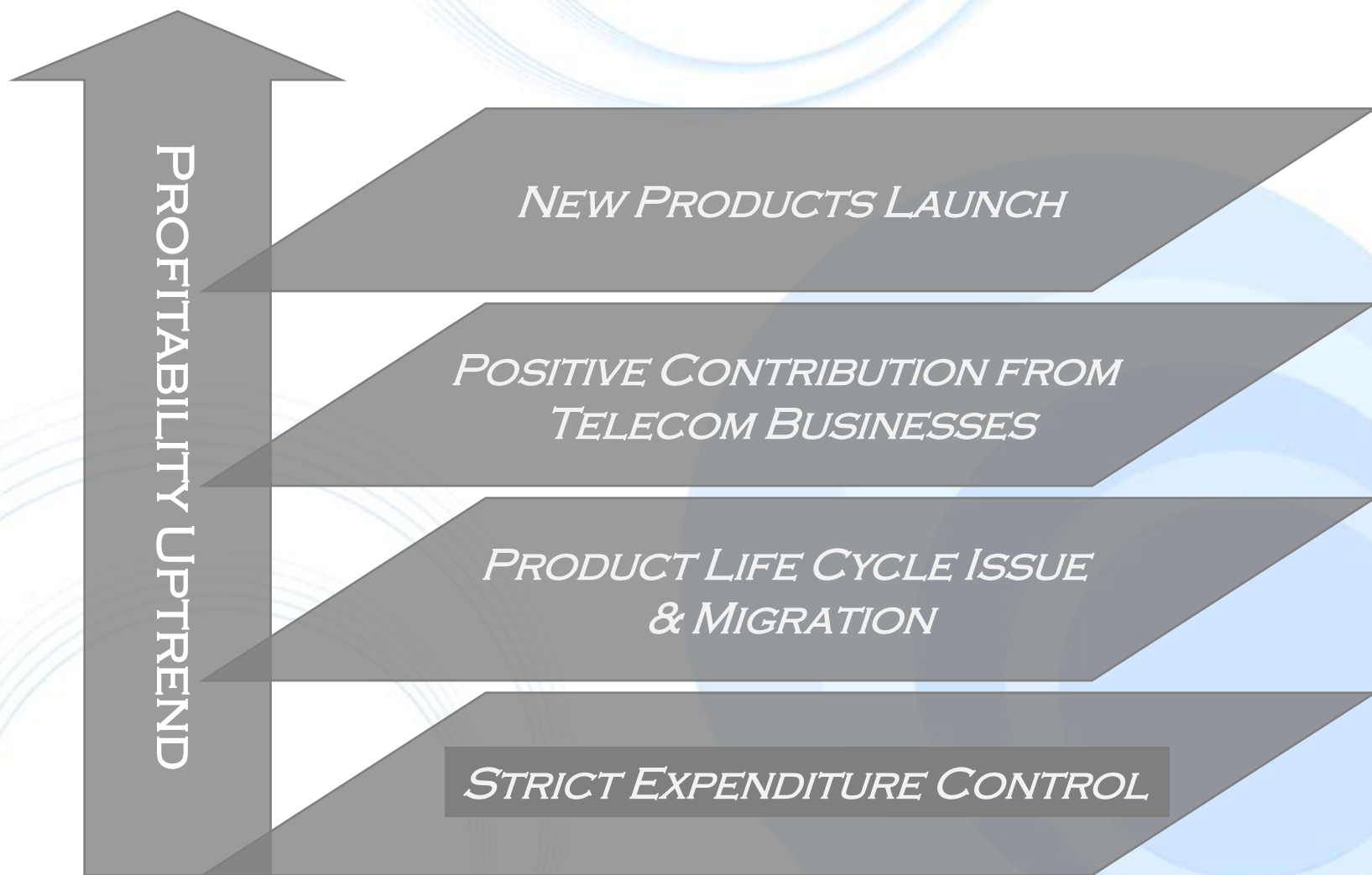
- ◆ Instant wireless sync
- ◆ Wireless display for HD content
- ◆ Cordless computing
- ◆ Internet access



