

Smart Homes

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Tallwood Venture Capital

Palo Alto, CA, USA

- Singapore Based -



Tallwood Venture Capital

- Based out of Palo Alto, CA, USA
- Total fund size of \$500M under management
- Investments in differentiated technologies, components and products in semiconductor that we believe will have a significant impact on enterprises and consumers.
- **Track Records**
 - **Founded**
 - Chips and Technologies (acq Intel), S3 (NASDAQ)
 - **Exits**
 - Marvel(NASDAQ), Newport Comms(acq Broadcom), SiRF(NASDAQ/acq CSR), Axiom Microdevices(acq Skyworks Solutions), Streaming Machines(acq Cirrus Logic), TrueSpan(acq SiRF), SiClock(SiLabs), Inphi(NASDAQ)

Contents

- Today
- Advancement in Computing and Consumer Devices
- Advancement in Telecommunication/Networking
- Tomorrow – Things Coming Your Way!
- What Do All These Means?
- Conclusion
- Q&A

Device Landscape

Convergence of Computing and Consumer Electronics

Computing



Consumer



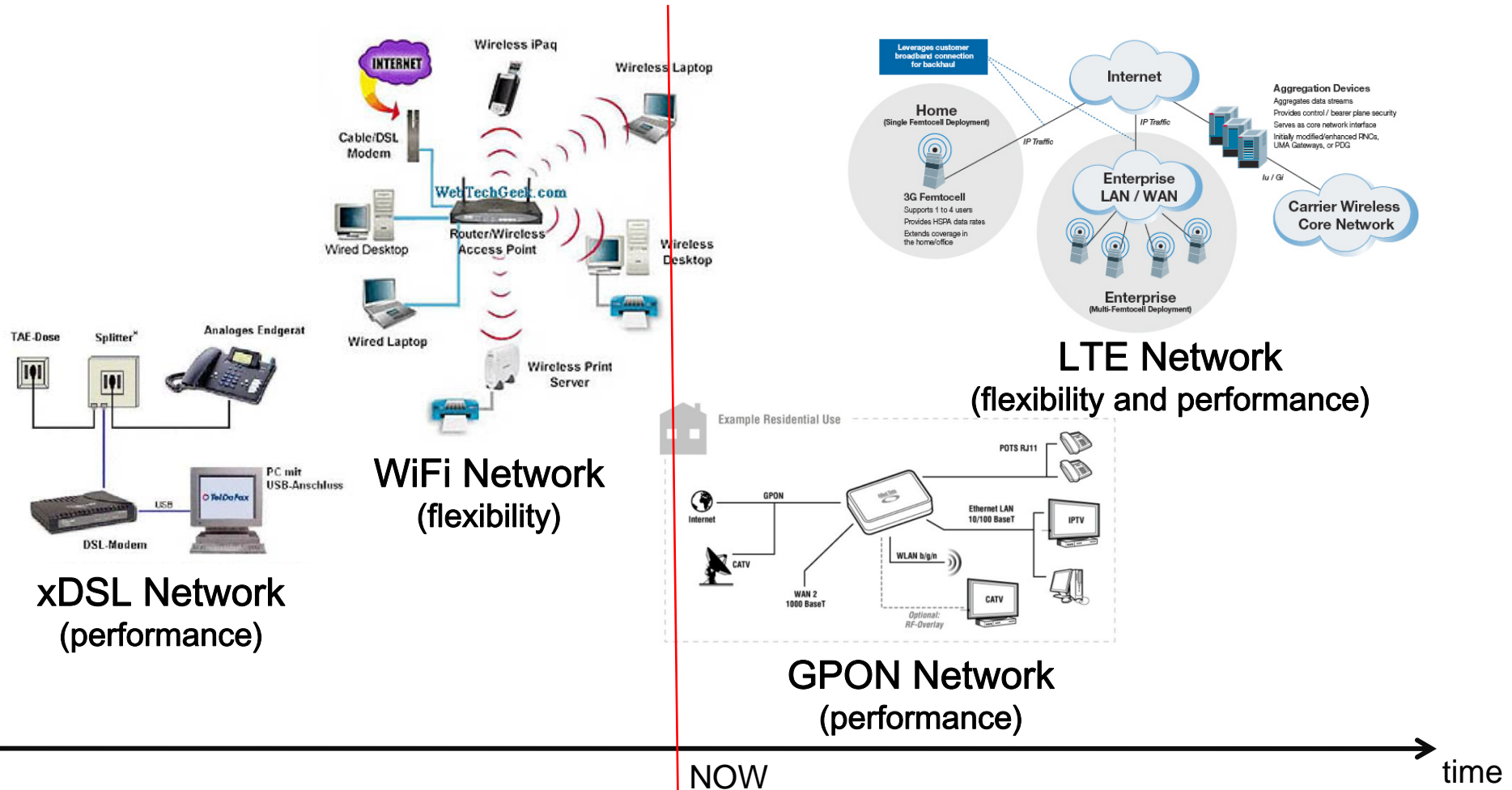
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NOW

