

NEW SERVICES AND THEIR CHALLENGES

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**Rapporteur:** Ian Welch



## New Services and their Challenges

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## Content

- GII
  - The Big Picture
    - This big, big picture
    - Convergence
    - The techno-socio-economic landscape
- UIE
  - Infohabitants
    - Open issues

## Time Horizons

- **Product Development time**
  - Web time
- **Research maturity time**
- Generation changeover time
- **Historic Epochs**
  - Civilisation advances
  - Evolutionary changes (Darwinian time)
  - Geological
  - Cosmological

## Engineering Vs Evolution

- How did speech evolve?
- Opposite ends of change processes
  - Strategy vs Tactics
  - Engineering has less foresight than we think
  - Engineering needs to evolve
    - products undergo a selection process
    - inventiveness does not stop with inventors

## Foresight in design

- Undesigned features; forced moves;
- Lack of design foresight
  - QWERTY phenomenon
  - Y2K problems
  - Calculator vs Telephone keypads
  - alphabets on phone keypads
  - Phone tariff structures

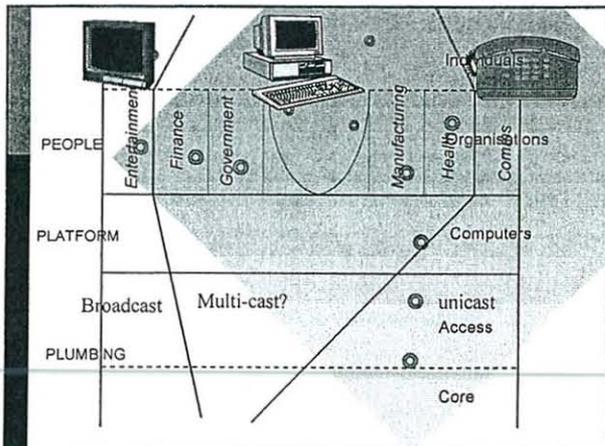
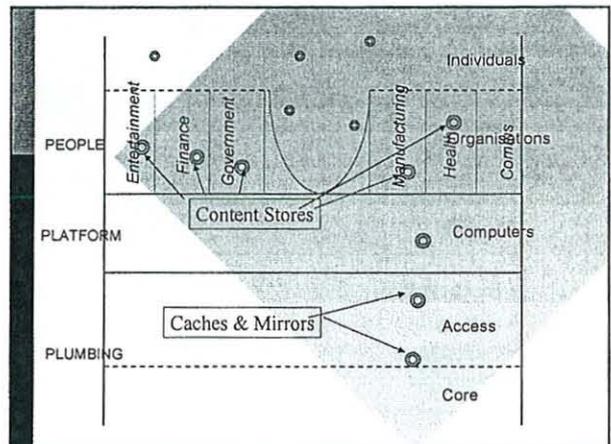
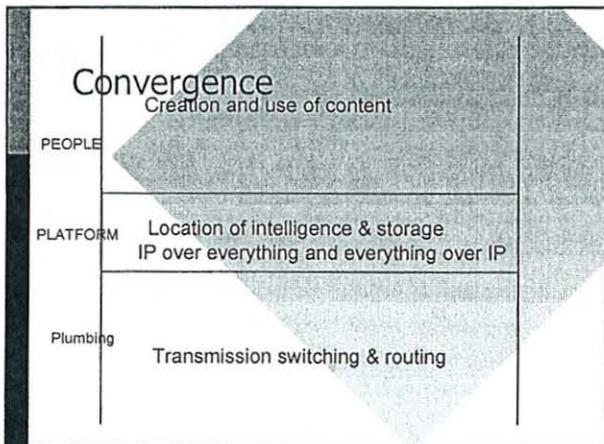
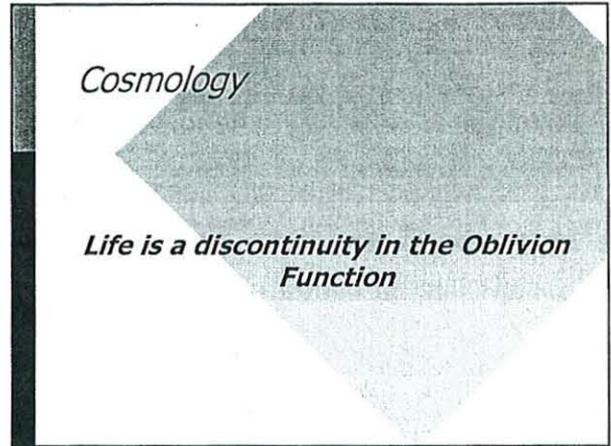
## Evolving convergence products & services

