Business aspects of IPv6

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IPv6 will cater for current & future trends of the Business in terms of continuity, growth, scale, efficiency & market share.

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- Devices always On ⬆

- Number of devices ⬆

- Number of addresses ⬆

- Need for globally routable addresses ⬆

- Security ⬆

- Mobility (& Mobile worker/Smart phones) ⬆

- Wireless (Future Internet is largely wireless/mobile) ⬆

- End user Cost ⬇

- Operating Cost ⬇

Currently, one of the major challenges for all stakeholders in thinking about the future of the Internet is its ability to scale to connect billions of people and devices [just 8% of IPv4 addresses remaining in March 2010]

Trends, also can be seen in the huge IPv6 Market & Business opportunities in Internet of things.

- Home Networking (Smart homes & Smart cities)
  - Home appliances (Such as Fridges, Lamps, A/C devices …etc)

- Industrial equipments

- Car navigation systems.

- Gaming.

- Mobile Devices.

- Sensors equipments

- Consumer Devices (i.e. Sony)

[Internet of things: Sensors, industrial equipment, Tele-metering]

Fields of application of wireless sensor equipments/networks
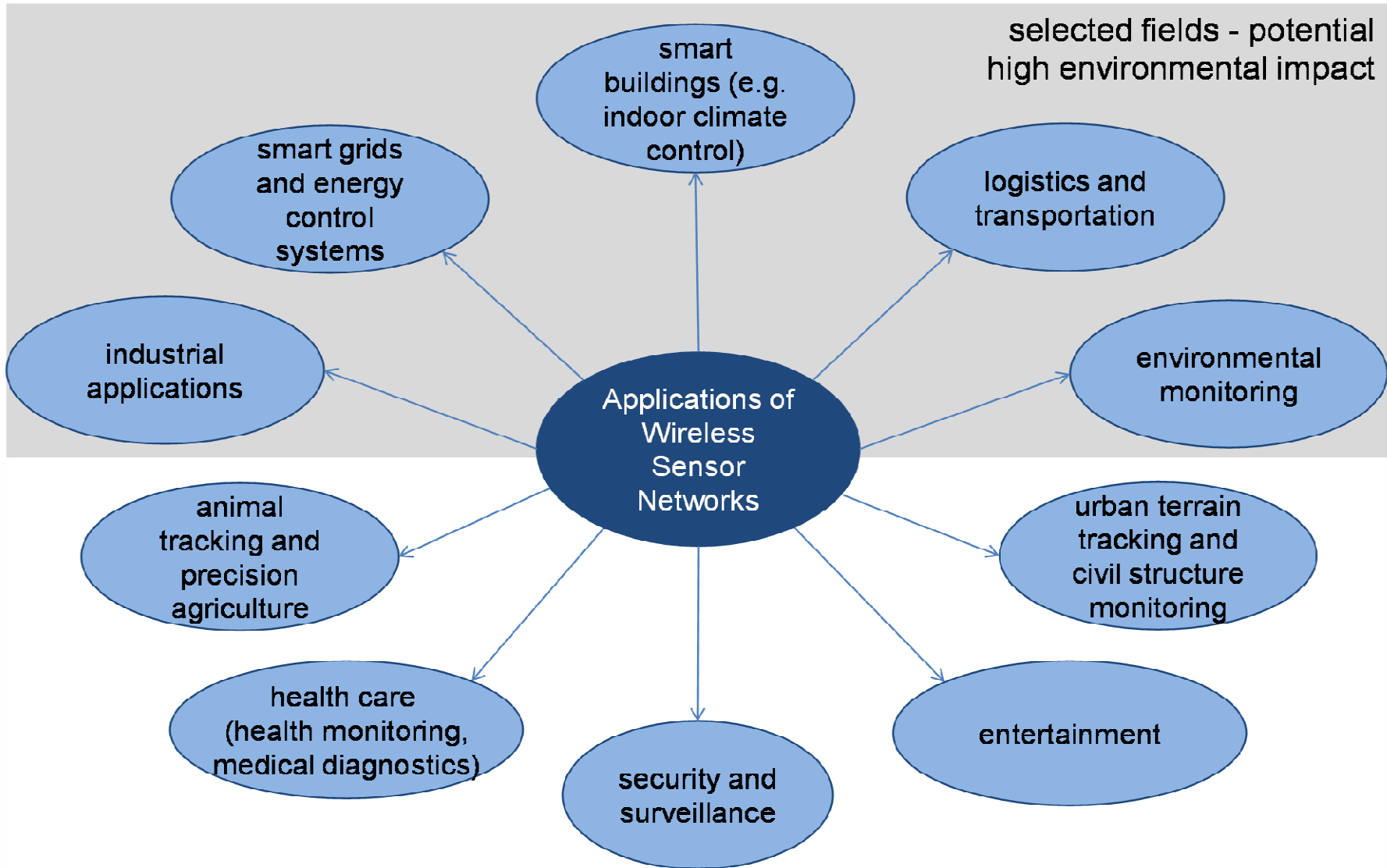
Business continuity should be valued accurately as IPv6 is a Business issue in the Internet service industry & need to be implemented timely/properly to avoid last minute rush.
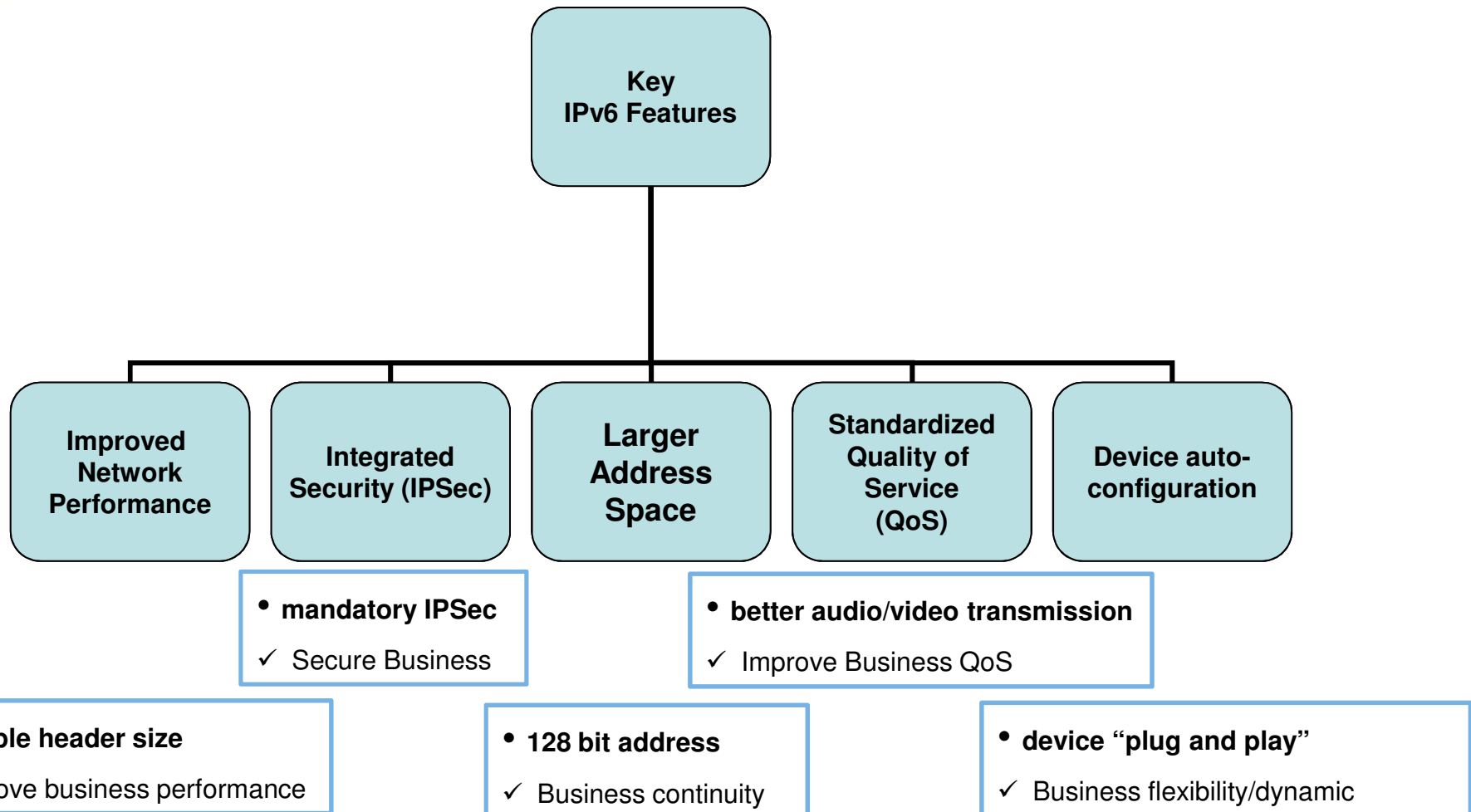
An Issue of Business Continuity