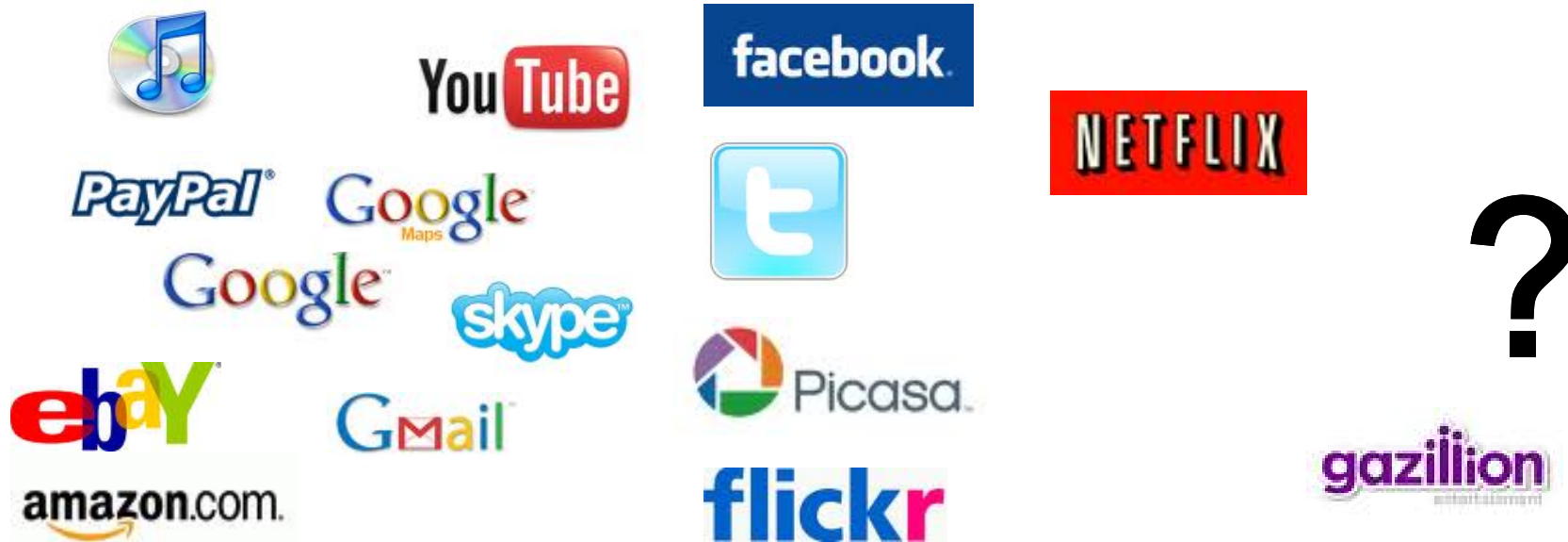
time

Communication Landscape

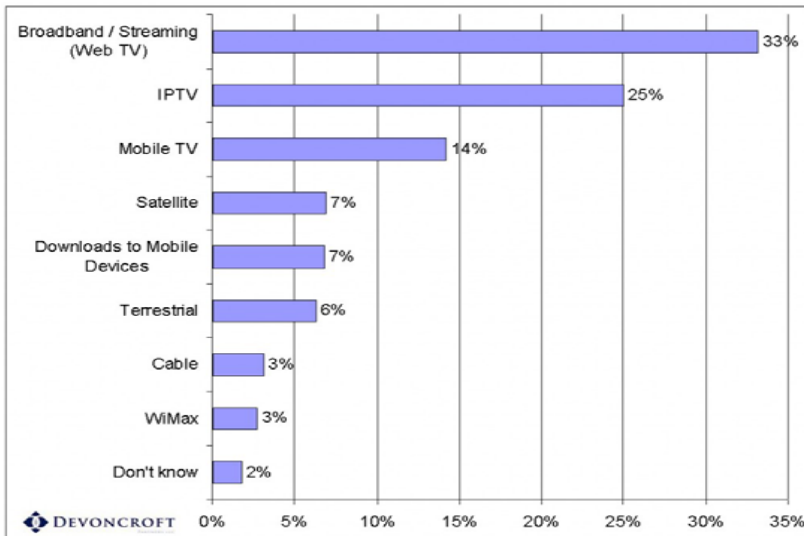
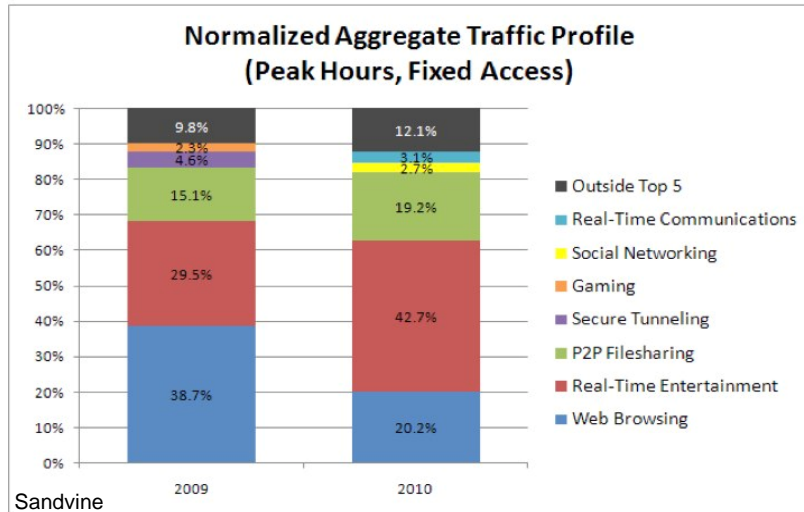
Flexibility, Performance, Intelligence



Application(“Content”) Landscape



Data Projecting Trends (US)



Among respondents who have **mobile broadband**, % who've used it for each of these functions in the previous month