New converged product

Digital product with early convergence

Digital version of Analogue product

Analogue Product



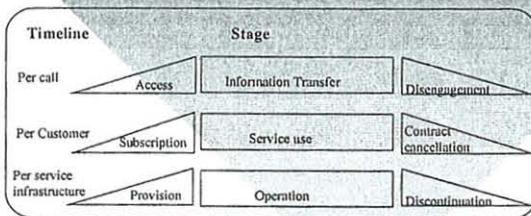
### Modalities of communications

- How
  - Letters
  - Postcards
  - Telephone
  - Radio
  - Television
  - Fax
  - E-mail
  - Voice-mail
- What
  - Provide information
  - Gather information
    - News
  - Education
  - Entertainment
  - Gossip
  - Alarms, emergencies
  - co-operative work
  - connected communities

### Economic (Business) Issues

- Sensitivity to tariff structures
- Positive Externalities
- Sensitivity to Churn
  - Affinity programs (& its management)
- New business expertise
  - Alliances & branding

### Quality of Service



### Bottlenecks to convergence

- Interaction & visualisation battleground
  - Complexity of devices
  - complexity of interactions
- Access Network battleground
  - The main reason for regulation
  - uneven market control compounded by externalities

### Opportunities (Challenges)

- Granularity of information gathered
- All manners of minor events can & will be monitored, collected & stored
  - number of web clicks taking place now
- More information than a human's ability to make sense of
- Summarisation approaches, Data mining
- WHAT ARE THE DANGERS? (electronic stalking)

### Social (Cultural) Issues

- Regulation content
  - deemed to be local (I.e. regional)
    - this implies correlation of cultural & Geographical boundaries
    - Multi-culturalism not catered for
- What is the impact of GII on the world's cultures?



## DISCUSSION

**Rapporteur:** Ian Welch

Professor Nygaard asked whether Professor Mamdani was not using science to describe his problem although Professor Mamdani had said he had difficulty in talking about computing science and preferred to talk about computing technology. Professor Mamdani said, for me science is definitely descriptive, whereas computing science is constructional rather than descriptive. When you are doing empirical study about informatics then it is science but when you are doing computing you are constructing a system and not analyzing it.

A participant asked whether Professor Mamdani believed in revolution rather than evolution. Professor Mamdani made the point that the way that people use technology is important - a clever manufacturer learns from how people who use technology and uses this in the process of redesign of the technology. He believes that this evolutionary process is more common and important than revolution.

Professor Mamdani said technology contains non-designed features that are similar to proto-features identified by evolutionists. In response Professor Dobson suggested that the features identified were not lack of foresight but engineering failure governed by the technology of the time. He suggested Y2K was an example of this. The high cost of memory had led to a bad design decision not a lack of foresight. Professor Mamdani pointed out that cost of memory may have been the original problem but people didn't address it even when cost of memory wasn't.

In response to discussion about difference between computing, telecommunications and media industries Professor Dobson made the point that there is a real difference between the underlying business models - service delivery, product delivery and content delivery. Professor Mamdani replied that these were just some of the differences that he would expand upon later in his talk.

Mr Maynard-Smith made the point that the Internet penetration figures were based on residential use whereas a lot of people have access from the workplace. If this was taken into account then the figure would be a lot higher. Professor Dobson added that you want to distinguish business from residential. Professor Mamdani said he is primarily thinking about residential use, as cultural change will be driven by residential uptake. He estimated that 60-70% of the population in the UK hasn't sent an email or had access to email. Professor Dobson expressed surprise at this figure and suggested the real figure was lower. In response Professor Nygaard said that in the countries with the highest penetration only 320 out of 1000 people have internet connection, the UK a little less and then a big drop. Professor Mamdani says that if you can raise the penetration then there will be a cultural change.

Professor Mamdani made the claim that people in the past were worried about using telephones for personal communication, or sentimental communication. Mr. Yapp suggested that the lack of privacy with human operators being in the loop caused a problem. Professor Nygaard suggested that the real problem was the cost that prevented people in the past. Professor Mamdani suggested that some modes were more suited to sentimental communication than others for example letters are better than email. Another participant said this is not quite right and has been proved by studies such as the Pittsburgh that easy access leads to use such as sentimental communication. Professor Nygaard suggested email is best used for back and forth communication as opposed to letters where it is about a subject and so is more composed. Professor Mamdani suggested that what was needed was to look at empirical studies of electronic communication.

