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What benchmarking teaches us
Surprises from the market

Fredrik Jungermann

Head of operator benchmarking
Nokia Siemens Networks
+4524286603
fredrik.jungermann@nsn.com

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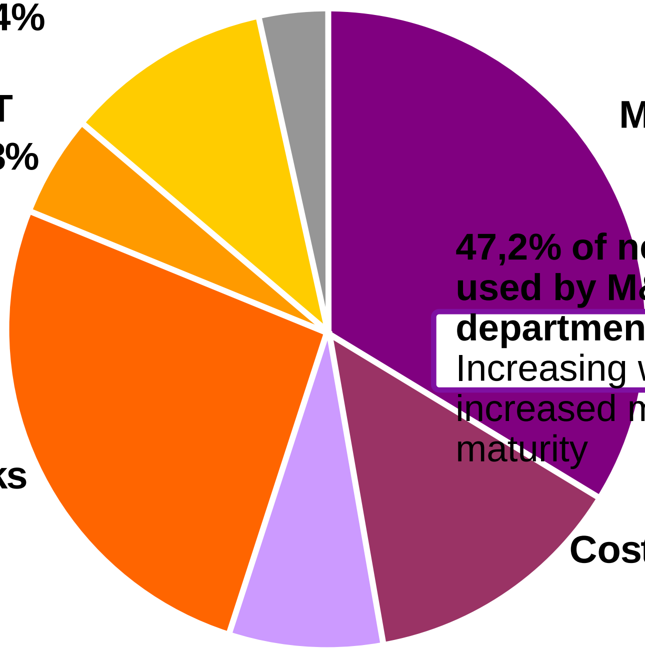
How do you use your OPEX?

Mobile: Net OPEX distribution
Mature markets

Average

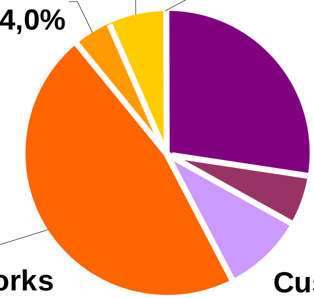


47,2% of net OPEX used by M&S department
Increasing with increased market maturity

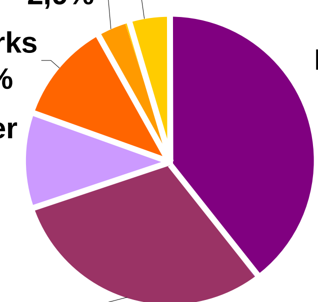
Interconnect & roaming and 3rd party content is net revenue for the average operator
Taken out of this chart

Personnel costs 18,0% of net OPEX
Part of M&S, Customer Service, Networks, IT, Support functions above

Low cost profiled **challenger operator**
High degree of outsourcing & partnering
Brand, network quality & price level key in market



Brand & quality profiled **established operator**
Typical degree of outsourcing & partnering
Brand, handsets & service quality key in market



Source: Nokia Siemens Networks' operational efficiency reference benchmark 2008, 3rd update

