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Indicators Meeting (WTIM-12)
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Contribution to WTIM-12 session

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English

SOURCE: Autoridade Nacional de Comunicações (ANACOM), Portugal

TITLE: Measuring fixed and mobile internet data traffic

FREE FLOWING COMMUNICATIONS

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Help 1

Measuring fixed and mobile internet data traffic

Help 2

10th WTIM, Bangkok

Rita Vala

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Measuring fixed and mobile internet data traffic

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Introduction

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Portugal

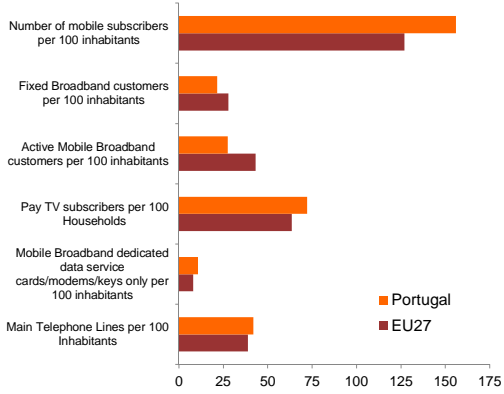
- ▶ Capital city: Lisbon
- ▶ Total Area: 92,090 sq km
- ▶ Population: 10.6 millions inhabitants
- ▶ GDP: €170.9 Million (2011).
- ▶ Language: Portuguese
- ▶ ANACOM (www.anacom.pt) is the regulator, supervisor and representative of the communications sector in Portugal.



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Introduction

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| Metric | Portugal | EU27 |
|--|----------|------|
| Number of mobile subscribers per 100 inhabitants | ~160 | ~130 |
| Fixed Broadband customers per 100 inhabitants | ~21.6 | ~25 |
| Active Mobile Broadband customers per 100 inhabitants | ~27.5 | ~45 |
| Pay TV subscribers per 100 Households | ~72.2 | ~60 |
| Mobile Broadband dedicated data service cards/modems/keys only per 100 inhabitants | ~10 | ~5 |
| Main Telephone Lines per 100 Inhabitants | ~40 | ~35 |

- ▶ High penetration of mobile phones
- ▶ Fixed Broadband penetration of 21,6 per 100 inhabitants
- ▶ Mobile BB penetration of 27,5 per 100 inhabitants
- ▶ Pay-TV services penetration of 72,2 per 100 HH
- ▶ 38 % HH have, at least, 4 different communications services
- ▶ Triple –play penetration of 38 per 100 HH
- ▶ Double-play penetration of 15 per 100 HH

Source: ANACOM, European Commission

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Why measure data traffic? ANACOM

Growing levels of connectivity, new devices, applications and services leads to increase in data traffic

- Number of broadband connections no longer enough to monitor Internet usage
- Traffic figures are of key importance to **monitor usage**.
- EU (2011), started collecting data traffic

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Indicators collected by ANACOM ANACOM

| Questionnaires | Indicators |
|--|---|
| <p>Fixed Services Questionnaire Quarterly Answered by all ISPs</p> | <p>Fixed broadband traffic</p> <ul style="list-style-type: none"> • Dial-up traffic (until 2008) • Broadband internet traffic, GB (since 2Q2008) |
| <p>Mobile Services Questionnaire Quarterly Answered by all Mobile Operators and MVNOs</p> | <p>Mobile broadband traffic</p> <ul style="list-style-type: none"> • MB and Number of sessions (since 2007) <ul style="list-style-type: none"> • Internet; • WAP; • Corporate services • MB and Number of sessions (since 2010) <ul style="list-style-type: none"> • Internet via datacards/modem • Mobile TV |

Data dissemination:

