

# Personal Broadband

Proposal for  
Broadband Working Group,  
Communication Futures Programme

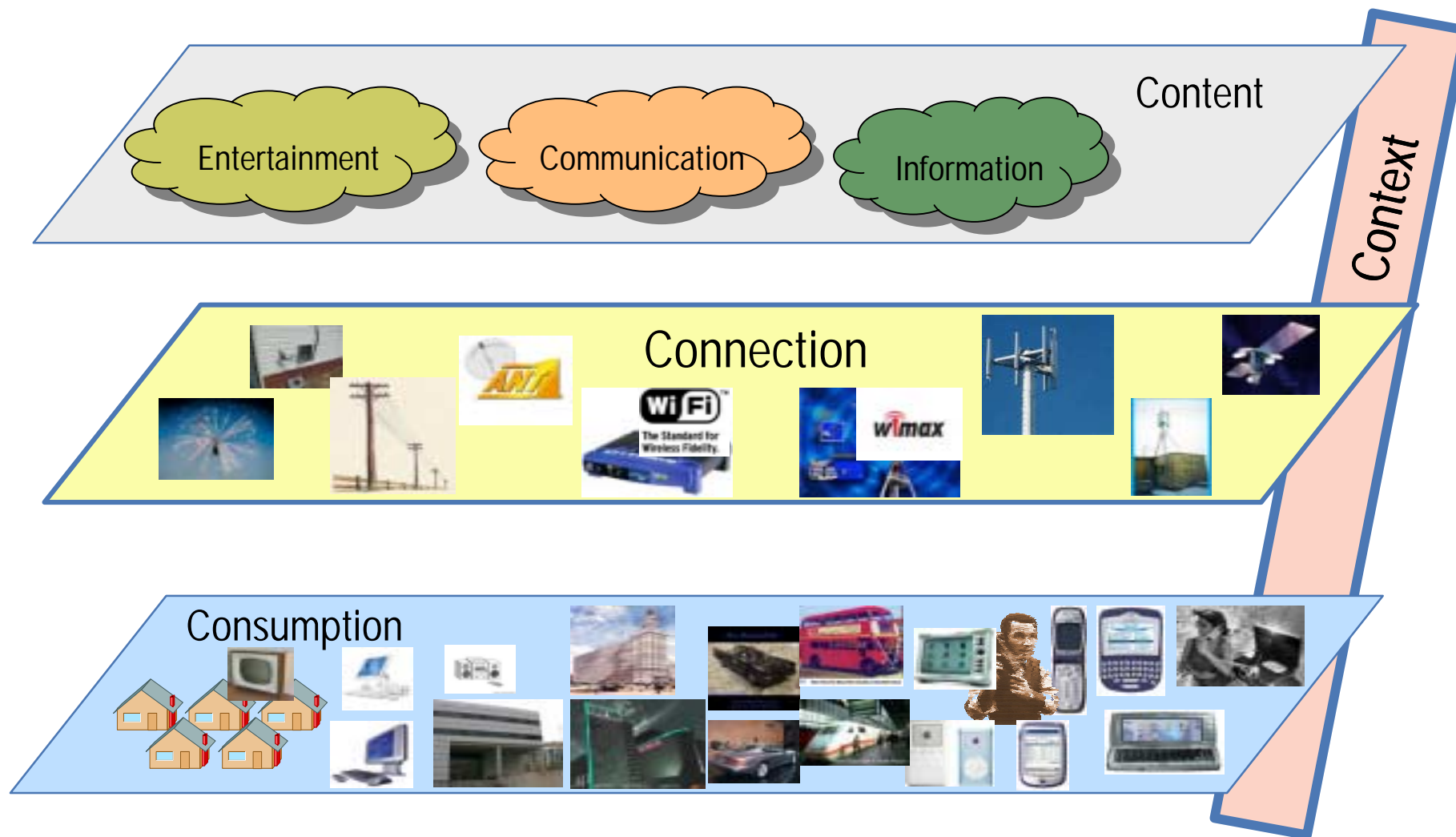


## Context: Inter-Industry Tussle

- Traditional industry boundaries within the “technology” sector are becoming increasingly blurred:
  - Services:
    - “Triple Play”: Television / ISP / Telecommunication ?
    - Fixed-Mobile-Convergence: Voice and Data
  - Devices:
    - Entertainment-Hubs: PC’s or Consumer Electronics?
    - Computing Devices and Productivity Tools: Phones, PC’s, or in between?
  
