

20 Years IETF - Innovations for a Global Market

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A Global Powerhouse

Siemens AG: Worldwide figures for fiscal 2005¹ (U.S. GAAP²)



Net Income: \$2.8B
Group Profit from Operations: \$5.9B



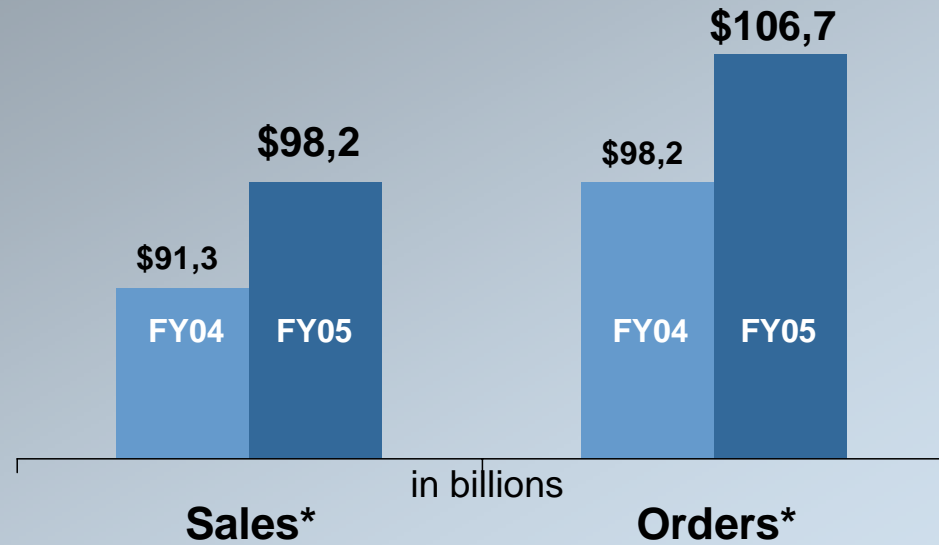
460,000 employees worldwide



47,000 employees and \$6.6B dedicated to global R&D



Ranked 2nd in its industry in *Fortune's* 2006 "America's Most Admired List"



¹Fiscal Year October 1 – September 30,

Siemens USA

Key statistics for fiscal 2005 (U.S. GAAP)



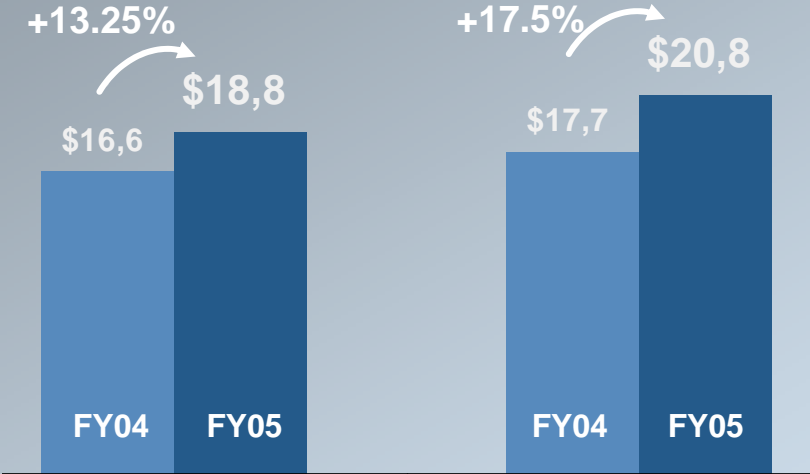
70,000 employees in all 50 states



6,945 employees in R&D



More than 9B€ spent on approx. 30 acquisitions in the past 18 months**



Sales* in billions Orders*



* Sales/Orders by U.S. Operating Companies exclusive of transactions with affiliated companies ** As of 06-30-06

A new heavyweight will arise...

