Mobile Broadband:

Commercial Accelerator - Regulatory Brake

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Mobile Broadband – Key Issues

Commercial Accelerators

- The Contribution of the Mobile Sector to the Greek Economy
- Mobile Broadband – Global Prospects
- Mobile Broadband – Greek Reality

Regulatory Brakes

- Over-taxation
- Over-regulation
- Licensing
- Spectrum

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The Contribution of the Mobile Sector to the Greek Economy (1)

The mobile sector makes a major contribution to the Greek economy:

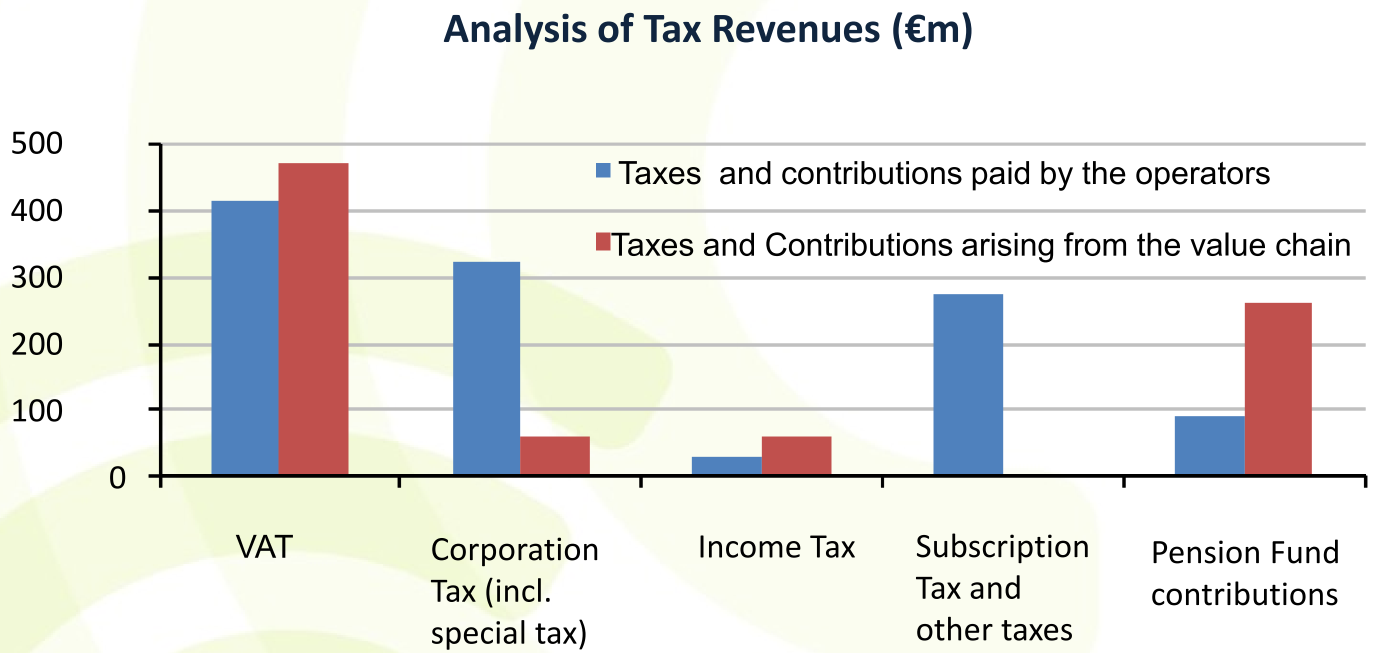
- 1.8% of GDP.
- €2 billion in revenues to the State
- 80 thousand jobs supported, directly and indirectly.
- Fierce competition leading to major cuts in mobile prices
  - Average price per minute for Cosmote customers c 60% lower in 2010Q1 compared to 2007.

……………… despite being under great pressure from intense competition and increased regulatory burdens.