"The technical stuff for IPv6 is done. IPv6 is ready. This is a business issue in the internet service industry. The ISP community around the world needs to pay attention... They are persisting in the 'nobody is asking for this' mentality. They are not valuing business continuity as they should. When they finally wake up, there is going to be a mad scramble for IPv6 and they won't implement it properly".
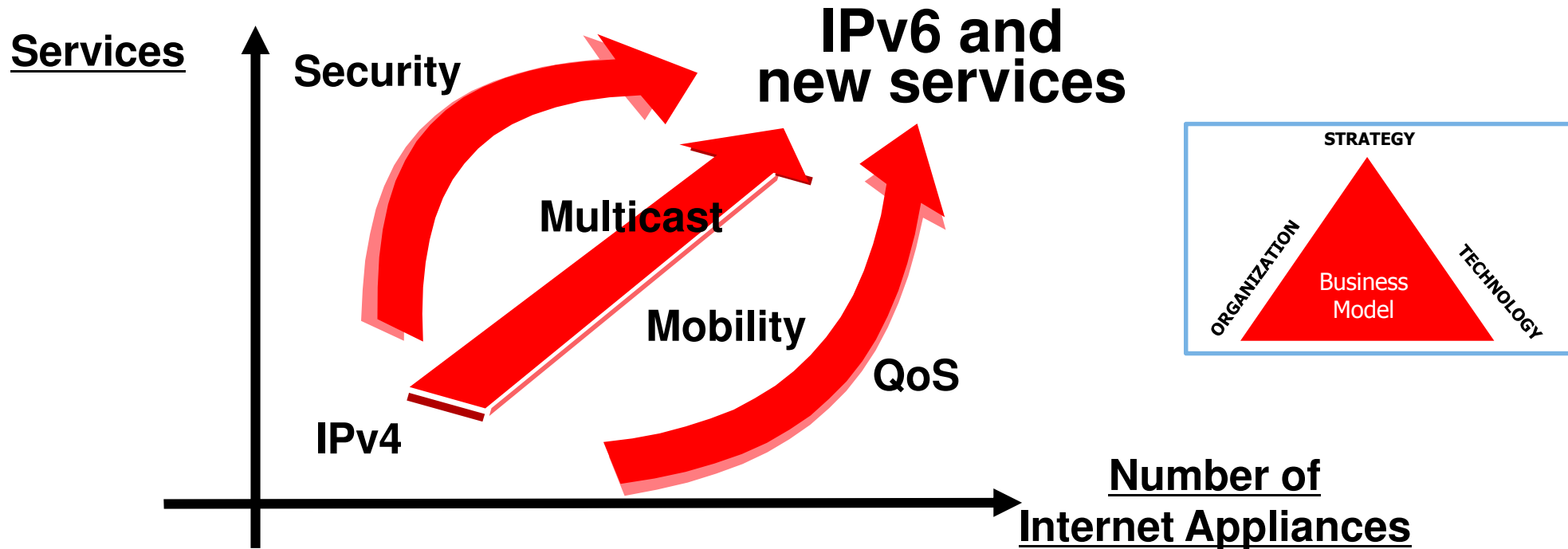
Vinton Cerf, September 30, 2008 interview with "The Times Online".

Vinton "Vint" Cerf is an American computer scientist who is the person most often called "the father of the Internet". His contributions have been recognized repeatedly, with honorary degrees and awards that include the National Medal of Technology, the Turing Award, and the Presidential Medal of Freedom.