Overview

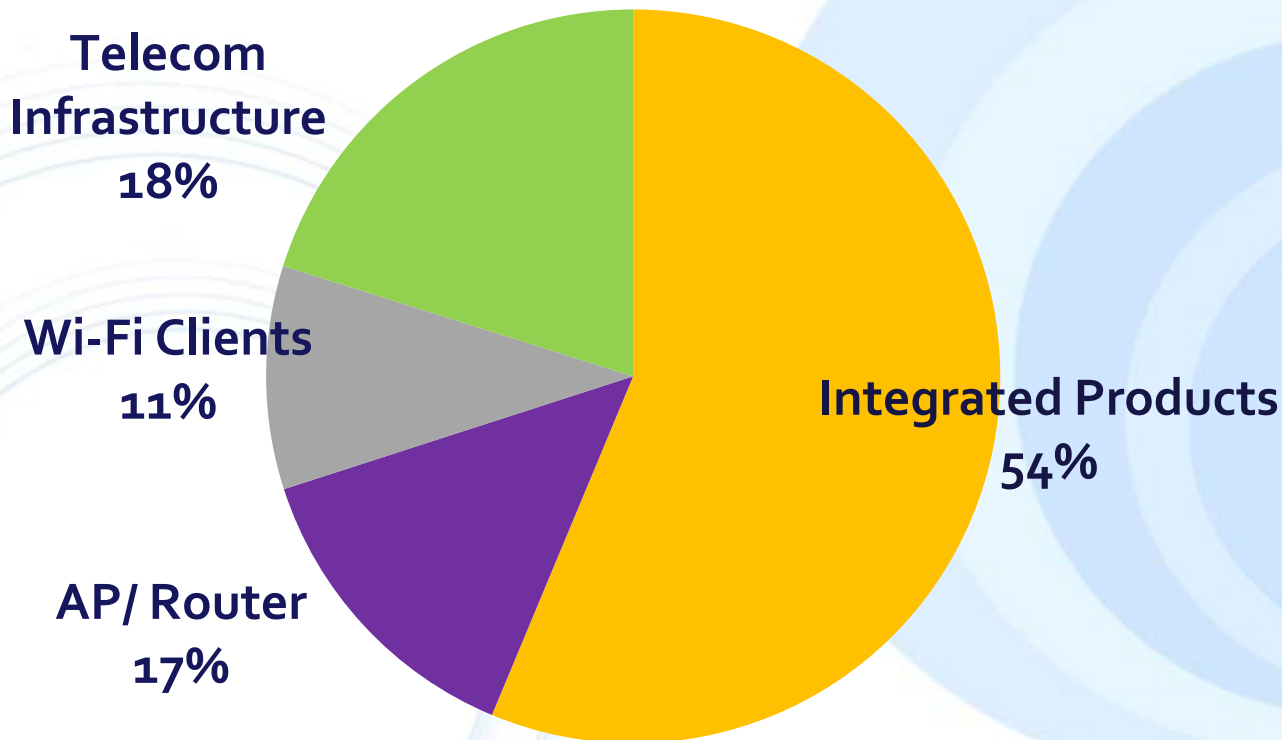
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Corporate Strategy



2012 Product Revenue Breakdown

- A. Integrated products: XDSL IAD, GPON, IPSTB, OTT Box & TKO
- B. Telecom Infrastructure : WiMAX, 3G Femtocell , LTE, MiFi
- C. AP/Router: AP, Router, Wireless display
- D. WiFi Clients: single and dual mode modules, dongles



2012 Summary of All Sectors

- Shipments of 2 product categories, Integrated Products and Telecom Infrastructure (telecom business), contribute 70% sales revenue:
 - High customization and integration (software and hardware)
 - Increasing gross margins and sustained prices
 - Main business opportunities
 - Early mover advantage in new telecom products emerged
- New market expansion for new products shipment
 - LTE CPE
 - GPON IAD
 - OTT
- Focusing on profits rather than sales revenue increase

