

DRAFT V2 – SUBJECT TO CHANGE

France 2025 – Group creation, innovation & research

May 22, 2008



McKinsey & Company

Foreword : 2 Questions, 3 sources, 1 caveat

2

Questions

- Which demand? What will the world consume in 2025?
- What offer ? What are the key technological fields in 2025? On which ones should France be positioned ?

3

Recent pieces of work

- *“10 trends, shaping the market landscape”* MGI, 2006
- *Innovation heatmap*, McKinsey/WEF, Davos, 2008
- *European Global Champions in HT* research in 2005


1


Word of caution – More a private sector than a public sector background and experience

Today's presentation

- **Which demands? What will the world consume in 2025**
- Which offers? What will be the key technological fields in 2025? Where should France play a role?
- Debate/Q&A

The ten trends shaping the future corporate landscape

 Relevant for today's discussion

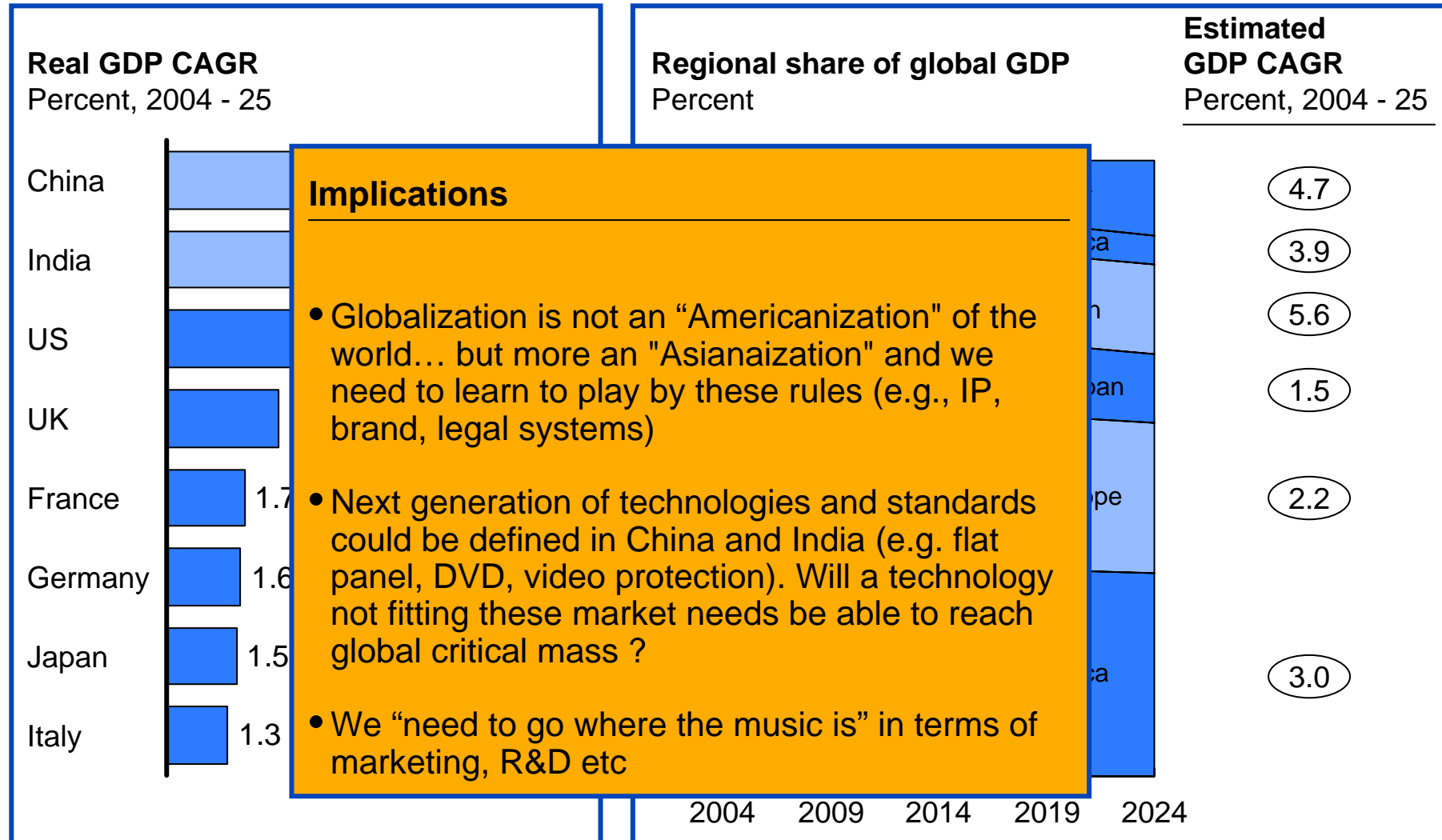
Macro-economic trends	1 Shift centers of economic activity	
	2 The overburdened public sector	
	3 The new consumers	
Social and environmental trends	4 Social life In a technological world	
	5 Turbulent tides of talent	
	6 The social cost of the free market	
	7 Limited resources, unlimited demands	
Business trends	8 New global industry structures	
	9 New science of management	
	10 The new economics of knowledge	

① Shifting centers of economic activity – GDP of Asia (Ex-Japan) and Europe will converge

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China and India will grow the fastest ...

... narrowing the gap between Asian and European GDP

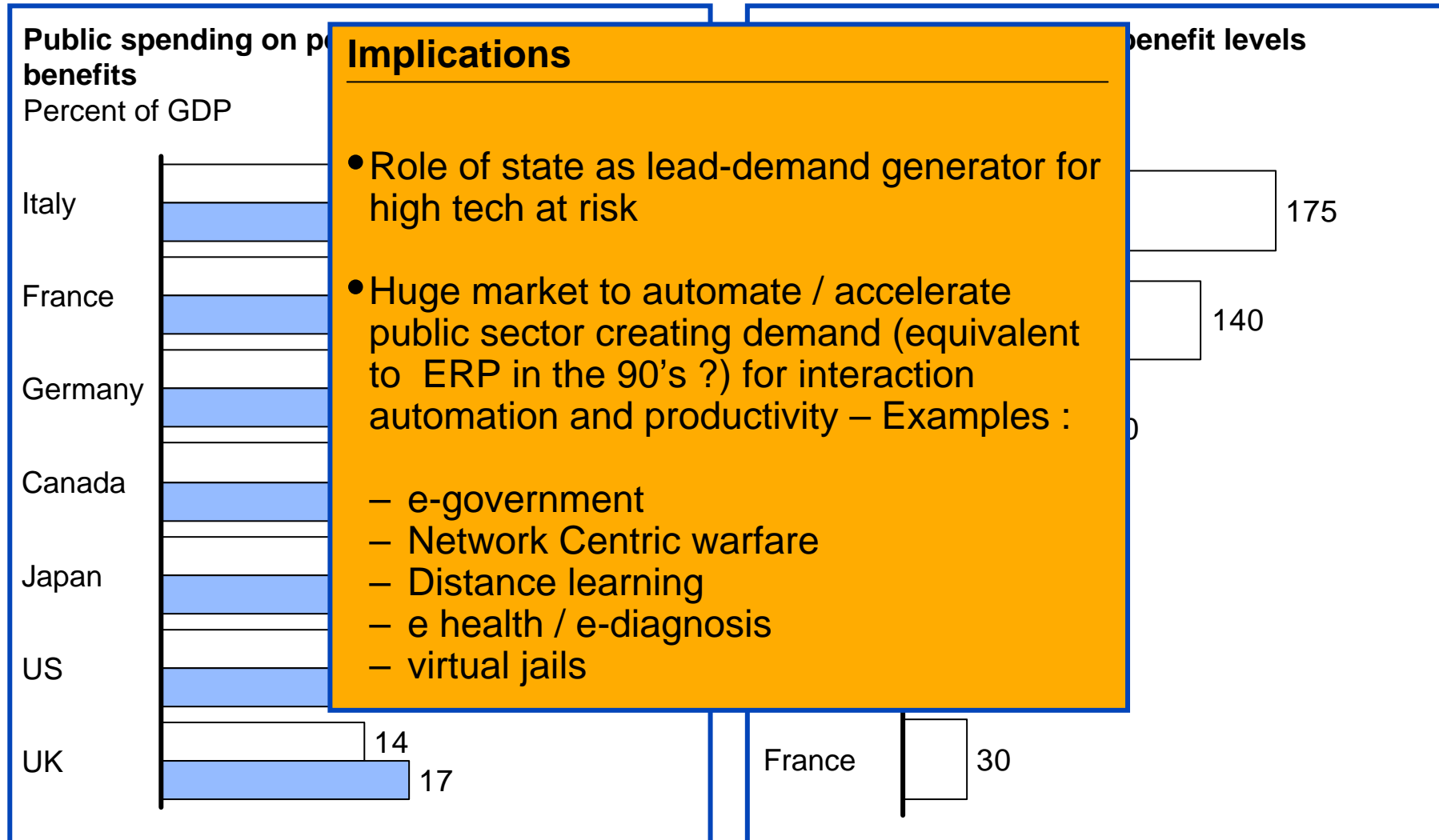


② The overburdened public sector – Rising government spending, change essential

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Public spending on pensions and healthcare will grow ...

