

Europe's Digital Economy at Risk

Eight trends why the European digital economy is losing ground – key measures to regain a leading position.

WHY EUROPE'S DIGITAL ECONOMY IS FALLING BEHIND.

Trend 1

Competitiveness

Europe losing ground in almost every segment of the ICT industry.

Trend 2

Sector value

Eroding market capitalisation in Europe. Value shifts towards North America and adjacent Internet markets.

Trend 3

Market structure

EU telecoms market highly fragmented. Insufficient scale harms ICT industry in Europe.

Trend 4

Revenues

Prolonged revenue decline in European markets; at the same time, data traffic grows tremendously.

Trend 5

Investment

EU lacks investment of up to 270bn EUR for high-speed next generation networks.

Trend 6

Regulation

Harsh regulatory framework despite intense competition in converging markets.

Trend 7

Telcos squeezed

Competitive pressure from OTTs and global telco giants squeezes European telecoms industry.

Trend 8

Cybersecurity

Europe lacks an integrated cybersecurity, data protection and privacy strategy.

TREND 1: ACROSS ICT SEGMENTS AMERICAN AND ASIAN COMPANIES DOMINATE GLOBAL MARKETS.

ICT Leaders 2011/12 (by revenues)



Source: A.T. Kearney, IDATE, Alexa, Financial Times

Trends

- Less than 10 percent of global ICT revenues are generated by European companies.
- Former market leaders have been picked up by global competitors (Nokia) or have exited market segments (Siemens).
- Many European industries are increasingly reliant on non-European ICT players.

TREND 1: GLOBAL PLAYERS FORGING THEIR WAY INTO EUROPE'S DIGITAL ECONOMY.

Inorganic Moves

DEALS



+



Alcatel-Lucent



LIBERTY GLOBAL



Hutchison Whampoa



Microsoft



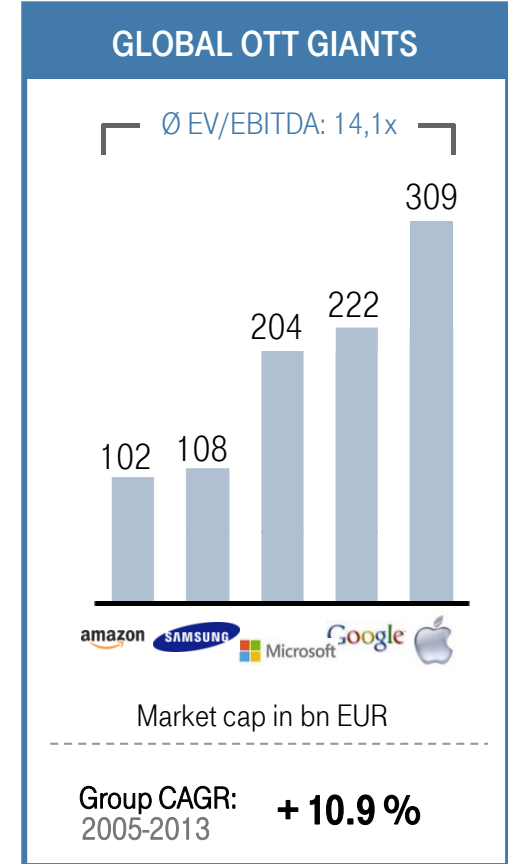
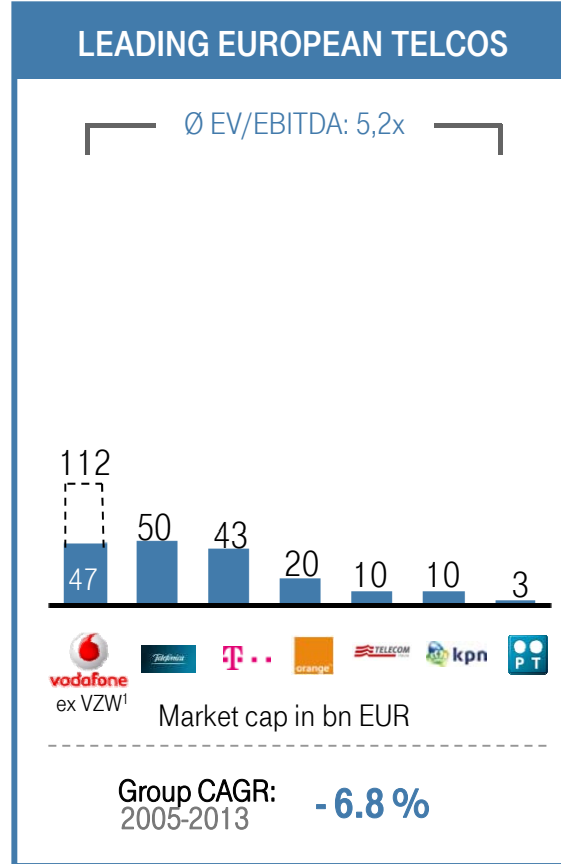
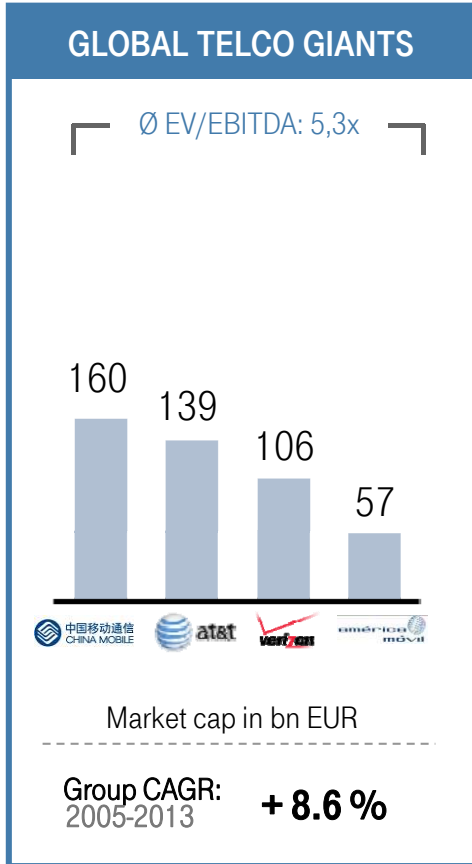
NOKIA