Source: ICAP for EEKT

The Contribution of the Mobile Sector to the Greek Economy (2)

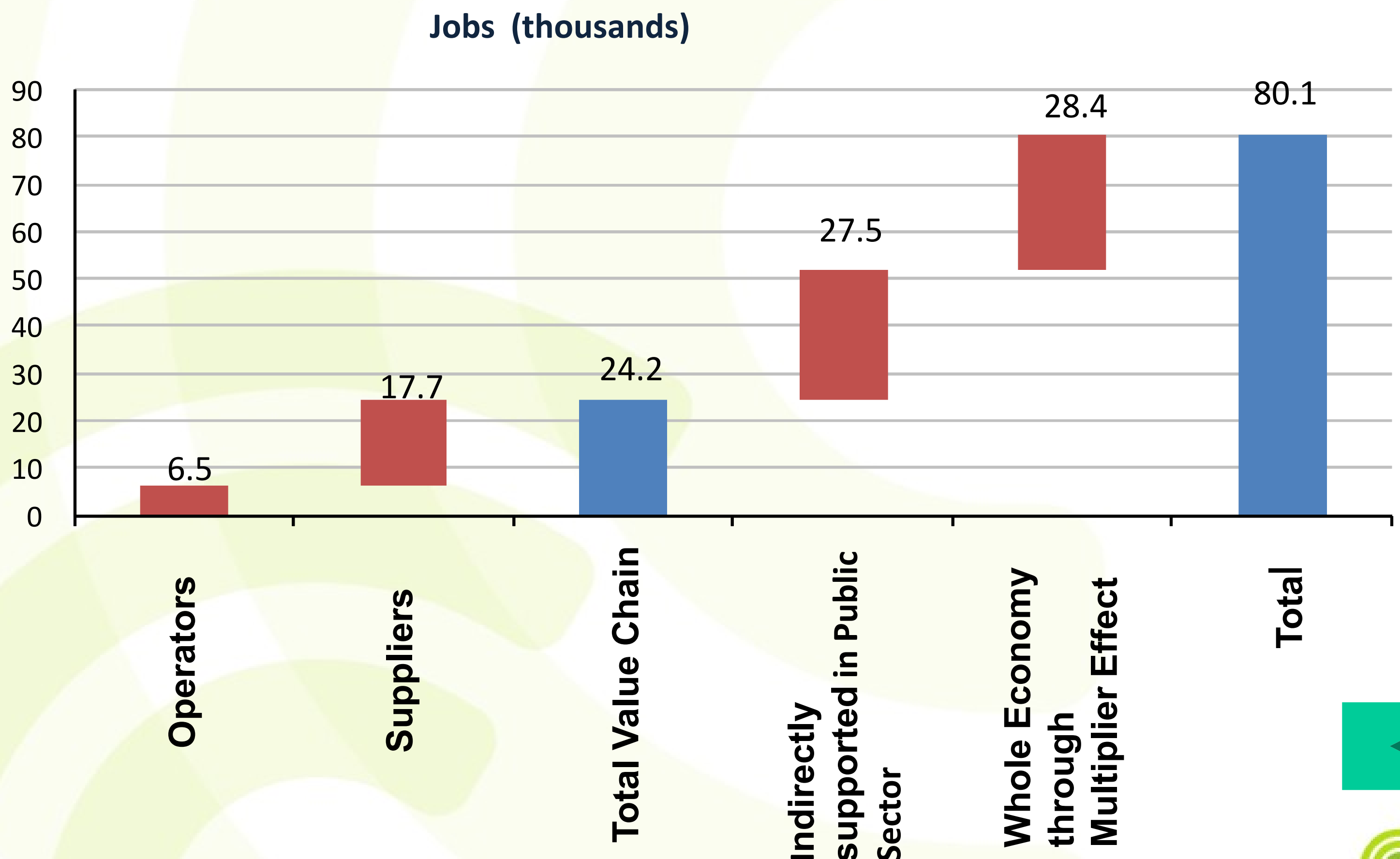
Tax Revenues contributed by the mobile sector



Source: ICAP for EEKT

The Contribution of the Mobile Sector to the Greek Economy (3)