IPv6 key features will improve the Business while addressing challenges & innovation

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                    ┌─────────────────┐
                    │      Key        │
                    │ IPv6 Features   │
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Key IPv6 Features

- **Improved Network Performance**
- **Integrated Security (IPSec)**
- **Larger Address Space**
- **Standardized Quality of Service (QoS)**
- **Device auto-configuration**

- **mandatory IPSec**
  - ✓ Secure Business

- **better audio/video transmission**
  - ✓ Improve Business QoS

- **variable header size**
  - ✓ Improve business performance

- **128 bit address**
  - ✓ Business continuity

- **device "plug and play"**
  - ✓ Business flexibility/dynamic

Technology as being a key pillar on Business Model created Business Driven Migration

Services

Security

IPv6 and new services

Multicast

Mobility

QoS

IPv4

Number of Internet Appliances

STRATEGY

ORGANIZATION

Business Model

TECHNOLOGY

Migration Benefits
- New services
- Gain market share

Migration Constraints
- No D Day
- No service interruption

Source: 6WIND - The IPv6 Company - 2010/4/14

IPv6 Business in Europe will address the new services as first candidate for deployment

- In Europe IPv6 Networks will be deployed first for their new service capacities
  - Mobile
  - Push
  - Peer to peer
  - Offering QoS & Security

Source: 6WIND - The IPv6 Company - 2010/4/14

Business/Governments cases

One Government, 2 ISPs & one construction company

ipv6.google.com - IPv6 enabled search page

Google™

| Google Search | I'm Feeling Lucky |

Advanced Search
Preferences
Language Tools

Advertising Programs - Business Solutions - About Google

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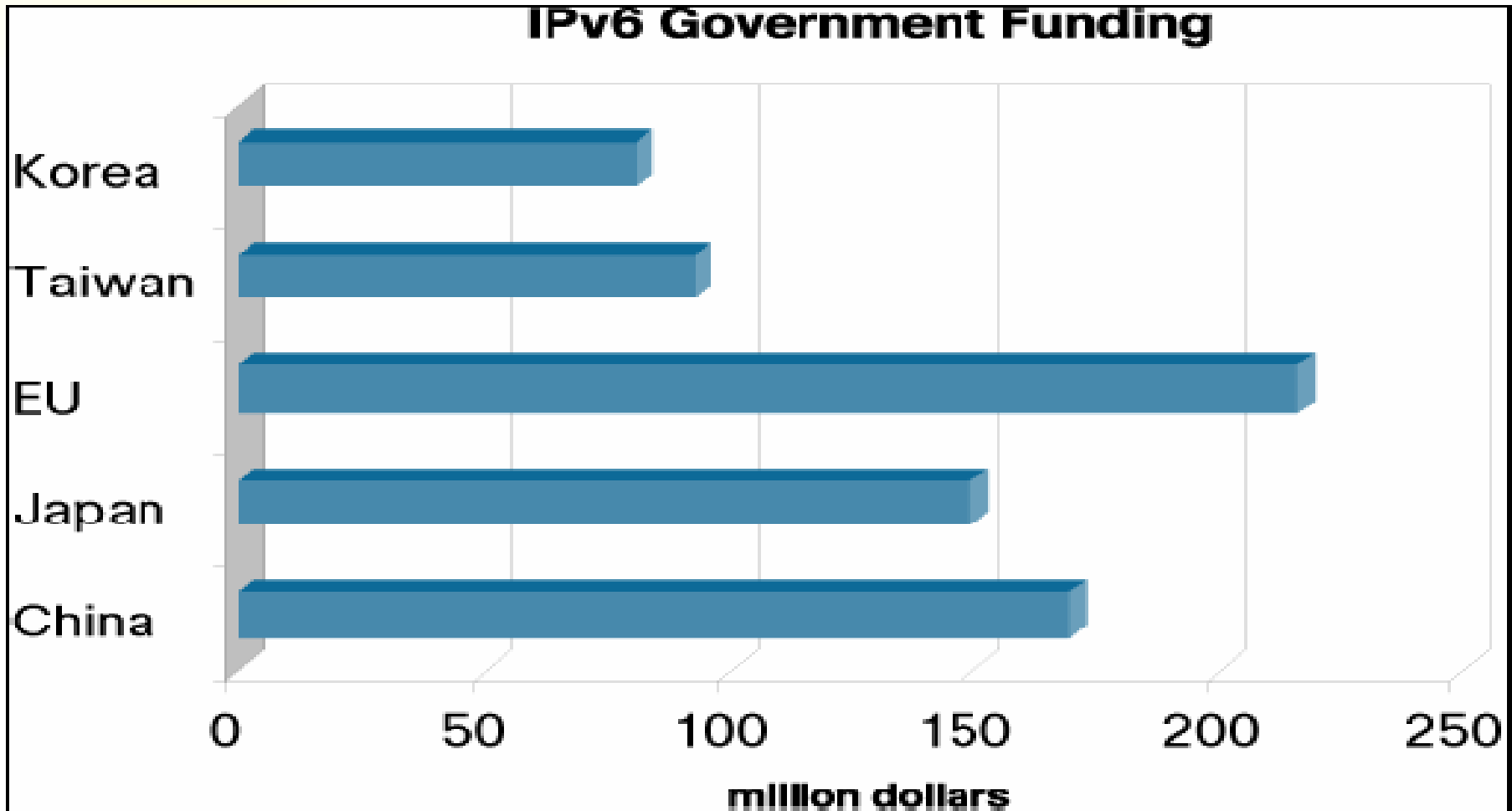
Government Investments in IPv6 until year 2006 in US dollars