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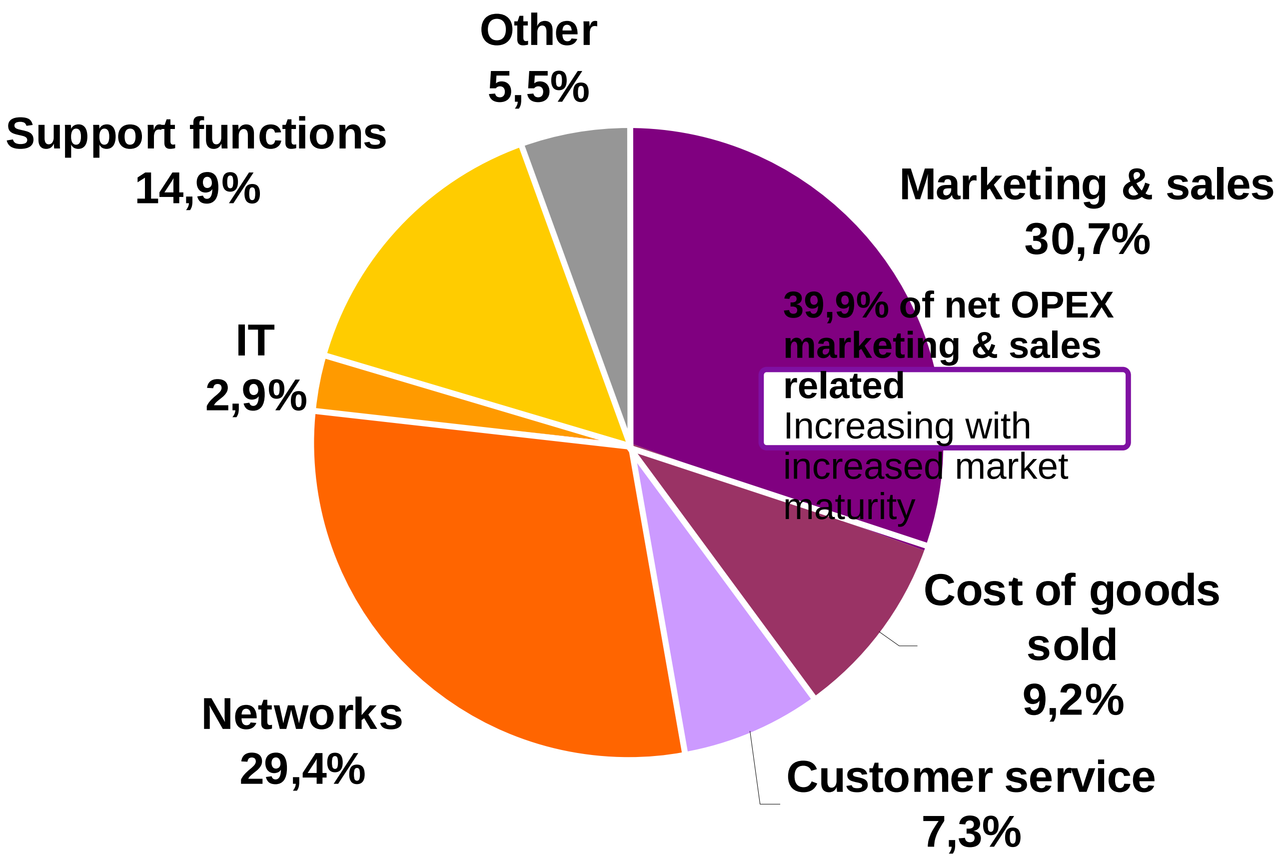
Mobile: Net OPEX distribution
Growth markets

Growth markets operators can expect **M&S, CoGS and IT OPEX to grow** on the expense of Networks and Support functions OPEX as market matures



Interconnect & roaming and 3rd party content is net revenue for the average operator
Taken out of this chart

Personnel costs 15,9% of net OPEX
Part of M&S, Customer Service, Networks, IT, Support functions above

Source: Nokia Siemens Networks' operational efficiency reference benchmark 2008, 2nd update

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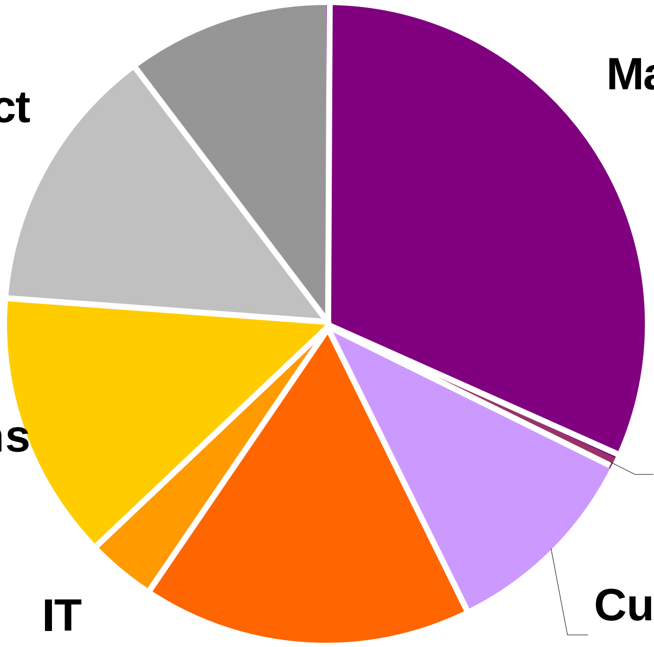
Fixed, broadband & cable: Net OPEX distribution
Mature markets

