

Asia-Pacific Regional Seminar on IMT towards 2020 and beyond

Mobile Devices & Services

- present and future -

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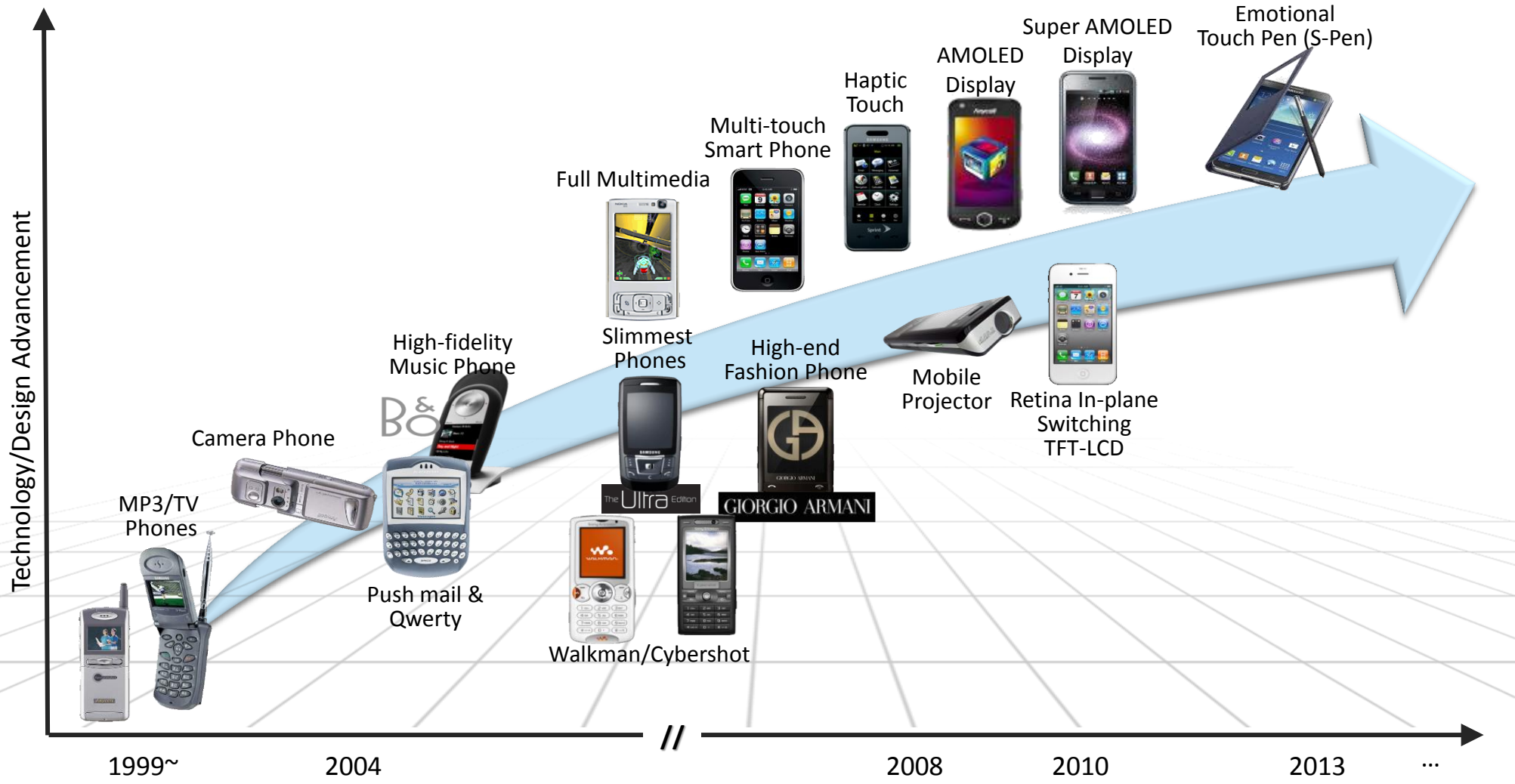
Ho Chi Minh City, Viet Nam

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Evolution of Mobile Device: History

Communication → Multimedia → Intelligence (Smartphone)