Business Model



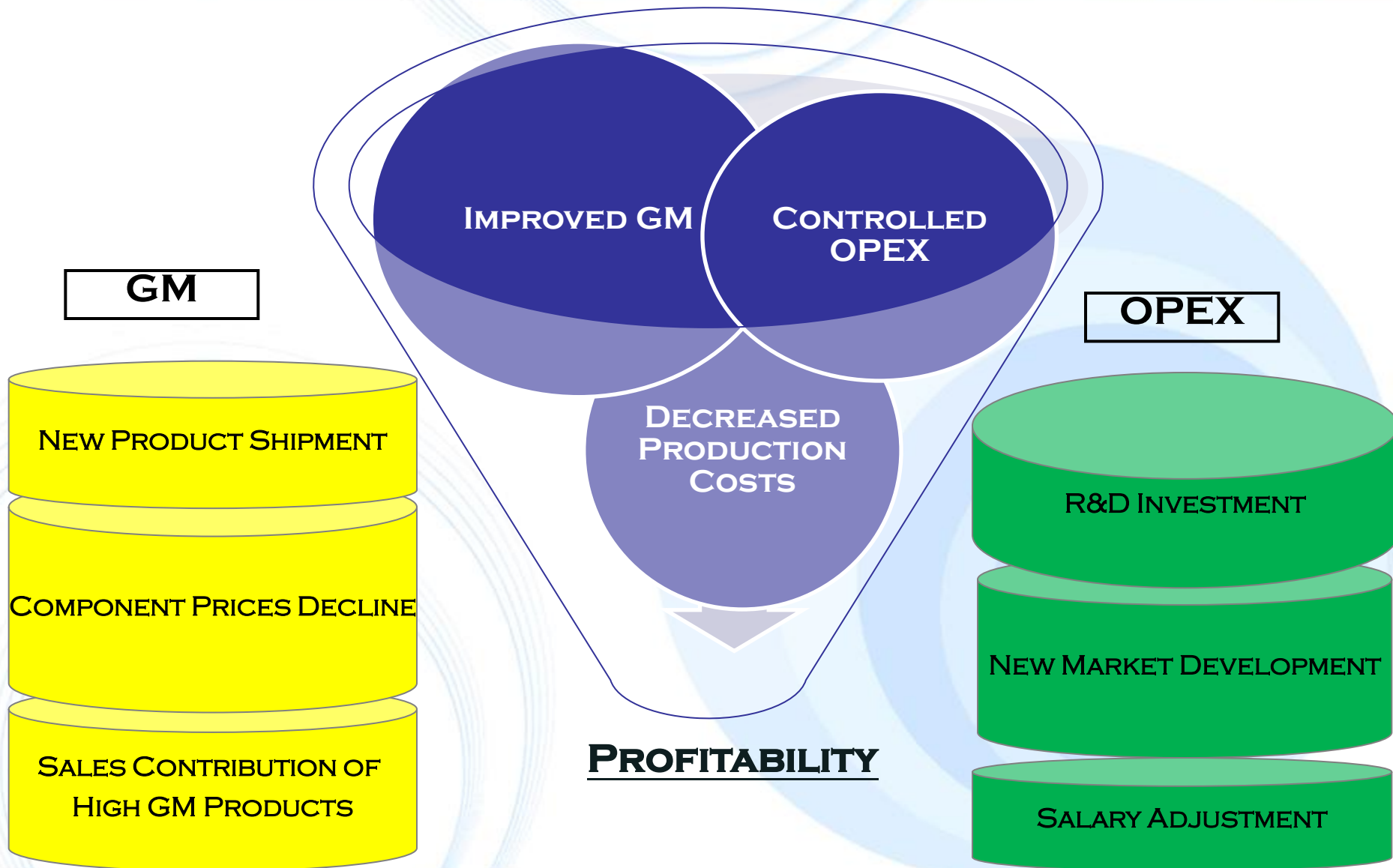
FOCUS ON TELECOM BUSINESS: 70% REVENUE

STRICT SUPPLY CHAIN CONTROL

**INCREASING DEMAND ON INTERNET ACCESS:
REQUIREMENT OF EFFICIENT DATA TRAFFIC
LOADING → HIGHER DEMAND ON TELECOM
INFRASTRUCTURE PRODUCTS**

Profitability will steadily improve !!