RUMORS



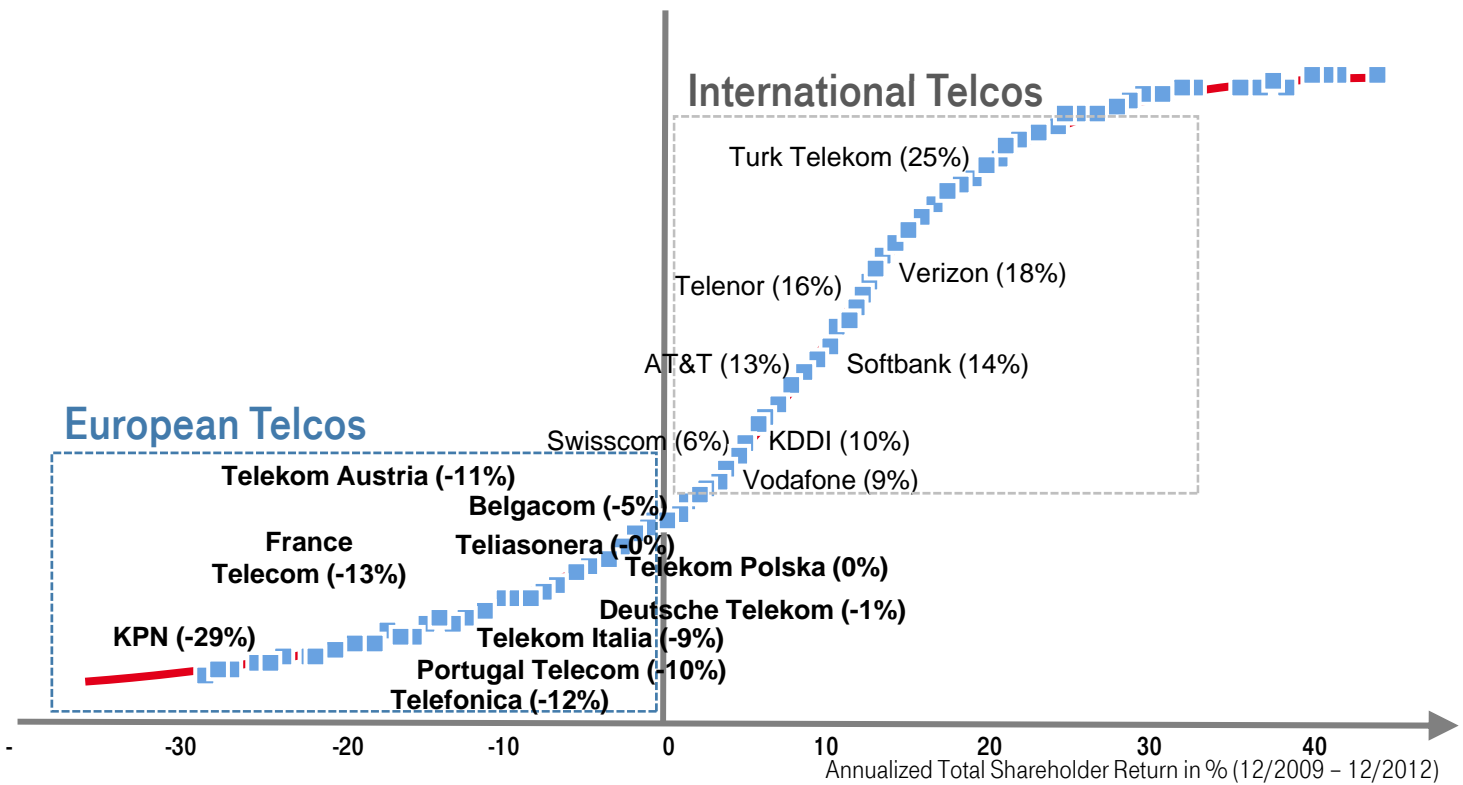
EUROPE: FROM INNOVATOR TO TAKE-OVER TARGET?

TREND 2: ERODING MARKET CAPITALIZATION IN EU. VALUE SHIFTS OUTWARDS.



TREND 2: NEGATIVE TOTAL SHAREHOLDER RETURNS FOR MANY EUROPEAN INCUMBENTS VS. GLOBAL PEERS.

Annualized Total Shareholder Return (12/2009 – 12/2012)

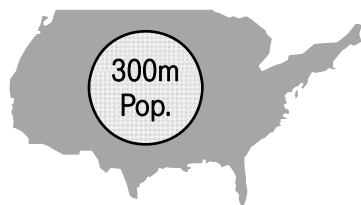


Source : BCG.

TREND 3: EU TELECOMS MARKET HIGHLY FRAGMENTED – INSUFFICIENT SCALE HARMS INDUSTRY.

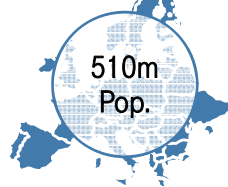
European Commission: “Fragmented European Market”.