Evolution of Mobile Device: Present

Evolution of Device Tech. has been leading evolutions in Mobile Services

High Performance Application Processors

- Hi-speed processor



High Resolution Displays & Cameras

- Ultra Brilliant & High Resolution Display
- Full HD Video Recording, High Resolution Camera

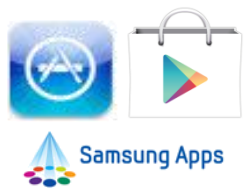


Unlimited Expandability

- Operating Systems

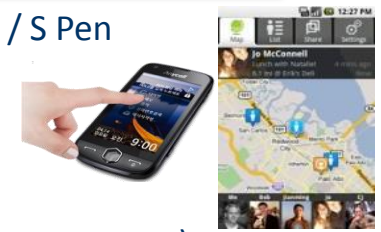


- Mobile Application Market



Enhanced & Emotional User Interfaces

- Touch/Haptic/Gesture UI / S Pen
- 3D Graphics
- Location awareness/ Motion Detection (GPS, Accelerometer, Gyroscope, etc.)



Ubiquitous Network Access

- High-speed Network (LTE, LTE-Adv, 802.11n/ac/ad)
- Enhanced Mobile Browser



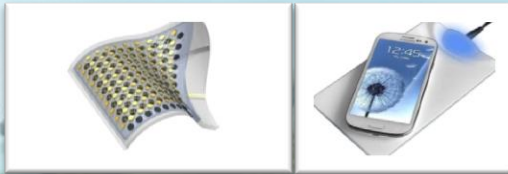
Evolution of Mobile Device: Future

New mobile services will be driven by device technology evolutions



Internet of Things

Battery Technologies / Ubiquitous Charging



Ultra High Resolution Camera / Display



Wearable form factors



Low Power Mobile Sensors



High Performance Processors



Evolution of Mobile Services : Augmented Reality

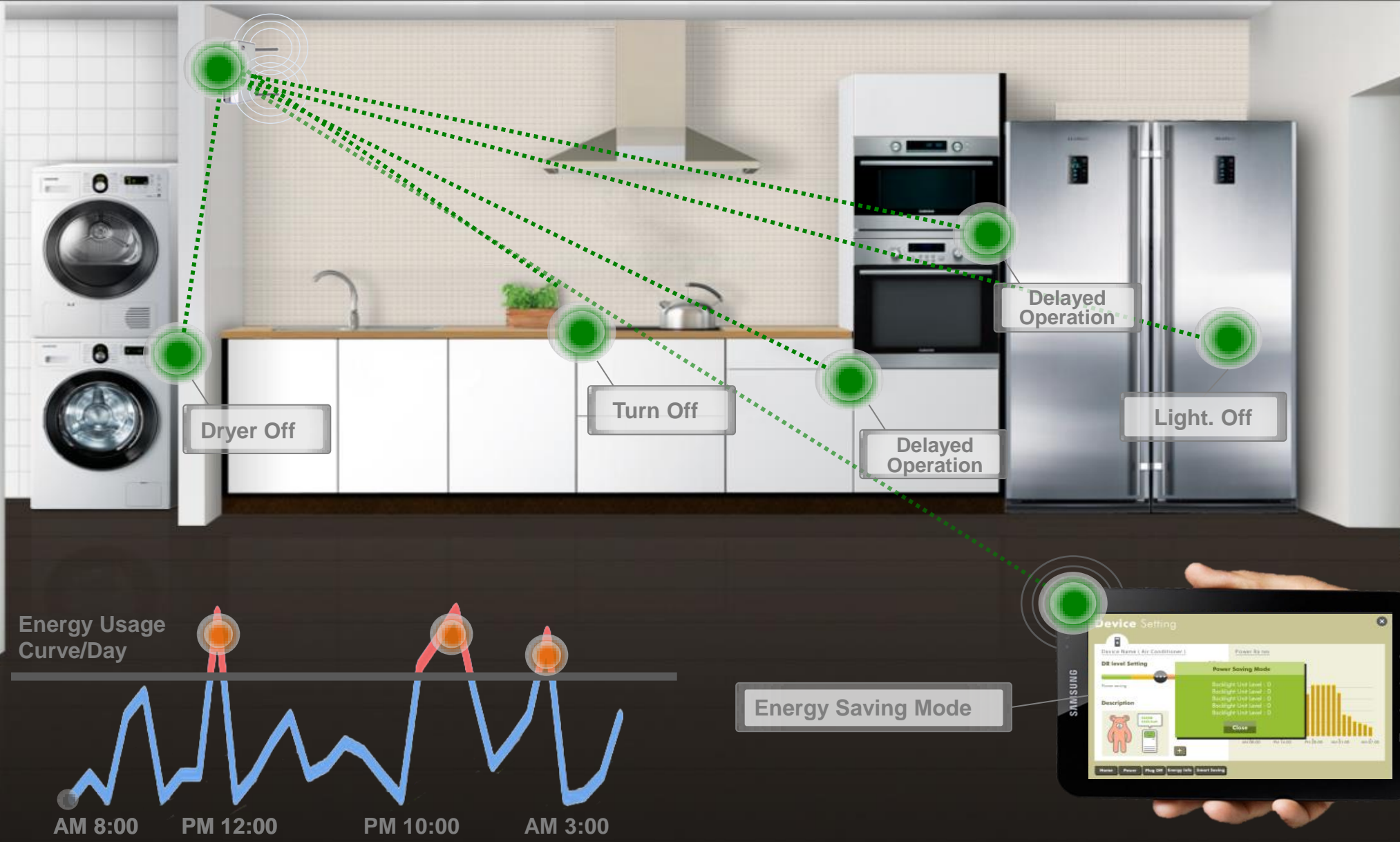
See the world in a new way !