2012 Better Financial Performance



Overview

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Industrial Development

INTEGRATED PRODUCTS

TELECOM INFRASTRUCTURE

AP/ROUTER

WIFI CLIENT/ PERIPHERALS

OTT Market

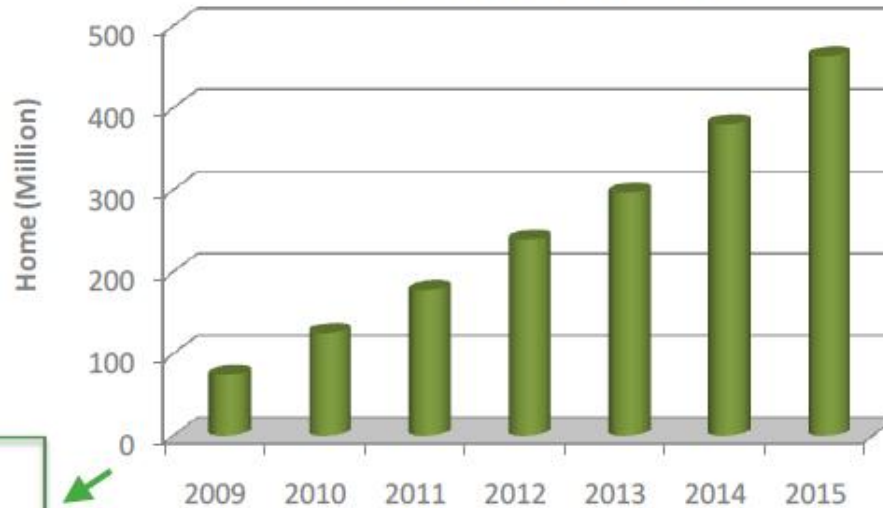
Widgets



Social networking



Worldwide OTT to TV household forecast



Source: IMS Research 2010

Catch-up TV



PGC/UGC



Gaming



Video-on-Demand



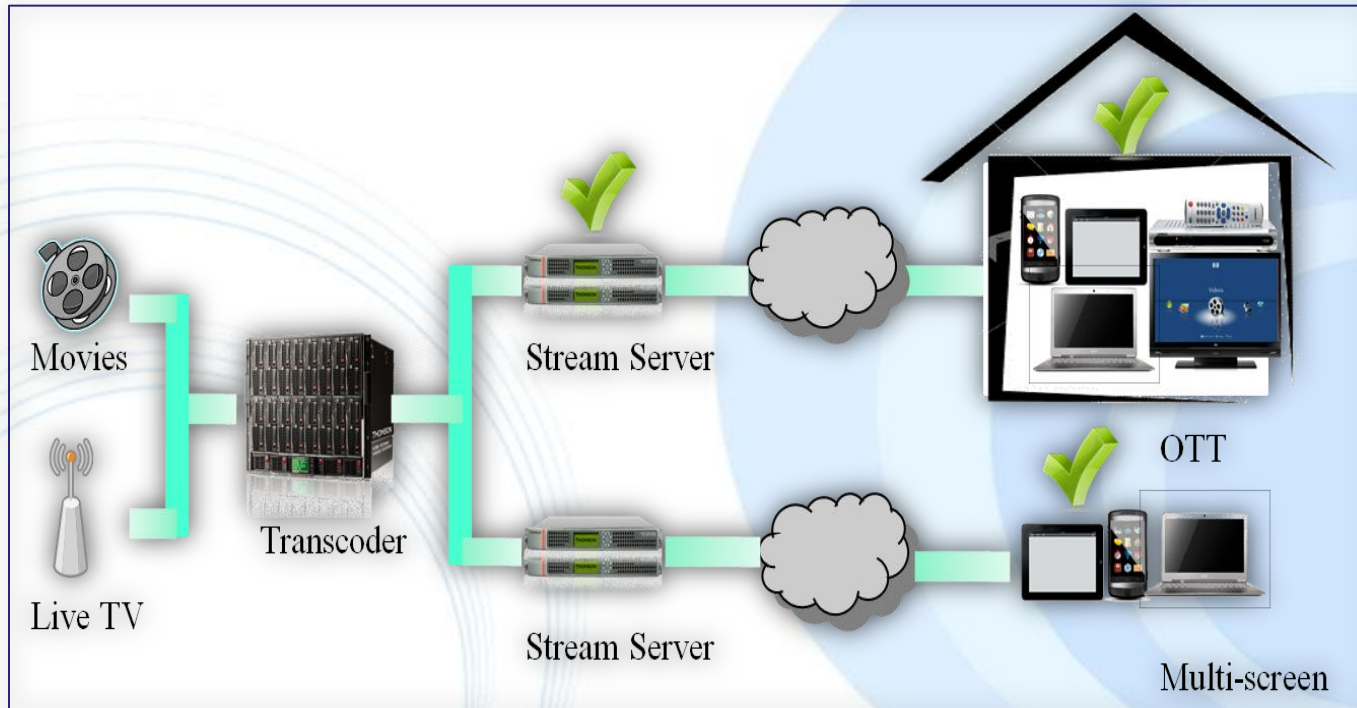
OTT/TKO Streaming Total Solution

- Over-the-top (OTT)/ Turn Key Operations (TKO) business: skyrocket
- TKO supports our customers to offer services that characterizes localization, customization and creativity.
- Targeted customers will no longer be limited to Telco, new customers, including service providers and specific communities, are interested in smart family applications.
- The growing potential and gross margin are genuinely better than traditional/standardized IPSTB.



Cloud Total Solution: TurnKey Operation

- Gemtek Video Direct provides an Operator or a Content Deliverer with a total internet TV solution.
- The solution could be offered under special request of customization and needs.
- TKO System Architecture:



IPSTB & OTT

- The shipment of IPSTB is transformed and adjusted because of changes in market demand and the trend of product life cycle.
- Traditional/ standardized IPSTB is no longer profitable (low gross margin) and therefore, Gemtek strategically decreases this product shipment.
- Some IPSTB shipment will be turned into OTT as home entertainment request is emerged.



Home Automation Products

- Features: Internet connection amongst sensors, home appliances and MID.
- The product of Home Automation enables users to use Smartphone to control home appliances through cloud (under internet access).
- This product expedites a new living style in which the concepts of energy saving and smart family are embraced by individuals.



GPON IAD & Capacity Expansion

- Service providers are adopting revenue-generating services and; bandwidth demand is growing to fulfill these services.
- GPON IAD's role: To provide high speed and cost effective access network.
- Fiber to the "X" (FTTx) is carrier's best solution: Reliable Internet access & driving down the OPEX for carriers in a competitive industry.
- Production capacity is expanded for GPON IAD as demand goes up.



IAD Landscape

- New potential customers are emerged on IAD business.
- A very high speed broadband access for residential gateway, consists Ethernet switch, 11a+n/g/n/ac Wi-Fi access point, and VoIP in one box.
- The cost-effective and powerful devices support increasing needs of multiple internet devices. The product shipment is thought to be quite significant in 2013.