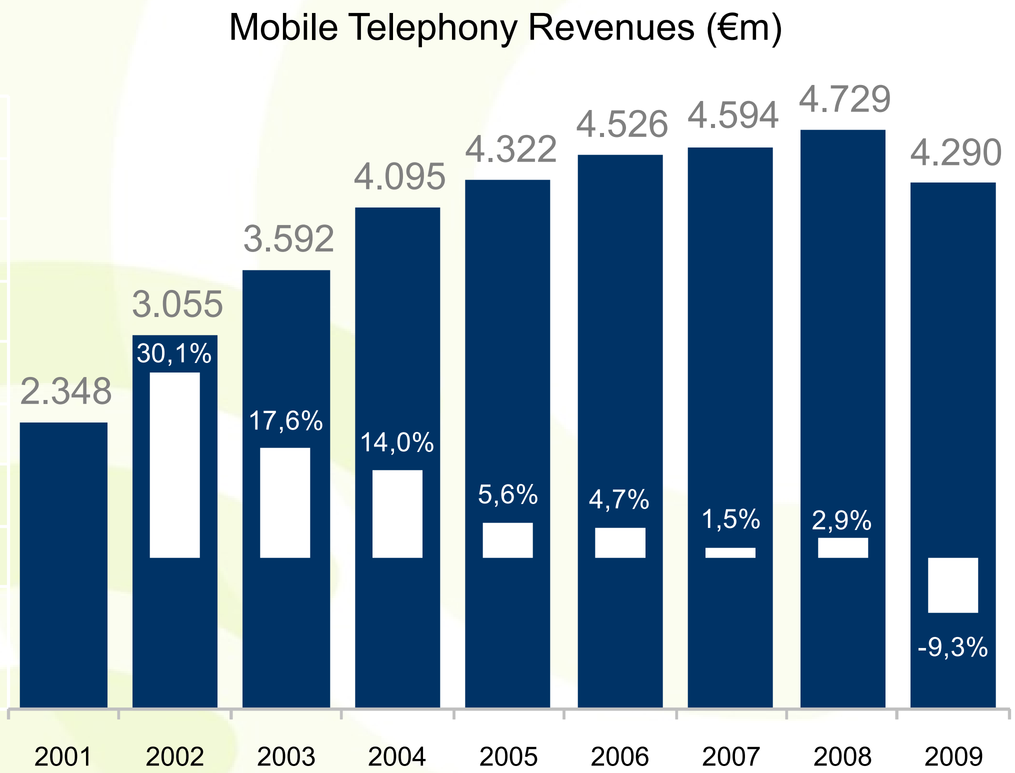
Jobs supported by mobile telephony in Greece



Source: ICAP for EEKT

The Contribution of the Mobile Sector to the Greek Economy (5)

All this achieved against a background of fierce competition in the Greek mobile sector……… with revenues falling for first time in 2009



Source: ICAP for EEKT

Mobile Broadband – Global Prospects

- **Rene Obermann, DT CEO**: DT Group targeting mobile broadband revenues to grow from €4 billion in 2009, to €6 billion by 2012, €10 billion by 2015.

- **Hans Vestberg, Ericsson CEO**, has predicted:

  - 3 billion new mobile broadband subscriptions in next five years.
  - 20 billion connected devices by 2020
  - By 2015, compared with 2009, mobile data traffic x 50.

- **European Commission May 2010 Digital Agenda**: *"Wireless (terrestrial and satellite) broadband can play a key role to ensure coverage of all areas including remote and rural regions. The central problem to develop wireless broadband networks today is access to radio spectrum"*.

- **15th Implementation Report**: in EU, *"average penetration rate of dedicated mobile broadband cards is growing rapidly. Convergence has become a reality"*.

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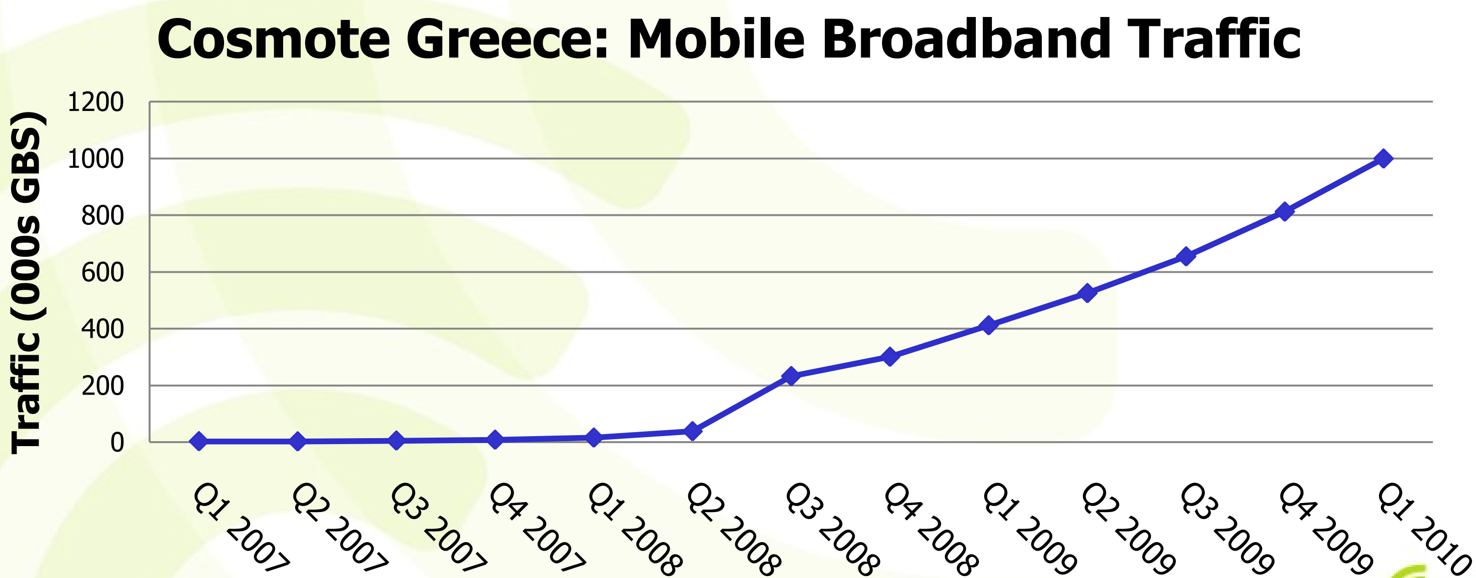
Mobile Broadband – Greek Reality (1)