Using the camera and GPS, GALAXY Tab brings Augmented Reality to the palm of your hand.

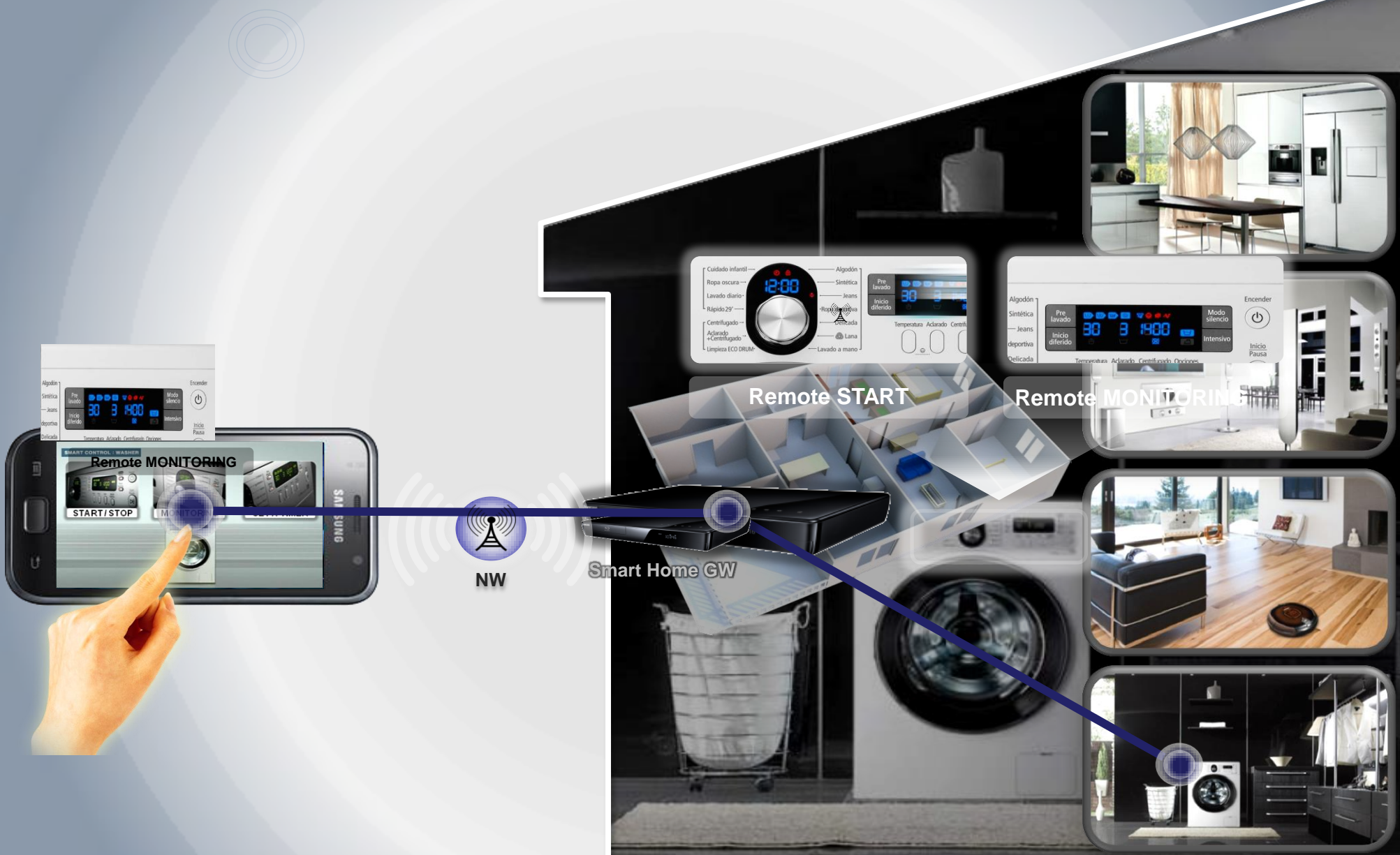
Explore your surroundings in detail, with point-of-interest icons that pop up to show you reviews and information on restaurants, stores and places of interest.