Support functions and Other stand for **23,7% of net OPEX**



3rd party content is net revenue for the average operator
Taken out of this chart

Personnel costs 22,2% of net OPEX
Part of M&S, Customer Service, Networks, IT, Support functions above

Source: Nokia Siemens Networks' operational efficiency reference benchmark 2008, 1st update

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Which departments have delivered OPEX savings?
And who has not?

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Mobile

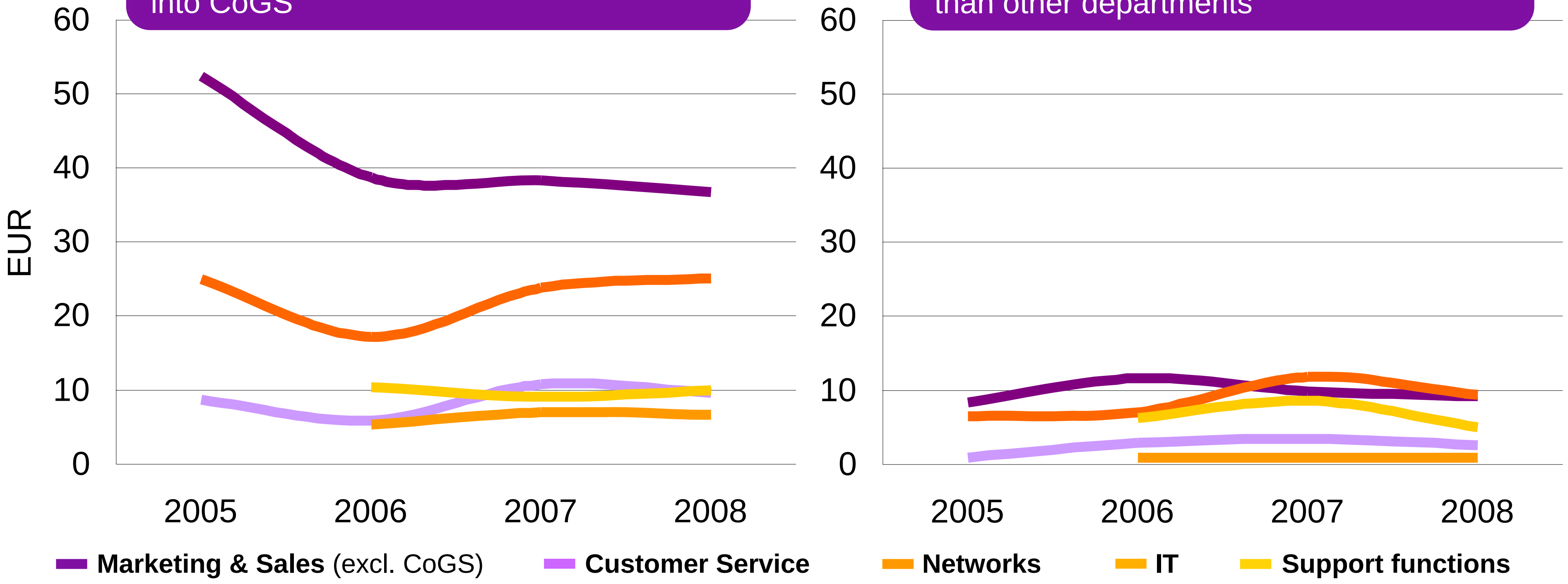
OPEX per customer 2005-08, departments

Mature markets

The only department that has become more OPEX efficient is Marketing & Sales – partially because of more OPEX put into CoGS