- Possible Reasons
  - Industry Push:
    - Economic Imperative of Growth → Inter-Industry Tussle
    - Technical Advances → Necessary Tools (e.g., “IP-Landslide”)
  - Consumer Pull
    - Benefits (perceived or actual)
    - Novelty
  
- Opportunities?

# Context: Service Definition & 4C's

"Communication is the act of consuming content through a channel within a specific context"



# Context: Access Everywhere, BB Penetration & Absorption of Mobility

Spectrum of Possibilities With Different Characteristics

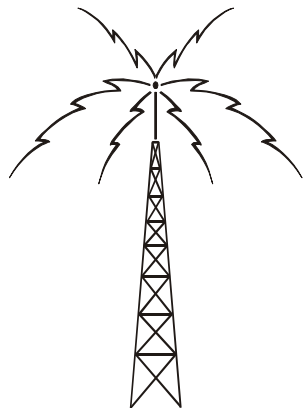


## Fixed & Fixed Wireless Data

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

## Hot spots

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



## Broadcasting

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

## Mobile Wireless Data

### Hot spots

### Hot zones

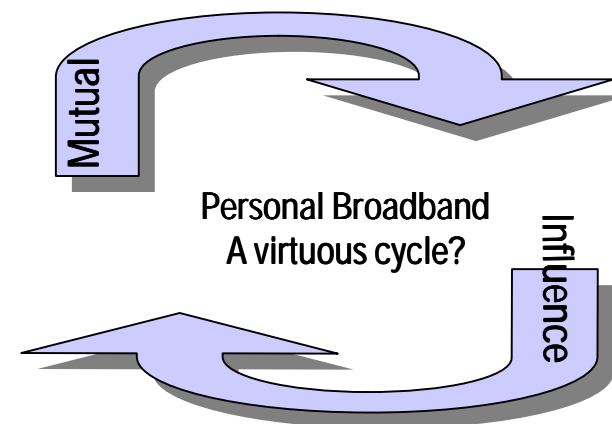
- High density traffic distributed over a small urban area (city centre, financial district)
- portability, low mobility
- high data rate