Industrial Development

INTEGRATED PRODUCTS

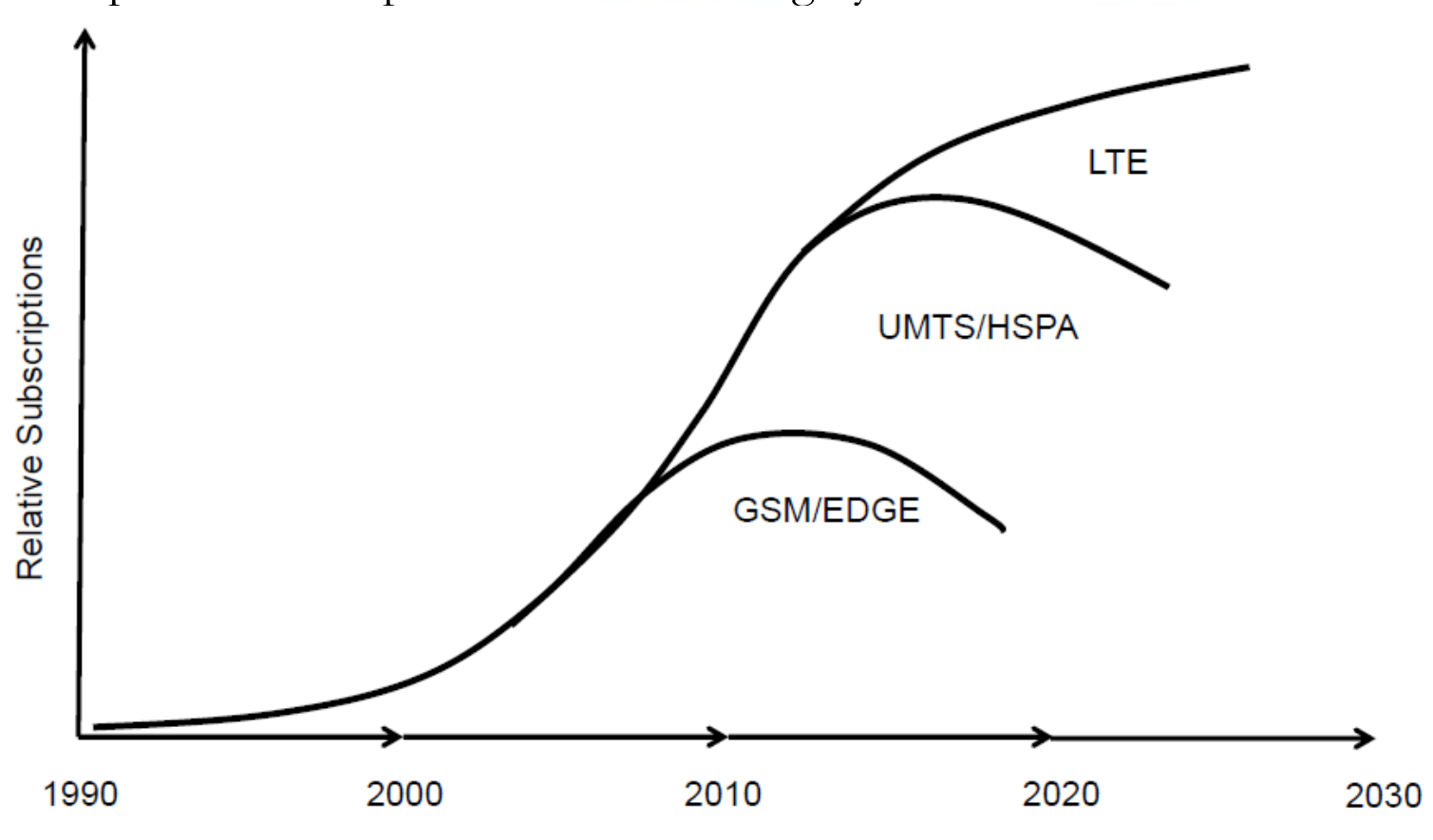
TELECOM INFRASTRUCTURE

AP/ROUTER

WIFI CLIENT/ PERIPHERALS

Relative Adoption of Technologies

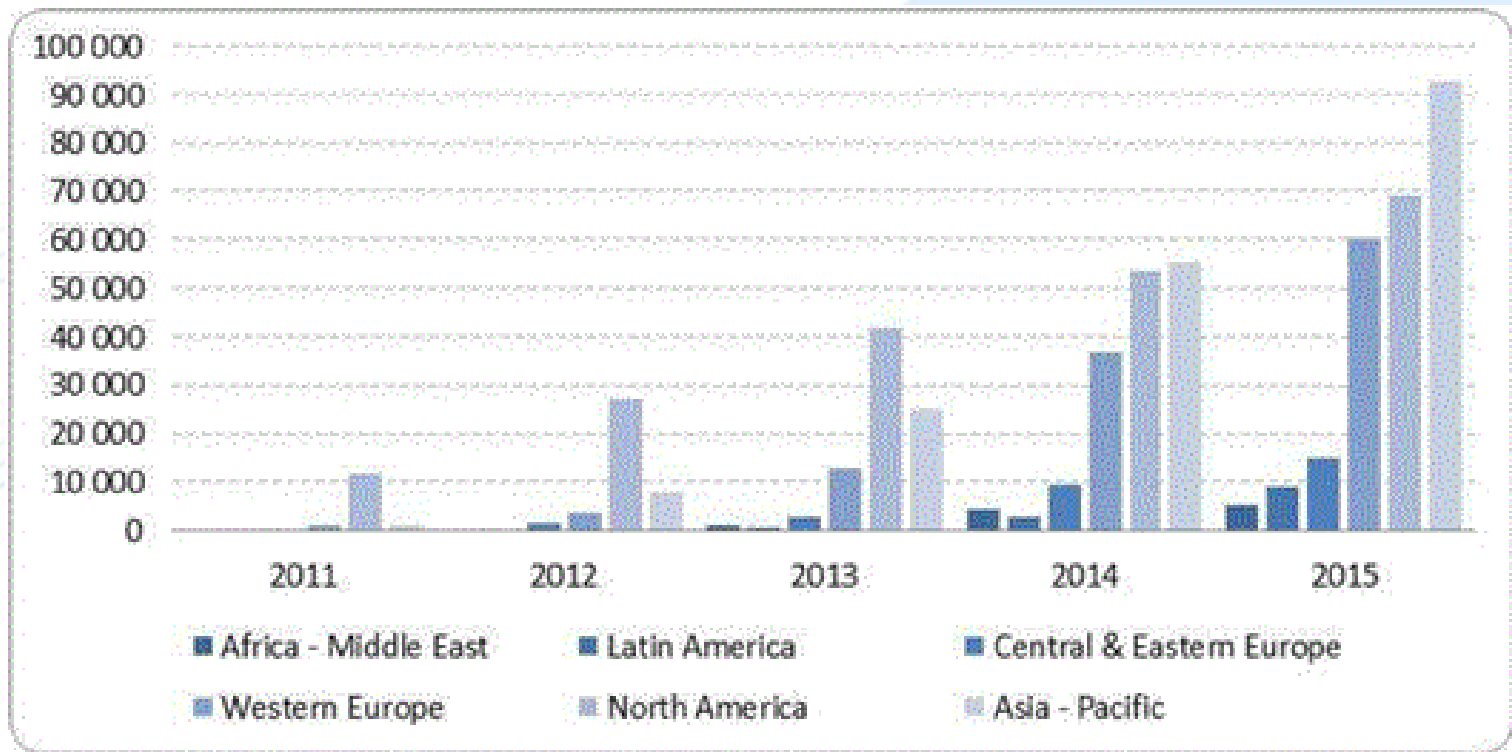
- 50% of the world's population will be covered by 4G LTE networks and Smartphone subscriptions will count roughly 3 billion in 2017.



