Summit on Visions for the Future of Communications

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Lisbon, Portugal
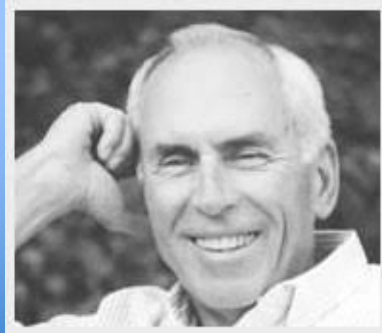
For Starters

- *"We tend to overestimate the effect of Technology in the short run and underestimate the effect in the long run." – Roy Amara 1972*

- *"We shape our buildings, and afterwards, our buildings shape us." – Winston Churchill 1944*

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Outline

- *Drivers*
- *Communications and Connectivity*
- *Convergence*
- *Economics*

Communications Drivers

- The Forces that stand out

  - "Deep Digitization"
    - Fuels Long term trend
    - Drives Demand for Communications
    - Forces integration and convergence – systems thinking
  - "Value of Mobility and Nomadicity"
    - Changes pattern of usage
    - Increases need for ubiquity
  - "Economics"
    - Battleground for Non Traditional Business Models
  - "Technological Advancement"
    - Need for continued investment in underlying fabric
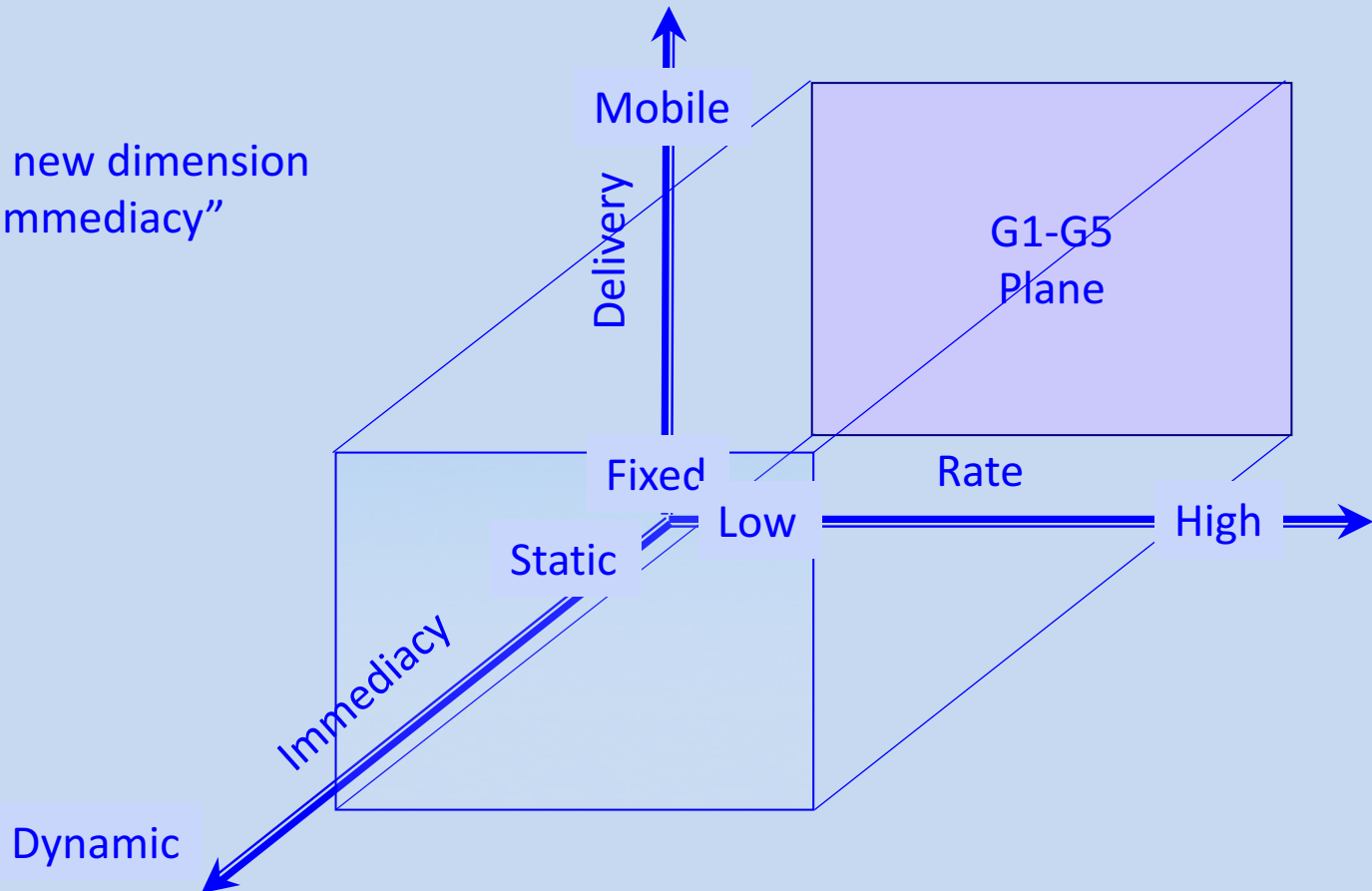   - Recognition of constraints and push for workarounds

