

Teknologitrender

Silvija Seres
Hamar Utvalget
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Web 2.0 is definitely here



E.g.: Bloomberg Philanthropies Mayors Challenge 2014:
155 applying cities come from 28 countries and
represent over 71 million Europeans

63% involve technology

20% involve co-design

16% involve volunteers

15% involve open / big data

14% involve open innovation

12% involve gamification



Moore and friends

Moore's Law: the number of transistors that can be placed on an integrated circuit chip is doubling every two years

"The greatest shortcoming of the human race is our inability to **understand the exponential function**"

E.g. pixels per dollar in digital cameras

But also mobiles, tablets, nanocomputers, wearables, drones, cars, ...

Our cultural systems rapidly incorporate computer technology into our thinking, philosophy and psychology

Gartner Top 10 Strategic Technology Trends

For 2013

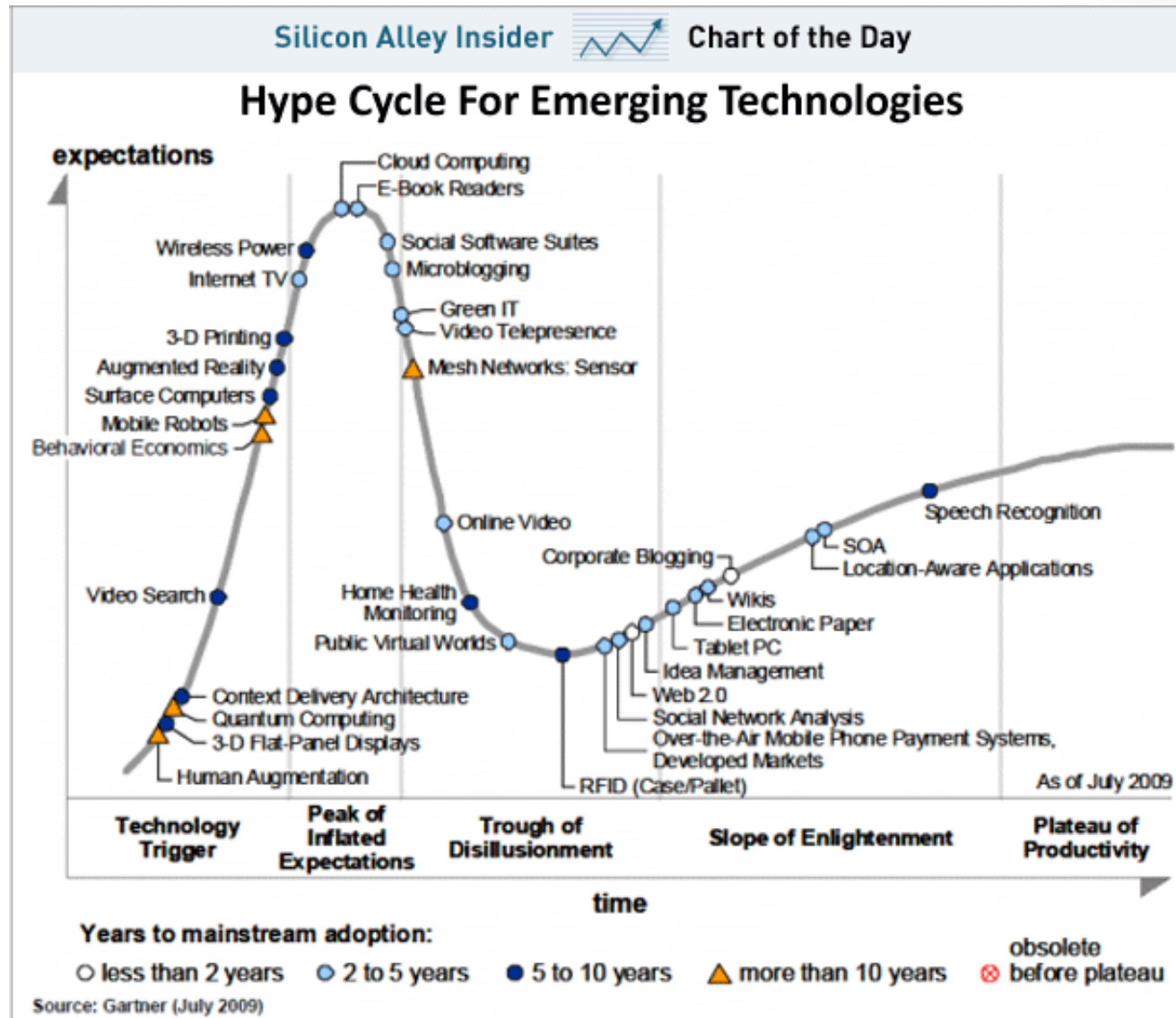
1. Personal Cloud
2. Hybrid IT & Cloud Computing
3. Mobile Devices Battles
4. Mobile Applications & HTML5
5. Enterprise App Stores
6. Internet of Things
7. Strategic Big Data
8. Actionable Analytics
9. Mainstream In-Memory Computing
10. Integrated Ecosystems