... leading to potential tax increases to maintain current benefit levels

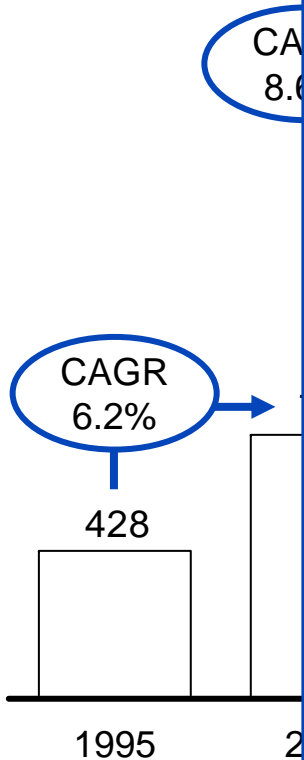


③ New consumers – Consumers earning >\$5,000 will increase by almost 1 billion DRAFT

Total population living in households earnings >\$5,000 per year

Majority of growth in households earnings >\$5,000 per year will be in India and China

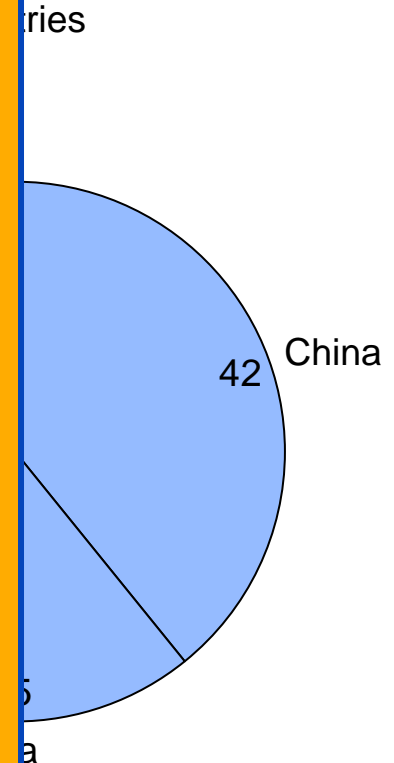
Developing countries
Million people



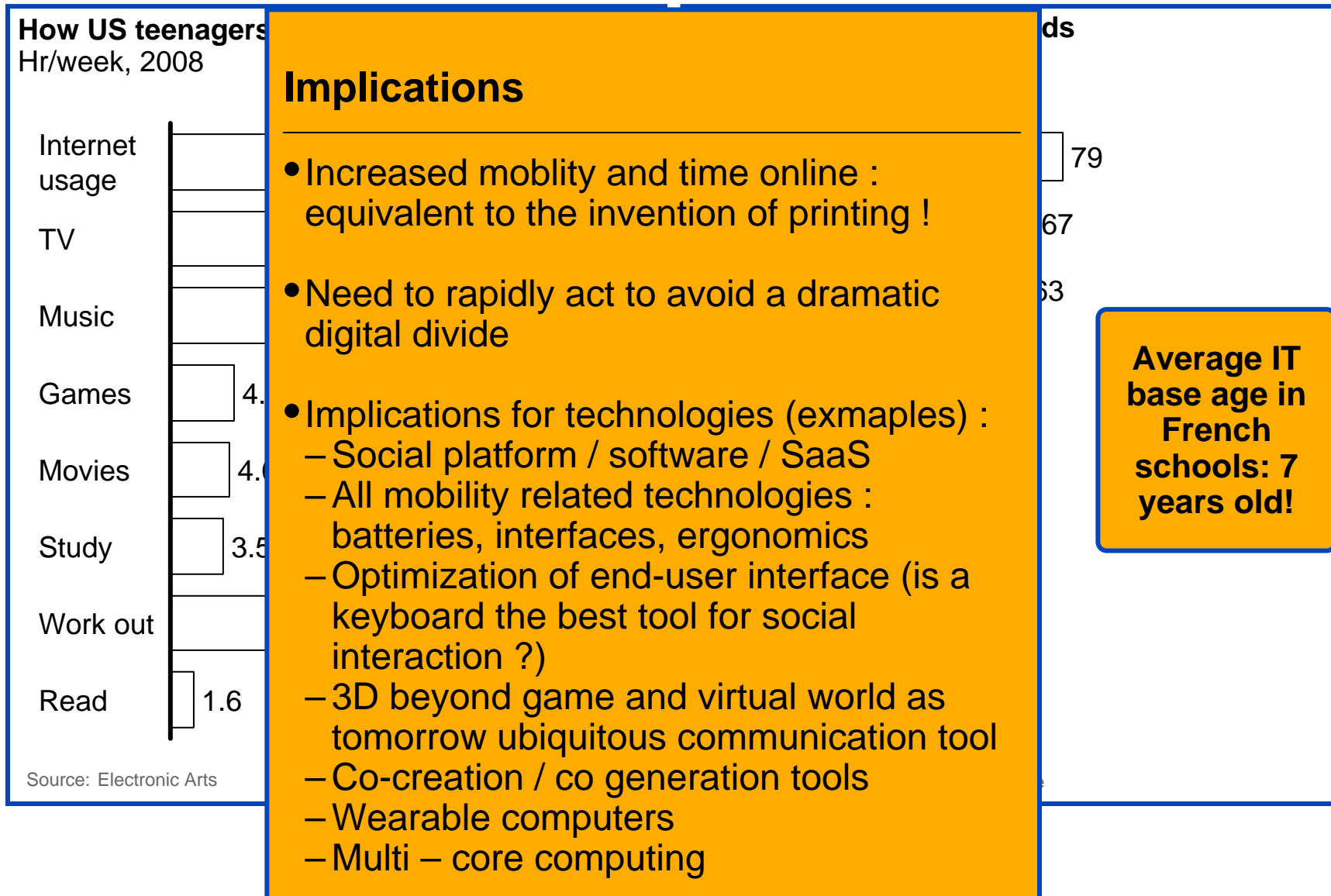
Implications

- Need to make business model innovation to serve these markets (e.g., pay per use PC)
- Need to make technology affordable (e.g., Nokia India cellphone, 100 USD PC)
- Implications for technologies (examples) :
 - Low cost screens
 - Low cost batteries
 - Simplified / cheaper back offices for operators
 - Secured small paiement (e.g. smart cards, SMS based)

Change in households earnings >\$5,000 per year 2005 - 15



4 Social life in technological word



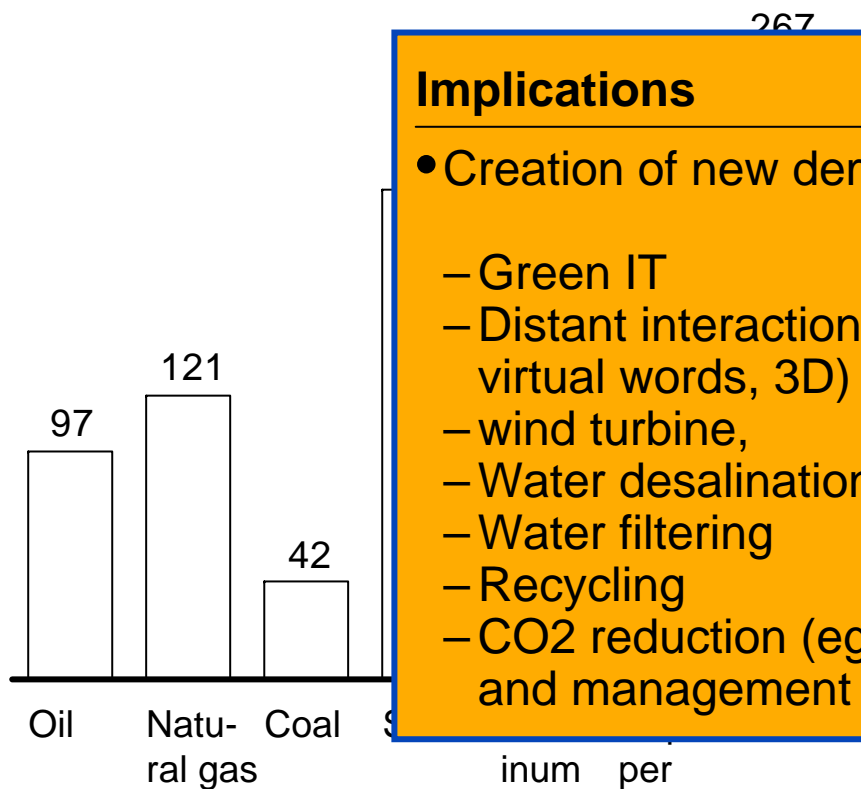
⑦ Limited resources, unlimited demands – Rapidly increasing consumption in many commodities

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By 2015, developing country consumption of fossil fuels is expected to exceed that of the developed world

