

Pipes and processors

Rory Macmillan

Arabcom

Beirut 29 May 2009

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Internet 110%

US\$ 300k for 3 screens + decor

Cost savings, productivity improvements, and environmental benefits from business trips avoided with TelePresence-enabled meetings over 5 years

Assuming:

- 5.5% of meeting participants avoid travel (assuming TelePresence meetings replace mostly one-day, two-day, and three-day trips)
- Average cost per trip is \$1,110 for domestic trips, \$3,171 for international trips

CISCO annual summit for 3,100 executives

“Intensifying Cisco's internal collaboration platform we saved almost US\$700 million in 2008 alone”

Old

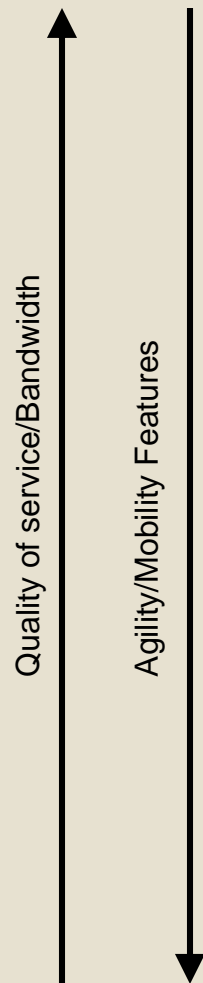


New



Networks – fixed-mobile access convergence

Converged Fixed-Mobile Architecture



MOBILE

MAN $\leftarrow 1000+m \rightarrow$

Macro cells 10^4 (GPRS, UMTS)

NOMADIC

LAN $\leftarrow 100m \rightarrow$

Micro cells 10^{5-6} (IEEE 802.11a, IEEE 802.11b, IEEE 802.11g)

COLONIST

PAN $\leftarrow 10m \rightarrow$

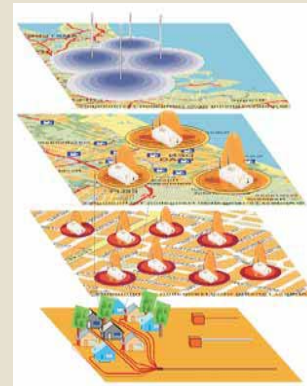
Pico cells 10^7 (Bluetooth, UWB)