Evolution of Mobile Services : Energy Management

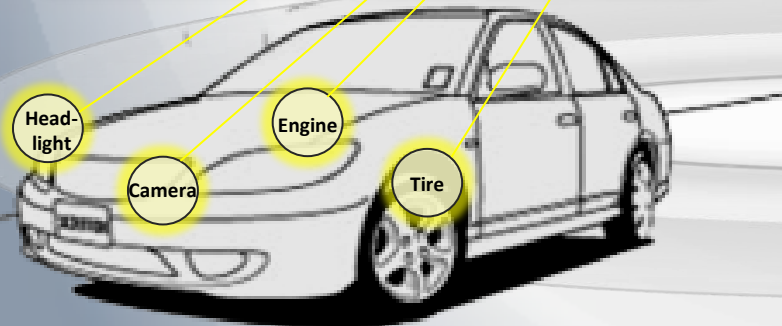
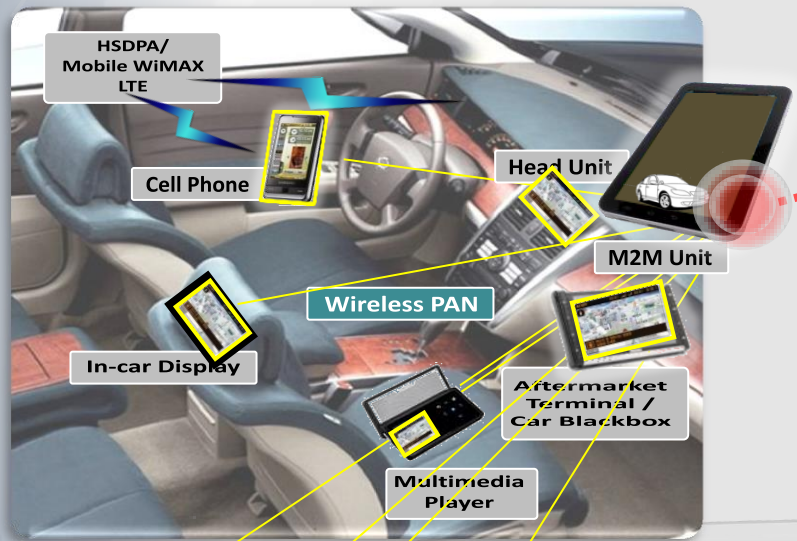
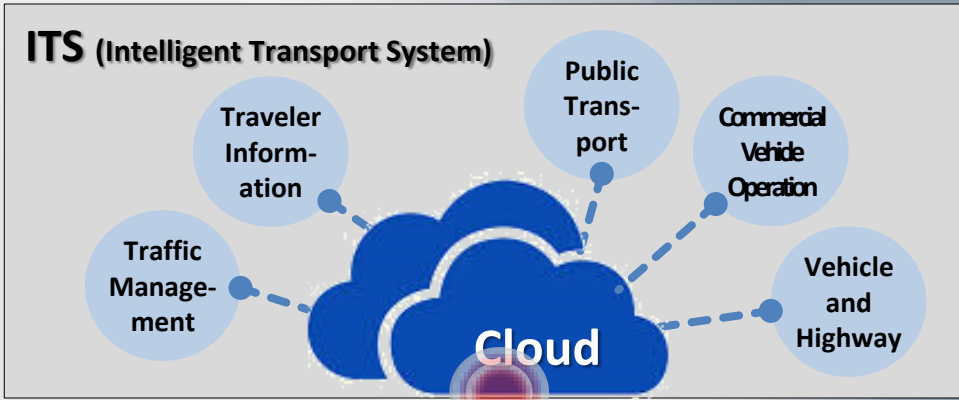