USA



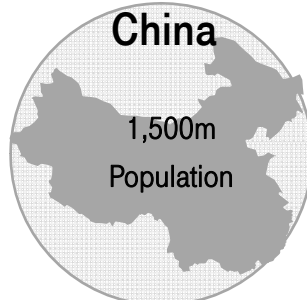
4-5 nation-wide operators

EU



200 national operators

China



4-5 nation-wide operators

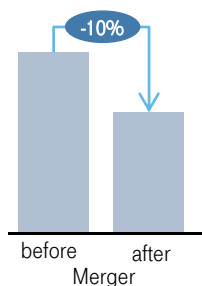
Source: European Commission.

Trends

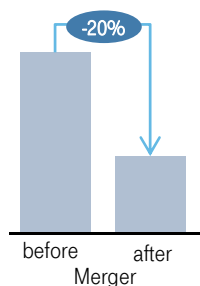
- American and Asian operators are able to serve hundreds of millions of customers each in one consolidated market.
- In Europe, merger remedies have repeatedly reversed market-driven consolidation (e.g. twice in Austria).
- The lack of scale impedes European telecom investments in next-generation technology.
- USA benefits from lower spectrum costs (0.55 EUR/pop/MHz vs. 0.77 in Europe).¹⁾
- Intra-European consolidation difficult due to framework conditions. EU companies become targets for non-European rivals.

Scale matters

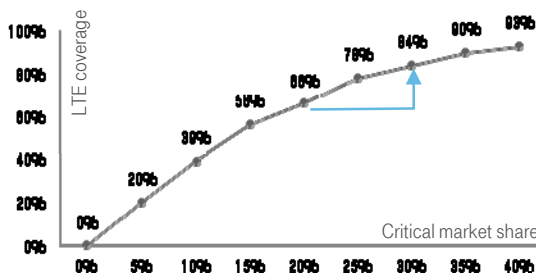
OPEX savings *



CAPEX savings *



Increased coverage **



* Example values from Sunrise/Orange merger proposal.

** Increased coverage: With higher market share it becomes economically viable to increase coverage to less densely populated areas.

Source: BCG (2013).

¹⁾ Analysis of 800 MHz auctions in the EU (2011-2013) vs. 700 MHz auctions in the USA (2008)

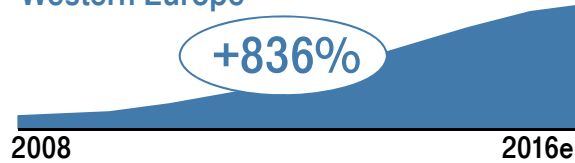
TREND 4: DECLINE OF EUROPEAN TELECOM REVENUES.

European Commission: "Pressure is growing".

IP Traffic

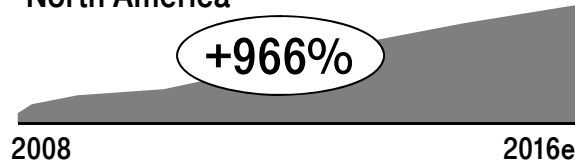
Western Europe

+836%



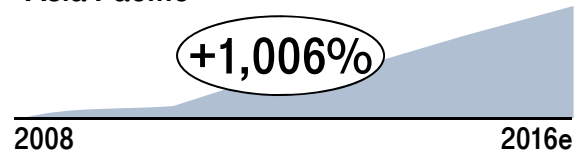
North America

+966%



Asia Pacific

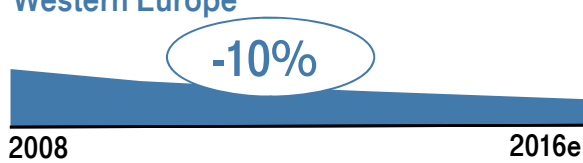
+1,006%



Telecom Revenues

Western Europe

-10%



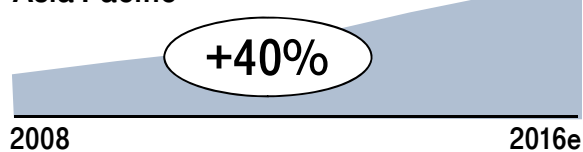
North America

+35%



Asia Pacific

+40%



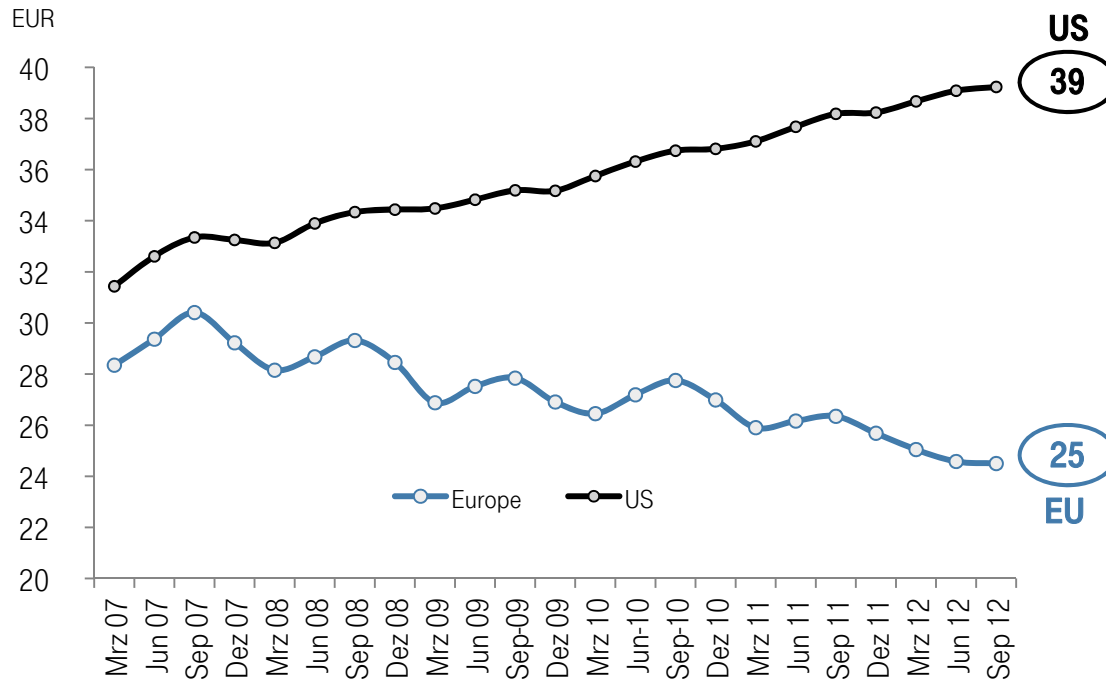
Source: European Commission (Sep. 2013)