READ/SEND E-MAIL 77%

ACCESS/DOWNLOAD MAPS OR DIRECTIONS 57%

VISIT SOCIAL-NETWORKING SITES 52%

PLAY GAMES 44%

DOWNLOAD/STREAM MUSIC 29%

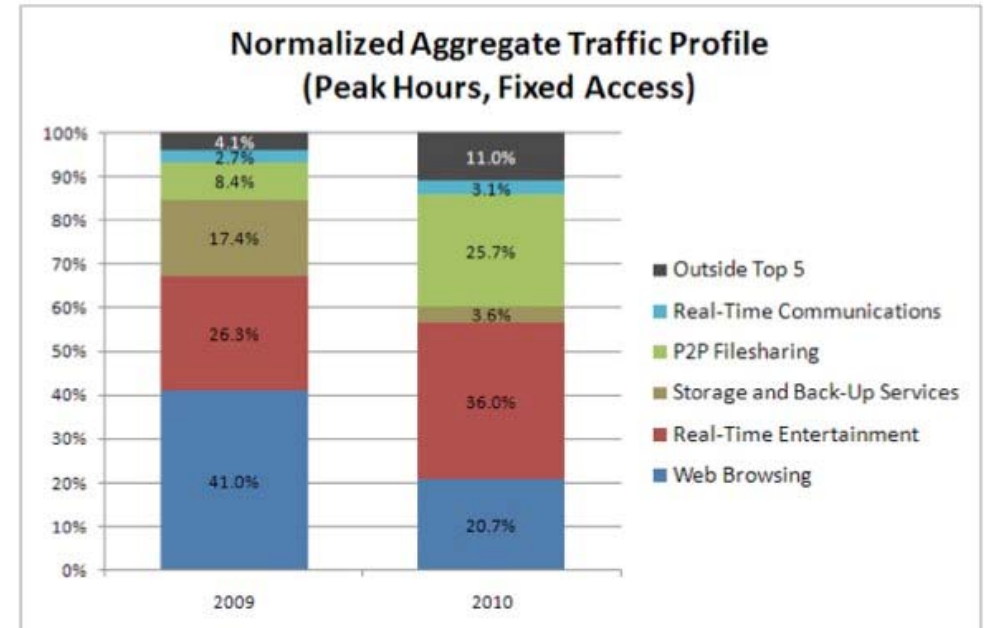
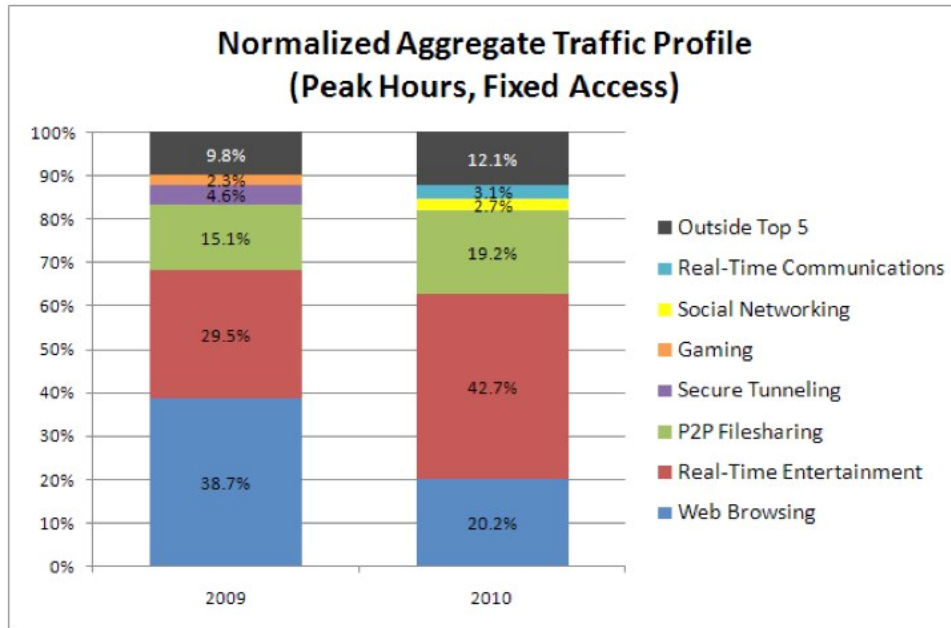
SHOP/MAKE ONLINE PURCHASE 23%

Source: TNG

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Sources: Sandvine, Devoncroft, TNG

US vs Asia (Internet Usage Trends)



Common Observations of US and Asia – Growth Areas

1. Real-time entertainment
2. P2P filesharing
3. Real-time communication

Observation of US – Growth Areas

1. Social networking

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Sources: Sandvine

Communication/Network/Connectivity

- Telephony Network
- TV and Radio
- Cable
- Mobile Network
- Satellite
- Fiber Network
(Telephony, Cable, ISP)
- Ethernet
- WiFi
- Powerline
- Composite
- Component
- S-Video
- IrDA
- HDMI
- Display Port
- VGA
- USB
- 2.4GHz Wireless
- Bluetooth
- e-SATA
- SD Card Interface
- Short range FM