U.S Federal government future does not doubt IPv6 adoption, with slow transition & to meet technology requirements for its long duration projects

- Preparing the U.S. **Federal Government for the future**

- **No doubts** - IPv6 will be adopted

- **Slowly transition** will **reduce cost** drastically

- U.S. Federal **Government projects**:
  – Having a 20-year duration, must evaluate emerging technologies to include in mainstream during the life of the project.
  – Avoid major restructuring during the life of the project.

NTT – Japan selected IPv6 over IPv4 for deploying IPTV services due to its Multicast model simplicity

▪ Largest ISP in Japan **deploying IPTV services**, including HDTV (High Definition TV)

▪ Streaming over FTTH (Fiber-to-the-Home) to several devices sitting on a home network

▪ Choice between IPv6 Multicast or NATed IPv4 Multicast

▪ Led to an **IPv6 end-to-end model simplicity**

• "Other services like "Earthquake Detection System

Bechtel Corporation deployed IPv6 due to operational cost savings and simpler network models

- Bechtel business **not directly related to the Internet**

- Highly dependent on the **flow of information**

- Always considering **improvements & optimizations** to information availability & distribution.

- IPv6 helped Bechtel with **operational cost savings and optimizations**

- To keep up with a **growing geographical footprint**

- **Constantly-changing network topology**, and an increasing number of networked devices.

- Being a **multinational organization** can benefit from IPv6 adoption.

- Three business units within Bechtel serve customers that **view IPv6 as strategic**

Comcast the largest cable TV in USA (23 States), IPv6 just to operate the business the same as on IPv4 but on a larger scale to sustain its business growth

- The primary drivers for IPv6 adoption:
    - Business growth opportunity and forecast
    - Dependent on the Internet for its revenues
    - "Infinite" IPv6 address space to sustaining business growth.

- **34.6 Mil. Subscribers** [23 million video, 10 mil. high-speed Internet & 1.6 mil. Phone]

- Its **growth constrained** by insufficient IPv4 address space.

- **Remotely manage** cable modems , set-top boxes & voice adapters to all subscribers .

- In 2005 realized, with **new customers** will **run out of private IPv4 space**.

- With IPv6 will **leverage potential new services** (Triple play) & **facilitate** its management while **growing** network to ensure **business continuity**.

End of Business/Governments cases

Therefore, leadership, skills & collaboration are key imperatives for "IPv6" adoption

Leadership

- Senior management buy-in & support as a key success factor
- Government & companies strategies to adopt , transform & monitor progress
- Decree of purchases & RFPs to include IPv6 support
- Awareness on the importance of IPv6 to their business(Public & private)
- Focused on new business capabilities & innovations

Skills

- Building IPv6 technical & business skills through training (Network, Applications & Services)
- Establish an IPv6 Test Lab (Test-beds)
- Establish large pool of experts with experience in IPv6 deployment