Evolution of Mobile Services : Smart Home



Evolution of Mobile Services : Connected Car

- Vehicle Maintenance
- In-Vehicle Gateway
- Car Infotainment



Evolution of Mobile Services : Connected Health



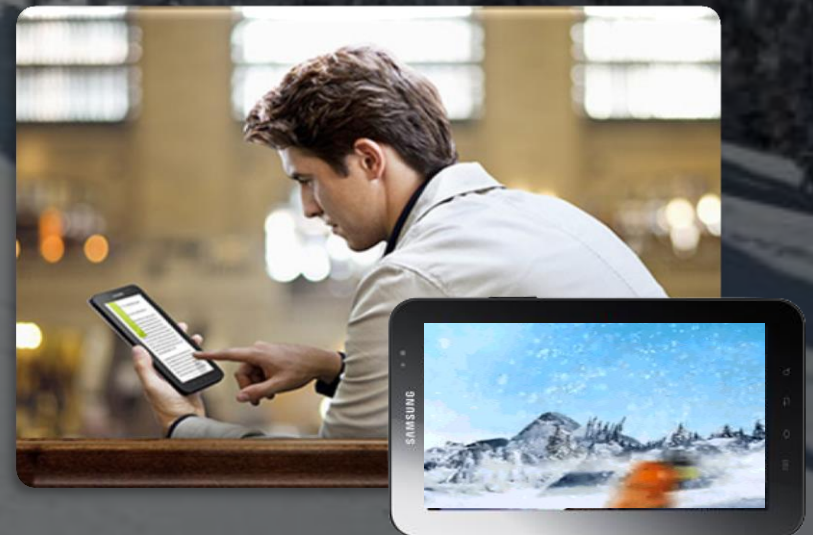
Evolution of Mobile Services : Mobile Education



(Electronic Whiteboard)

Evolution of Mobile Services : UHD streaming

Wireless UHD Data Transmission



Evolution of Mobile Services : Holography

Huge content representation

- Realistic object representation
- High resolution
- Information I/O possibility

Require data implement hologram

- Now, HDTV resolution: 2Mpixels
- 60°field of view 40 inch HDTV resolution: 3.6×10^{12} pixel
- 1.8 million times high resolution
- Data(RGB 8bit, 60fps): 5,000Tbps

HDTV hologram implement

- Require 2 trillion calculation(1Mpixel)