For 2014

1. Personal Cloud
2. Hybrid cloud & IT as service broker
3. Cloud/client app architecture
4. Web-scale IT
5. Enterprise mobile platforms
6. Mobile apps and eco systems
7. The Internet of everything
8. Smart machines
9. Software-defined everything
10. 3D Printing

Cloud computing

Source:
Gartner



Technology cycles



Mary Meeker
Partner, Kleiner Perkins
Caufield & Byers

**Technology Cycles – Still Early Cycle on Smartphones + Tablets,
Now Wearables Coming on Strong, Faster than Typical 10-Year Cycle**

Technology Cycles Have Tended to Last Ten Years

*Mainframe
Computing
1960s*



*Mini
Computing
1970s*



*Personal
Computing
1980s*



*Desktop Internet
Computing
1990s*



*Mobile Internet
Computing
2000s*



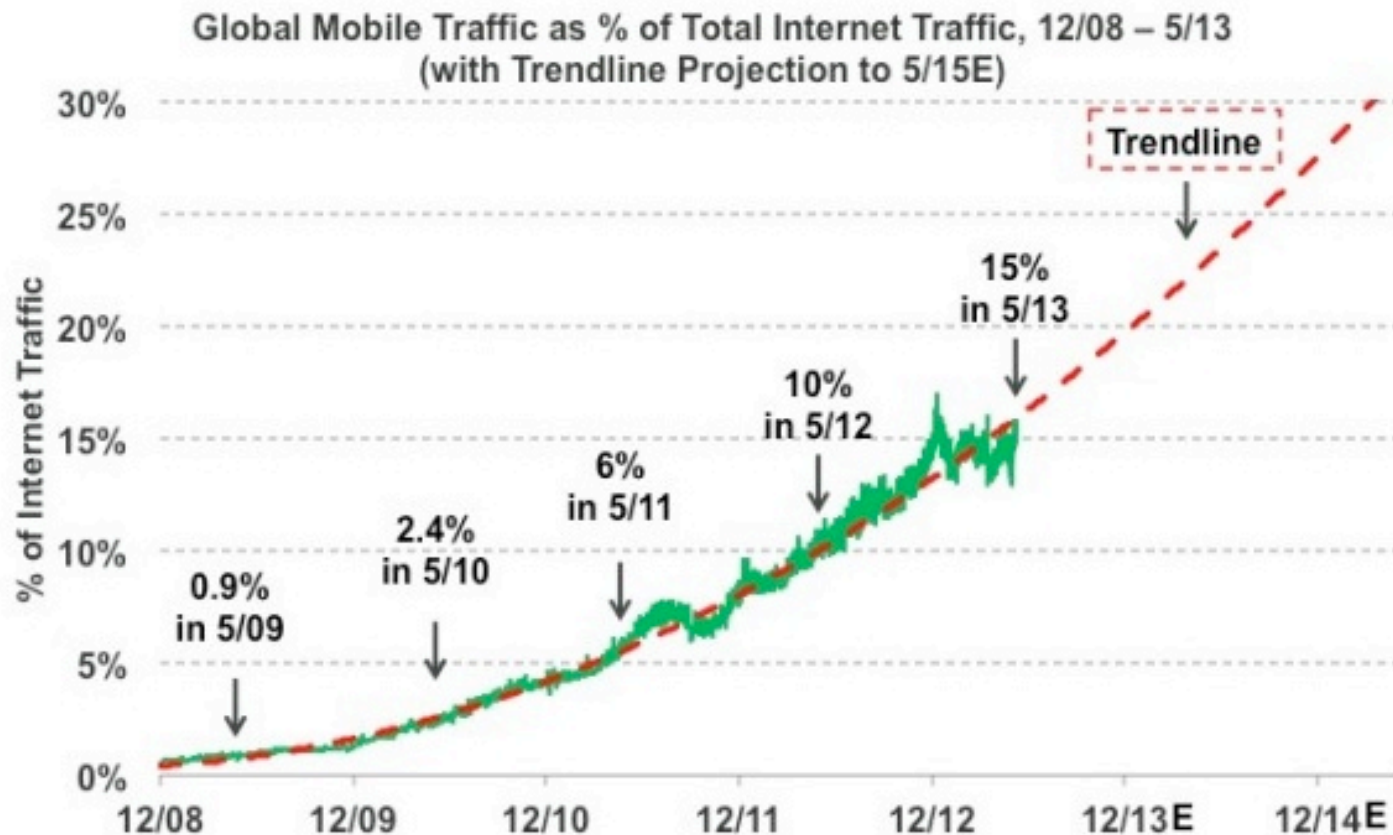
*Wearable /
Everywhere
Computing
2014+*



Others?

Mobile traffic

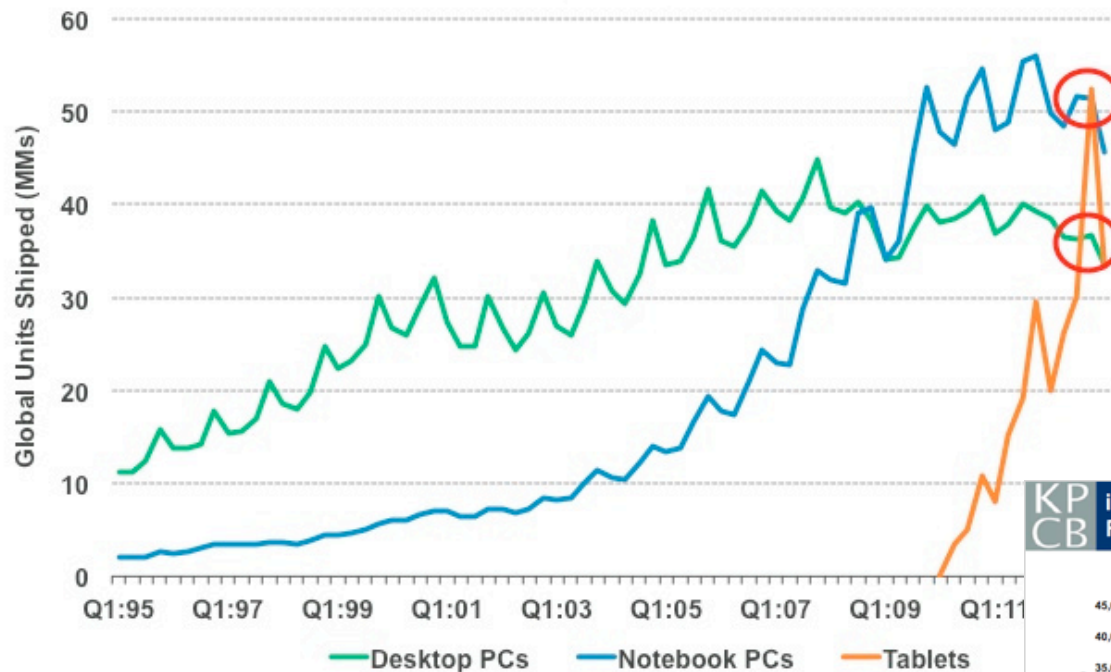
Mobile Traffic as % of Global Internet Traffic =
 Growing 1.5x per Year & Likely to Maintain Trajectory or Accelerate



Tablets

Tablet Shipments =
Surpassed Desktop PCs & Notebooks in Q4:12, < 3 Years from Intro