Trends

- While IP Traffic grows, revenues shrink continuously.
- Despite huge growth in demand for their services telecoms companies in Europe face decreasing revenues.
- This is in stark contrast to the U.S. and Asia Pacific where revenues are on the rise.
- Prices in European Markets are under pressure due to regulatory intervention and competition.

TREND 4: PROLONGED REVENUE DECLINE IN EUROPEAN MARKETS.

Wireless service revenues per capita in the U.S. and Europe



Source: Bernstein Research (Feb 2013). Exchange rate USD/EUR as of Sep 12.

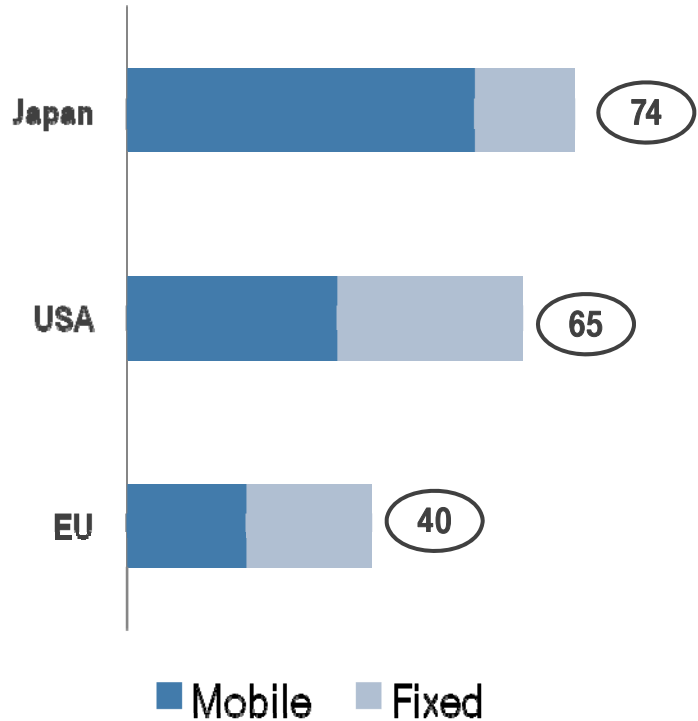
Trends

- U.S. consumers generate higher revenues per capita for mobile wireless services compared to European consumers.
- Revenue growth allows U.S. carriers to deploy LTE at a much faster pace than the EU.

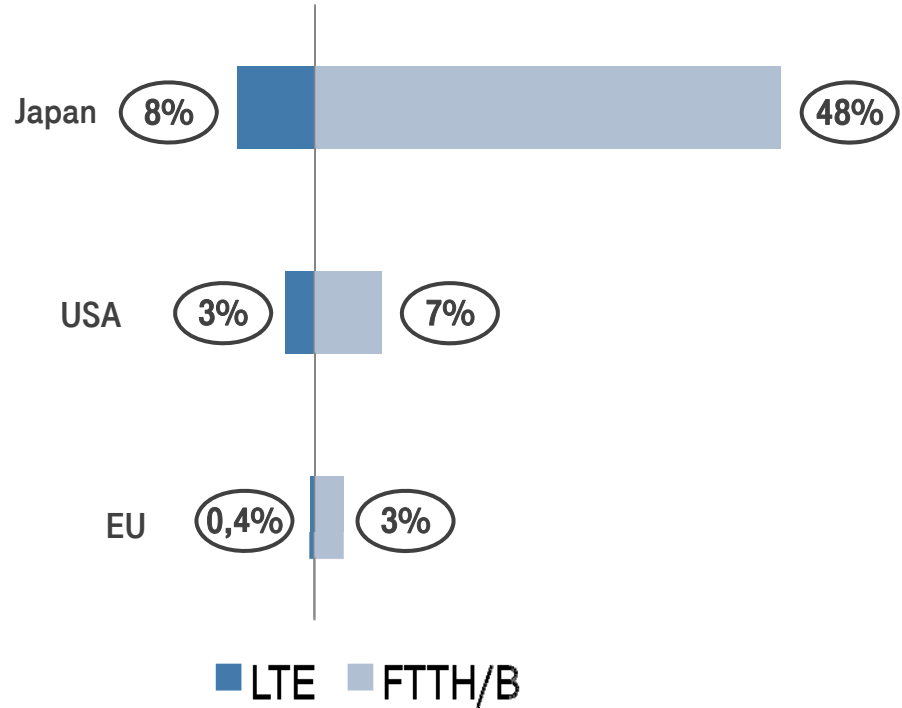
TREND 4: LOW PRICE LEVEL AS WELL AS LOW NGA PENETRATION IN EUROPE.