50inch hologram display realization

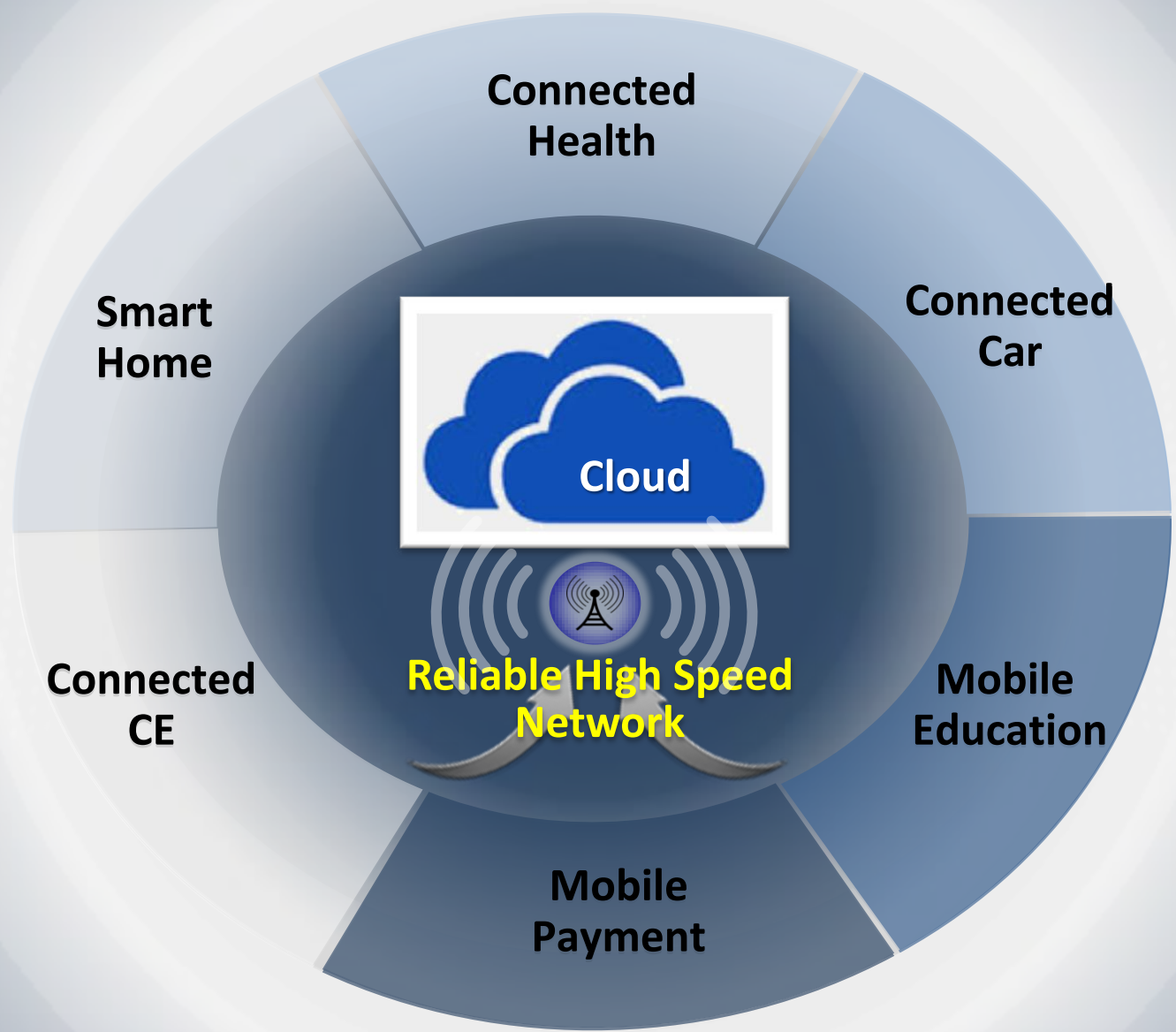
- Require thousands Super-HD spatial light modulator

Sufficient visible region (clearly visible to the naked eye looking) real-time hologram image implement

- Require 250,000 times HDTV resolution
- Filed of view $2 \sim 60^\circ$: 110MB \sim 70GB



Evolution of Mobile Services : All Connected via Cloud



Evolution of Mobile Services : Examples

Korea has released a plan for Five Core Services with Future IMT (5G)



Future SNS (1000x Device)

- Device-to-Device communication without SNS server



Mobile Multi-view Video (1000x Data Rate)

- Realtime interactive multi-view video streaming service



Intelligent Mobile Cloud (1000x Latency Reduction)

- Private mobile cloud for wearable devices



High Mobility Backhaul (1000x Data Rate)

