

ITS Brussels 2014

Disruptive innovation: Challenges for European business and policy

The reasonable man adapts himself to the world: the unreasonable one persists in trying to adapt the world to himself. Therefore all progress depends on the unreasonable man.

George Bernard Shaw

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Where are we? US Global Dominance in ICT

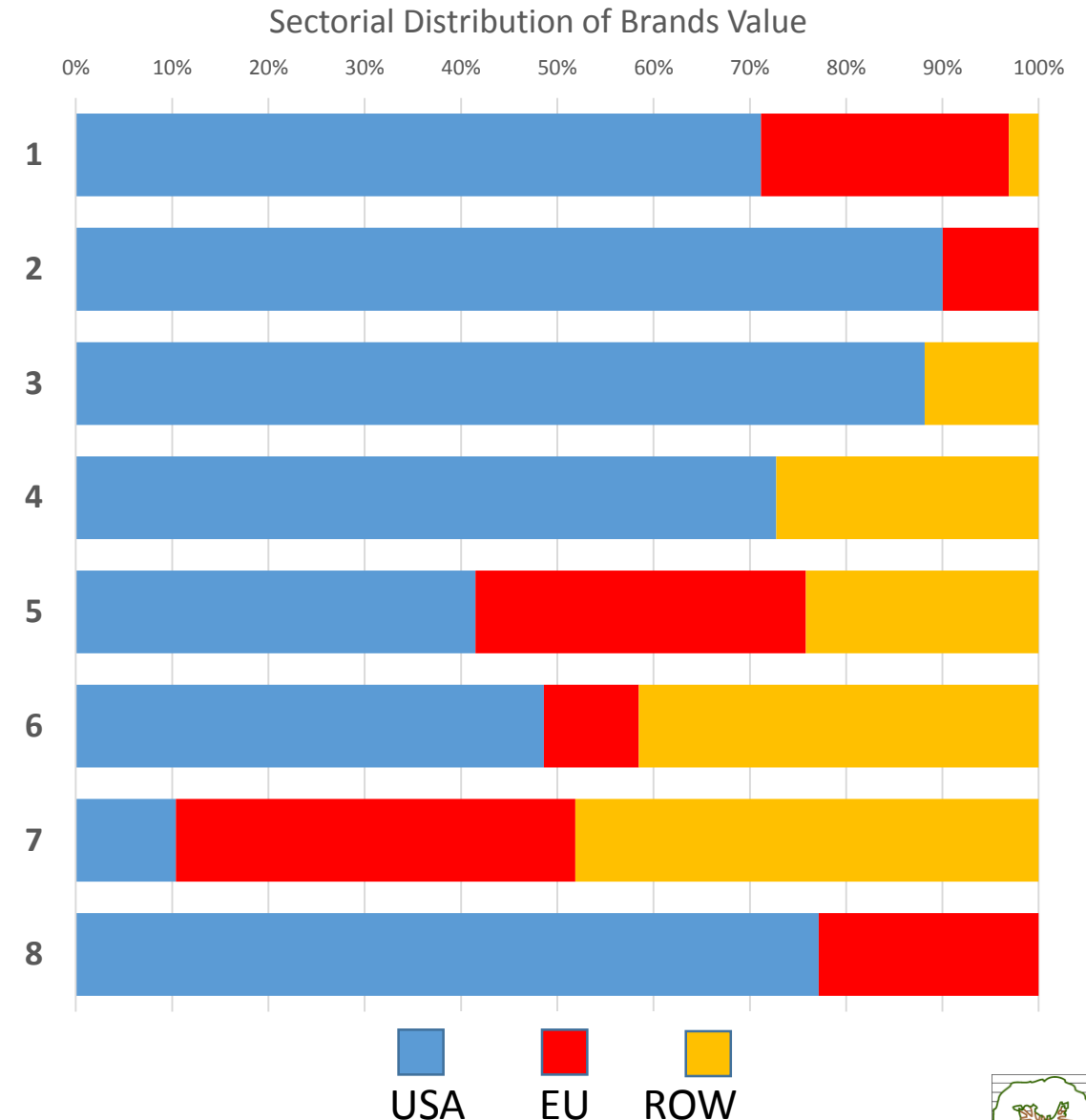
As seen through “100 Global Brands 2014”