<http://www.anacom.pt/render.jsp?categoryId=277884#horizontalMenuArea>


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| Indicators collected by ANACOM | |
|---|--------|
| Fixed Broadband | ANACOM |
| Help 7 | |
| Fixed Broadband Internet | |
| Indicator 4.3 - Traffic volume of the broadband internet access service (in GB). | |
| <p>Definition: Traffic volume of the broadband internet access service (upload and download), in a fixed location, measured in GB. Includes all traffic generated by all fixed broadband internet customers of the ISP (collected quarterly). Includes traffic from residential and non-residential customers.</p> | Help 8 |
| <p>Exclusions: IPTV/Cable digital/Cable hybrid VoD, other broadband traffic than internet</p> | |
| <p>Questionnaire: Electronic communications services at a fixed location and of nomadic VoIP services (available at http://www.anacom.pt/render.jsp?categoryId=340660#horizontalMenuArea)</p> | |
| <p>Source: ISPs</p> | |
| <p>Problems faced by operators:</p> <ol style="list-style-type: none"> 1. IPTV traffic 2. Internet access bundled with IT services (storage, data warehouse, etc.); 3. Leased line traffic – operators do not measure the real traffic routed through a leased line. | |
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| Indicators collected by ANACOM | |
|--|---------|
| Mobile Broadband | ANACOM |
| Help 22 | |
| Mobile Broadband Internet | |
| <ul style="list-style-type: none"> • Traffic indicators: | |
| <p>Packet-Switched (PS) traffic of the 3G network and equivalent standards (in MB and number of sessions):</p> | |
| B.6.1 Internet – broadband traffic volume with origin in a 3G networks, upgrades, evolution equivalent standards (IMT-2000) | |
| <p>Definition: It includes, among others, the following standards: UMTS, HSPA, WCDMA, CDMA2000, 1xEV-DO Rev B, TD-CDMA, TDMA, FDMA/TDMA, Wi-MAX, etc.... – measured in megabytes (MB)/number of sessions. In the cases of UMTS/HSPA it includes the PS traffic volume with origin in the network, related to the PDP (Packet Data Protocol) volume sessions to access the APN Internet, measured in MB. Given the technical difficulties raised by the operators, should be counted in this indicator, the traffic above mentioned regardless of network used (above 256 Kbps).</p> | Help 23 |
| iB.6.1 p - of which internet connection via cards / modems – broadband internet traffic with specific connection by USB/modem | |
| <p>Questionnaire: Mobile Services Questionnaire (available at http://www.anacom.pt/render.jsp?contentId=963861)</p> | |
| <p>Source: MNOs and MVNOs</p> | |
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Indicators collected by ANACOM

Mobile Broadband



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Mobile Broadband Internet

D.6.3 Internet traffic in roaming-out - broadband traffic volume (with origin in a foreign provider by a customer of a national provider, while outside of Portugal) with origin in a 3G networks, upgrades, evolutions or equivalent standards (IMT-2000)

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Definitions: It includes, among others, the following standards: UMTS, HSPA, WCDMA, CDMA2000, 1xEV-DO Rev B, TD-CDMA, TDMA, FDMA/TDMA, Wi-MAX, etc.... – measured in megabytes (MB)/number of sessions. In the cases of UMTS/HSPA it includes the PS traffic volume with origin in the network, related to the PDP (Packet Data Protocol) volume sessions to access the APN Internet, measured in MB. Given the technical difficulties raised by the operators, should be counted in this indicator, the traffic above mentioned regardless of network used.

Questionnaire: Mobile Services Questionnaire (available at <http://www.anacom.pt/render.jsp?contentId=963861>)


Source: MNOs and MVNOs

Other Mobile Broadband Traffic indicators

- Indicators B.6.4. – Corporate Services (MB)
- Indicators B.6.5. – Mobile TV
- Indicators B.4. - Number of videocalls and number of minutes of videocalls

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Broadband traffic in Portugal

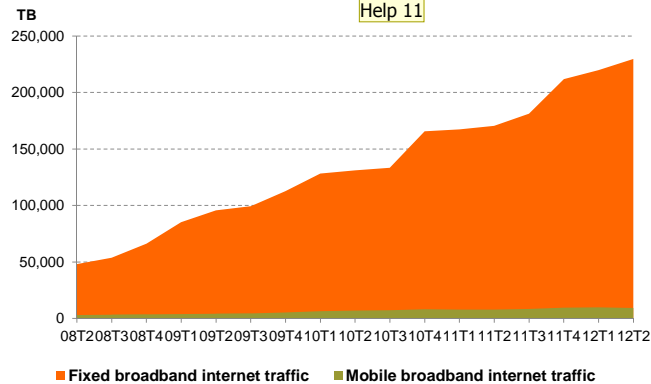


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Strong growth in Broadband internet traffic in recent years

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| Year | Fixed broadband internet traffic | Mobile broadband internet traffic |
|------|----------------------------------|-----------------------------------|
| 2008 | ~40,000 | ~5,000 |
| 2009 | ~80,000 | ~5,000 |
| 2010 | ~120,000 | ~5,000 |
| 2011 | ~160,000 | ~5,000 |
| 2012 | ~220,000 | ~5,000 |

- ▶ Fixed BB internet traffic has increased almost **5 times** over the past 4 years
- ▶ Mobile broadband represents 4 per cent of Total Internet traffic
- ▶ Mobile Internet traffic with specific connection by USB/modem represents **93% of total mobile BB** internet traffic.