WIRELINE

Copper

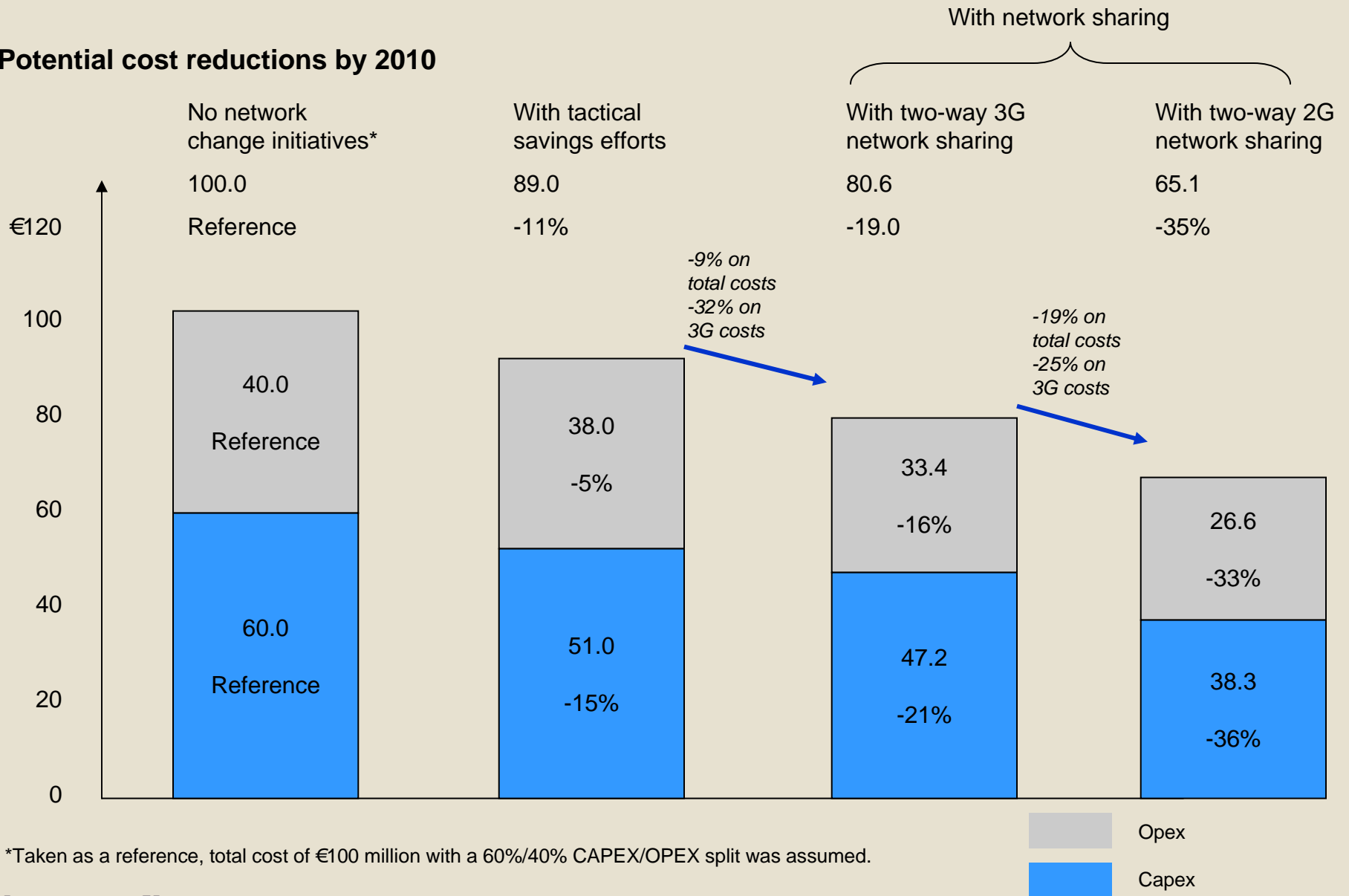
Coaxial

Fiber



Infrastructure sharing – drivers of voluntary sharing

Potential cost reductions by 2010

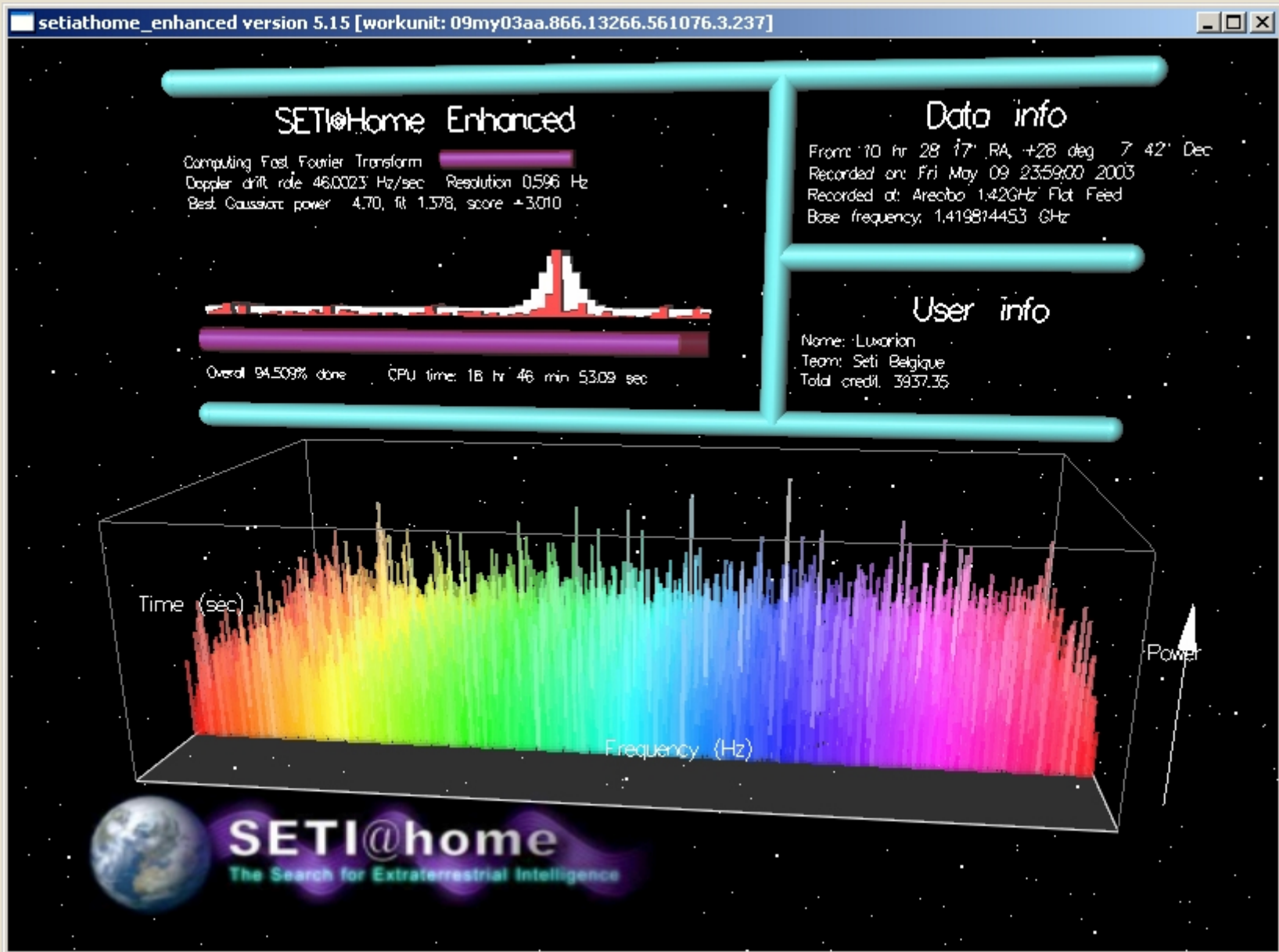


*Taken as a reference, total cost of €100 