NOKIA

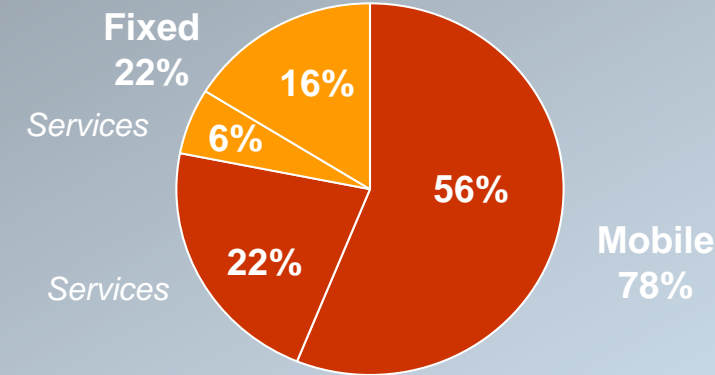
Networks

Revenue 2005: €6,6

- Wireless
- Wireline
- Services



Nokia Siemens Networks



Revenue CY 2005: €15,8 Bn.
Headcount: about 60.000

SIEMENS

Com Carrier

Revenue 2005: €9,2

- Mobile Networks
- Fixed Networks
- Carrier Services



21 Attendees at the 1st IETF meeting in San Diego 16-17 January 1986



Braun, Hans-Werner	U. of Mich.
Brescia, Mike	BBNCC
Callon, Ross	BBN Labs
Chiappa, Noel	MIT/Proteon
Eldridge, Charles	Sparta
Gross, Phill	MITRE
Hinden, Robert	BBNCC
Mathis, James	SRI
Mills, David (Chairman)	Linkabit
Nagle, John	Ford Aerospace
Natalie, Ronald	BRL
Rokitansky, Carl	DFVLR
Shacham, Nachum	SRI
Su, Zaw-Sing	SRI
Topolcic, Claudio	BBN Labs
Zhang, Lixia	MIT-LCS
Clark, David	MIT-LCS
Corrigan, Mike	DCA
Deering, Steve	Standford
Means, Robert	M/A Com
St Johns, Mike	DCA (B612)

Telecommunications 20 years ago -- Computers start to talk over phone lines

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Acoustic Modem 1981 –
Anderson Jacobson
300 Bd



Acoustic Modem 1989 –
CTK
1200 Bd FDX

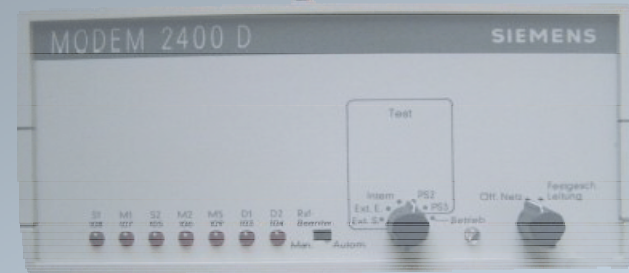
Acoustic Modem 1989 –
Dataphon
300 - 2400 Bd FDX
“Datenföhn”



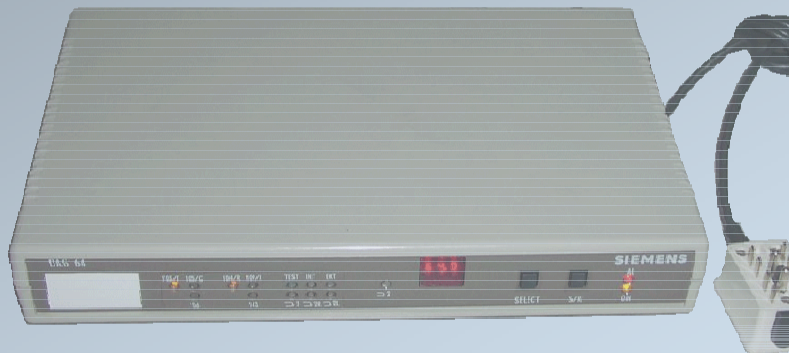
Also professional users were guests in a voice network