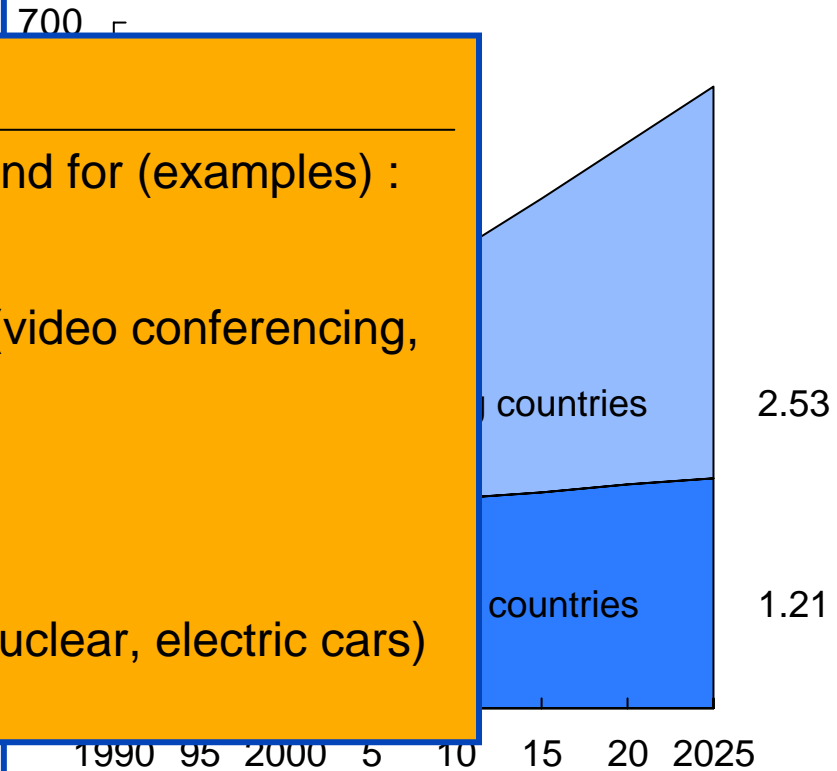
China in particular, has shown massive growth

Percentage change in Chinese consumption of energy and metal resources 1995 - 2004



Fossil fuel consumption British Thermal Units (BTU), quadrillion

CAGR 2005 - 2025



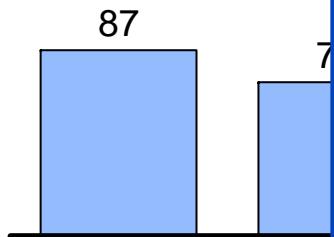
Implications

- Creation of new demand for (examples) :
 - Green IT
 - Distant interactions (video conferencing, virtual worlds, 3D)
 - wind turbine,
 - Water desalination
 - Water filtering
 - Recycling
 - CO2 reduction (eg nuclear, electric cars) and management

⑩ Businesses are adopting new technologies (e.g., Web 2.0)

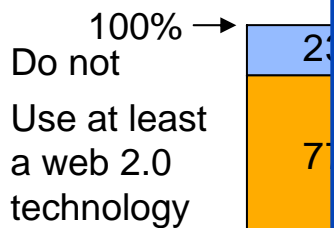
Percent

Awareness is already



Awareness of relevance for the enterprise

... as is usage

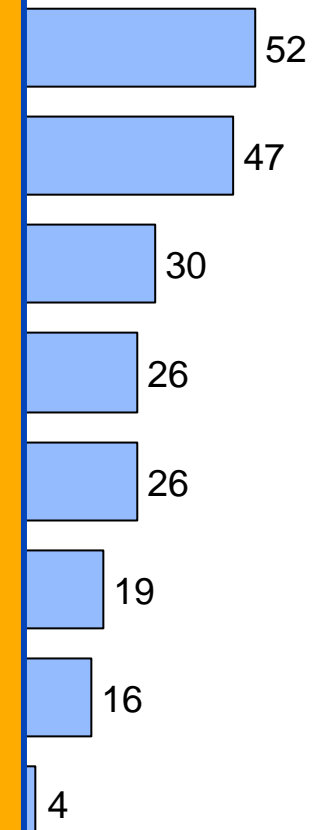


Including web services

relevance

Important for your business

Percent reach in top 3



Implications (examples)

- Social platform / software : virtual words as productivity tools ?
- SaaS
- Collaboration / co-creation tools
- Data management / IP management tools
- Co-creation / co generation tools
- Wearable computers
- Multi – core computing

Source: McKinsey Quarterly Web 2.0

Today's presentation

- Which demands? What will the world consume in 2025

- **Which offers? What will be the key technological fields in 2025? Where should France play a role?**

- Debate/Q&A

Key messages on the technology offer side

- Europe is clearly lagging behind in terms of High Tech champions with the exception of Aerospace and mobile
- Asia R&D capacity is building up fast, increasing pressure on Europe
- Market fragmentation and lack of talent pool depth appear as two critical factors to explain Europe position
- While corporate culture appear as critical for innovation, national culture less so
- Silicon Vally has not made technological breakthrough but has brought hem to market amazingly well. Creating the boundary conditions for innovation monetization appears as critical

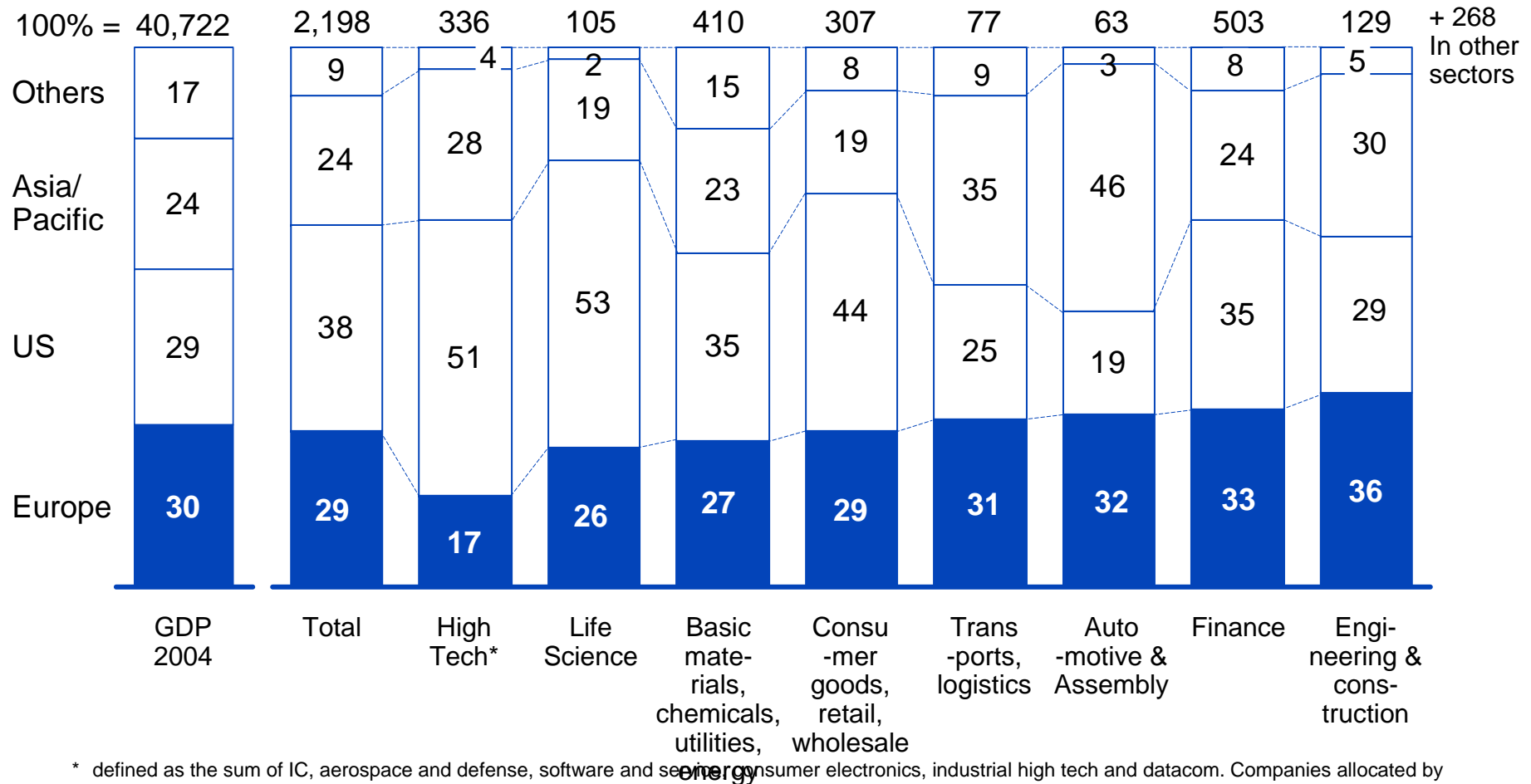
A systematic assessment shows that Europe's performance in HT is below average....

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PRELIMINARY

GDP by region, US bn

Breakdown of number of companies in top G2000 by region for most important sectors, in percentage, 2003