### Wide area data

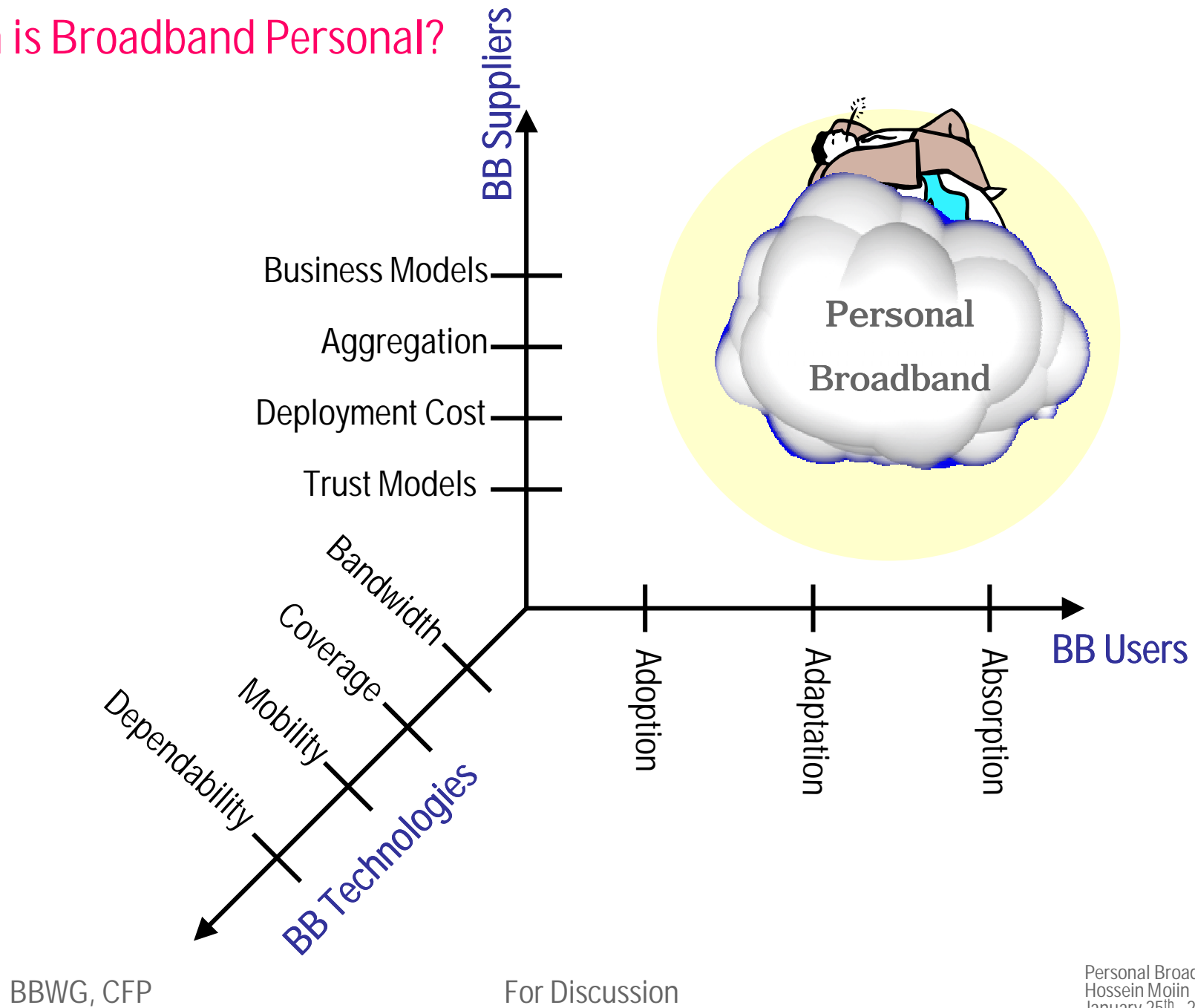
- Traffic distributed over large area
- portability, low to high mobility
- low to high data rate
- low to medium traffic density