Monthly revenues and high speed broadband penetration levels

2012 monthly ARPU/ARPA (in EUR)



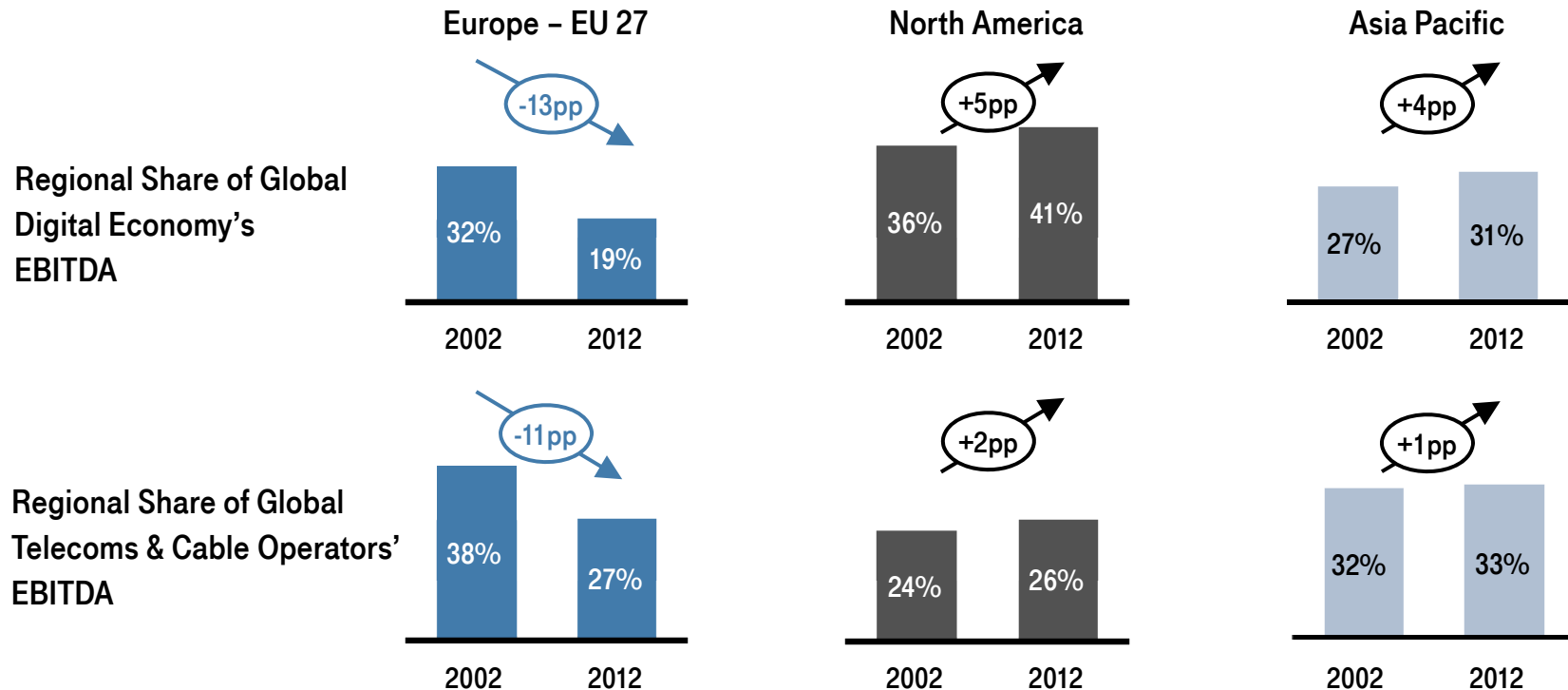
2012 LTE and FTTH/B penetration¹



1) LTE subscriber penetration; FTTH/B household penetration. Source: BCG; Informa.

TREND 4: EUROPEAN DIGITAL ECONOMY SUFFERS FROM DECLINING PROFIT POOLS.

Shares of the World's Digital Economy EBITDA

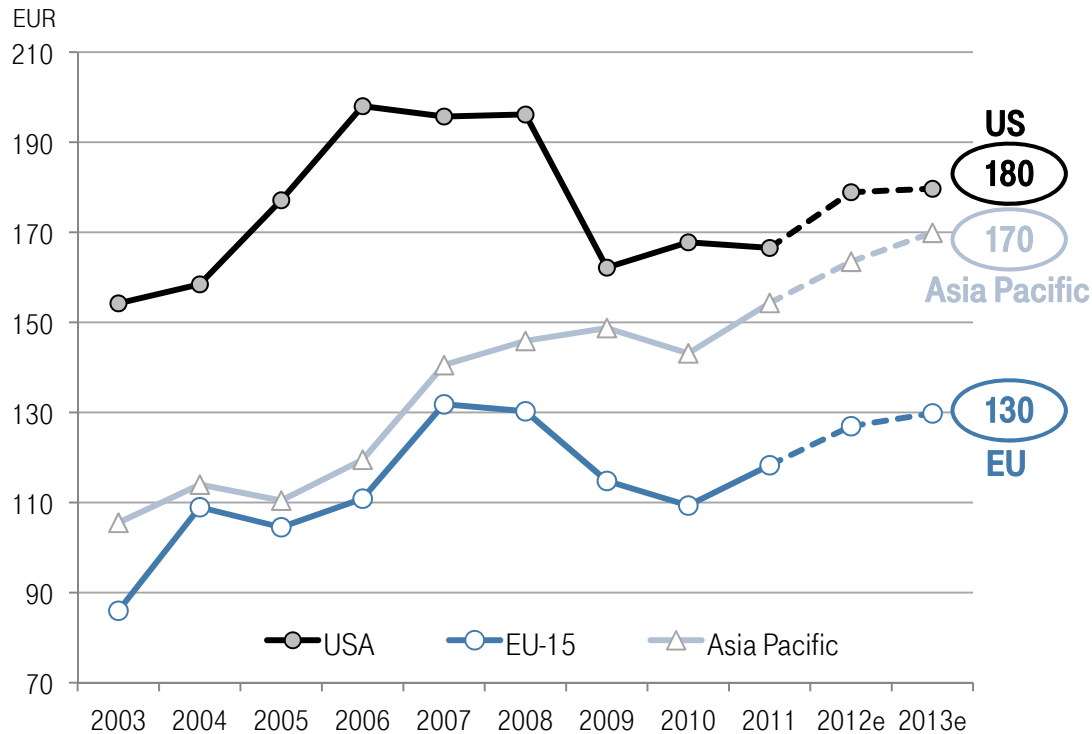


Digital Economy: Telecommunications services and equipment, Content services & applications, TV services, Software and IT services, Computer hardware, Consumer electronics

Source: DT Group Development, based on data from Factset (comparison of 387 listed companies).