Collaboration

- stakeholders– Government, Industry and Academia
- International IPv6 providers (Transit, test-beds …etc)
- Task-force meeting & events
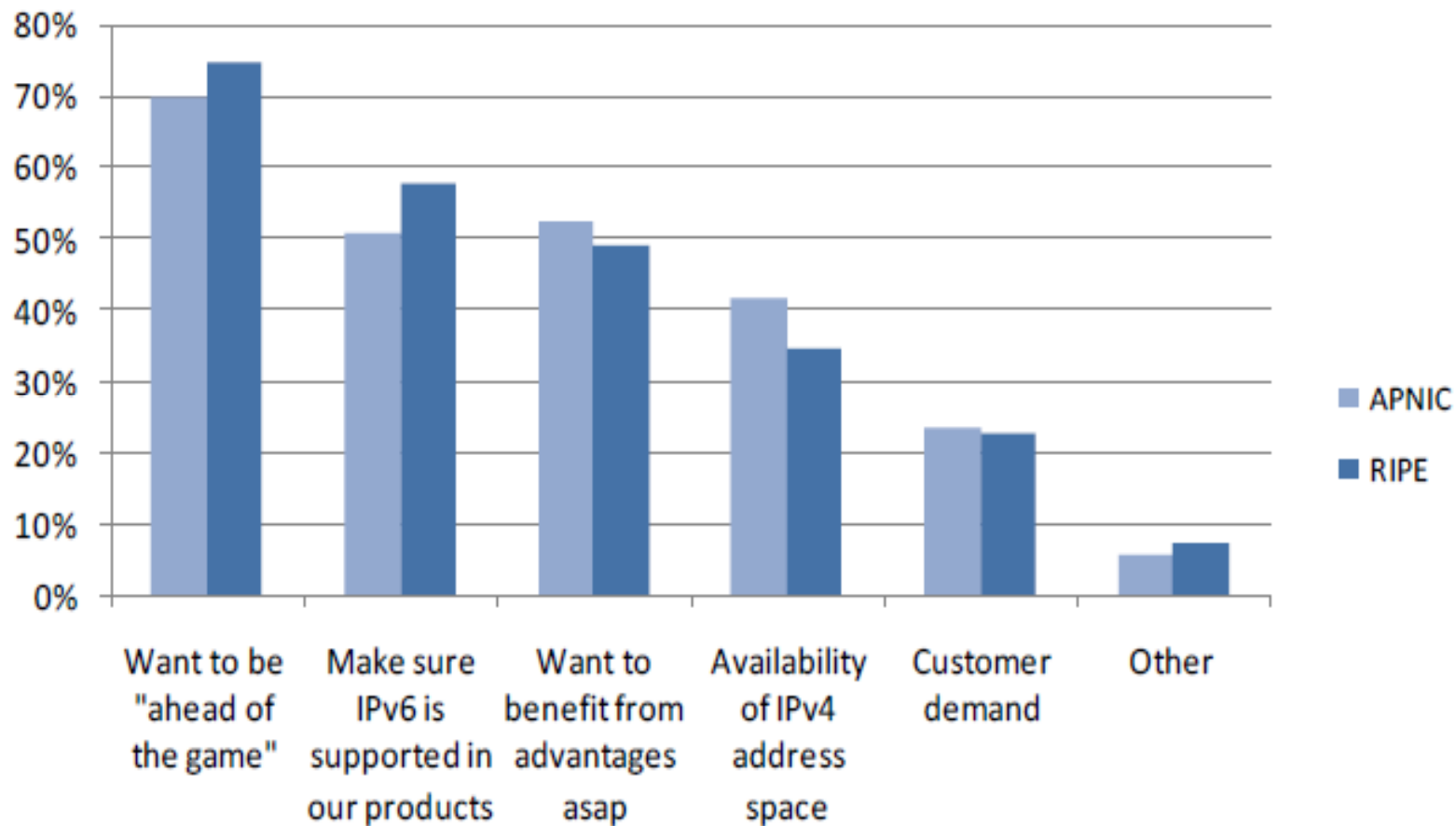- Continuous collaboration between Technical & Business entities & abide by the time-line