Modem N10 –
Siemens 1977
V24, synchron, 9600 Bd

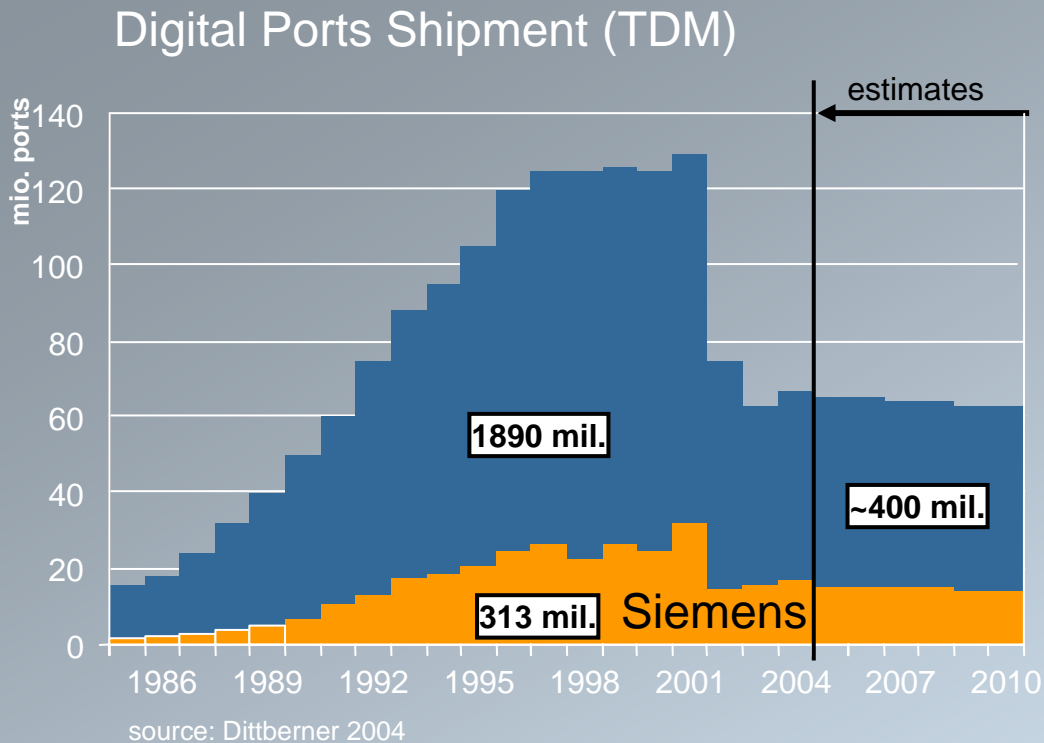


Modem 2400 D –
Siemens 1985
2400 Bd



Modem DAG 64 –
Siemens
Datex-P X.25

Digital voice switches was a booming business until ...



» **Siemens is leading supplier**

- 17% market share of shipments 1985 - 2004
- 25% market share of shipments 2004
- Analysts expect a steady demand above 60 mio. Ports p.a. until 2010

Siemens with largest installed base and more than 350 customers in 110 countries.

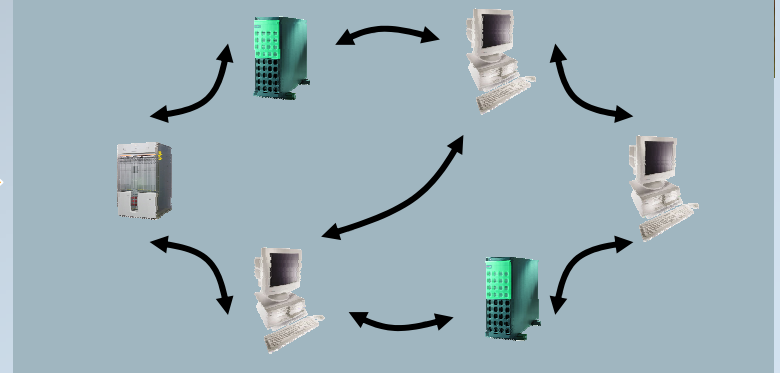
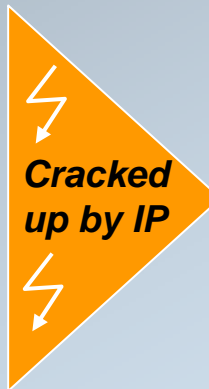


... Moore's Law and IP cracked up strong vertical industry

"Island of the Mighty"