million with a 60%/40% CAPEX/OPEX split was assumed.



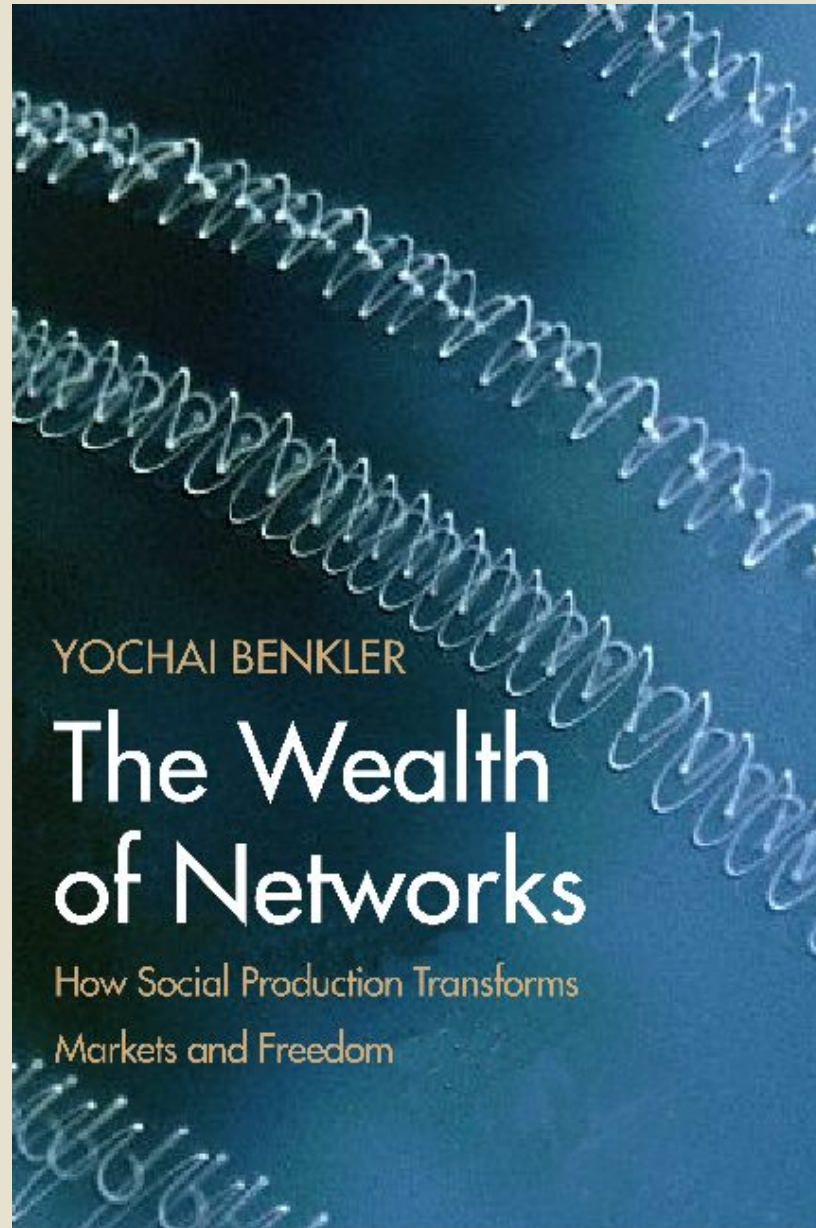
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“When the network becomes as fast as the processor, the computer hollows out and spreads across the network”