LTE Device Adoption

- LTE devices shows a surprising march of the multiple devices.
- LTE Devices Shipment, 2011-2015:

QUANTITY: 000'



Source: IDATE

4G LTE Highlight

- LTE product shipment is expected to show an important growth in 2013.
 - New shipping countries
 - Product variety: a more complete product and solution offering
 - New customers emerged



LTE VoIP WiFi Router Platform



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One Stop Shopping on LTE Products

- There are more than 60 bandwidth in 4G network. Gemtek's LTE products are specifically integrated to meet different requirements from customers.
- Gemtek offers one stop shopping on LTE products that will attract more potential customers.

MULTI-MODE LTE
MIFI ROUTER-
COMPACT



MULTI-MODE LTE
MIFI ROUTER-
GTI GLOBLE
ROAMING



GEMTEK 4G
DONGLE



LTE HIGH END
OUTDOOR CPE



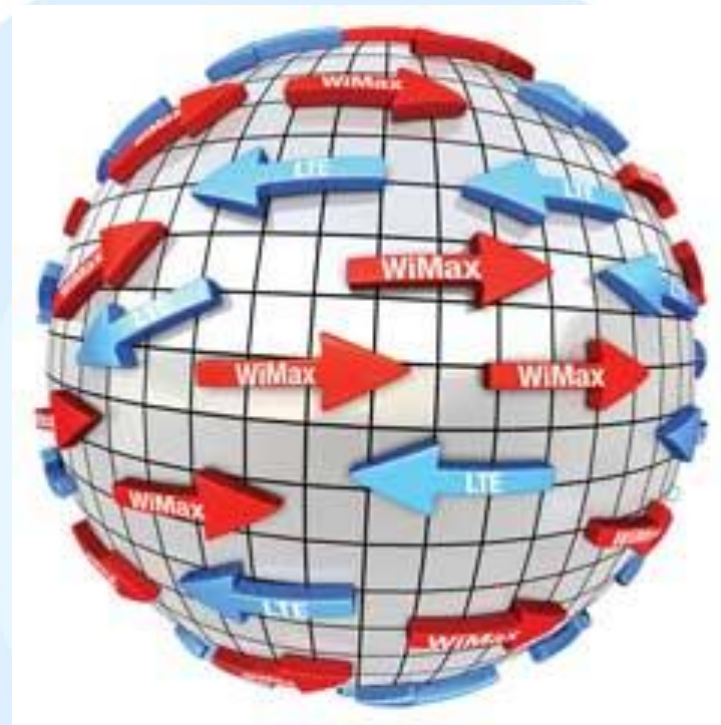
Small Cell

- High demand on 3G small cell was one of the reasons that 2012 gross margin was improved.
- 4G small cell will start shipping in 2H13.