TREND 5: EU LACKS INVESTMENT FOR HIGH-SPEED NEXT GENERATION NETWORKS.

Telecommunications investment in EUR per capita



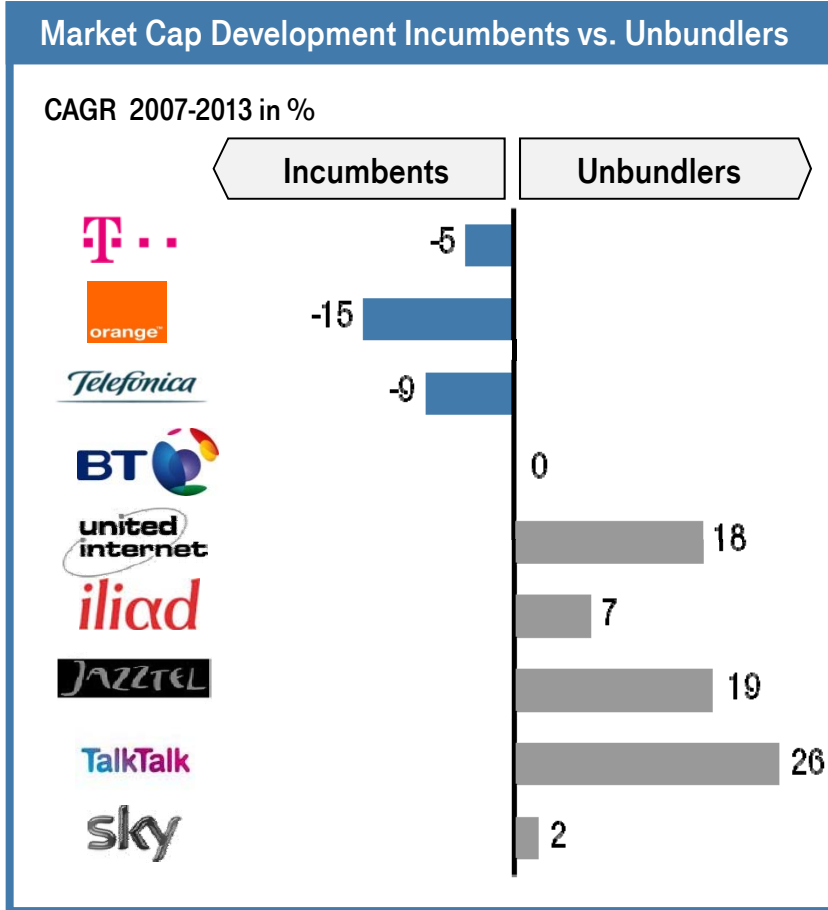
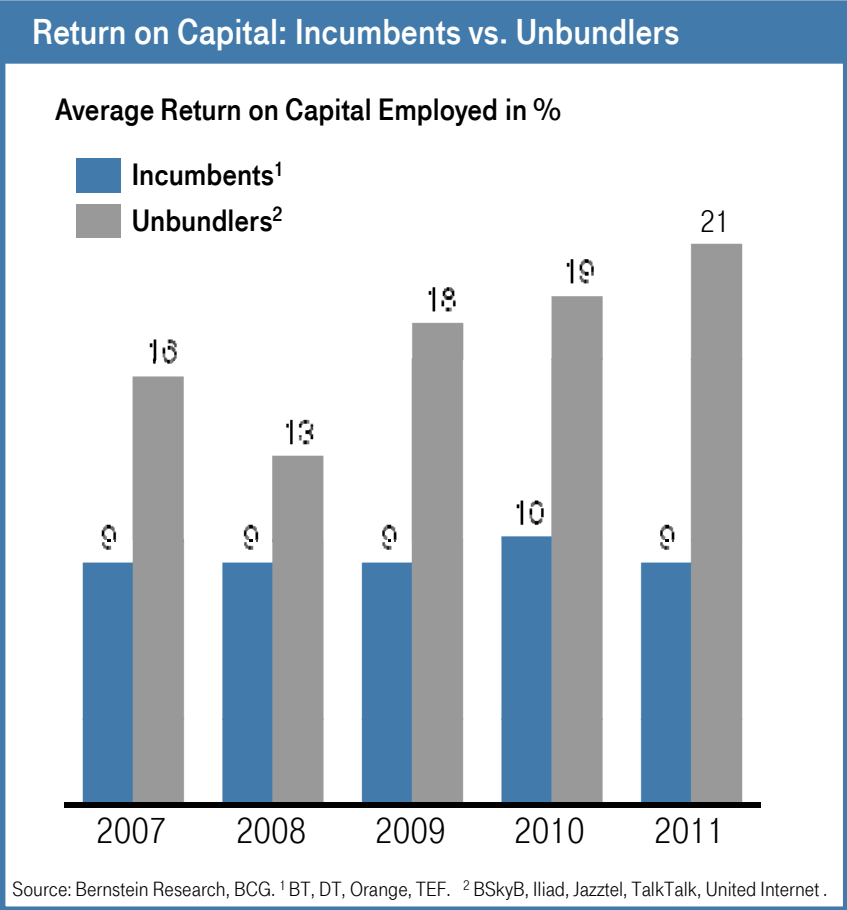
Asia Pacific: Japan, South Korea, New Zealand, Australia.