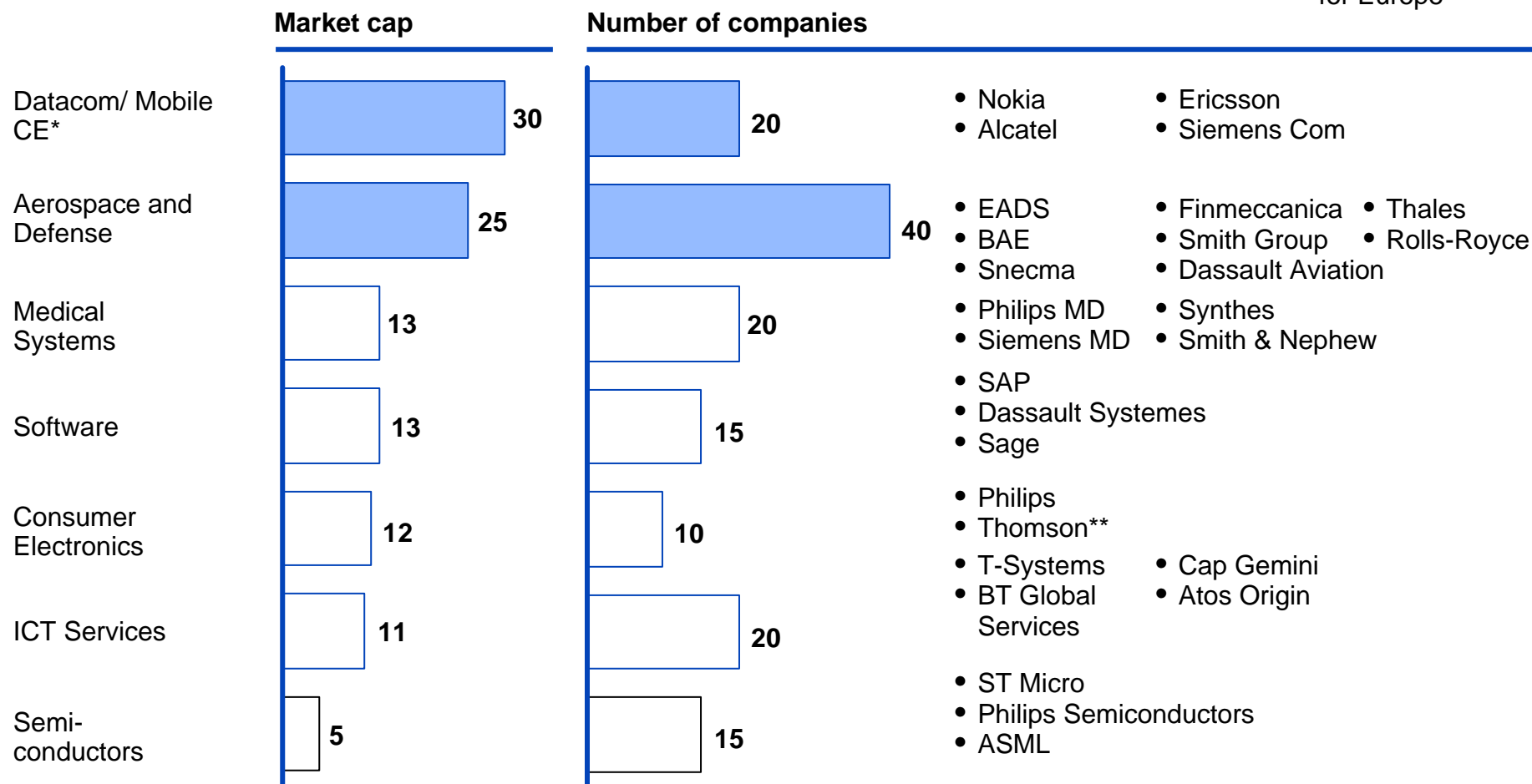
* defined as the sum of IC, aerospace and defense, software and services, consumer electronics, industrial high tech and datacom. Companies allocated by region based on HQ location
Source: G2000 database, McKinsey analysis, Global Insight

...with the exception of Aerospace/Defense and Mobile/Datacom

European share of top 20 companies (by market cap) per ht sector, in percent

PRELIMINARY

■ Strong position for Europe

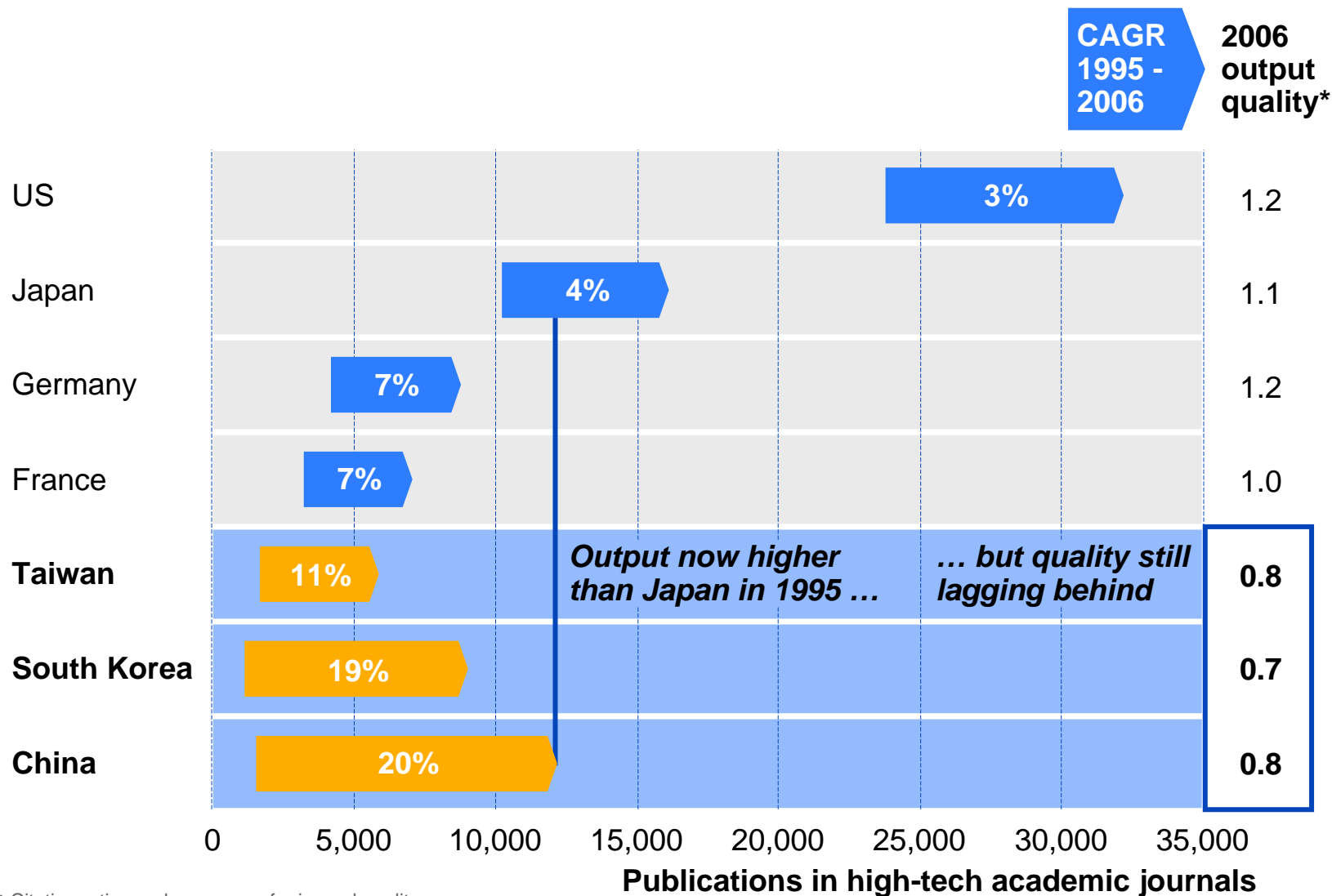


* Compiled data for Datacom/Mobile CE

** classification based on 2003 sales breakdown and therefore before 2004 transaction on TV activities and 2005 transaction on Tubes activities

Source: G2000 McKinsey database, Global Vantage, Bloomberg May 2005, Global Insight

Asian research capacity catching up fast !



* Citation ratio used as a proxy for journal quality
 Source: Thomson Scientific, McKinsey analysis

Europe is currently disadvantaged on two critical dimensions of high tech but could still come back in shaping this turbulent industry DRAFT

High Tech Intrinsic characteristics

Speed to scale



Higher than average Impact of CEO's actions



Turbulent industry



- Rate of innovation increasing
- New segments to be shaped

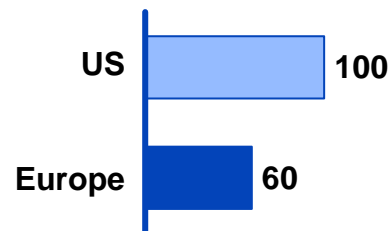
Fragmented market



Europe's position

Smaller talent pool

Relative size of "most desirable" employers workforce

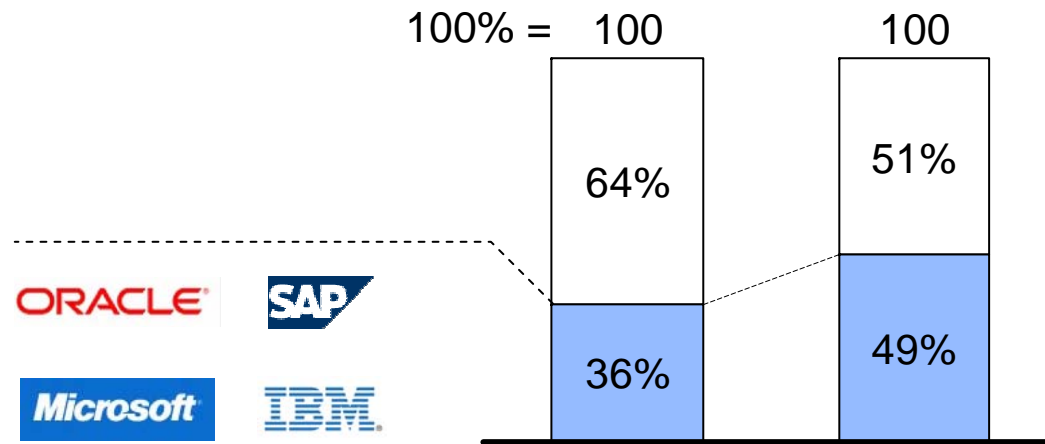


Europe is clearly lagging behind in High Tech today...