Global PC (Desktop / Notebook) and Tablet Shipments by Quarter
Q1:95 – Q1:13

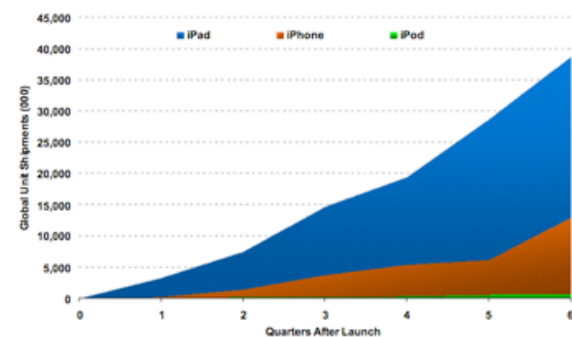


KPCB

Note: Notebook
Source: Katy Huberty, Ehud Gelblum, Morgan Stanley Research. G

KPCB iPods Changed Media Industry... iPhones Ramped Even Faster... iPad Growth Leaves "Siblings" in Dust

First 6 Quarters Cumulative Unit Shipments, iPod vs. iPhone vs. iPad



Source: Apple, as of Q2:11 (6 quarters post iPad launch).

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Big data

Big data: analyzing large volumes of rapidly changing structured and unstructured social and enterprise data

Tomorrow's winning players, we expect, will be the sector's most customer-centric companies. They will have developed **a truly deep understanding of their customers** and will be able to satisfy their wants and needs in a manner that meets, if not exceeds, expectations in all critical areas, including product selection and availability, interaction experience, service quality, channel accessibility, and communications.

Wearables

Sensor-Enabled Wearable Attributes

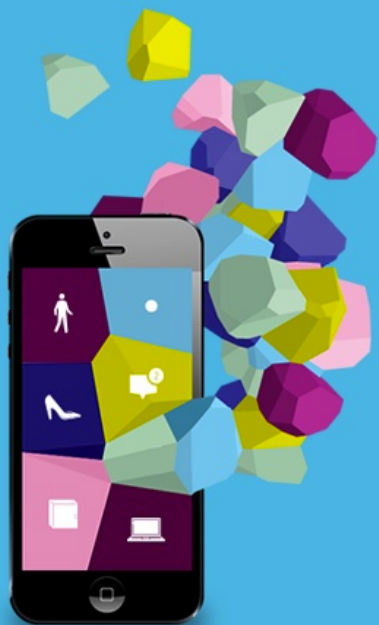


Internet of things



An OS for the physical world:

An Estimote Beacon is a small, wireless device, sometimes also called a 'mote'. When placed in a physical space, it broadcasts tiny radio signals to smart devices. Think about it as a very small lighthouse. Smartphones that are in range are able to 'hear' these signals and estimate their location very precisely, as well as to communicate with the beacon to exchange data and information.