Growth markets

OPEX efficiency flat or decreasing – except Support functions, that on the other hand is closer to mature markets than other departments



Source: Nokia Siemens Networks' operational efficiency reference benchmark 2005, 2006, 2007 & 2008 (3rd update mature, 2nd growth) Note that operators within peer groups might vary year to year

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Why customer loyalty is the most potential margin booster

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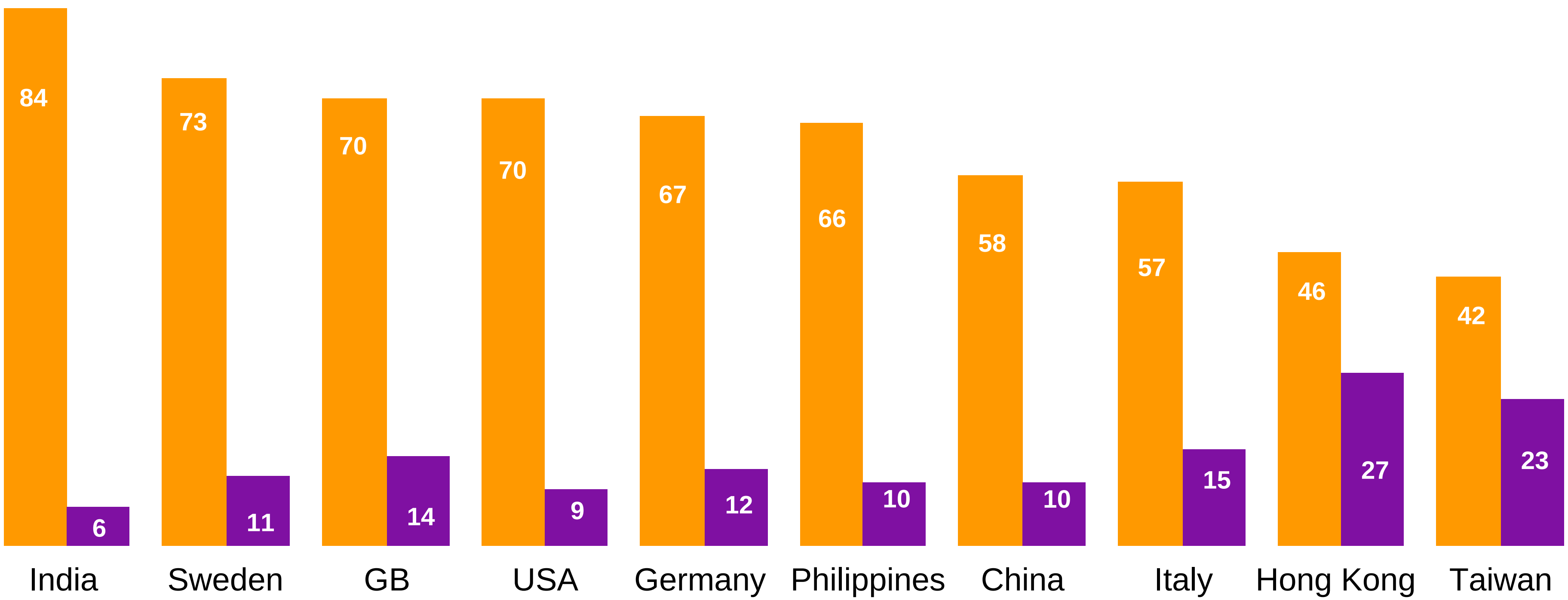
Correlation between satisfaction and churn risk