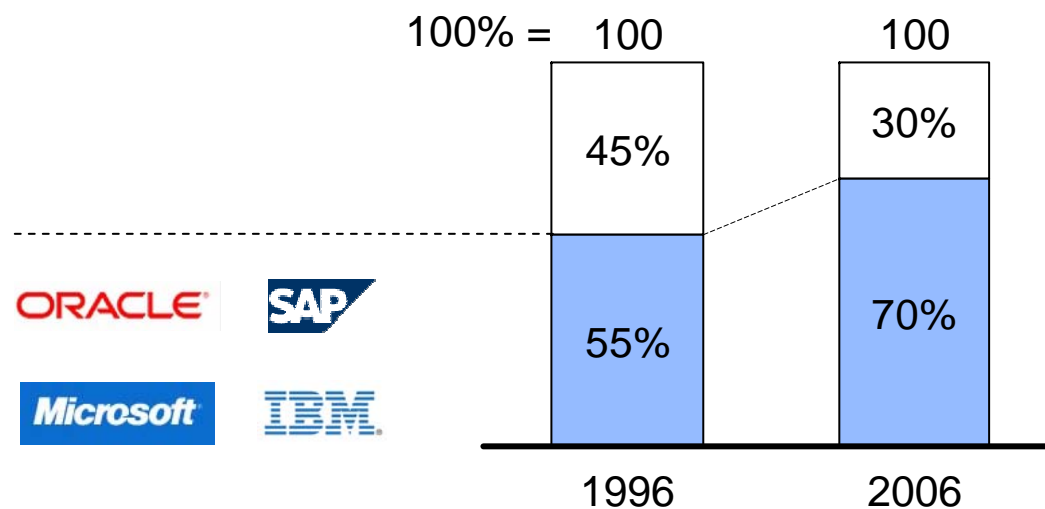
... but can come back by leveraging its strengths to shape new segments

Size matters : in SW the big four players account for 50% of the revenues and 70 % profits and have increased their grip over the last decade

Mega companies share in sector revenues

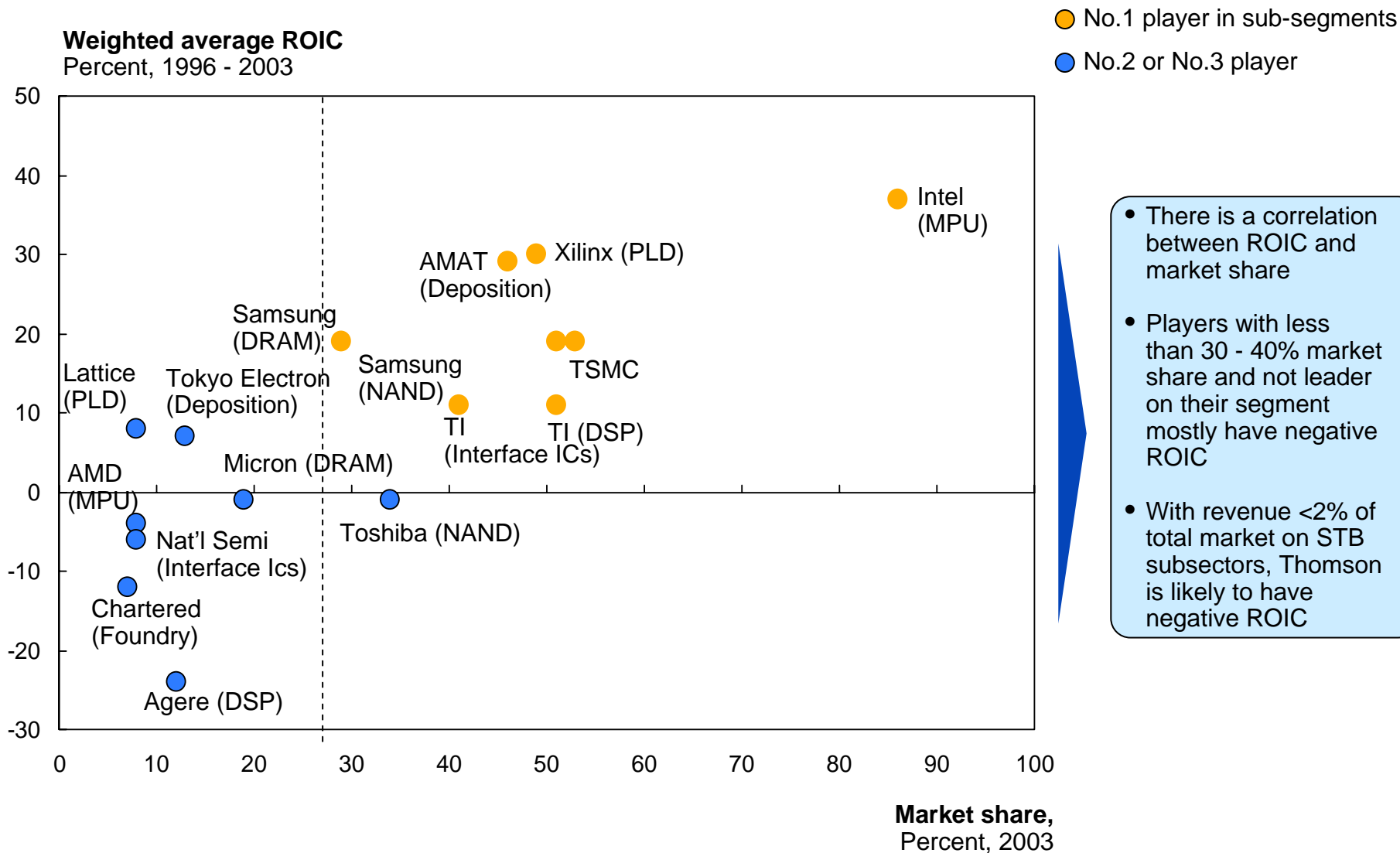


Mega companies share in sector EBITA



Note: Mega consists of Microsoft, IBM SW division, Oracle and SAP. Refer appendix slides for details on other category constituents
 Source: Corporate Performance Analysis Tool, McKinsey Corporate Performance Center analysis

In ICs, a leading market share (40%+) in a sub-segment is critical to create value

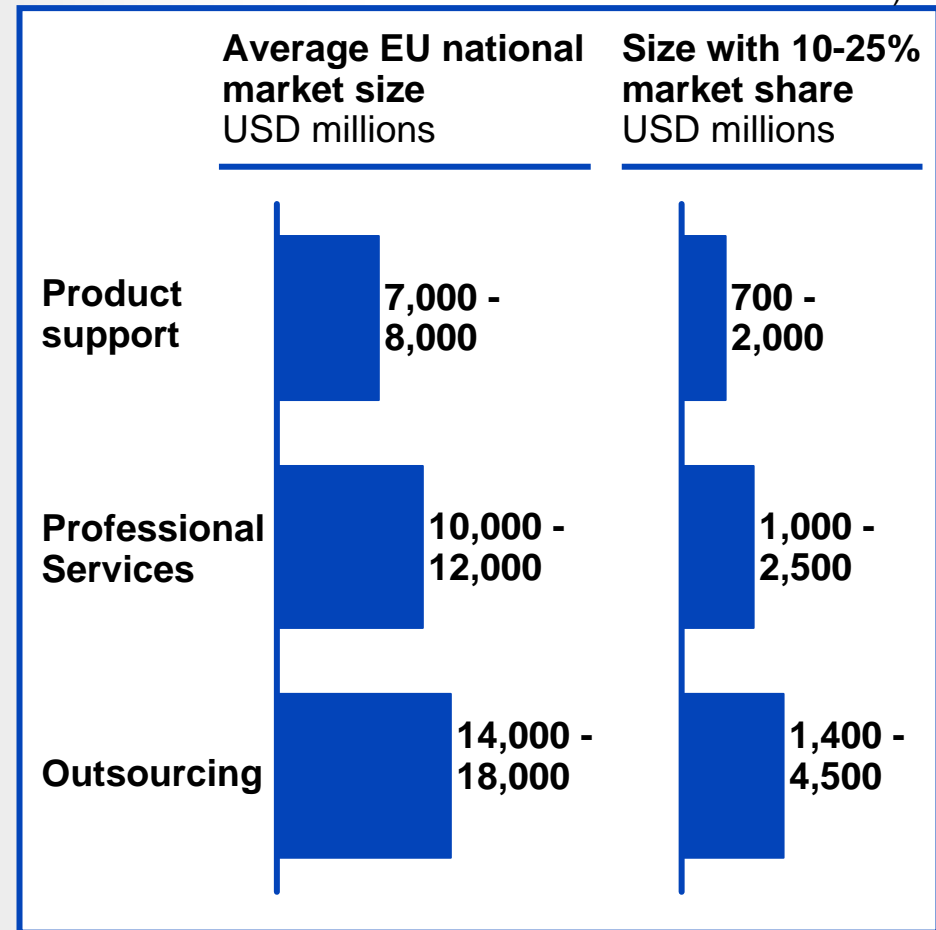
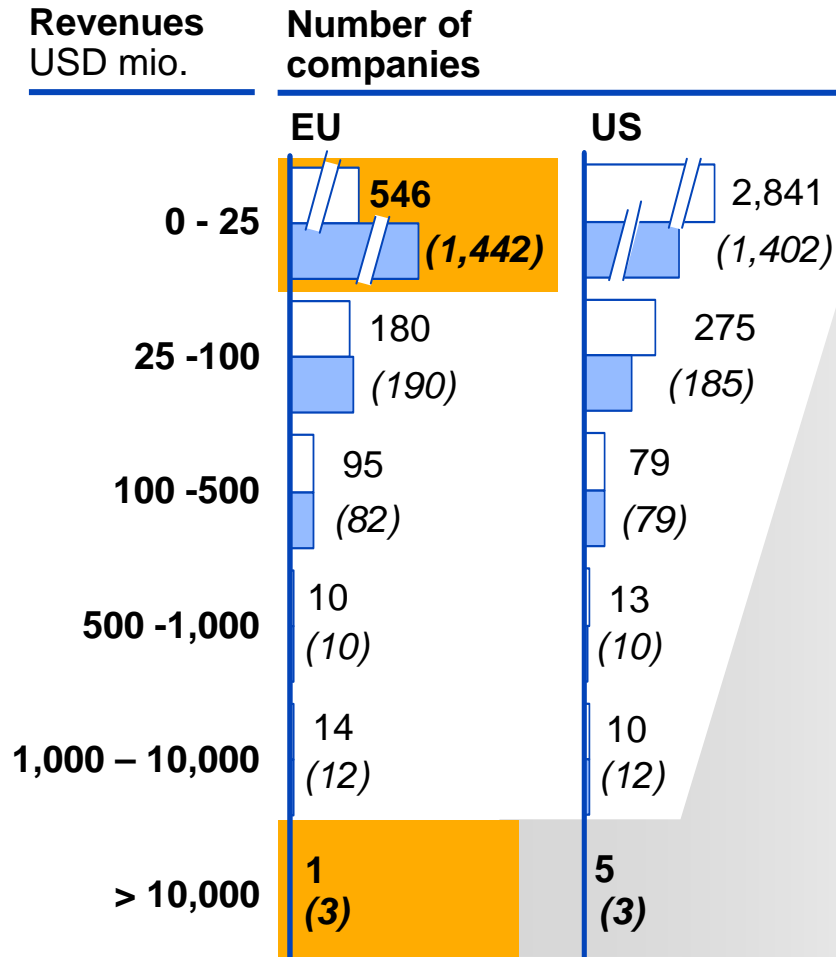