- Wide range of affordable MBB packages eg. COSMOTE offers 7 “Internet On The Go” packages, from €5 per month (for 100MB) to €49.92 for “Unlimited”.
- Cosmote offers speeds up to 28.8Mbps, with 42.2Mbps being piloted.
- 88% 3G coverage in Greece (according to OECD report). COSMOTE 3G coverage now higher still.
- Rapid growth in Data traffic:



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Mobile Broadband – Greek Reality (2)

- Greek mobile industry prepared to invest €1.8 billion over next three years in new high-speed data services.

- Technology, investment and consumer demand for mobile broadband all present in the Greek market.

BUT……..

- Growth in penetration slower than in other EU countries. 15th EU Implementation Report: 2% of Greece vs 5.25% EU Average.

- Hence need to accelerate pace of development in Greece.

Regulatory obstacles in Greece to broadband development

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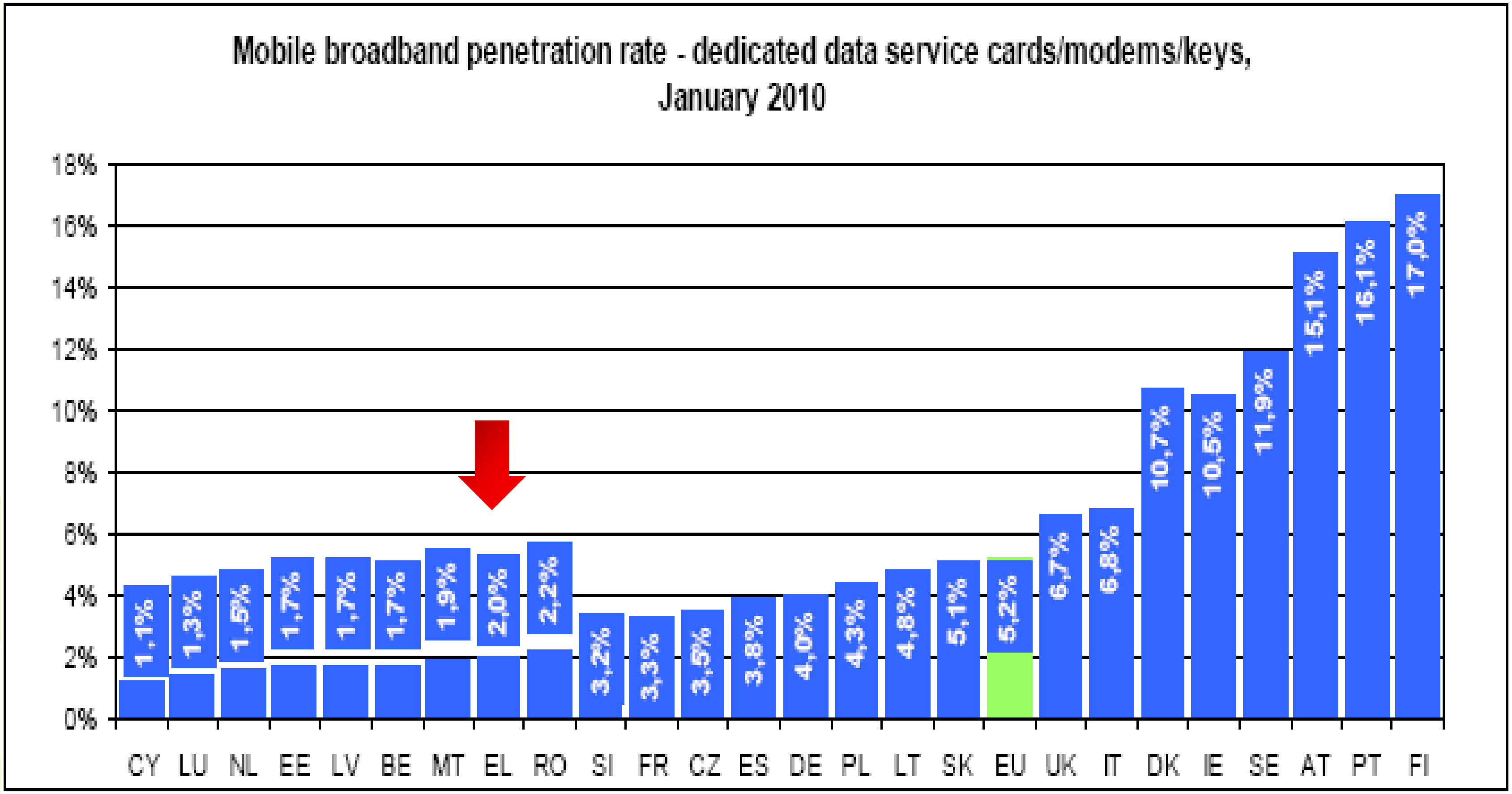
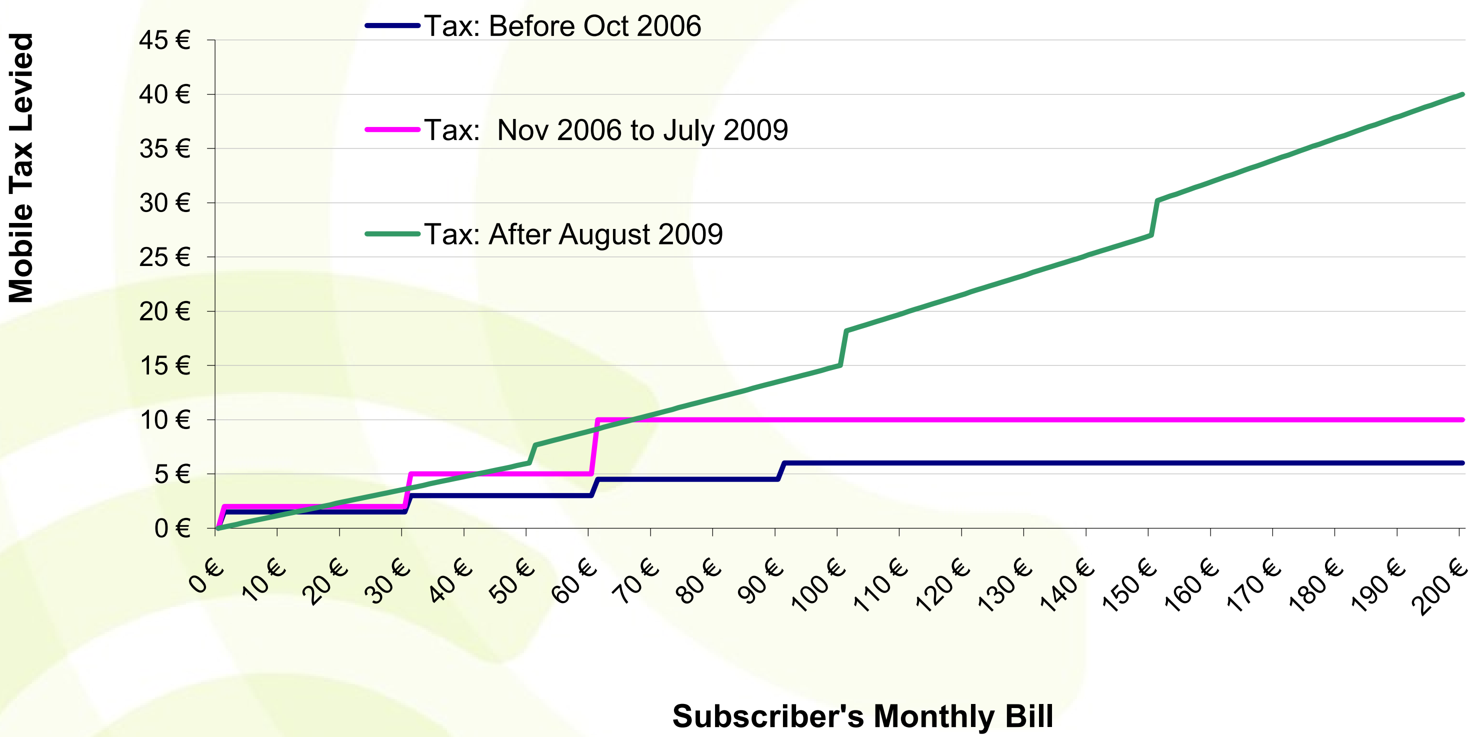
Source: European Commission