## Context: Opportunity & Rational for Success

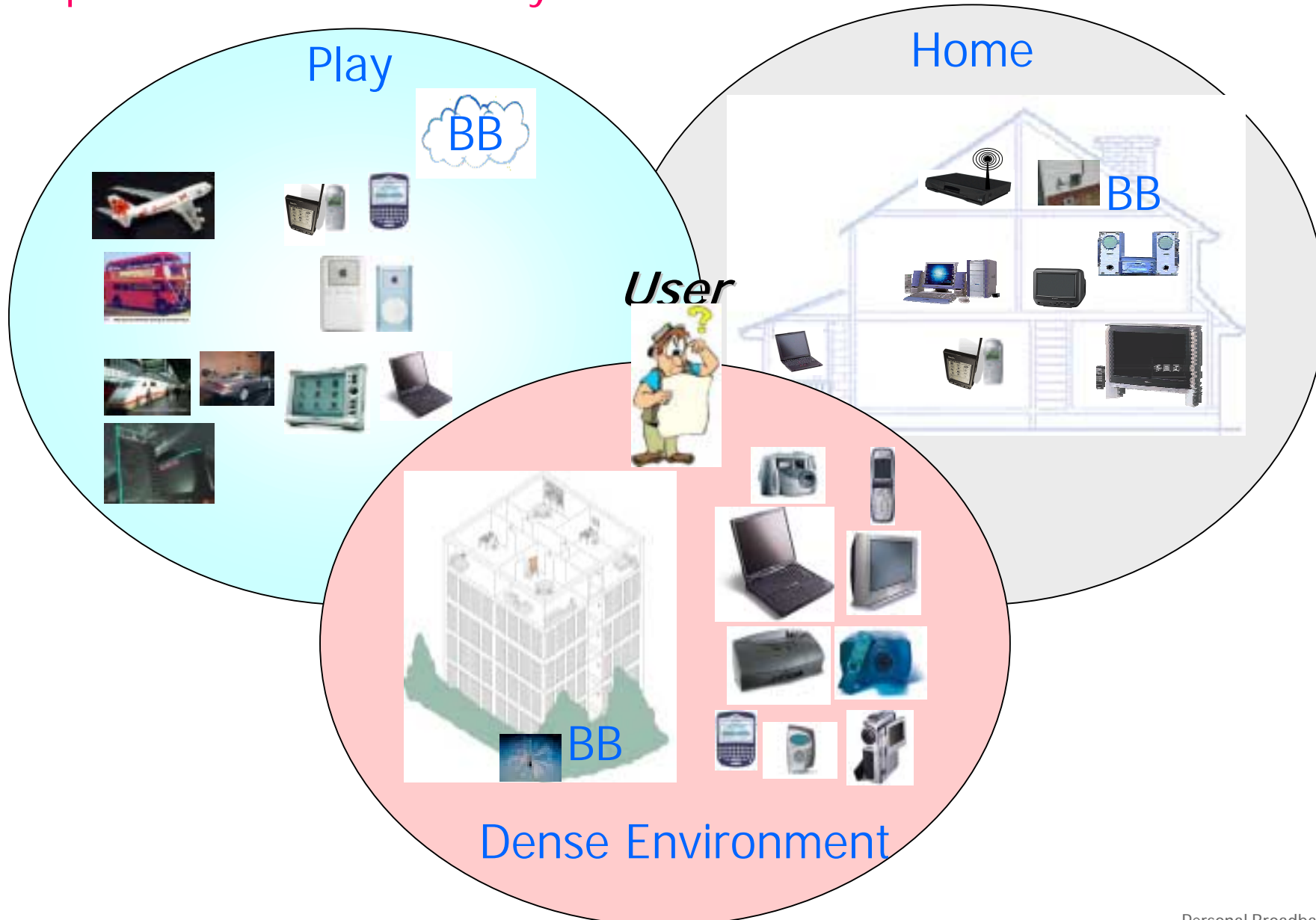
- **Observation:** Many recent technology driven services owe their success in mass market, at least in part, to their personal nature → absorbed in users' lives
- **Opportunity:** Making Broadband Personal
- **Examples:**
  - Mobile Peer-to-Peer Communication (to overtake fixed-line revenue in 2004 )
  - 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?



# Sample Vision: User-Centricity in a connected world



## Example of Barriers

### ➤ Supply Side:

- 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”
- 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
- 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:

- Adoption: Required social, regulatory, and technical development for a profitable business and how users assess the usefulness of personal broadband?
- Adaptation: How personal broadband can change the behavior of users?
- 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
<b>1. Vision</b> <b>(4/05)</b>	<ul style="list-style-type: none"><li>• What would personal broadband look like &amp; is it a good idea?</li><li>• What services would it offer? What characteristics would it possess?</li><li>• How would it benefit general public?</li></ul>
<b>2A. Technology</b> <b>(6/05)</b>	<ul style="list-style-type: none"><li>• What are the key technological barriers to the vision?</li><li>• What are the potential approaches to removing these barriers?</li><li>• Which of these holds most promise and should be pursued in CFP?</li></ul>
<b>2B. Business</b> <b>(6/05)</b>	<ul style="list-style-type: none"><li>• 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)?</li><li>• What are the potential approaches to remove those barriers?</li><li>• Which of these holds most promise and should be pursued?</li><li>• Incorporate regulatory, lesson from near industries, and consumption trends</li></ul>
<b>Approach</b>	<ul style="list-style-type: none"><li>• 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)</li><li>• Update the larger team (Broadband and Core-Edge working groups) and solicit input</li><li>• Incorporate inputs and gain approval</li><li>• Present Whitepapers in June to a broad audience outlining the programme of research</li></ul>
<b>Process</b>	<ul style="list-style-type: none"><li>• Use MIT/CFP BBWG &amp; 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</li></ul>

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

BBWG, CFP

For Discussion