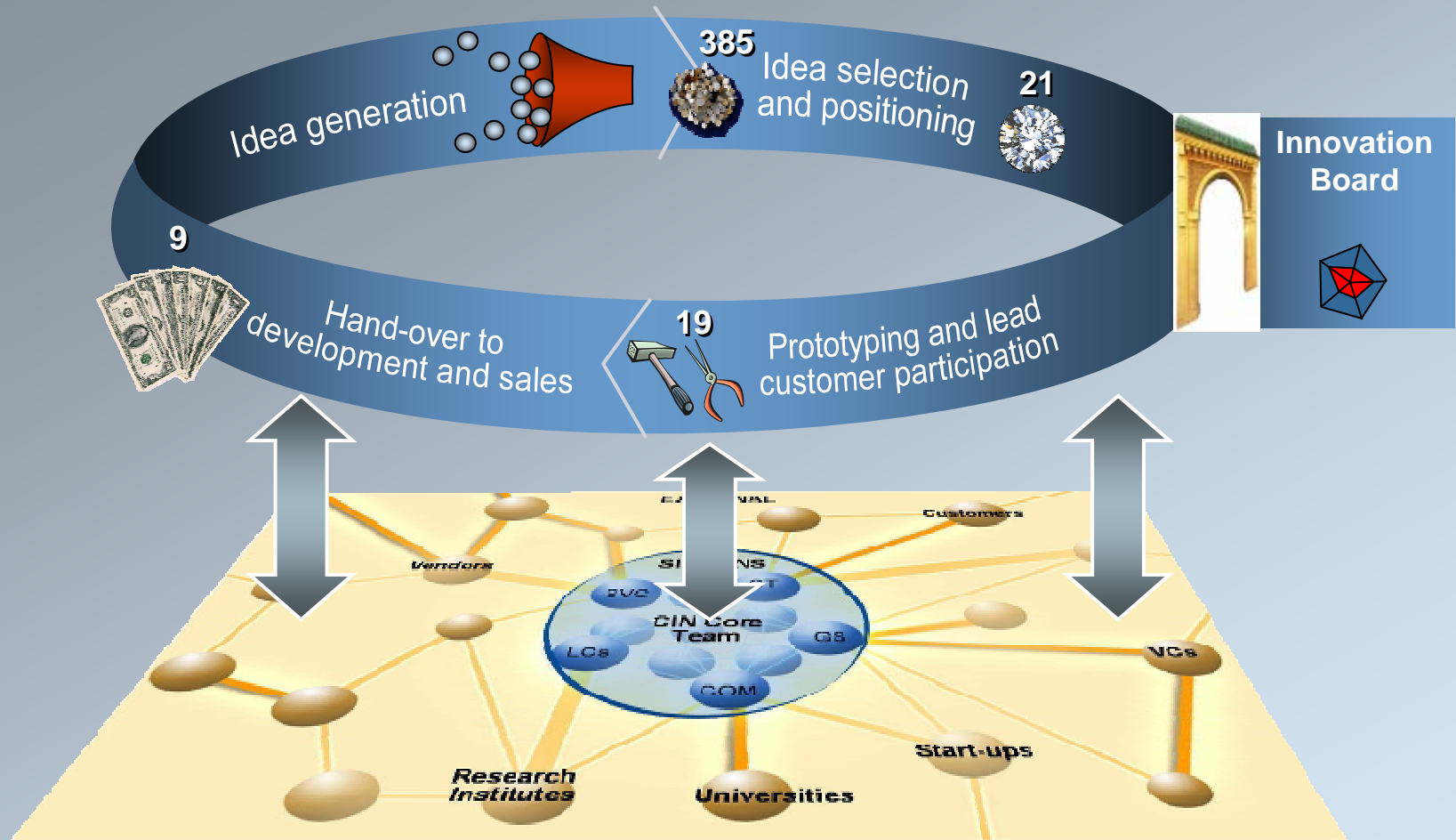


"Continent of the Innovators"