Mobile Broadband Penetration Rate in Europe



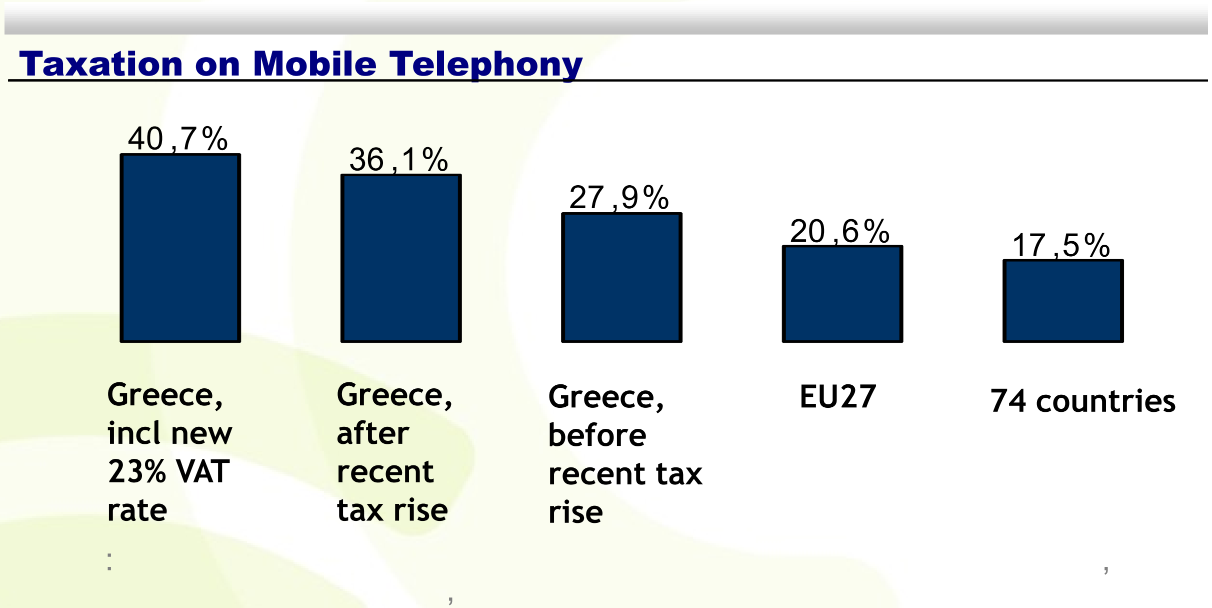
Regulatory Brakes 1. Over-taxation

- Huge increase in taxation on mobile sector, with two successive rises in tax rates:



Regulatory Brakes 1. Over-taxation

- ….. leading to Greek tax rates being the highest in Europe by some distance:



Source: ICAP for Greece. GSMA for RoW

- but positive change that under new tax Law, broadband now excluded from the mobile tax.

Regulatory Brakes 2. Over-Regulation

Series of regulations impacting on Greek mobile operators:

- **Severe cuts in Mobile Termination Rates** – to fall by 50% between 2008 and 2011, under the current EETT glide path.
- **Roaming Regulation:** large cuts in both wholesale and retail roaming tariffs. Disproportionate impact on Greek operators since Greece as a tourist country, has large volume of inbound roaming traffic.
- **Regulations from EETT and other authorities (ΑΔΑΕ, ΑΠΔΠΧ, Συνήγορος του Πολίτη).** Impose both direct financial costs and other compliance cost (time, staff costs etc)

Strong regulatory pressures in an environment where mobile sector revenues are already falling due to fierce competition. Increases difficulty of financing investment in next generation services.