Fragmentation of European markets prevent companies to grow beyond the size of 1-2 national markets

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PRELIMINARY

■ Steps where EU has issues
 Actual number
 (GDP share)

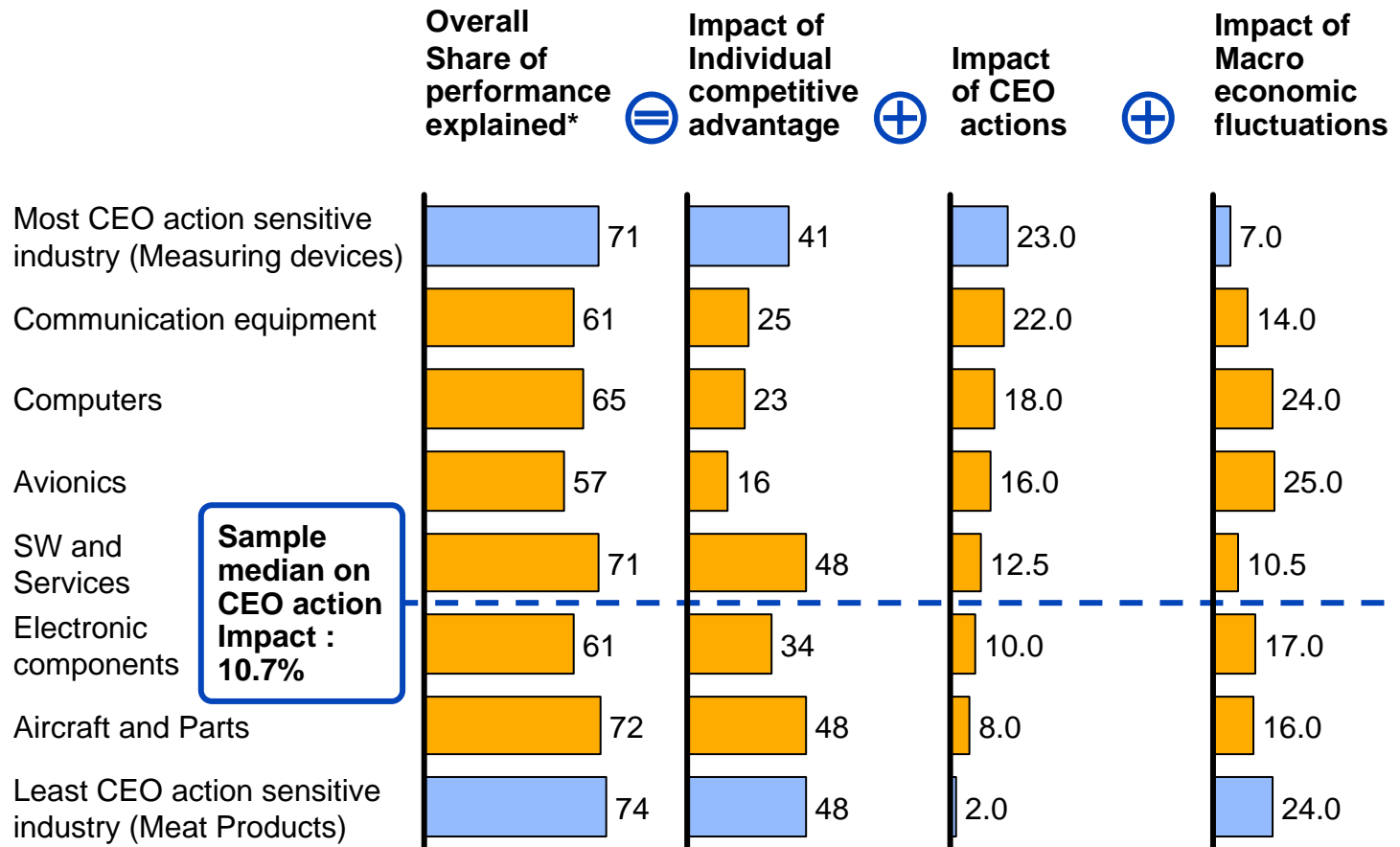
Example ICT services



Source: IT Services Worldwide Forecast (Gartner, June 2005); Outsourcing worldwide Forecast (Gartner, Nov. 2004), team analysis

CEO leadership matters a lot in High Tech

Percentage share of each variable to explain industry performance



'When does Leadership matter': study by Wasserman, Nohria and Anand (Harvard) based on 532 companies over 19 years

Sample median on CEO action Impact : 10.7%

* Measured by the market to book ratio

Source: When does Leadership matter The contingent Opportunities view of CEO Leadership - Wasserman, Nohria and Anand, Harvard University Strategy Unit, 2001

EU players need to improve talent attracting and developing processes

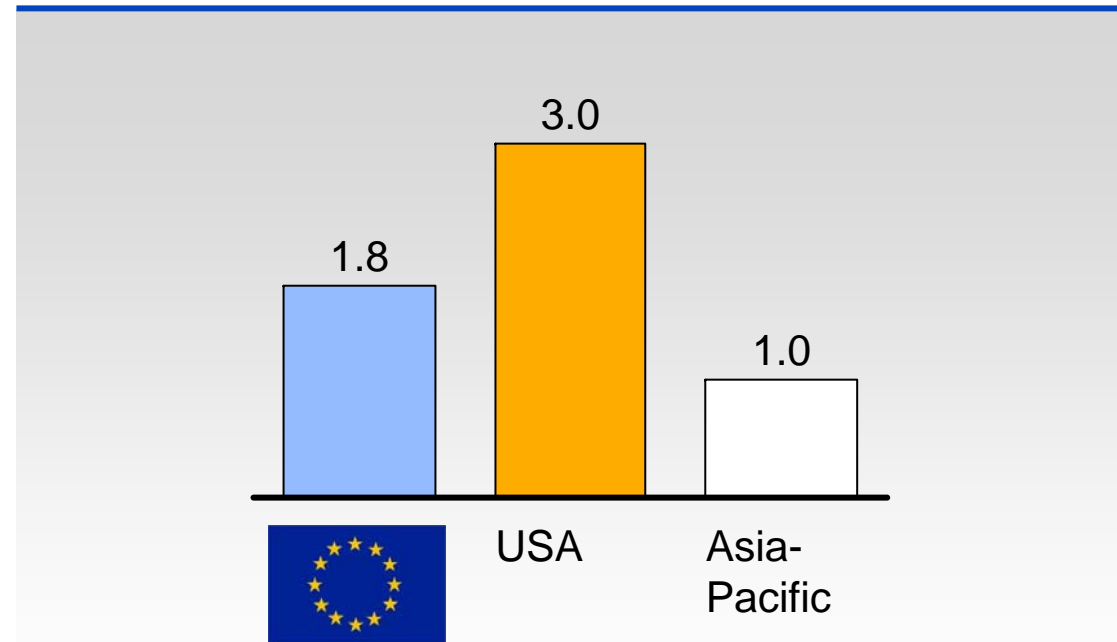
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Egon Zehnder International

- Assessment conducted on 14 global companies in High Tech (5 European, 5 US and 4 Asian) on ability to :
 - Attract top talent in Engineering
 - Attract top talent in Sales and Marketing
 - Develop and retain talents
 - Build a positive culture

Relative assessment of companies' processes strengths in attracting and developing talents

Maximum rating +4; Minimum rating -4

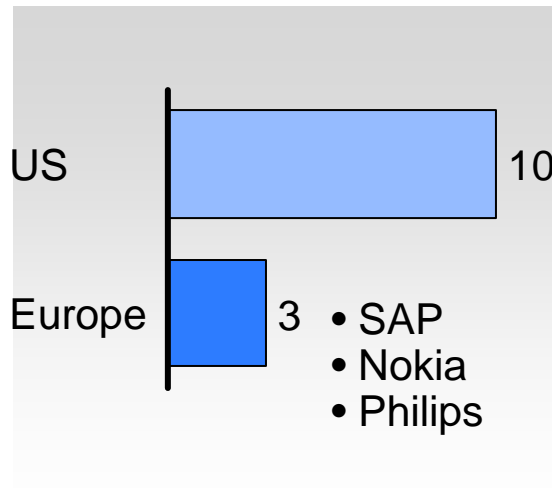


In addition, Europe's top management talent pool size seems smaller...