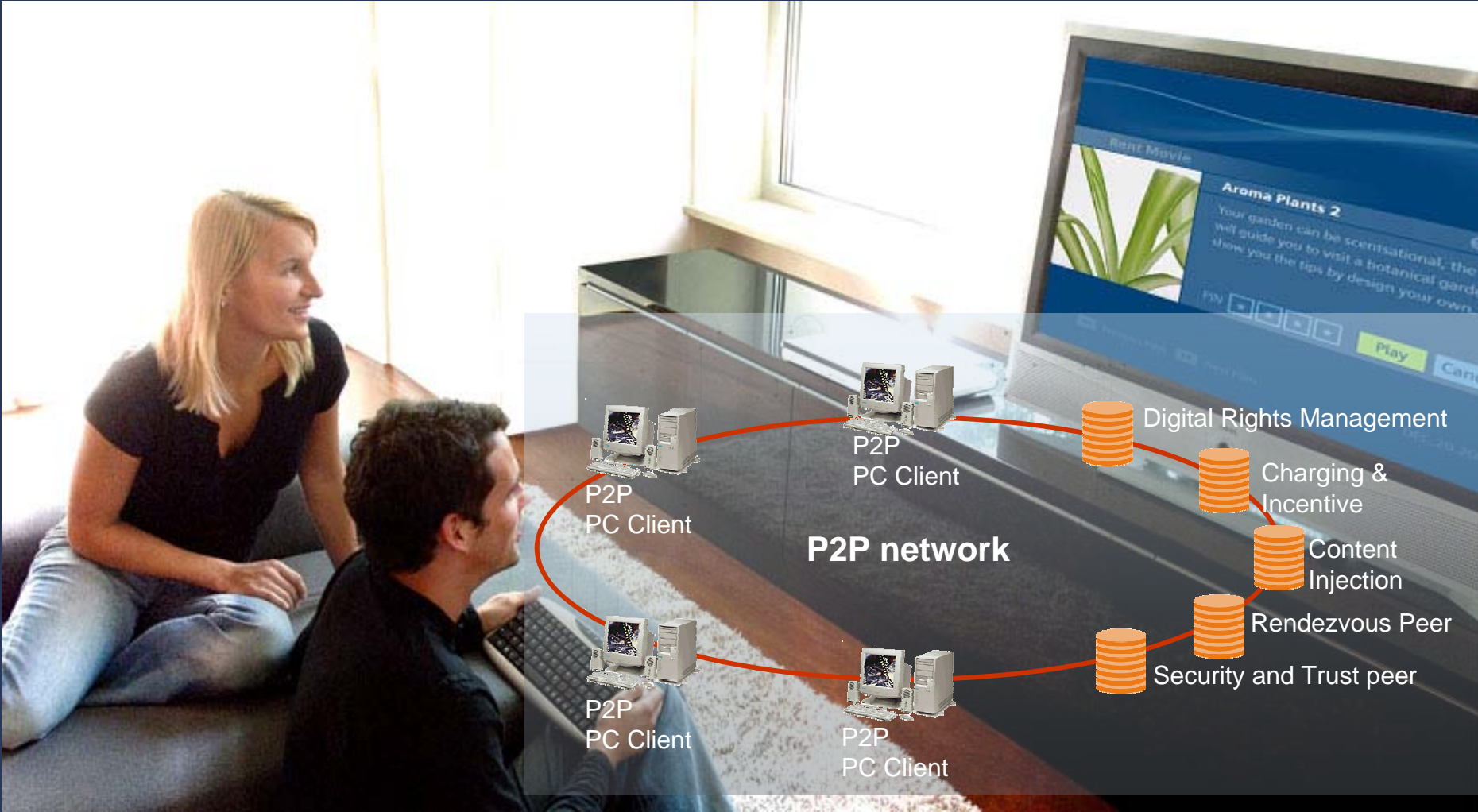
Source: Com CD

Provide new Product Ideas and bring them to new business within 2 - 3 years



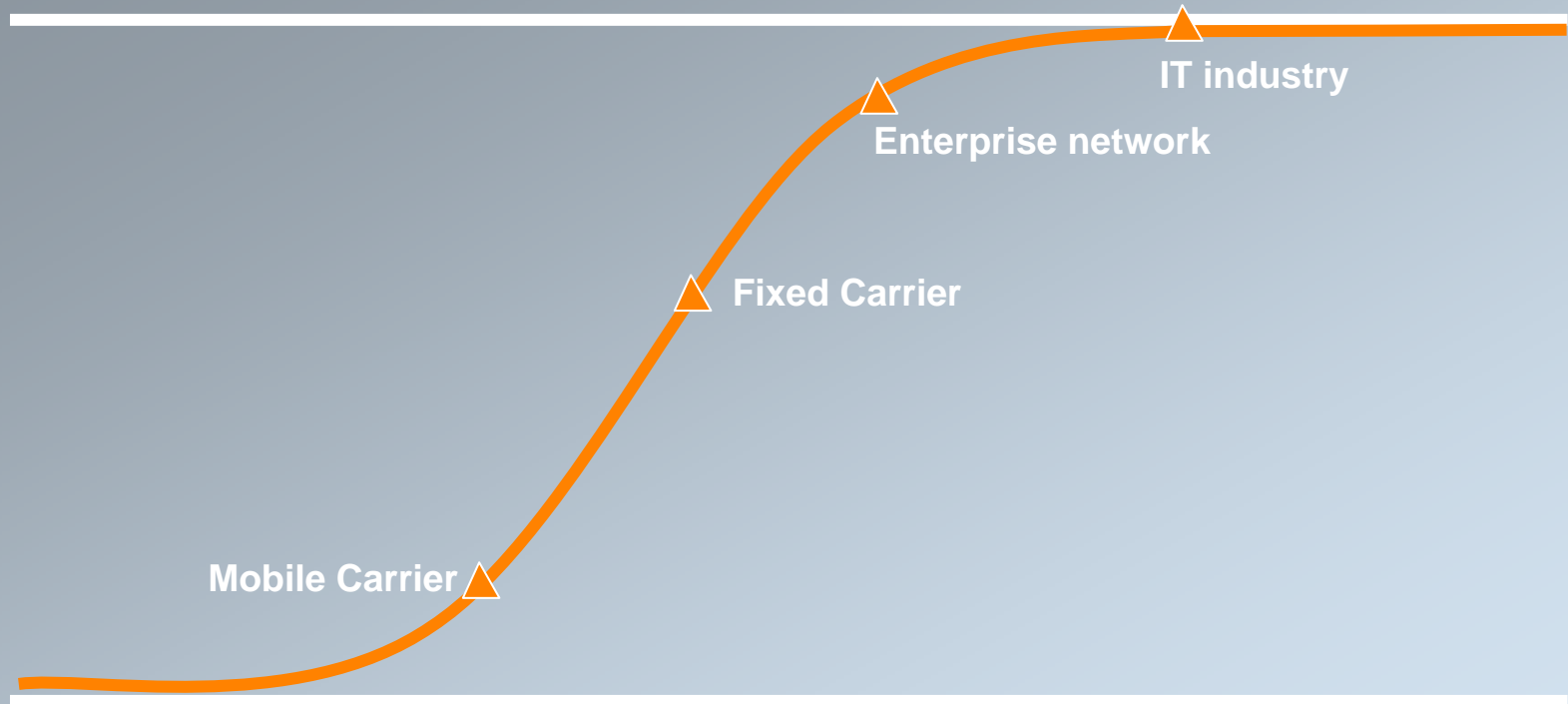
Source: Com CD

PeerTV – Global Personal Video Recorder



IT technology takes over Telco while laws of physics still apply

100% IT/IP/Ethernet



100% telco-specific technologies

The transition from vertical, single-purpose networks...

Mobile network	Fixed network	Data network	Cable TV network
Applications and application enablers	Applications and application enablers	Applications and application enablers	Applications and application enablers
Control	Control	Control	Control
Switching and routing	Switching and routing	Switching and routing	Switching and routing
Transport	Transport	Transport	Transport
Access	Access	Access	Access
Clients and devices	Clients and devices	Clients and devices	Clients and devices



...to a horizontal, multi-purpose network
for every type of access and device –
provisioning new services

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Service Delivery Framework (SDF)