Source: OECD.

Trends

- Investment of up to 270 bn EUR required to roll-out fibre based high-speed networks in Europe.
- Long term investment level in Europe is well below the U.S. and Asia/Pacific level.

TREND 6: REGULATORY REGIME FAVORS NON-INVESTING UNBUNDLERS.



TREND 6: EUROPE IS CHALLENGED BY HARD REGULATION AND COMPETITION POLICY.

US

- Main goal: market driven infrastructure rollout, allow adequate financial returns
- Approach:
 - favor infrastructure competition
 - lenient access regulation for broadband
- Financing: operators fund the fiber network

Europe

- Main goal: competition and low consumer prices
- Approach:
 - far-reaching market regulation,
 - intrusive access and price regulation,
 - complex institutional framework with National Regulatory/Competition Authorities, Body of European Regulators and EU Commission.
- Financing : operators fund the fiber network

Asia / Pacific

- Main goal: make fiber accessible for everyone as part of industrial policy
- Approach:
 - favor service competition,
 - open-access wholesale networks
- Financing : government-subsidized deployments

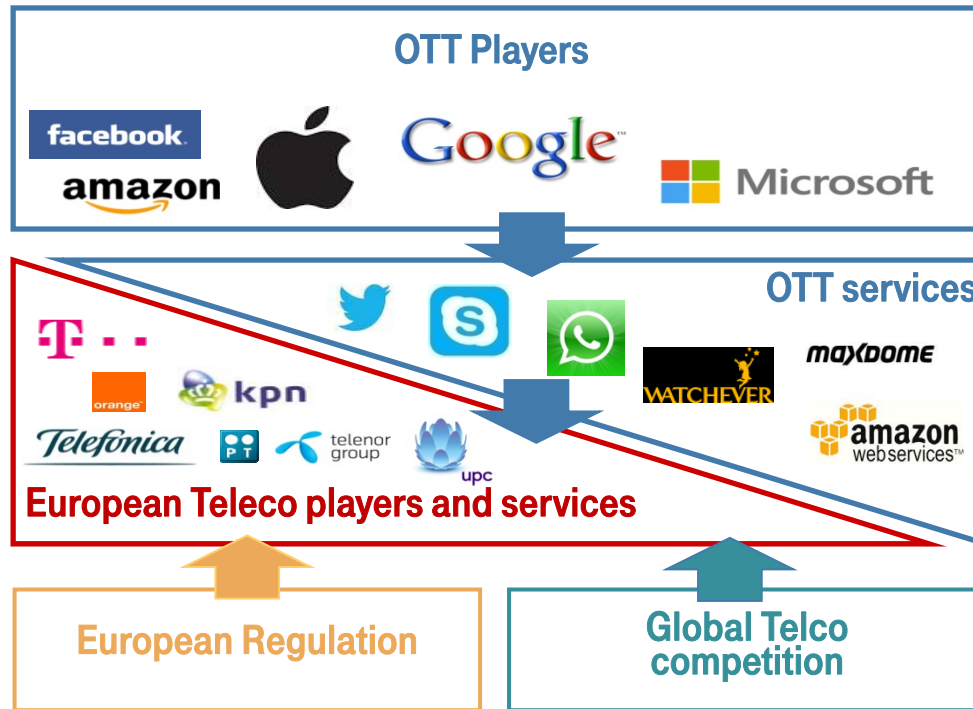
TREND 6: TRADITIONAL REGULATORY PARADIGMS DO NOT MEET THE INVESTMENT CHALLENGE.

Regulatory concept	Myth	Reality	Recommendation
Ladder of investment	<ul style="list-style-type: none"> • Providing new entrants with access to many facilities allows them to first build up a critical mass of customers before they invest in infrastructure. 	<ul style="list-style-type: none"> • Little theoretical support in economic research, no empirical evidence.¹⁾ • Nonetheless, 'ladder of investment' concept with major political acceptance. 	<ul style="list-style-type: none"> • Dismiss ladder of investment concept. • Acknowledge proven investment incentives: positive financial outlook, predictability, absence of regulatory risks.
Essential facility doctrine	<ul style="list-style-type: none"> • Access regulation as the only way to establish competition, as the incumbent owns the 'essential facility'. • Price regulation needed to secure consumer welfare. 	<ul style="list-style-type: none"> • Consumers benefit from ubiquitous competing alternative infrastructures (cable, fiber, mobile). • Extension of legacy copper regulation to new technologies. 	<ul style="list-style-type: none"> • Access and price regulation need to be fundamentally revisited (lack of justification). • Competition law sufficient to prevent abuse of market power.
Spectrum auction	<ul style="list-style-type: none"> • Spectrum auctions ensure efficient development of mobile markets. • High auction proceeds unrelated to industry development. 	<ul style="list-style-type: none"> • High cost of spectrum hampers fast mobile NGA rollout. • Some EU governments exploiting spectrum auctions to cover budget deficits. • Hyper complex auction designs entailing high economic risks. 	<ul style="list-style-type: none"> • Auction design must support sustainable and investment-friendly outcomes. • Allow for long-term spectrum usage and trading.

¹⁾ See e.g. Hausman & Sidak (2005); Bauer (2010); Bourreau, Dogan & Manant (2010); Briglauer & Vogelsang (2011).

TREND 7: TELCOS SQUEEZED IN CONVERGING MARKETS.

Global competitive pressure squeezes European telecoms industry.



Trends

No level playing field – compared to telcos, OTT players benefit from:

- Low CAPEX and sunk costs,
- Low risk due to instant scalability,
- Global markets build on network effects,
- Proprietary standards,
- Less regulatory obligations.