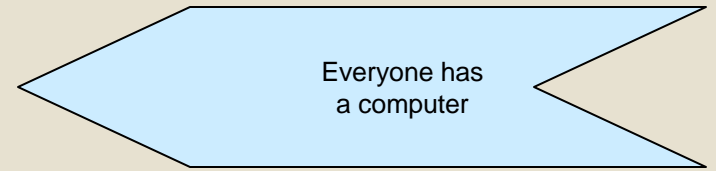
– Eric Schmidt



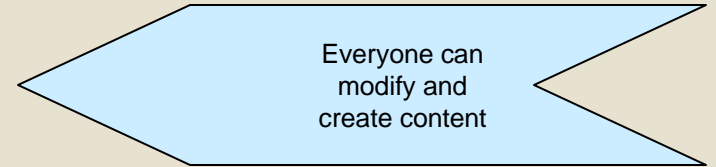
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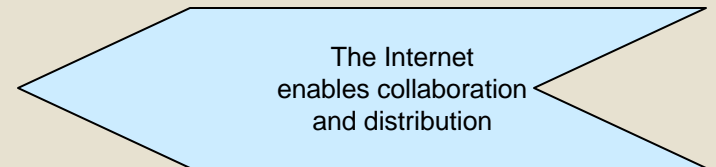
First, the **physical machinery** necessary to participate in information and cultural production is almost **universally distributed** in the population of the advanced economies.



Second, the primary **raw materials in the information economy**, unlike the physical economy, are [**freely available**] public goods – existing information, knowledge, and culture.



Finally, the Internet provides a **platform for distributed modular production** that allows many diversely motivated people to act for a wide range of reasons that, in combination, cohere into new useful information, knowledge, and cultural goods.



Yochai Benkler

The Wealth of Networks



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- Emirates NBD Al Barsha Data Center, Tier III
- IBM data center built April 2008 for Telecom Egypt (“big green”)
- Injazat Data Systems JV between Mubadala Development Co. and EDS, an HP company, owner of the first Tier IV



**THE
BIG SWITCH**

**REWIRING THE WORLD, FROM
EDISON TO GOOGLE**

NICHOLAS CARR

*author of *Does IT Matter?**

Electricity and computing share a special trait that makes them unique even among the relatively small set of general purpose technologies: they can both be delivered efficiently from a great distance over a network.

Nicholas Carr
The Big Switch



- access and usage restrictions
- regulatory
 - portability
 - openness and interoperability
- security, privacy, anonymity
- reliability and liability
 - cloud customer data
 - third party data
 - cloud provider data
- jurisdictional issues



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Google floating data center