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Communications Drivers

The new dimension
Is "Immediacy"

Mobile

Delivery

G1-G5
Plane

Fixed

Rate

Low — High

Static

Immediacy

Dynamic

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Communications Drivers

- Next steps
  - Automation and Autonomy
    - Loosely Coupled Constructs
    - Compose-able Systems
    - Orchestration
  - Trust, Security, Privacy and Assurance
    - Rethinking Control Planes
  - Shared resources
    - Spectrum
    - Efficiency
    - Computing and storage
    - Power

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Communications and Connectivity

- Important Aspects
  - Diversity of Technologies
  - Hierarchy
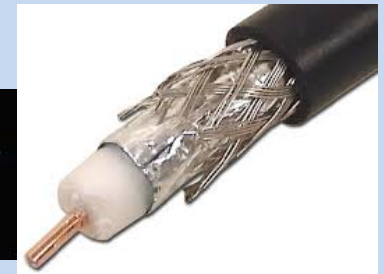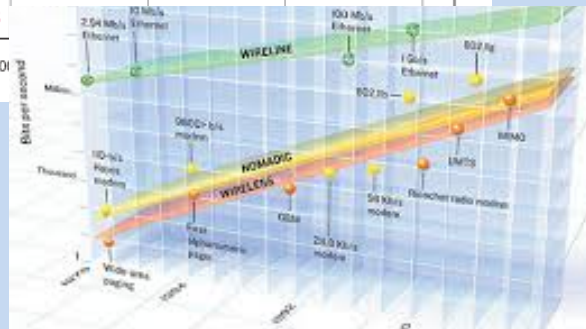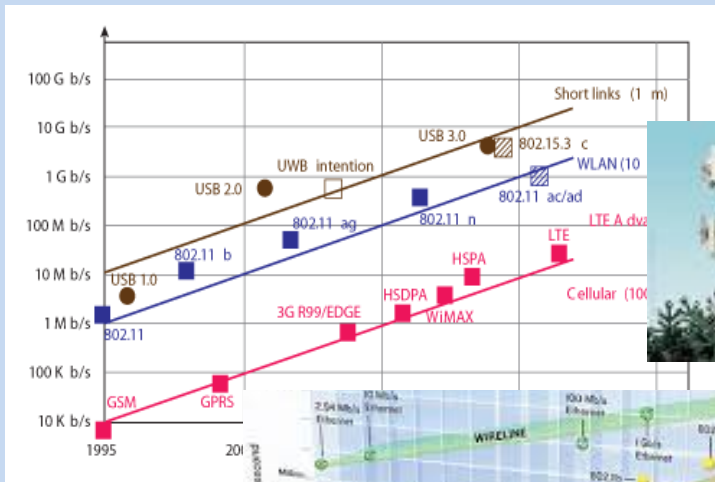 - Heterogeneity of Solutions
  - Recognizing Constraints

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Communications and Connectivity

- ## Diversity of Technologies

Communications and Connectivity

- ## Hierarchy and Heterogeneity
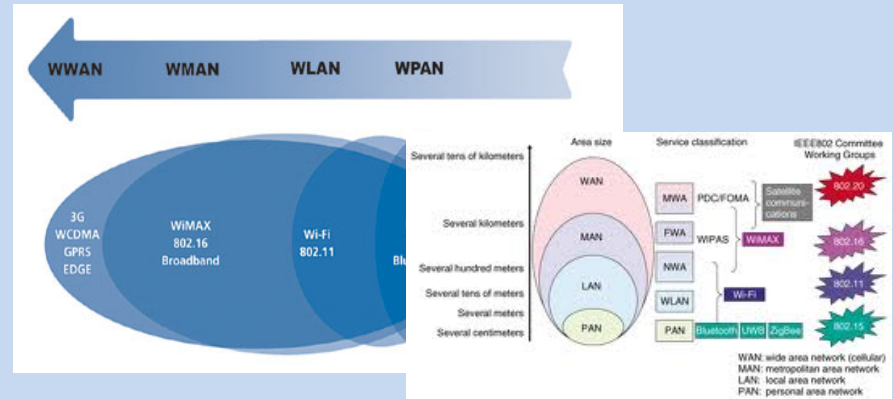
Convergence