- High Quality wireless video streaming on the high speed railroad



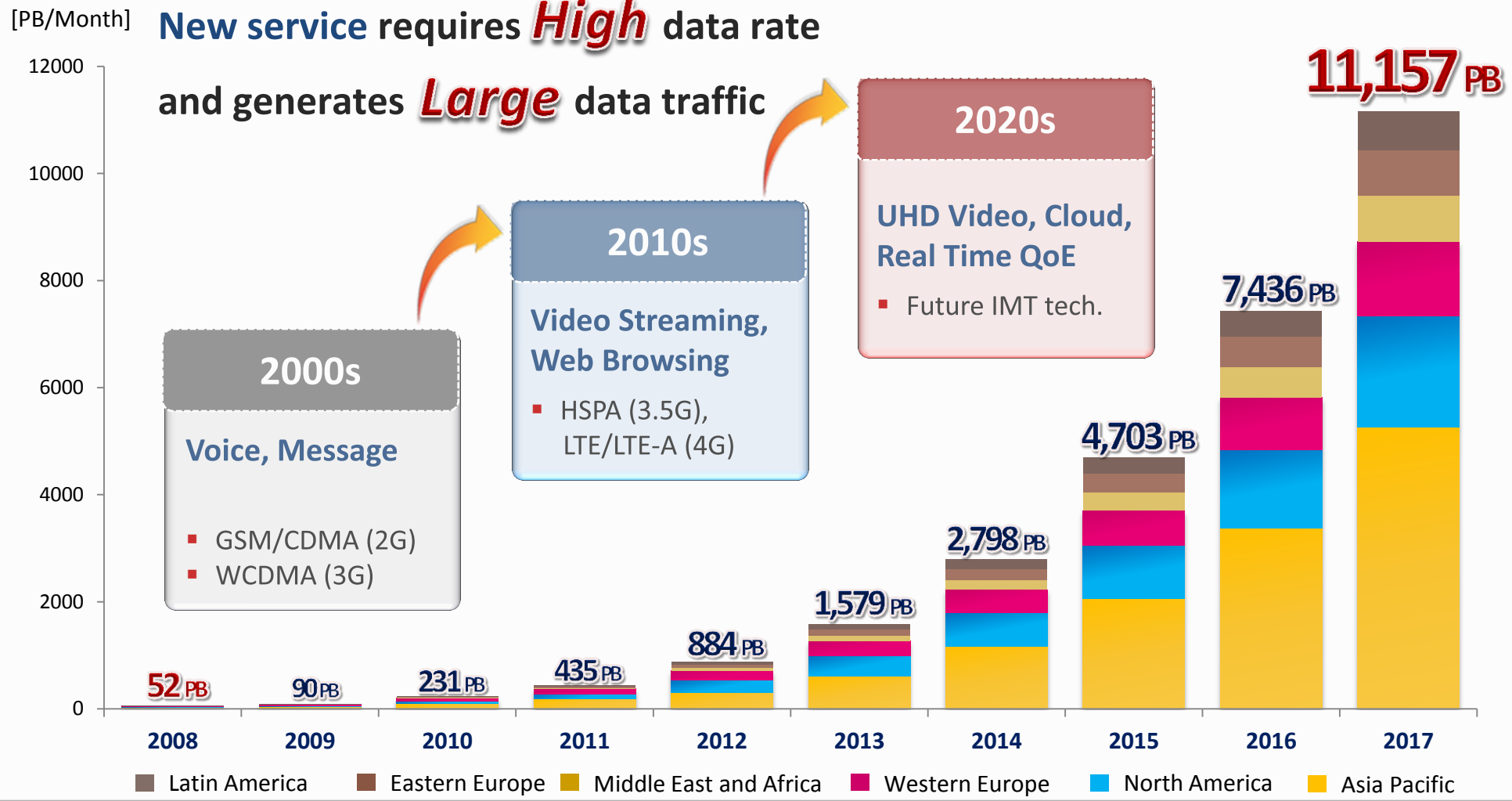
UHD / Hologram over cellular (1000x Data Rate)