Egon
Zehnder
International

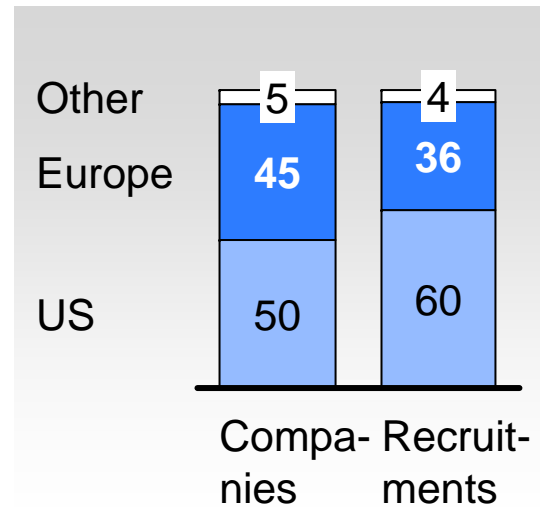
Lower number of global "most desirable employers" in HT

of Companies



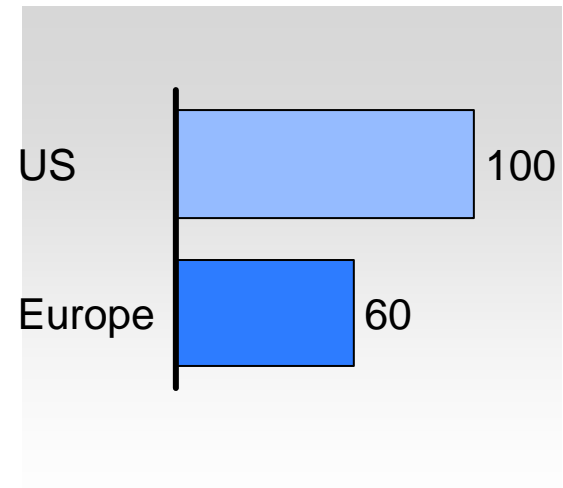
Lower share of 'most recruited from' companies in Europe in HT

% of Top 35 companies and % of recruitment from them



Smaller share of "most desirable" employers workforce in Europe

Index 100 = US



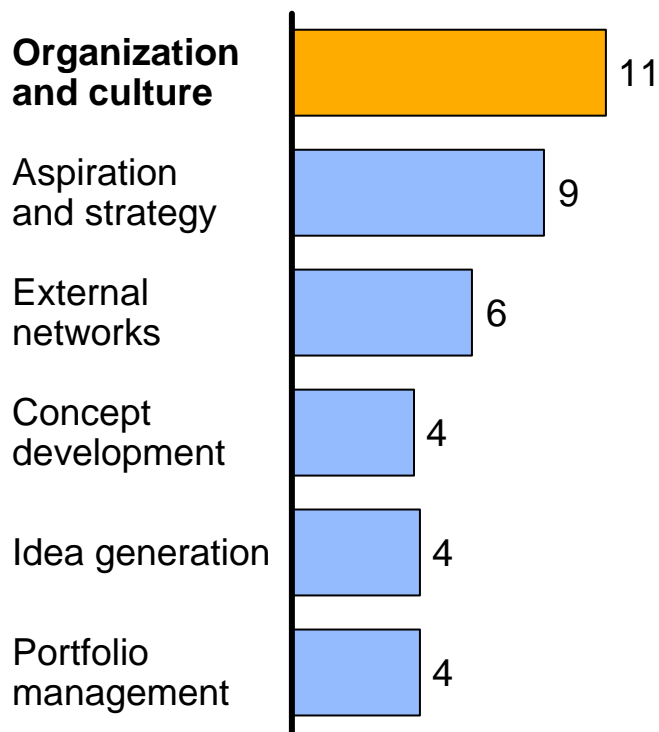
Finding talents is perceived to be the most significant managerial challenge in a recent opinion survey of Global HT Top Executives

Source: Fortune; Job Korea; Monster; Universum; annual reports, Egon Zehnder International analysis, Team analysis

Corporate culture critical for innovation, national culture less so

While corporate culture is one of the most important determinants of company level innovation ...

Difference between high and low performing companies in percent



... we see that innovation can thrive in a wide range of national cultures

Index	Finland	USA	Japan	Influence on performance
Category				
Individualism	63	91	46	Moderately positive
Uncertainty Avoidance	59	46	92	Moderately negative
Long Term Orientation	33	29	80	Mixed
Masculinity	26	61	95	Moderately negative
Power Distance	33	40	54	Moderately negative
Innovation Output ¹	Top 5%	Top 5%	Top 5%	

1. Worldwide output rank in Ideation, Implementation and Commercialization
 Source: McKinsey 2006 Global Innovation Benchmarking Survey, Geert Hofstede