The lower the satisfaction level with the operator …



… the higher the risk that a user will churn

Source: Nokia Siemens Networks' Pulse end-user study, 2007/2008

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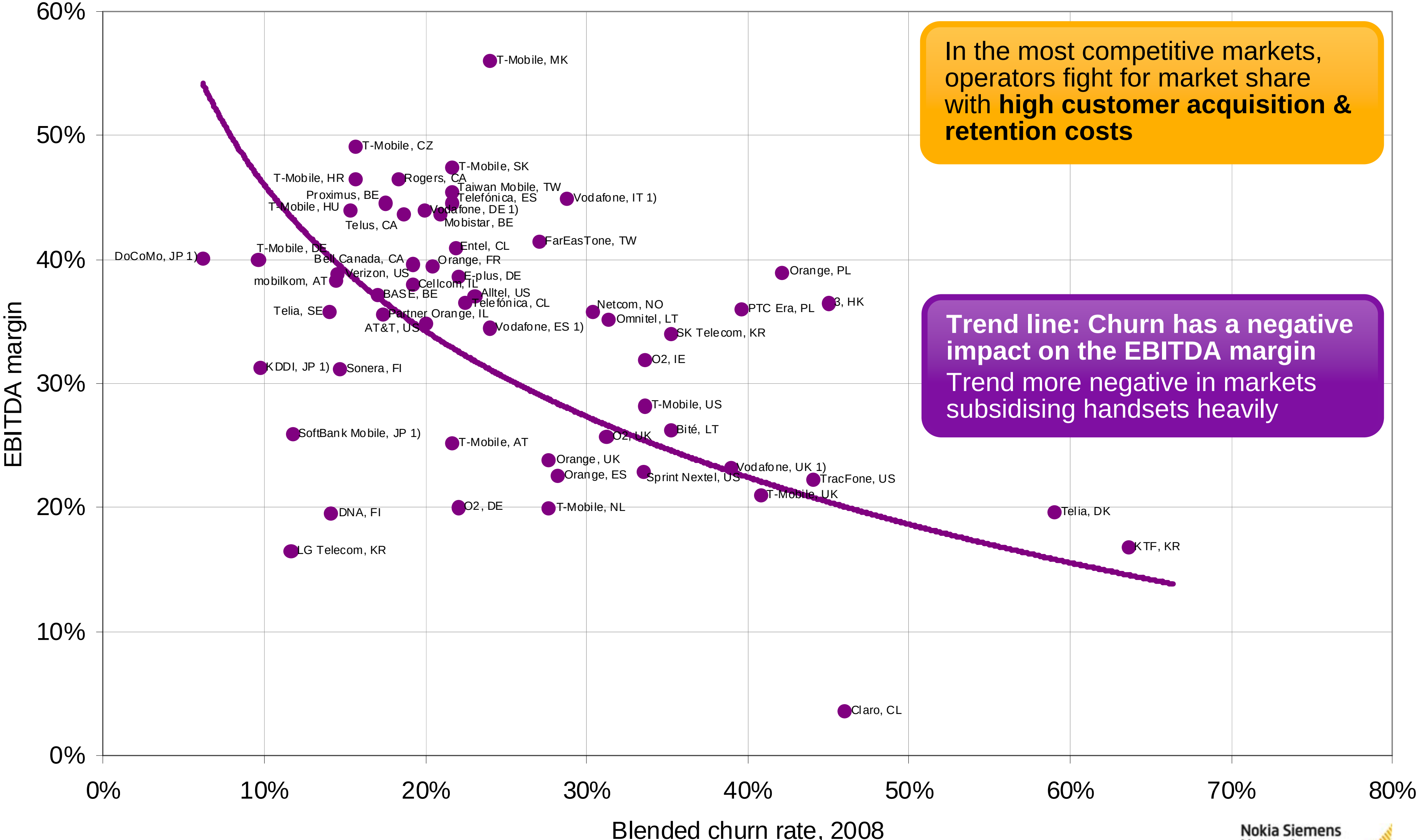
Churn is eroding margin in mature markets

Mobile, 9m 2008



Source: 9m08 reports for operators with fiscal year ending December, 1H08 reports for operators with fiscal year ending March [marked 1)]; Q1 reports for operators with fiscal year ending June [marked 2)] – if reported 18 November