TREND 8: THE CYBERSECURITY CHALLENGE.

Major cybersecurity threats

Hactivism

Corporate espionage

Government-driven

Terrorism

Criminal

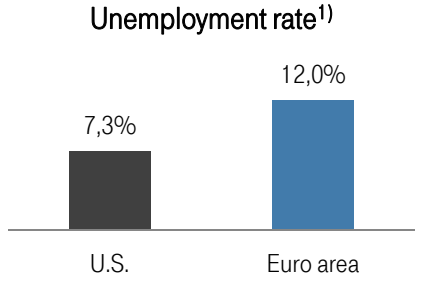
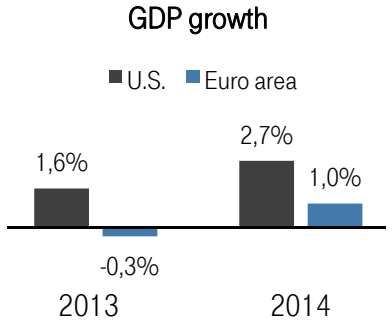
Source: World Economic Forum.

Challenges

- Lack of security in the digital sphere threatens public safety and economic welfare.
- Security threats are growing in all areas – several million cyberattacks per day.
- Espionage undermines trust in cybersecurity and weakens confidence in digital services.
- Comprehensive surveillance of Internet traffic and services undermines freedom of the Internet, basic human rights and cultural forms of expression.
- Data protection and privacy: different legislations within Europe and compared to the U.S.
- Europe's telcos becoming acquisition targets of players from outside Europe jeopardizes technological sovereignty and increases Europe's dependency on non-European ICT companies.

GROWTH AND EMPLOYMENT IN EUROPE DEPEND ON MORE ICT INVESTMENT.

European economy trailing behind



¹⁾ August 2013 Source: Economist

ICT spurs growth and employment

- ICT accounts for 21% of GDP growth in the last 5 years in mature countries.¹⁾
- A 10 percentage-point increase in broadband penetration raises annual per-capita growth by 0.9-1.5 percentage points.
- ICT contributes to productivity growth: 31% in Europe, 59% in the U.S.
- ICT creates 2.6 new jobs for every one destroyed.

¹⁾ Sweden, Germany, UK, France, USA, South Korea, Canada, Italy, Japan.

Source: McKinsey, ifo, European Commission.

ICT investment unleashes macroeconomic growth

- Poor telecom revenue outlook causes an investment gap estimated at €110-170 billion to reach DAE¹⁾ targets.
- Deregulation and other measures boosting ICT investment in Europe could yield up to €750 billion in GDP growth and 5.5 million jobs by 2020.²⁾

¹⁾ DAE: Digital Agenda of Europe. DAE targets: >30 Mbit/s coverage for all, 50% of households taking up > 100 Mbit/s by 2020.

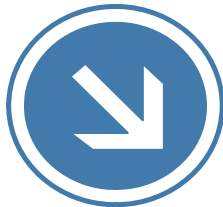
²⁾ BCG estimates

Source: Boston Consulting Group, EC Scoreboard.

THE DECLINE OF EUROPE'S ICT INDUSTRY ENTAILS SUBSTANTIAL ECONOMIC AND POLITICAL RISKS.

Europe's ICT industry in decline ...

1	Competitiveness	5	Investments
2	Sector Value	6	Regulation
3	Market Structure	7	Telcos squeezed
4	Revenues	8	Cybersecurity



... entails substantial economic and political risks

Economic risks:

- Decreasing investments in ICT, e.g. in high-speed broadband networks.
- Innovation rents captured by non-European players.
- Reduced macroeconomic growth, loss of jobs.

Political risks:

- Loss of European ICT know how – technology leadership overseas.
- European economy increasingly reliant on non-European ICT players.
- Europe increasingly vulnerable to cyber criminality and espionage.
- Ability to protect critical telecom infrastructures impaired.
- Loss of confidence in the digital economy.

EUROPE NEEDS TO REGAIN A LEADING POSITION.

Vision for EU's ICT industry:

**Regain leading position within next 10 years:
Telecom network infrastructure (fiber, LTE,
intelligent networks), Soft- and Hardware,
Internet Services.**

Key priority:

**Align all EU policies to restore consistency and
credibility of political decision-making:
Economic and Competition Policy, State Aid,
R&D, Justice.**

AT A GLANCE: EIGHT TRENDS WHY EUROPE IS FALLING BEHIND.

1 Competitiveness

Europe is losing ground in almost every segment of the ICT industry. Only 5 European companies amongst the world's ICT leaders. They contribute less than 10% to global ICT revenues.

2 Sector Value

Eroding sector value in EU and value shifts towards the U.S. and Asia. Market capitalization of European telcos declines by 7% per year since 2005. In contrast: Global OTT and telco giants has grown by 9-11%.

3 Market Structure

Strong market fragmentation and insufficient scale due to 200 national operators in Europe compared to 4-5 nation-wide operators in the U.S. and China.

4 Revenues

Prolonged revenue decline in Europe of -10% within 2008-2016. In contrast: Revenue growth of more than 35% in the U.S. and Asia Pacific.

5 Investments

EU lacks investment of up to 270 bn EUR for high-speed next generation networks. Long term investment in Europe of 130 EUR per capita is well below 170-180 EUR investment in the U.S. and Asia Pacific.

6 Regulation

Hard regulation and competition policy in Europe favors non-investing unbundlers. Market driven infrastructure rollout in the U.S. guarantees adequate financial returns.

7 Telcos squeezed

No level playing field in the European telecom industry. Telcos are squeezed between global players, OTT players and services as well as regulatory measures.

8 Cybersecurity

Europe lacks an integrated cybersecurity, data protection and privacy strategy.