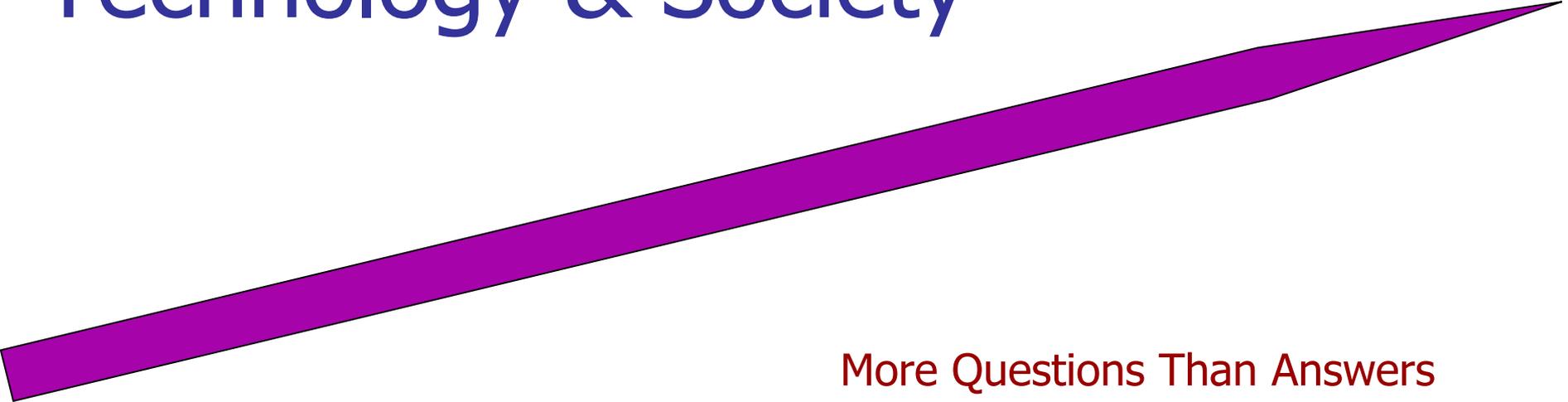


Technology & Society



More Questions Than Answers

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Advances in technology play a crucial role in shaping our behavior and way of life

Technologies that shaped our society

- Fire
- Writing
- First book, press, commodity press, copy machine, laser printer
- Wheel, wagon, steam engine, train, ship, car, airplane
- Phone, radio, TV, cell phone
- Consumer electronics

Technology and Sociology

- Mapping social communication on top of technology communication
- Effects of technology on group communication
- Social behavior of technology and technology adoption
- Technology aspects give rise to different viewpoints of life
- Technologies that change our community

Technology Advancements

- We are facing many technology revolutions; some of them might have huge impact of our lives and we need to understand them!
- Advances in numerous technologies have a potential of pushing our society in many different directions. We need to know where!
- Not sure that we understand the impact

More questions than answers

Specific current technologies and their impact on society

- Big-Bandwidth Pipes
 - Video conferencing
 - Virtual Presence (Holograms)
 - Last Mile - Optical Network availability
- Big Disk availability
 - Video files, storage capacity
- Huge Computation Power
- Silicon and Consumer Electronics
- New applications

Big Bandwidth Pipes

- How this affects our social interactions?
- What if Last Mile is solved?
 - Optical, FTH, MEF, EFM, RPR, CDM.....
 - Dedicated connection (circuit)
- Video Conferencing
 - Does not really work adequately (yet)
 - TV quality – 2.2Mbs , DVD 4.5Mbs (each direction)
- Virtual Presence – (not science fiction)
 - 8Gbs dedicated

What is the impact on our communication pattern?

Bandwidth is Becoming a Commodity _

- Price per bit went down by 99% in the last 5 years on the optical side
 - This is one of the problems of the current telecom market
- Optical Metro – cheap high bandwidth access
 - \$1000 a month for 100FX (in major cities)
 - This is less than the cost of T1 several years ago
- Optical Long-Haul and Metro access - change of the price point
 - Reasonable price drive more users (non residential)
- DWDM – Single fiber can transmit more bandwidth than the entire Internet

Big Disk Availability

- What type of usage we will do with unbounded disks?
- Currently disk cost is about \$700/TB
- What type of applications can we use it?
- Video files – movie 1GB, - 70 cents store, in 5 years – 0.3 cents
 - How will this changes the use of personal storage?
 - What type of new things will we store if the disk is so inexpensive?

What are the implications of having very large storage?

Huge Computation Power

- How does powerful computation affect our ability in solving real life problem?
- We have massive amount of computation in our hands
- We have amount of computation on our desk that is larger than a supercomputer 15 years ago
 - More computation in our watch than Apollo 11 (\$0.01)
- How does this affects us?
- Matching DNA? Bioinformatics? Weather prediction?

How does powerful computation affects in solving real life problems?

Silicon and Consumer Society

- Advanced technologies derived from Silicon
- Moor's Law still working
- We can add much more functionalities into silicon
- Price point – consumer electronics
- Whole society driven form consumer electronics
- The cost of new gadgets – commodity

How does fundamental silicon material change our economy?

Application Adoption

- New innovations allow simple and easy introduction of new and sophisticated applications.
 - Web itself
 - P2P apps
 - Recording Industry
 - Open Source
 - Web services

Why do we adopt new applications so readily?

Summary

- Advances in technology play a crucial part in shaping our behavior and way of life
- History showed that technologies changed our behavior pattern
- Some current technologies and their impacts
 - Bandwidth, computation, storage, silicon
- Applications – Will we drive them or will they drive us?

“Blindsided by Technology”

- When a base technology leaps ahead in a dramatic fashion relative to other technologies, it always reshapes what is possible for a better society

*It blindsides
us all...*