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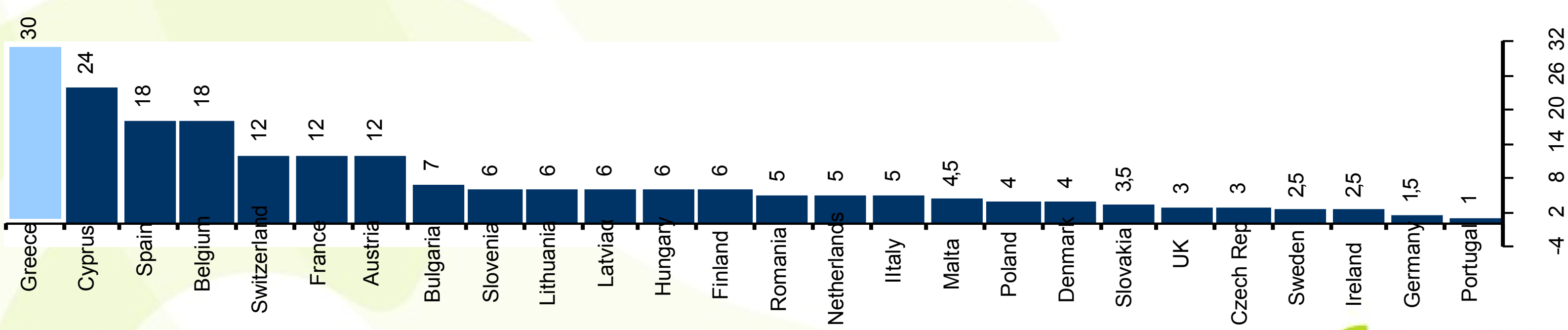
Regulatory Brakes 3. Base Station Licensing

- **Severe problems with licensing base stations in Greece.** The problem deteriorating year-by-year, with each year a new Authority to deal with.

- Greek chapter of 15th Implementation Report refers to:
  - *Systematic problems…… the legislation is still not being applied correctly by all relevant authorities…… cumbersome procedures……certain local authorities set ad-hoc conditions.*
  - *This ultimately affects the quality of services offered to end-users and their right to access advanced communication services based on high-speed broadband*

- **Greece – longest licensing period in EU**

Months needed to licence a base station



Regulatory Brakes 3. Base Station Licensing

- **Major failings in base station licensing process:**
  - **Bureaucracy:** process involves 9 public authorities, compared with 1-3 in rest of EU.
  - **Time-consuming:** more than two years in Greece, compared with EU average of 7 months.
- **Immediate steps required by public authorities to resolve outstanding licensing problems.**
- BTSs in Greece comply with significantly lower EMF emission limits than the EU limits. In 2009,1308 inspections carried out in Greece. In no case were the safe emissions limits exceeded.

The urgent need for change recognised by all interested parties.

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Regulatory Brakes 4. Spectrum

- Why is Spectrum Important?
  - Mobile Broadband is spectrum hungry.
  - Existing mobile spectrum already used to near-capacity.
  - Large capex savings and higher quality service from using 800MHz/900MHz for new LTE services.

- **Liberalisation of 900MHz band must be done in a competitively neutral way.** Requires Armed Forces to release their 2x5MHz of 900MHz spectrum and/or spectrum reallocations among mobile operators.

- **Neelie Kroes***: *"Spectrum is a scarce resource and ……….. the so-called digital dividend, and other coordinated actions, are needed to allow better and more innovative mobile services. We cannot be complacent about this - opening up spectrum is not the same as using it well. We cannot waste opportunities".*

- Study for EU by **Analysys Mason, DotEcon and Hogan & Hartson (9.9.2009):** "We estimate the economic and social value of the DD across the EU to be in the range of €150-700 billion**"

* Mobile World Congress Feb 2010

**Net Present Value over 15 years

Regulatory Brakes 4. Spectrum

- Significant progress on Digital Dividend in most of Europe: Most countries have…….. *Either already completed the transition to Digital broadcasting* - Germany, Denmark, Norway, Switzerland, Luxembourg ……. *Or are implementing plans to complete switchover in advance of the 2012 target* - Austria, Croatia, France, Hungary, Spain, Slovenia
- **And in most cases, with clear Government/Regulatory decisions to allocate the 790-862MHz band to mobile uses.**
- **Greece lagging badly behind:**
  - Analogue TV switch-off unlikely to occur by 2012. May not be by 2015.
  - No decision on allocating 790-862MHz band to mobile uses.
  - One-third of DD band now allocated to Greek armed forces.
  - Positive development that Ministry of Infrastructure has initiated procedure to appointed a consultant to review spectrum policy.
- **€3.6 billion paid for DD spectrum in recent German spectrum auction……..**