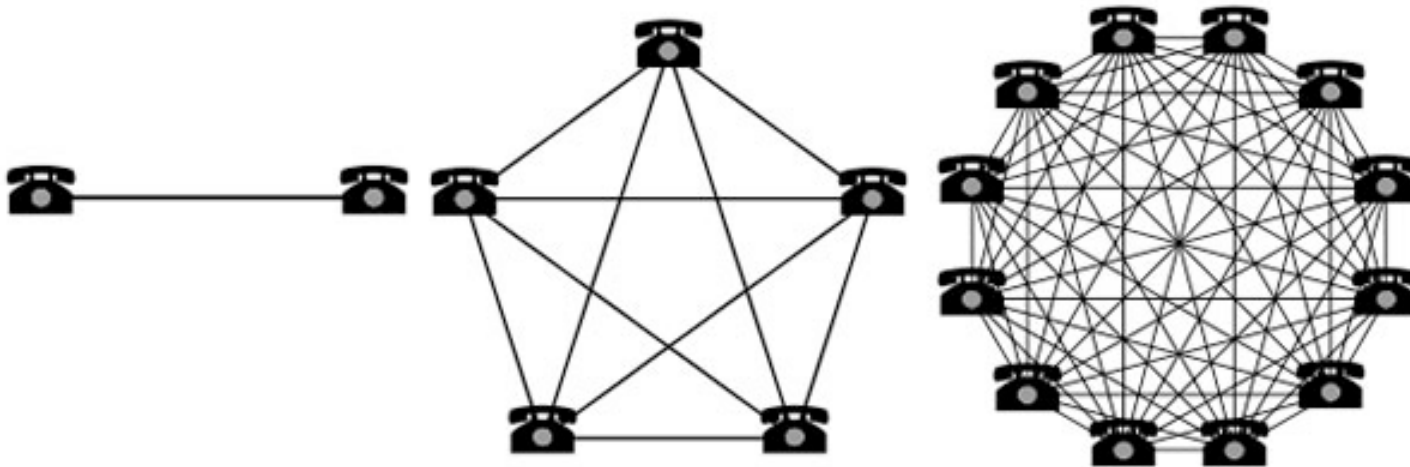


Four geek laws worth keeping in mind

1. Amara's Law: "We tend to overestimate the effect of a technology in the short run and underestimate the effect in the long run"
2. Brooks' Law: "Adding manpower to a late software project makes it later"
3. Thackara's Laws: "If you put smart technology into a pointless product, the result will be a stupid product"
4. Reed's Law: "The Value of a Network Increases Dramatically When People Form Subgroups for Collaborations and Sharing"

Metcalfe vs Reed, 1/2

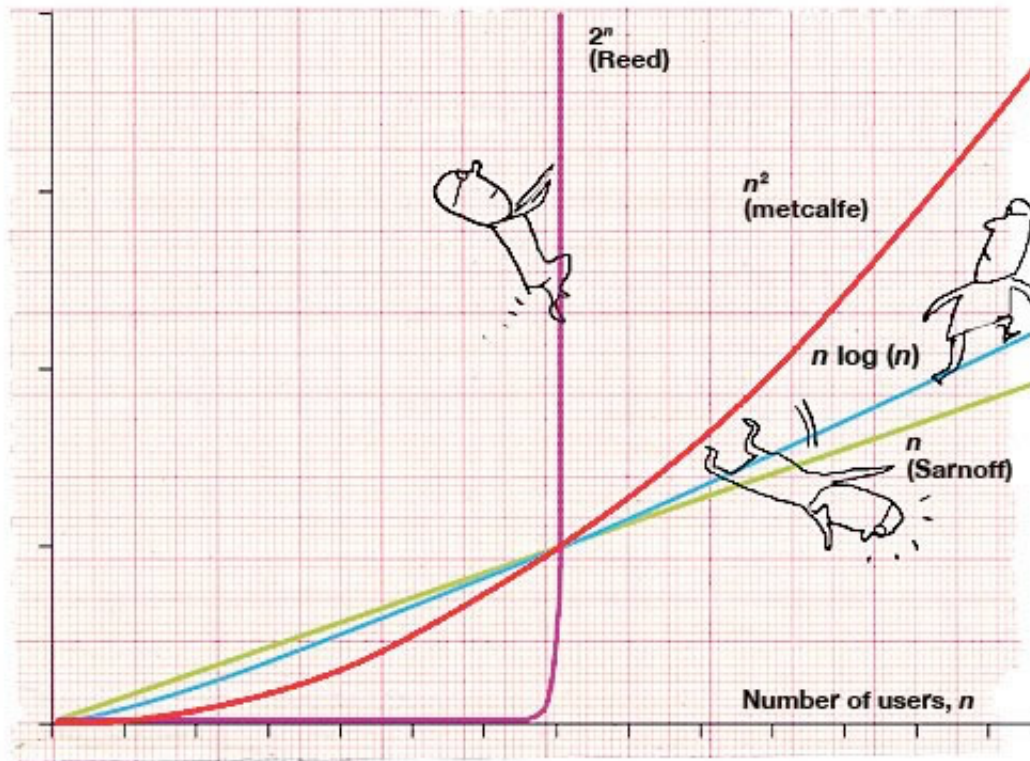
"Metcalfe's Law" or network effect: The value of a network is proportional to n^2 , where n is the number of users (1993)



Metcalfe vs Reed, 2/2

Reed, 2001: three different types of networks:

1. one-to-many (broadcast network or Sarnoff network, like TV and radio networks)
2. one-to-one (transactional network or Metcalfe network, such as emails and instant messaging)
3. group-forming network (GFN or many-to-many)



Metcalfe's law understates the value of the third type of network. **GFNs actually increases exponentially with the number of possible sub-groups.** The value of this network is roughly $2n$, where n is the number of participants.

The Road To Success



what people think
it looks like



what it really
looks like