Rough comparison of France research output in High Tech

2006

Number of scientific publication

Number of citations

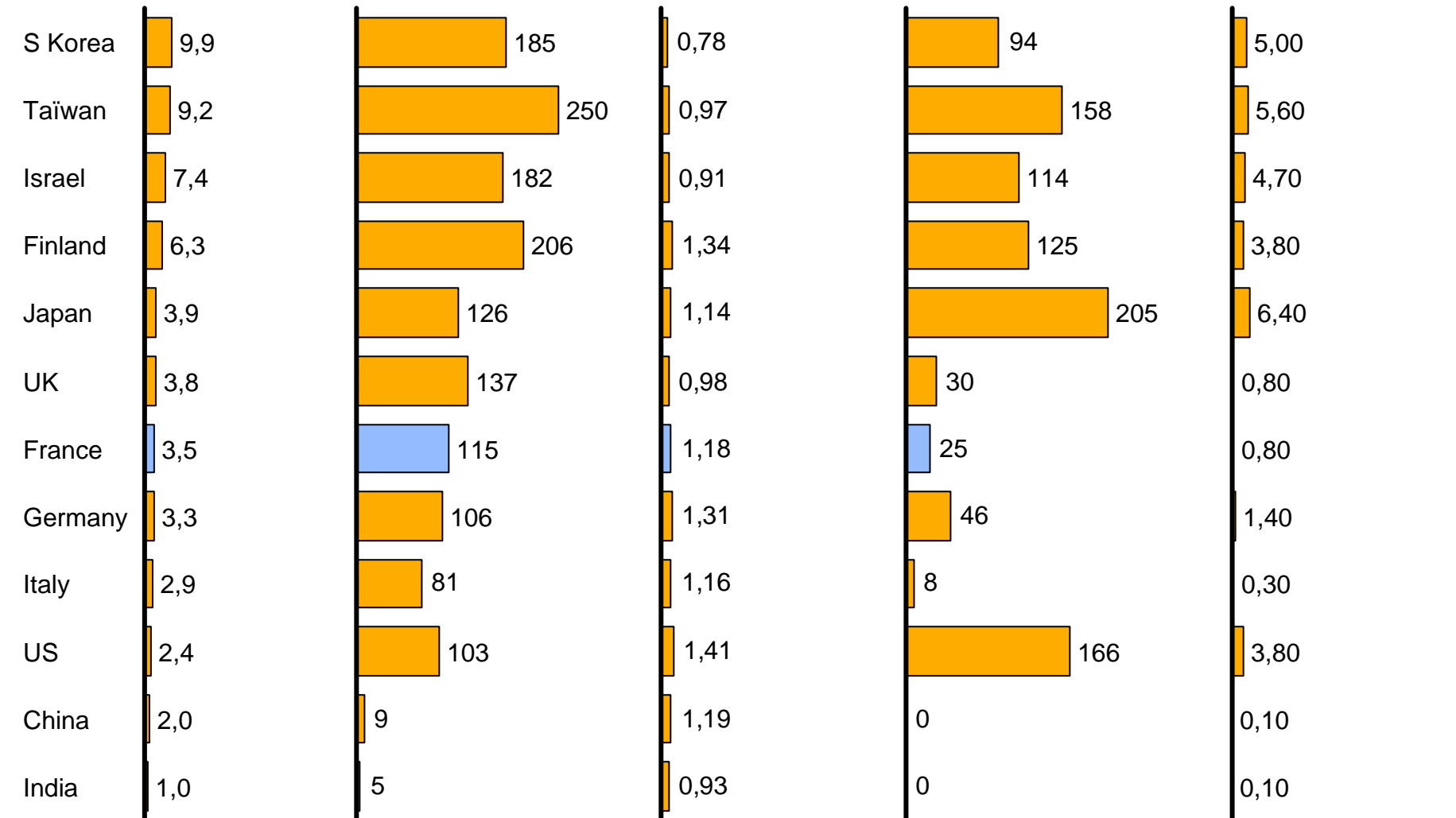
Number of patent

GDP Normalized

Per Capita

Per Capita

GDP Normalized



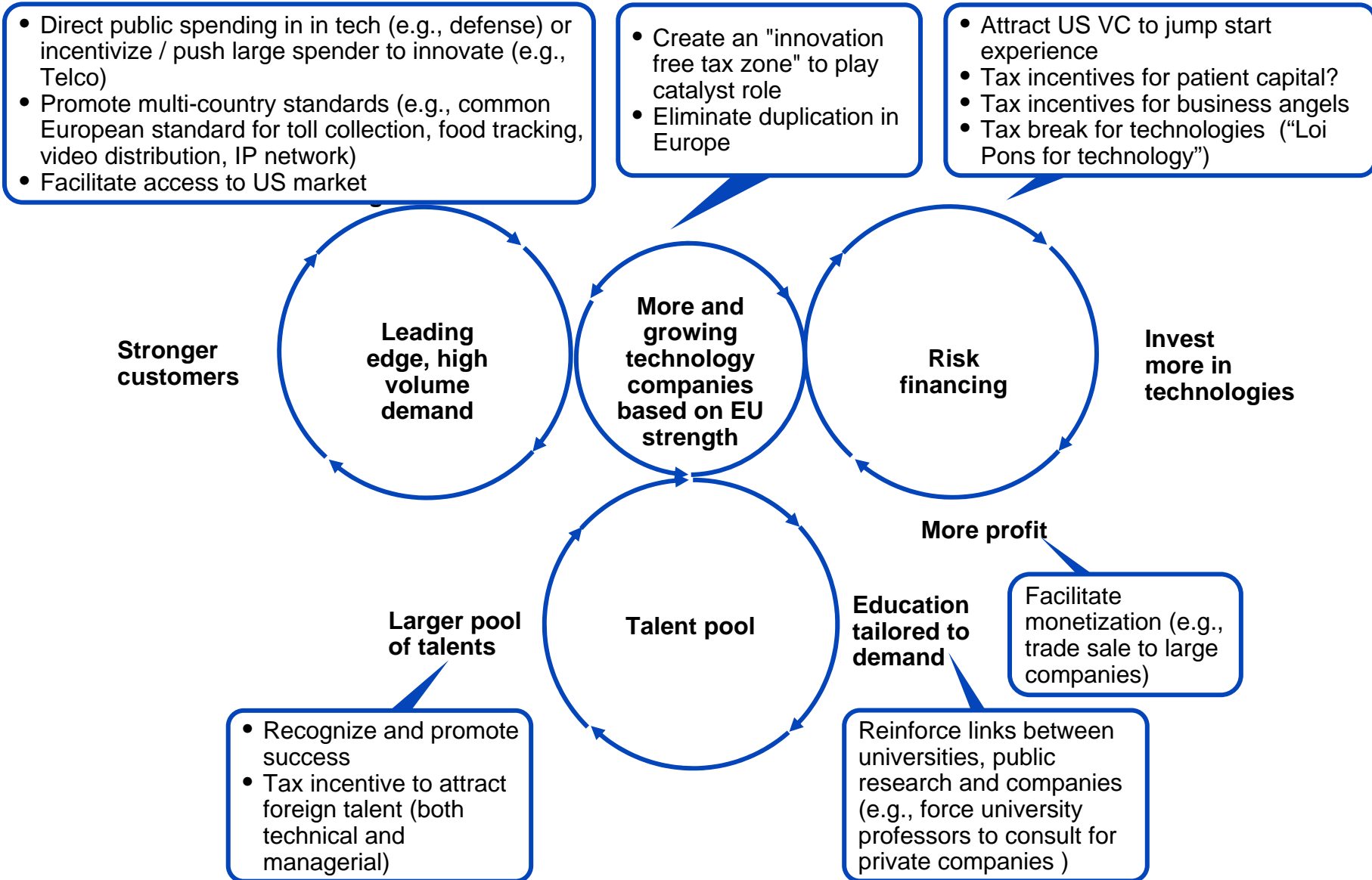
Silicon Valley has not made technological breakthrough, but it excels at bringing technology to market

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<u>Major innovation name in the US</u>	<u>Place of invention</u>	
1940	Vacuum tube	Pennsylvania
1950	Transistors	New Jersey
1970	ICs	New Jersey
1980/90	PCs	Seattle/East Coast
2000	Internet	DARPA

- Silicon valley has invented the business model to monetize these innovations
- Key issue therefore is to create a micro economic environment allowing to bring innovation to market and monetize it

Where and how to influence the innovation virtuous cycle in France



Today's presentation

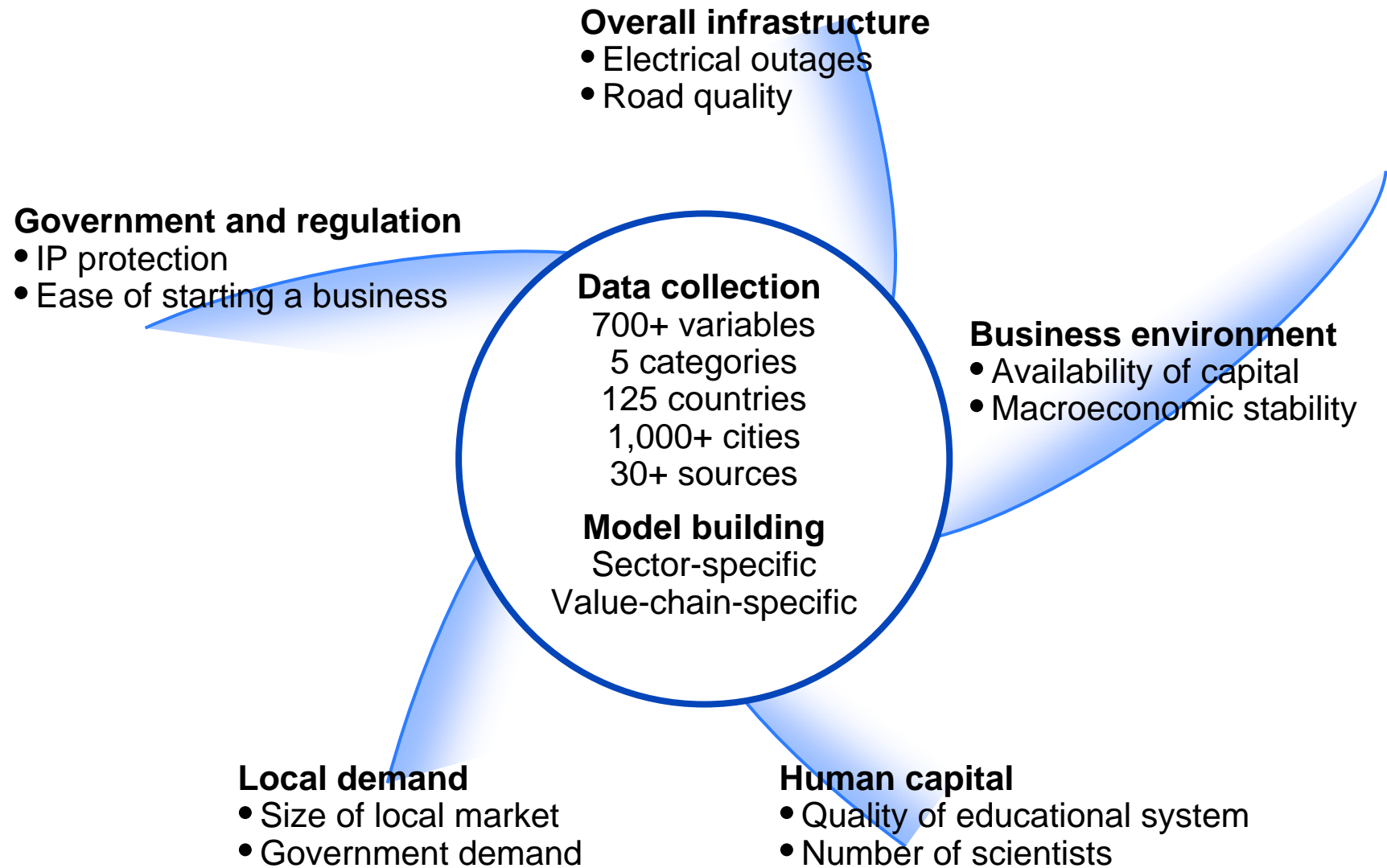
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- **Debate/Q&A**

Thank you!


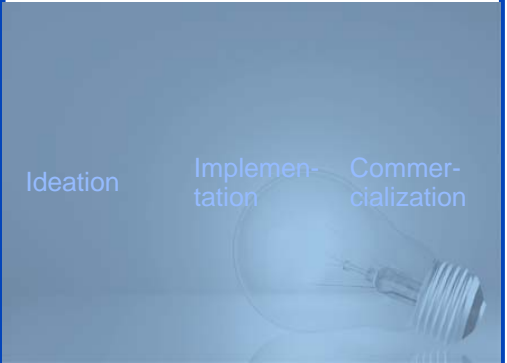

BACKUP

Innovation Heatmap – a rich and evolving platform



Source: McKinsey

Complexity of innovation defies a single index

<p>Sector granularity Each sector/subsector has its own unique innovation dynamics</p>	<p>Innovation value chain Innovation happens along a value chain</p>	<p>Geographic granularity For many innovation drivers, country level generalization is not useful</p>
		
<p>What innovation drivers are most relevant for each specific (sub-)sector?</p>	<p>Which stages are bottle-necks for innovation in a given location?</p>	<p>What are innovation drivers at a regional or city level?</p>

Source: McKinsey