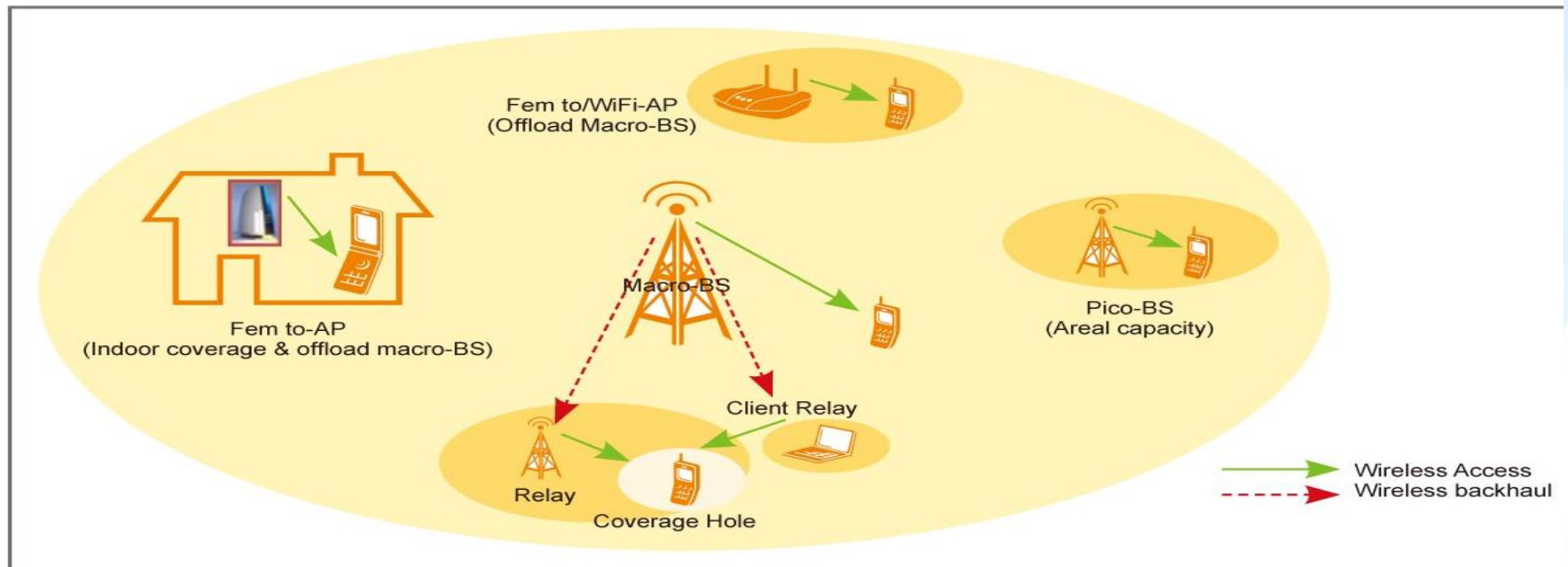
WiMax

The WiMax market will be mild as most Telco turn into LTE: some existing WiMax customers are requesting LTE product shipment.



Wi-Fi Hotspot

- Wi-Fi Hotspot is thought to be an effective solution towards current internet traffic boom.
- Simplified Hotspot Access: Expect widespread deployment in 2013
- Service providers and carriers require product/ service integration for an easy authentication and well security on Wi-Fi hotspots.



Industrial Development

INTEGRATED PRODUCTS

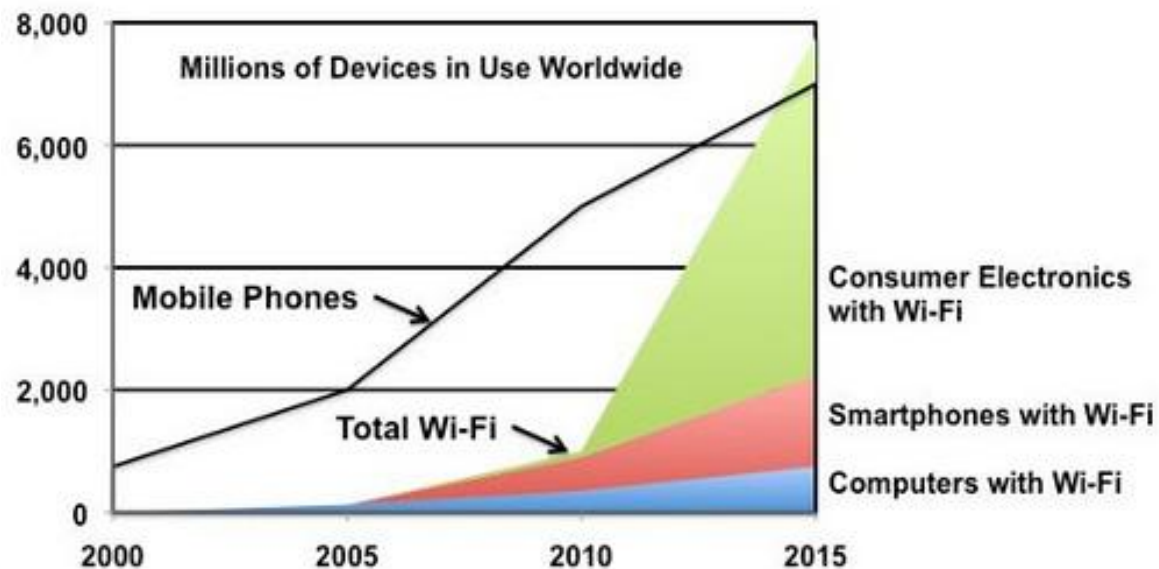
TELECOM INFRASTRUCTURE

AP/ROUTER

WIFI CLIENT/ PERIPHERALS

AP/Router in Retail Market

- 802.11ac/ 11ad routers for retail market will be the main sales in 2013.
- These new standards are hoped to resolve growing data traffic demand.



WiFi DIRECT



High End Access Point

- 802.11ac brings upgrade in devices.
- Upgrades: Controllers, switches and Ethernet cabling
- Enterprise-class access points: Starting during mid 2013
- High end AP= Enterprise contributed revenue growth in 2012. This advance in market share will continue for this year.