100 Global Brands: Sectorial Analysis

Total value 2,865 Billion USD

	Sector	#	Value B USD	% of Total	USA	EU	ROW
1	Retail	35	864	30%	71%	26%	3%
2	SW & Services	8	365	13%	90%	10%	0%
3	HW & Devices	5	219	8%	88%	0%	12%
4	Pure Internet	6	306	11%	73%	0%	27%
5	Telcos	11	340	12%	42%	34%	24%
6	Banking & Insurance	27	584	20%	49%	10%	42%
7	Autos	6	114	4%	10%	42%	48%
8	Industrial	2	73	3%	77%	23%	0%



Was US Dominance inevitable?

Waves of Innovation in ICT since 1970

		USA	Europe	Current Status
1	Mainframe Computing	Advantage		Obsolete
2	Television & Broadcasting		Advantage	Faded
3	Satellite Communications	Advantage		Faded
4	IC, ASIC, Memory, RFIC	Advantage		US - Asia
5	Digital Switching		Advantage	Faded
6	Fiber Optics, Digital Transmission	Advantage		Split
7	Telefax, Modems			Asia
8	Personal Computing & Software	Advantage		HW to Asia
9	Mobile Communications		Advantage	EU-Asia
10	Ethernet, Routers & LANS	Advantage		US-Asia
11	Internet through 2001 Crash	Advantage		
12	Internet Post-Crash	Advantage		US Hegemony?

Gov & Mil Funding

Gov Funding

VC Funding



VC Investments 2013

	VC Money Invested (M USD)	Average Value of Deals (M USD)	Investment as % of GDP	Average Seed Investment (M USD)
Europe	3,400	1.1	0.024	0.34
USA	29,400	7.4	0.18	4.3
Israel	900	5.0	0.3	

