Personal Broadband

Proposal for
Broadband Working Group,
Communication Futures Programme

BBWG, CFP

For Discussion

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Context: Inter-Industry Tussle

➢ Traditional industry boundaries within the “technology” sector are becoming increasingly blurred:
  o Services:
    o “Triple Play”: Television / ISP / Telecommunication?
    o Fixed-Mobile Convergence: Voice and Data
  o Devices:
    o Entertainment Hubs: PC’s or Consumer Electronics?
    o Computing Devices and Productivity Tools: Phones, PC’s, or in between?

➢ Possible Reasons
  o Industry Push:
    o Economic Imperative of Growth → Inter-Industry Tussle
    o Technical Advances → Necessary Tools (e.g., “IP-Landslide”)  
  o Consumer Pull
    o Benefits (perceived or actual)
    o Novelty

➢ Opportunities?
"Communication is the act of consuming content through a channel within a specific context."

- Communication
- Information
- Entertainment
- Content
- Connection
- Consumption
Context: Access Everywhere, BB Penetration & Absorption of Mobility

Spectrum of Possibilities With Different Characteristics

**Fixed & Fixed Wireless Data**
- residential users, SoHo
- fixed UE location, no mobility
- ADSL data rate at a minimum for wireless
- Up to 100mbps (as in SK) for fixed

**Hotspots**
- high traffic density over small hot spots, mainly indoor
- high data rate
- portability

**Mobile Wireless Data**
- Unidirectional traffic
- low to high data rate
- local or wide area coverage
- possible broadcast/mobile convergence

**Hot zones**
- High density traffic distributed over a small urban area (city centre, financial district)
- portability, low mobility
- high data rate

**Wide area data**
- Traffic distributed over large area
- portability, low to high mobility
- low to high data rate
- low to medium traffic density

**Broadcasting**
- Unidirectional traffic
- low to high data rate
- local or wide area coverage
- possible broadcast/mobile convergence
Observation: Many recent technology driven services owe their success in mass market, at least in part, to their personal nature → absorbed in users’ lives

Opportunity: Making Broadband Personal

Examples:
- Mobile Peer-to-Peer Communication (to overtake fixed-line revenue in 2004)
- Laptop Computers (more sold than desktops in 2004)
- Personal Digital Assistants
- Personal Music Players
- Google

Hypothesis: these services share common characteristics:
- Conducive Infrastructure
- Suitable Content
- Suitable Consumption Device
- Attractive Business Model
- Useful Service (perceived or factual)

Question: Can an infrastructure service (i.e., BB) become personal?
When is Broadband Personal?

BB Suppliers

- Business Models
- Aggregation
- Deployment Cost
- Trust Models

BB Technologies

- Bandwidth
- Coverage
- Mobility
- Dependability

BB Users

- Adoption
- Adaptation
- Absorption

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Sample Vision: User-Centricity in a connected world
Example of Barriers

❌ Supply Side:
  o Suitable business model for further investment in the core when most obvious sources of revenue
    are at the edge including the role of “context provider”
  o Incorporation of different suppliers with different goals (commercial or social) into a common
    substrate for communication (for both near-field and telecommunication): Co-existence & adaptability
  o Availability of suitable technology at reasonable cost to cover a profitable portion of population:
    ✓ Appropriate Bandwidth, Capacity & Scalability for both synchronous and asynchronous services
    ✓ Multi-path & User’s Preference (including mobility)
    ✓ Security & trust

❖ Demand Side:
  o Adoption: Required social, regulatory, and technical development for a profitable business and how
    users assess the usefulness of personal broadband?
  o Adaptation: How personal broadband can change the behavior of users?
  o Absorption: How personal broadband can become invisible?
Need: Impartial & Broad Perspective

- Convergence of various industries demands a perspective that is not biased towards any, but broad enough to cover all

- Such cross-industry initiative would require significant intellectual capital with uncertain financial returns for any one company → Academic participation is essential

- To be effective, such a vision requires participation of business and technical experts to turn it into reality

- There is a need for quick results → existing forums may not be effective

- There is a need for cooperation with shared rewards

- MIT / CFP provides an ideal ground for accomplishing all of the above requirements
Proposal: A Programme of Research by June 2005
As Agreed In Small Group

Description

1. Vision (4/05)
   • What would personal broadband look like & is it a good idea?
   • What services would it offer? What characteristics would it possess?
   • How would it benefit general public?

2A. Technology (6/05)
   • What are the key technological barriers to the vision?
   • What are the potential approaches to removing these barriers?
   • Which of these holds most promise and should be pursued in CFP?

2B. Business (6/05)
   • What are the key barriers to the vision (considering tussle and existing investments) on both the supply and demand sides (business or otherwise, e.g., micro-barriers)?
   • What are the potential approaches to remove those barriers?
   • Which of these holds most promise and should be pursued?
   • Incorporate regulatory, lesson from near industries, and consumption trends

Approach
• Small team to propose the vision, frame the questions and come up with initial answers (mix of academia and industry covering both technology and business issues)
• Update the larger team (Broadband and Core-Edge working groups) and solicit input
• Incorporate inputs and gain approval
• Present Whitepapers in June to a broad audience outlining the programme of research

Process
• Use MIT/CFP BBWG & Core Edge (industry neutral, but heavily subscribed by various industries) to define and agree a vision and identify a programme of research to take to various standard bodies, corporations, institutions, etc

Current Team: MIT, Nokia, BT, Telus, (DT) Potential Contributors: ?