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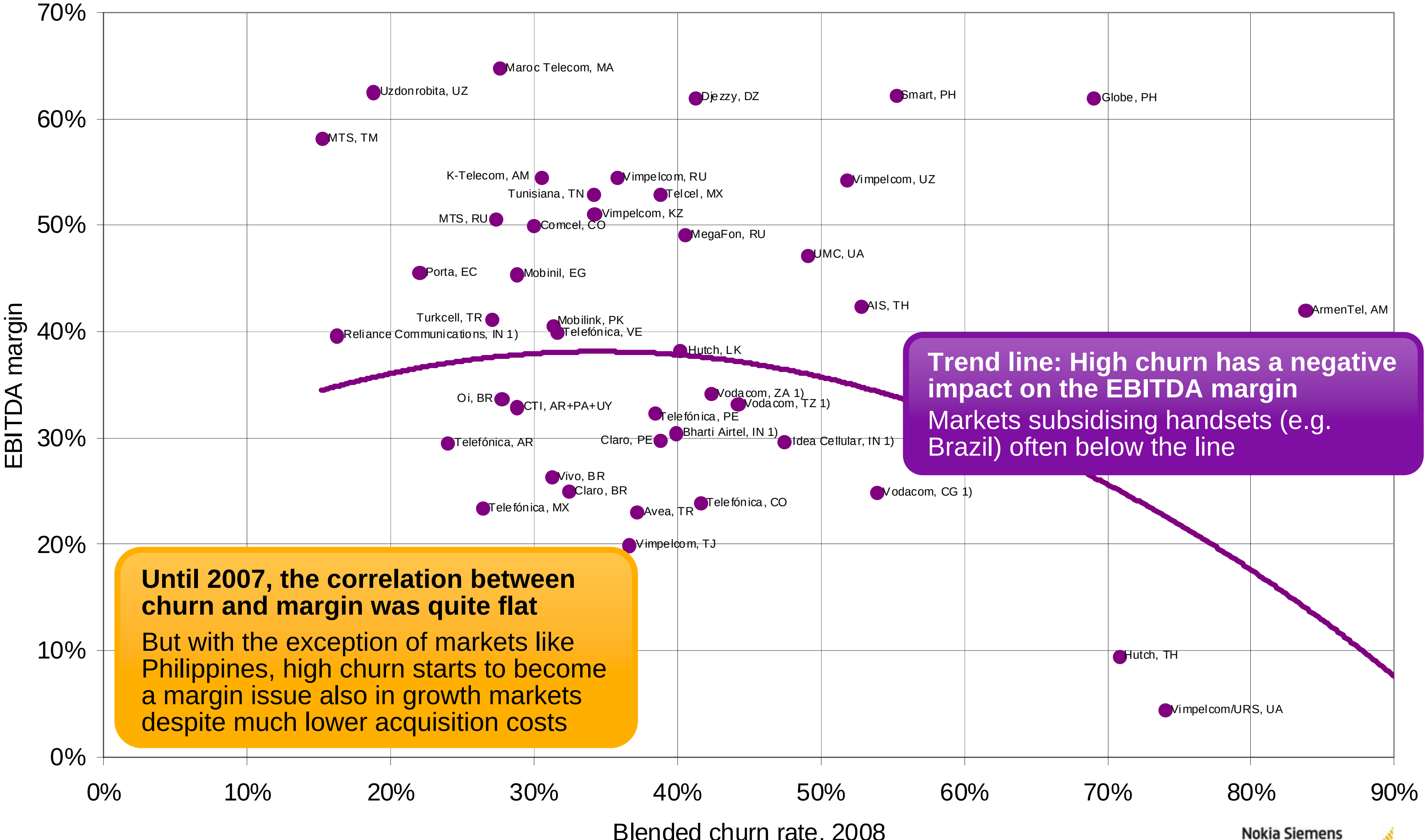
High churn has started to erode margins also in growth markets

Mobile, 9m 2008



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High ARPU or low OPEX – Which one is best for margin?

