



# MIT Communications Futures Program

*A cross-cutting examination of the  
telecommunications industry*

# Framing Today's Discussion

- The Internet is going through another set of growth pangs.
- Recent security issues, the flood of media traffic and strained relationships between content providers and ISPs, the maturing Internet of things, and the rise of mobile networks suggest we may be reaching a tipping point where people are thinking about the Internet in fundamentally new ways.
- Given the extent to which the Internet has become embedded in just about every aspect of society, the implications of these changes are at a scale not seen before.

# Barriers to the future

- Are we there yet? Why not?
- A range of issues:
  - We have not thought of it yet.
  - It costs lots of money.
  - Technology is not ready (waiting for Moore's law).
  - Regulatory barriers.
  - Coordination problems.
  - Mis-aligned interests.

# Our vision

- Our vision is to build guiding theories about how communications will work for people and industry. Our means is *roadmapping* – *exploring and analyzing the options and their impact*
- A range of issues:
  - We have not thought of it yet.
    - The Media Lab loves innovation and creative thinking.
  - It costs lots of money.
    - We can model and describe the problems.
  - Technology is not ready (waiting for Moore's law).
    - We can explain and predict.
  - Regulatory barriers.
    - We engage regulators and produce evidence-based papers.
  - Coordination problems.
    - The Sloan School studies industry structure.
  - Mis-aligned interests.
    - We can bring the issues into focus, and perhaps find ways to align them.

# Our members

- The CFP is a partnership between university and industry. Our industry partners include:
  - Cisco
  - Comcast
  - NBCU
  - ESPN
  - Nokia Solutions and Networks
  - Telecom Italia
  - TV Globo
- We invite other collaborators to join our working groups as appropriate.

# Leadership

An interdisciplinary team from MIT heads the program

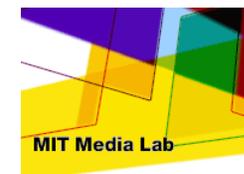
- Charles Fine, Chrysler LFM Professor, MIT Sloan School of Management
- David Clark, Senior Research Scientist, MIT Computer Science and Artificial Intelligence Laboratory
- Andrew Lippman, Senior Research Scientist, MIT Media Laboratory



Charles Fine



David Clark



Andy Lippman

# Operations

## Working Groups

- Industry participants engage closely with faculty in the research and provide valuable input into the direction and content of the program.
- Co-chaired by faculty and industry sponsors.
- Groups are launched as new issues emerge and disbanded as issues become less relevant or research is completed.
- Regular meetings (face-to-face and/or concall)

## Member meetings

- Plenaries plus workshops
  - Oct 1-2/14 – CFP All-members meeting
- Held at MIT & member locations
- Working group reporting, guest speakers, workshops

## Research

- All research (papers & presentations) are available to CFP members on our Web site: <http://cfp.mit.edu>

# CFP Value

- **Insight and analysis:** MIT researchers develop ideas in collaboration with our industry partners. We carry these through to create models and detailed analyses.
- **Exchange of ideas among academia and industry:** Our members have the opportunity to workshop specific issues they are grappling with inside their organizations with the larger group. This makes CFP an ideal place to test new ideas.
- **Validation:** The ideas developed through CFP activities are captured in papers that our member participants can distribute internally.
- **Social networking:** Through our various meetings, our members have the opportunity to connect with academics, policy makers, and industry peers.

# Current Working Groups

## Mobile Broadband

*Dave Clark and Bill Lehr*

- Mobile broadband value chain and ISP economics, new pricing models, and engineering for efficiency.

## Spectrum

*Bill Lehr & Dave Clark*

- Dynamic Spectrum Access (DSA) sharing models

## Value Chain Dynamics

*Charlie Fine & Natalie Klym*

- New business models, focus on future of television/video, system dynamics modeling of industry disruption

## Ultimate Media

*Andy Lippman*

- Reimagining visual media in a world of extreme connectivity, processing, visual presence, scale and scope, social connectedness.

## Privacy and Security

*Karen Sollins*

- Examine the value of authenticated identity inside the network, current focus on “trust frameworks”

# Today's Agenda

- 9:00 Introduction to CFP (Dave Clark)
- 9:15 Working group presentations
- Mobile Broadband: Towards a Sustainable Future (Dave Clark)
  - Trust Frameworks (Karen Sollins)
  - Toward More Efficient Spectrum Management (Bill Lehr)
  - Value Chain Dynamics in the Television Industry (Charlie Fine)
  - Ultimate Media (Andy Lippman)
- 10:50 Q&A / Wrap
- 11:00 Ultimate Media demos (3rd Floor)
- 12:00 Lunch (3<sup>rd</sup> Floor)