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Application Domains

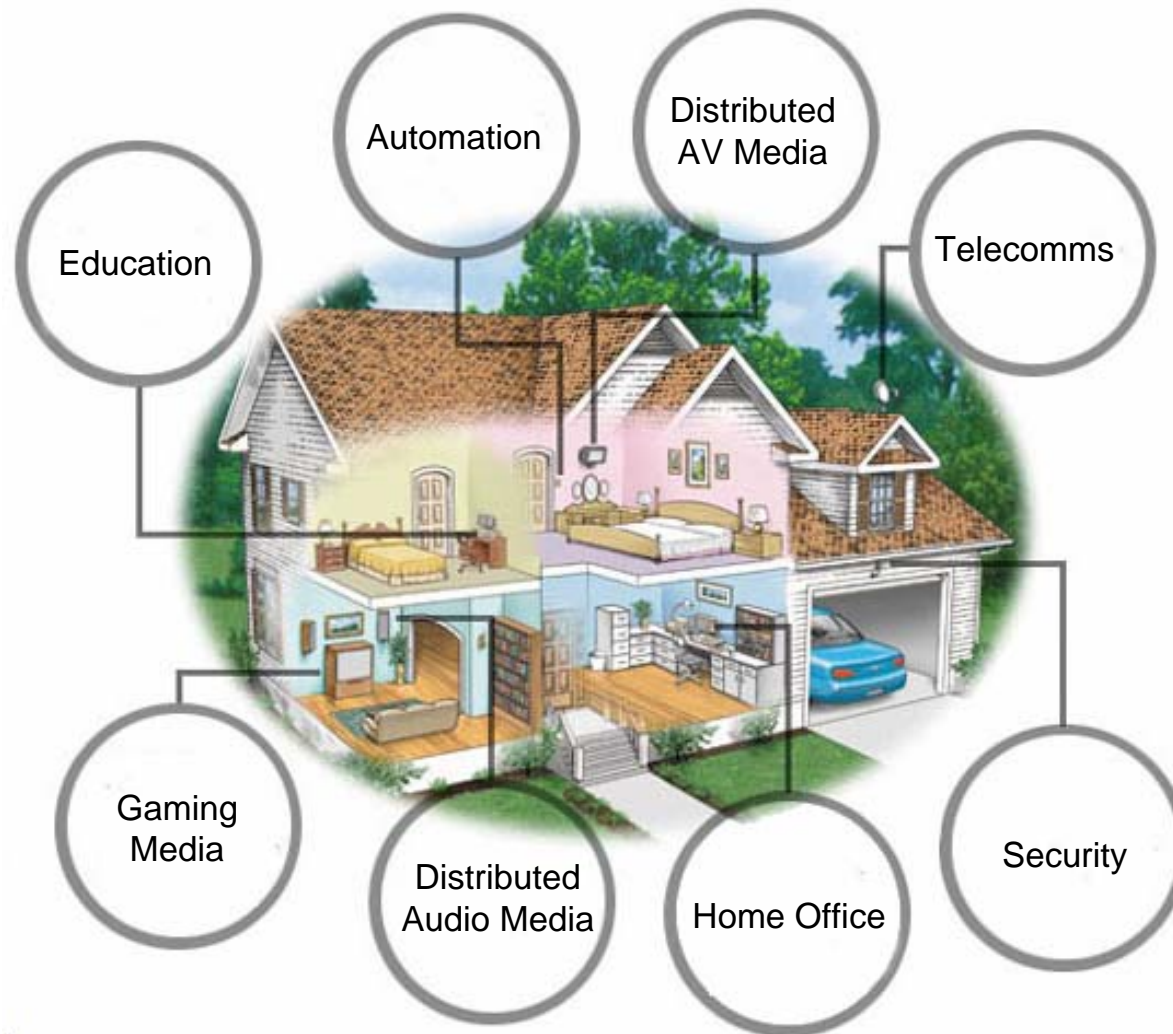
- Office (Corporate, Services)
- Telecommunication (Email, Text, Telephony, VOIP, Video Call, Teleconference, Services)
- Gaming (Offline, Online, Services)
- Media (Personal, Collection, External Sources, Services)

- Education (School, Knowledge Resources, Services)
- Monitoring/Security (Internal, External, Services)
- Automation (Lightings, Appliances, Services)

- Applications/Computing (Search, Information Access, Services)



Elements of A Smart Home



Personal Devices



notebook



portable
gaming machine



portable media
player



digital camera



tablet



e-reader



netbook



smart phone

Devices that one would choose/buy for oneself – trend, design, functionalities, performance, etc

Shared Devices



desktop PC



all-in-one printer



modem-router



external storage



NAS storage



TV



media player



hi-fi



gaming machine



VOIP phones



camcorder



digital photo
frame/album



GPS

Internet Connected Devices of Tomorrow



kitchen appliances



health monitoring
devices



musical devices



digital locks and safe



lighting and power switching
control



toys

(NOTE: pictures here are for illustrative purposes only, and may not represent net connected devices)
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Rich Media, Connectivity, Interactivity

- **Rich Media**

- High number of data sources are available on the Net for reference and use
- Devices has the most up-to-date data

- **Connectivity**

- Allows devices to be connected for transmission, exchange, and processing of data

- **Interactivity**

- Always connected devices allow interactions between them, where actions are generated/issued in response to the resultant or existing state of the other connected device.

In Conclusion



- With increased bandwidth availability, the number of connected devices with wide ranging functions will appear.
- The channels allows devices to reference or use richer data on the Net.
- The devices have up-to-date firmware for optimal operations.
- Real-time sharing, access, transmission, and communication of rich media are made possible.
- Richer applications will follow to enable and support better living lifestyles.

Overall, a more complete connected eco-system of devices for smart home is created.