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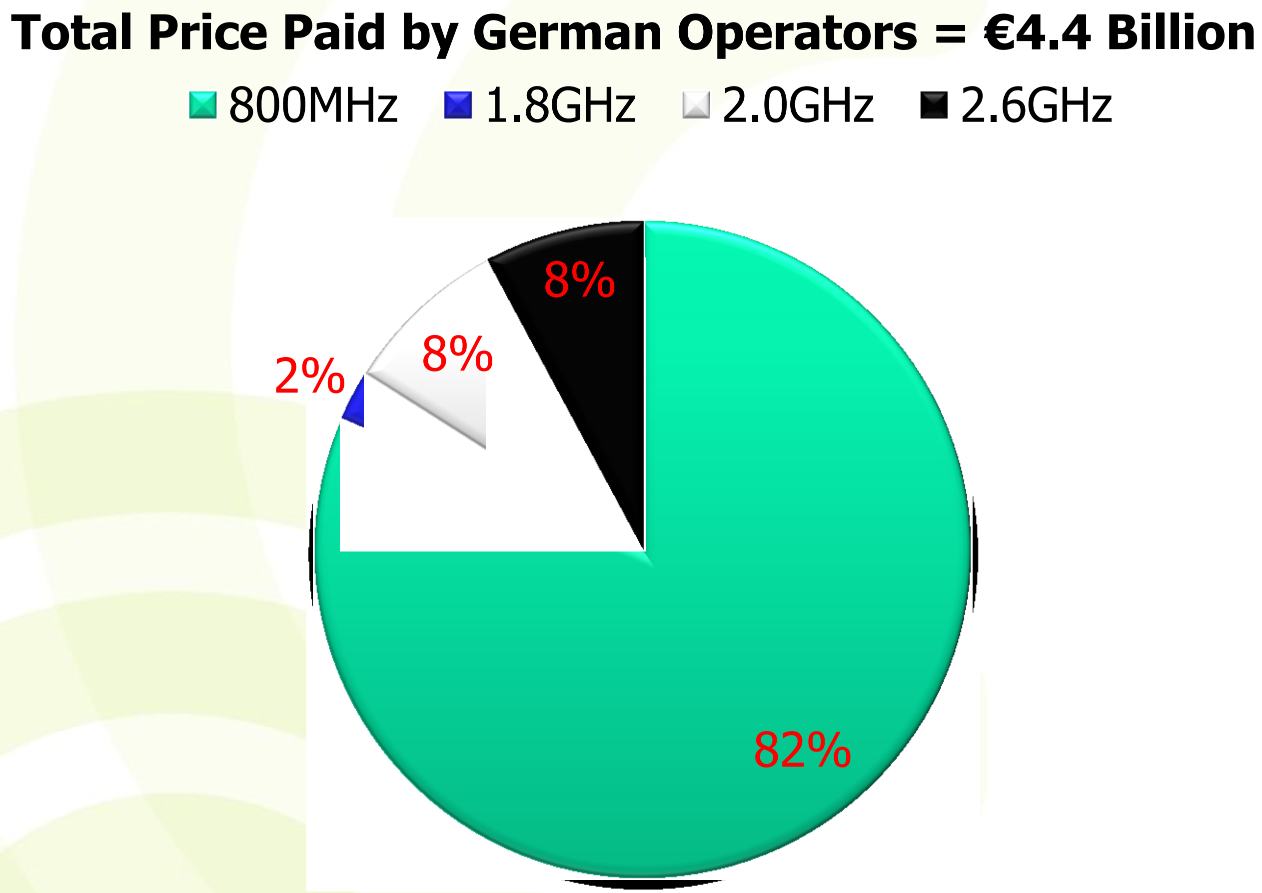
2010 German Auction - Final Prices - Shares by Spectrum Band



Conclusions

- Prospects for new generation of mobile broadband services offering high quality services, with wide coverage and high speeds.
- COSMOTE has planned investment in next generation networks to make this happen.
- But vital that regulatory issues are resolved – over-taxation, over-regulation, serious failings in processes for base station licensing, and lack of progress on the Digital Dividend in Greece.

Thank you

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