- Hybrid broadcasting & communication services

Expectation : Mobile Data Traffic

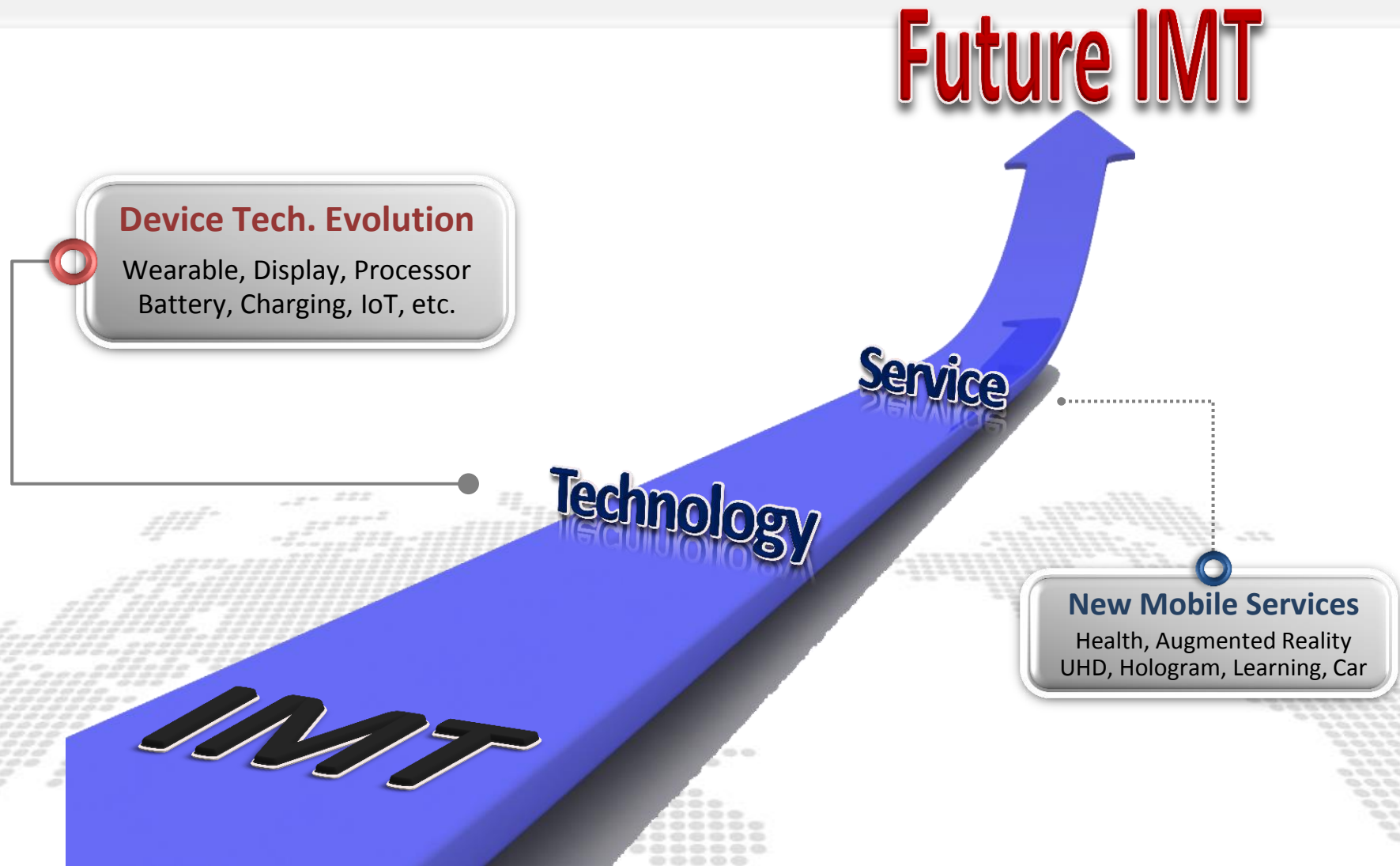
Evolution of mobile services will derive high traffics & data rates

[Source: Cisco, 2012]



Motivation for the Future IMT (5G)

Time to prepare Future IMT technologies





THANK YOU



SAMSUNG

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