- Communications and Connectivity are not a stand alones in value creation – the question is what area dominates a specific solution or application:
  - Computing
  - Storage
  - Software
  - Interfaces
  - Sensors
  - Actuators
  - Power and Energy
  - Design and Life Cycle Technologies
  - Integration Technologies

  These all play a role – need and necessity for systems thinking of where Communications fits in.
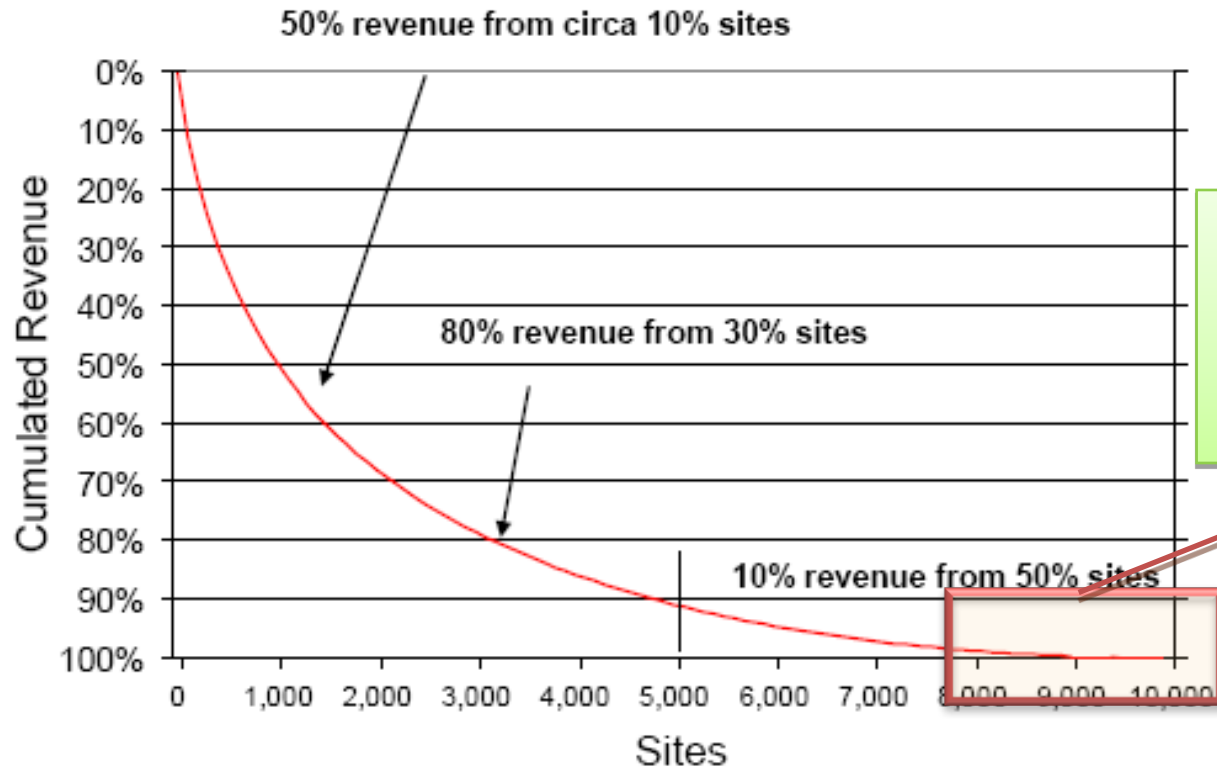
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Economics

- Investments and what's behind them
- Formation of large markets
  - Economies of scale
  - Long Lived Powerful Protocols
- Role of Business Models
- Following where value comes from
- Meeting Social Needs

Economics

From Vannu Bose

Summary

- Need to always keep the bigger picture in mind
- Emphasis on Systems Thinking – Economics Included
- Working on what's next after IP
- Continuing investment in the physical fabric

- Preparing the core for a much deeper level of softwarization!

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