	Investment as % of GDP
France	0.038
United Kingdom	0.027
Germany	0.024

Sources: PWC+NVCA, EVCA, PWC Israel



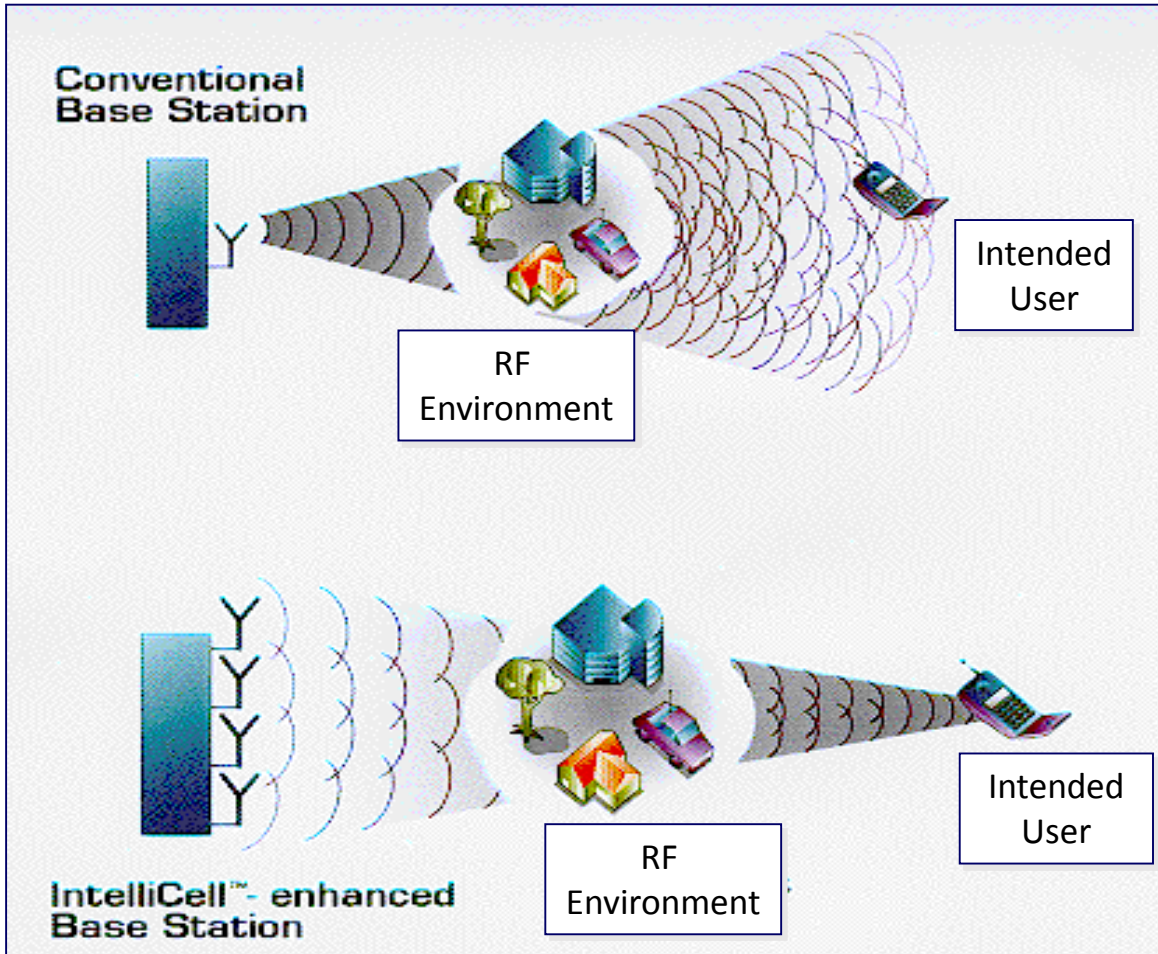
What does a VC want?

- **Answer: He wants to earn a high return, while minimizing risk**
- Hence he has 4 questions
 1. Does the technology work?
 2. Can they make it?
 3. Can they sell it?
 4. Can they make money selling it?
- **Apprehending risk is an ongoing process**
 1. Technology Risk – Resolved quickly
 2. Market Risk - Permanent
 3. Management Risk – Major and Chaotic



Adaptive Beamforming

Short History of a Mobile Technology Breakthrough:



- Founded 1992 in Santa Clara
- 6 PhDs out of Stanford's ISL Lab
- Couldn't get VC funding
- 1993: Got "Doctors and Dentists" Funding
- Made Breakthrough Demo
- 1994: Met with Japanese Operator, which had a huge problem
- 1996: Mass production under way at Kyocera, Japan, with 6X capacity multiplier
- Staff at 100, with 15 nationalities
- Funding has reached 45 M USD

• *Explanation of 1994 on how the thing works*



Adaptive Beamforming

Short History of a Mobile Technology Breakthrough:

- 2000: Built the first Flat IP Mobile Broadband System, with Spectral Efficiency of 4 bps/Hz
- Viable in just 5 MHz TDD spectrum
- Got blocked by Mobile Cartel on getting spectrum everywhere Europe, except in North of Europe
- Funding at 145 M USD
- Started working with Siemens on next gen Mobile Broadband, far superior to LTE
- 2001 Crash: Siemens abandoned project, disbanded own team, and soon after started withdrawing from Mobile altogether.

CONCLUSION:

- *Extraordinary Wireless products can be developed by a capable, focused, decently funded small team, with access to resources, INCLUDING SPECTRUM*
- *This is completely different from collaborative pan-EU research efforts*



What to do?

- Foster a culture of risk-taking
- More resources (incentives to private funding, including tax breaks)
- Preference to be given to focused entities with single agenda
- Speed of execution, etc.
- Assurance of continued funding if stated goals met
- Access to spectrum