Source: ICP-ANACOM

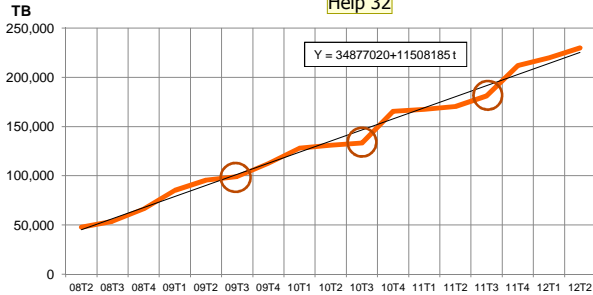
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Broadband traffic in Portugal



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Help 31 Fixed Broadband internet traffic in Portugal – time series analysis



- ▶ Average increase of 11 508 TB/ quarter
- ▶ Seasonality effect (most prominently from 2010): 3Q registers a more significant and negative seasonal effect

Linear regression model with a linear time trend and a multiplicative seasonal adjustment since 2010. Seasonal index: T1= 1,02; T2= 0,98; T3= 0,92; T4= 1,05. Adjusted R squared = 0,985 and Root Mean Squared Error (RMSE) = 4 037 TB

Source: ICP-ANACOM

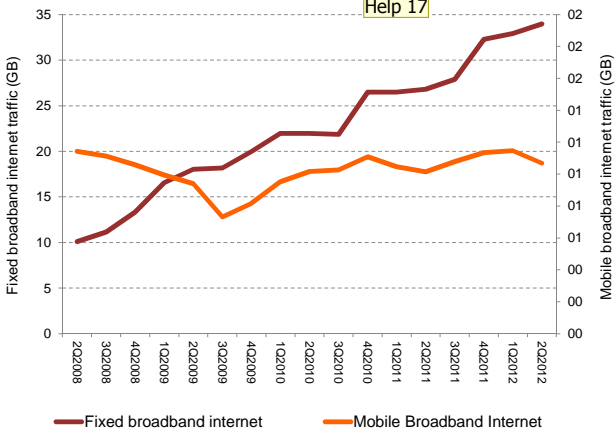
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Broadband traffic in Portugal



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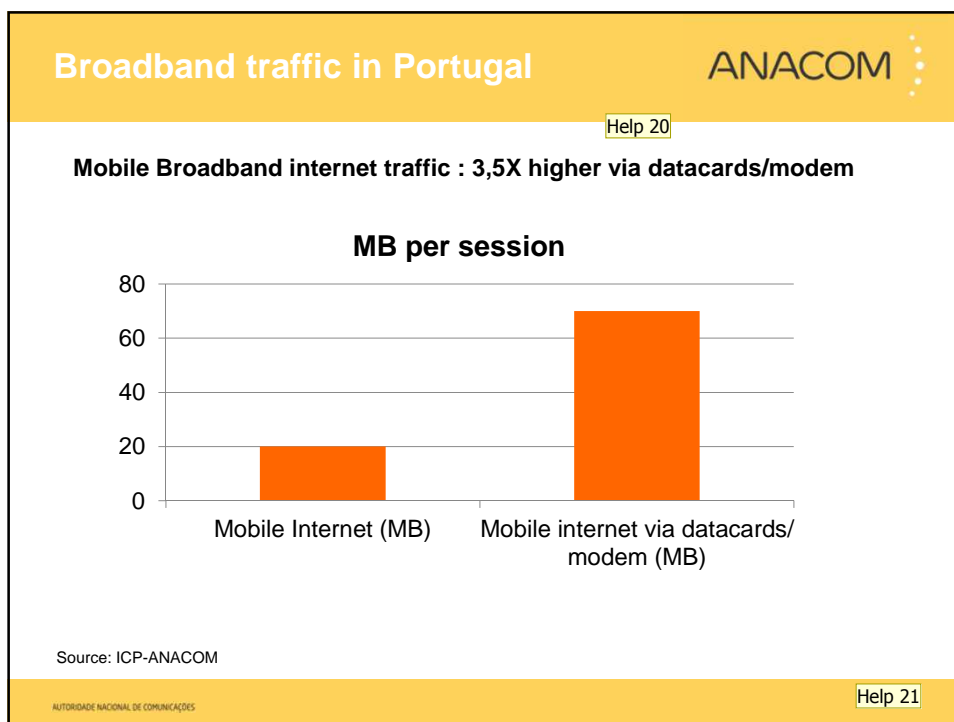
Help 16 Avg internet traffic per month, per user



- ▶ Average fixed Internet data volumes very different from mobile
- ▶ During the 2Q2012 data volume per fixed broadband user was on average **34 GB/month**
- ▶ Mobile broadband users generated on average **1,1 GB** traffic/month
- ▶ Fixed broadband average data volume per user increased almost **3 times** over the past 4 years
- ▶ Mobile Internet USB/modem users generated on average **2,7 GB/month**

Source: ICP-ANACOM

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Recomendations

Based on ANACOM's experience

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- ▶ Based on ANACOM's experience:
 - ▶ **Traffic indicator for broadband internet only**
 - All BB services are difficult to measure – operator are not able to measure all data traffic.
 - The wider our definition becomes more difficult to obtain reliable indicators.
 - ▶ **Separate indicator for Mobile vs Fixed internet**
 - ▶ **Internet Mobile traffic via data cards vs via handsets**
- ▶ Indicators need to be **clearly defined**, with clear and transparent definitions.
- ▶ To guarantee data comparability, in order to have benchmarks
 - ▶ harmonised criteria and definitions
 - ▶ collected in the same period

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Thank You.

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