Industrial Development

INTEGRATED PRODUCTS

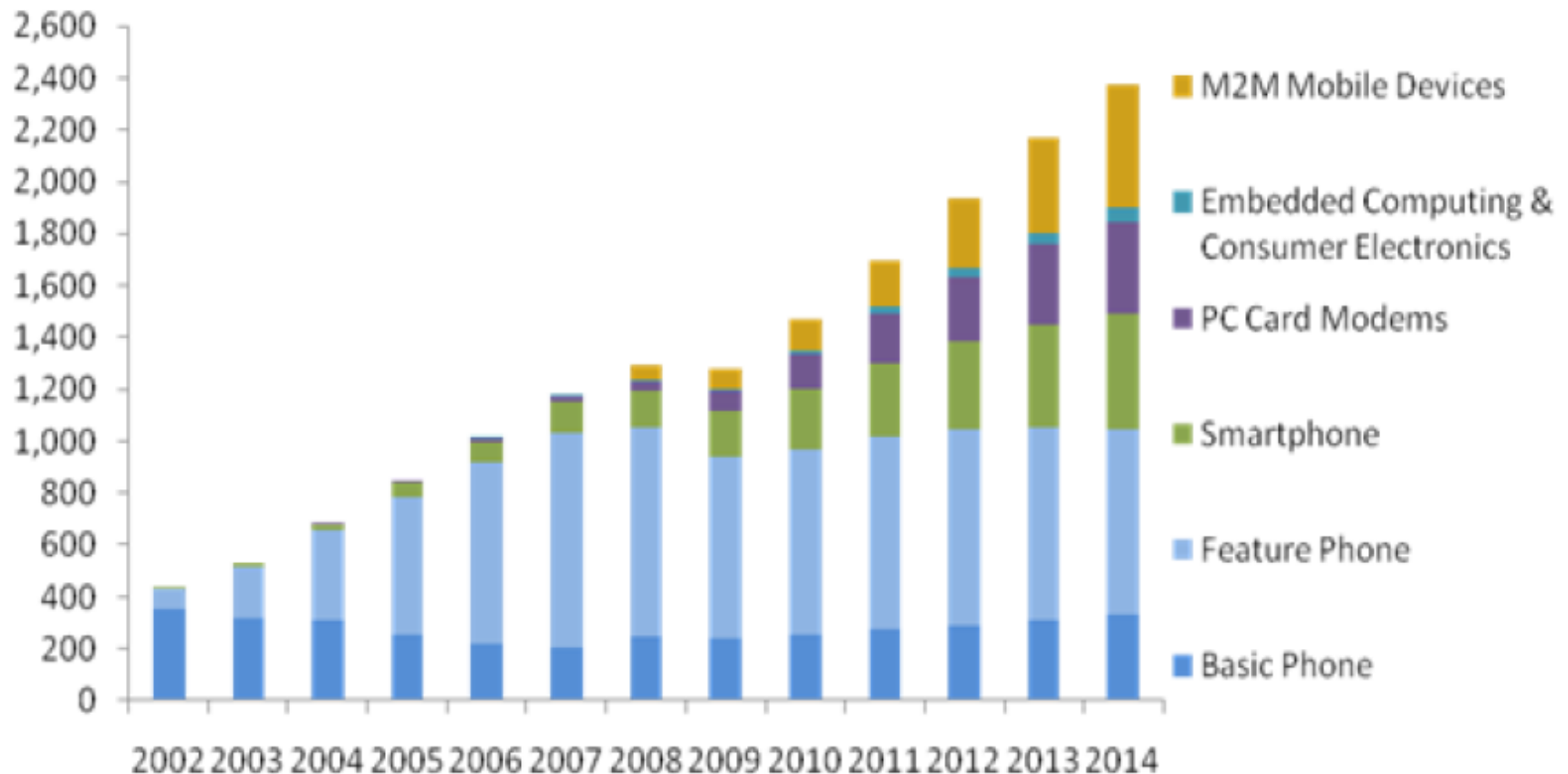
TELECOM INFRASTRUCTURE

AP/ROUTER

WIFI CLIENT/ PERIPHERALS

Client Devices Growth

Global sales of devices by type (in million):



WiFi 11ac & 11ad

- 11ac/ 11ad standards are not only be seen in AP, also modules for Notebook.
- Perform Under different scenarios:
 - Simultaneous streaming of HD video to multiple users
 - Rapid synchronisation and backup of large data files
 - Wireless display



11ac Value Proposition

Video-grade Performance Across Increasingly Crowded, Busy Networks

Elimination of lag with Interference-free 5GHz for video, gaming and other latency-sensitive applications

Significantly greater capacity—3x 11n per stream—with 80 MHz and 256 QAM to support **richer content faster**

Increased rate-over-range at close- and mid-range with standardized mechanisms.

Lower joules-per-bit to improve power efficiency, **extend battery life**

Driving **"practical" Gigabit wireless** performance

Driving toward greater spectral efficiency with MU-MIMO for **simultaneous support for more clients**



Peripherals

Broadband Internet brings demand on peripherals for Smartphone, tablet and TV.



MIFI & CHARGER

WIRELESS HDMI



THANK YOU