Expected largest hurdle(s) for organizations to deploy IPv6?
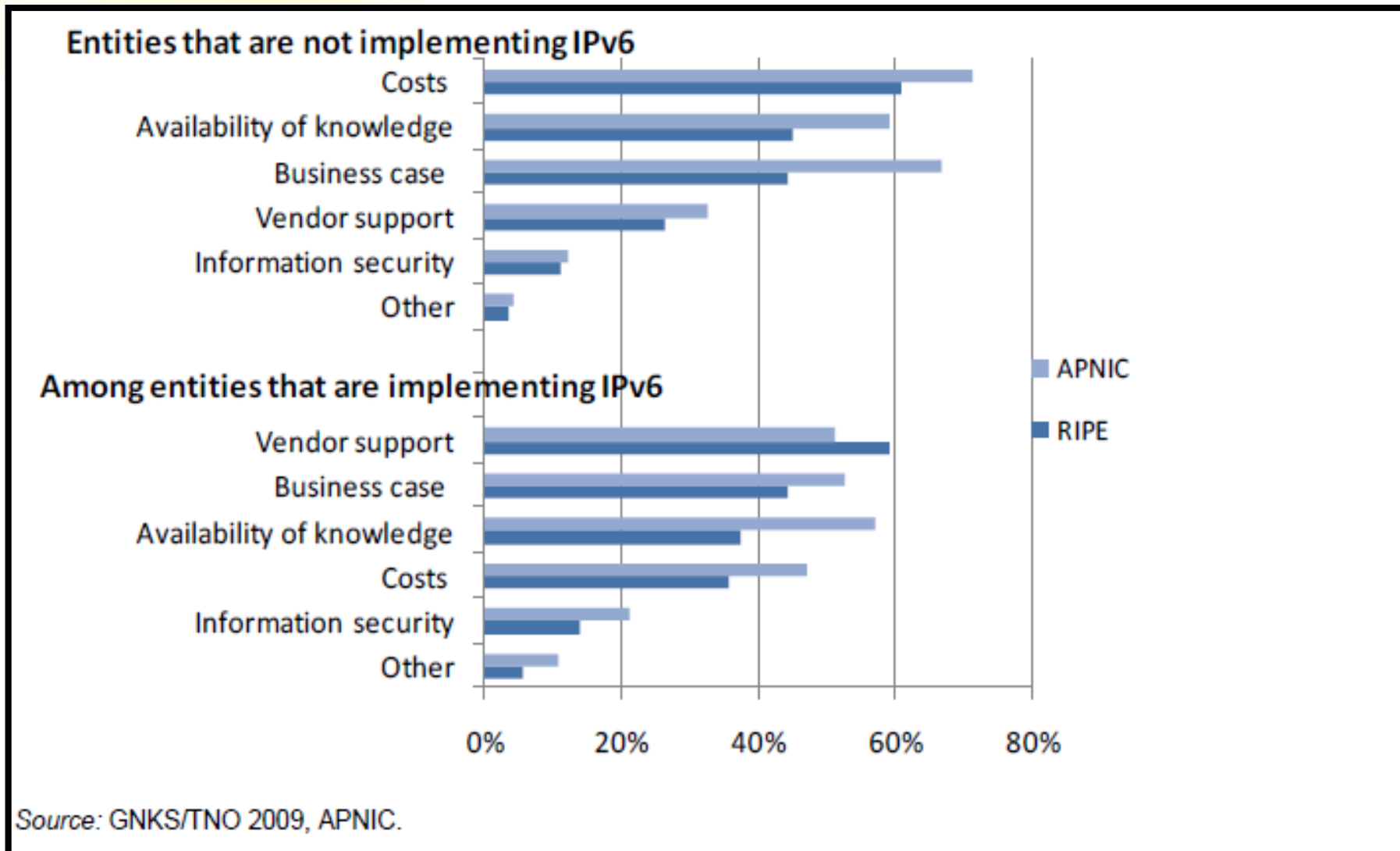
APNIC = Asia Pacific Network Information Centre
RIPE NCC = Réseaux IP Européens-Network Coordination Centre

Drivers for IPv6 deployment

Source: GNKS/TNO 2009, APNIC.

APNIC = Asia Pacific Network Information Centre
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Conclusion

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- **Major Economies and industries** are aware of benefits of IPv6 and have made **substantial investments**.

- With the **world converging towards IP** based communications we need to be proactive to invest now to reap for tomorrow with IPv6.

- IPv6 is one of the key technologies for **widespread deployment of mobile services (MIPv6)**

- **Responsibility lies on the country** to take up the **challenge and take leadership** in developing and deploying technological solutions

- The change in core infrastructure requires **supporting leadership** as the full benefit can only be gained by complete migration to a **dual stack environment**

- These require **public sector support** (local and national) and **buy-in from the Business/private sector**

IPv6, no longer 'if' but 'when and 'how', so avoid wait & rush

Thank you for your kind attention