Applications and
application enablers

Applications and
application enablers

Applications and
application enablers

Applications and
application enablers

Control

Switching and Routing

Transport

Access

Access

Access

Access

Clients and devices






Clients and devices

Clients and devices

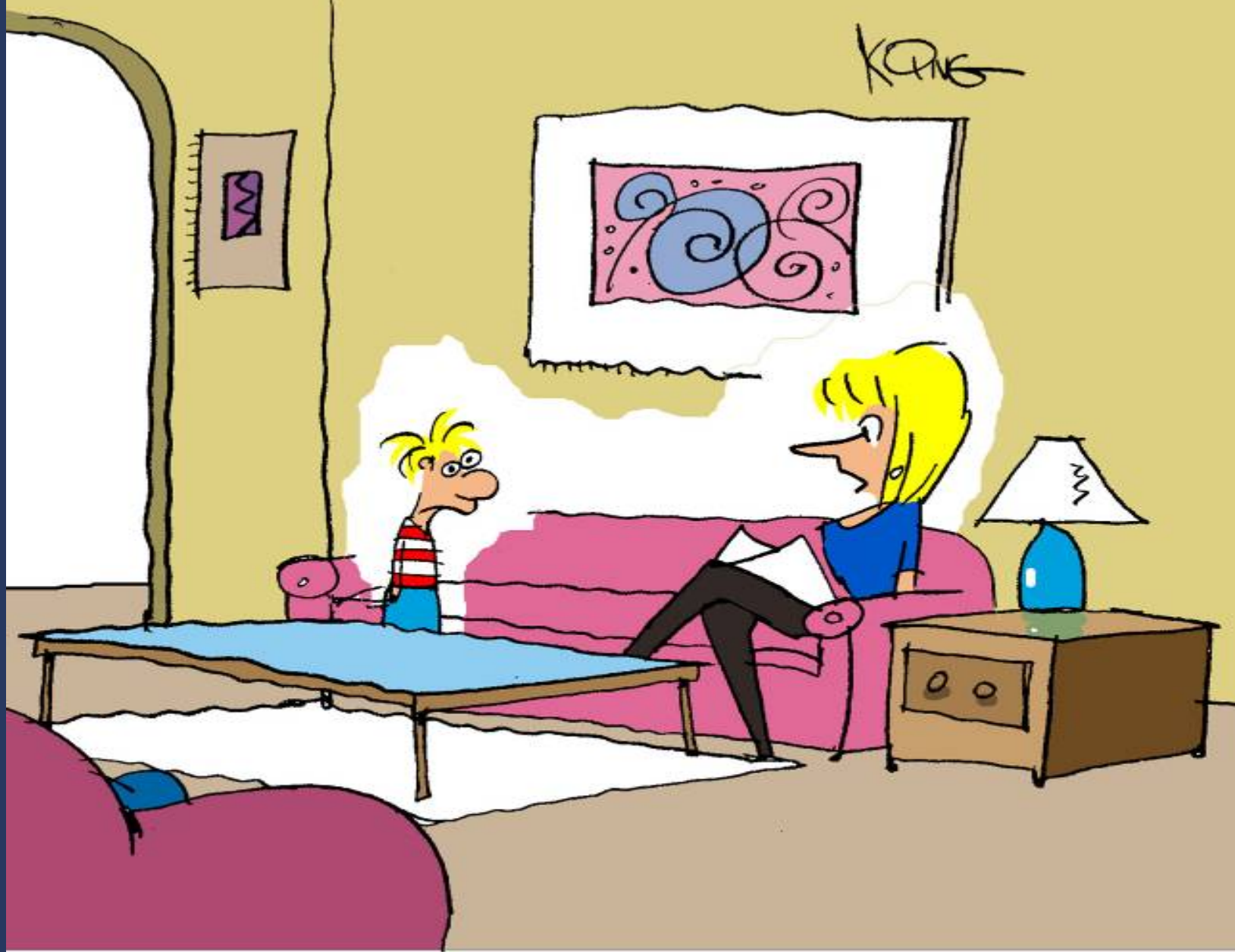
Clients and devices



Communications still has a long way to go to match human capabilities

	Senses	Bandwidth of Receptors	Neuronal Transmission
	Eyes	200 Gbit/s	200 Mbit/s
	Ears	4 Mbit/s	2 Mbit/s
	Skin	1,5 Gbit/s	10 Mbit/s
	Tongue	150 Mbit/s	11 Mbit/s
	Nose	20 Gbit/s	30 Mbit/s
	$\Sigma =$	ca. 200 Gbit/s	ca. 250 Mbit/s

KONG



*"No, you weren't downloaded.
You were born."*

Dr. Georg Haubs

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Thank you