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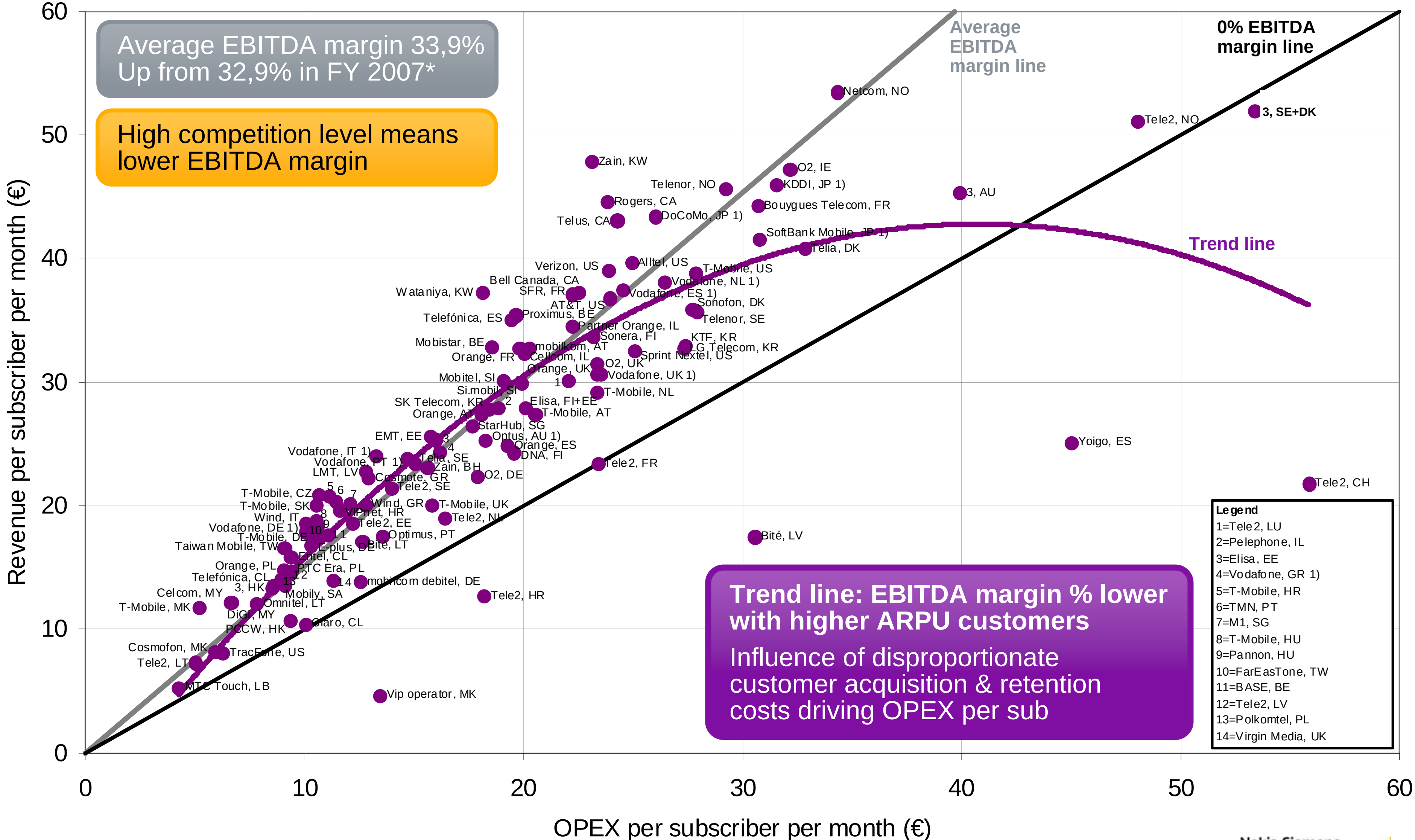
High ARPU focus drives OPEX and lowers margin

In competitive mature markets

Mobile, 9m 2008



Source: 9m08 reports for operators with fiscal year ending December, 1H08 reports for operators with fiscal year ending March [marked 1)]; Q1 reports for operators with fiscal year ending June [marked 2)] – if reported 18 November

*) Not the same operators as not all have reported their 9m08

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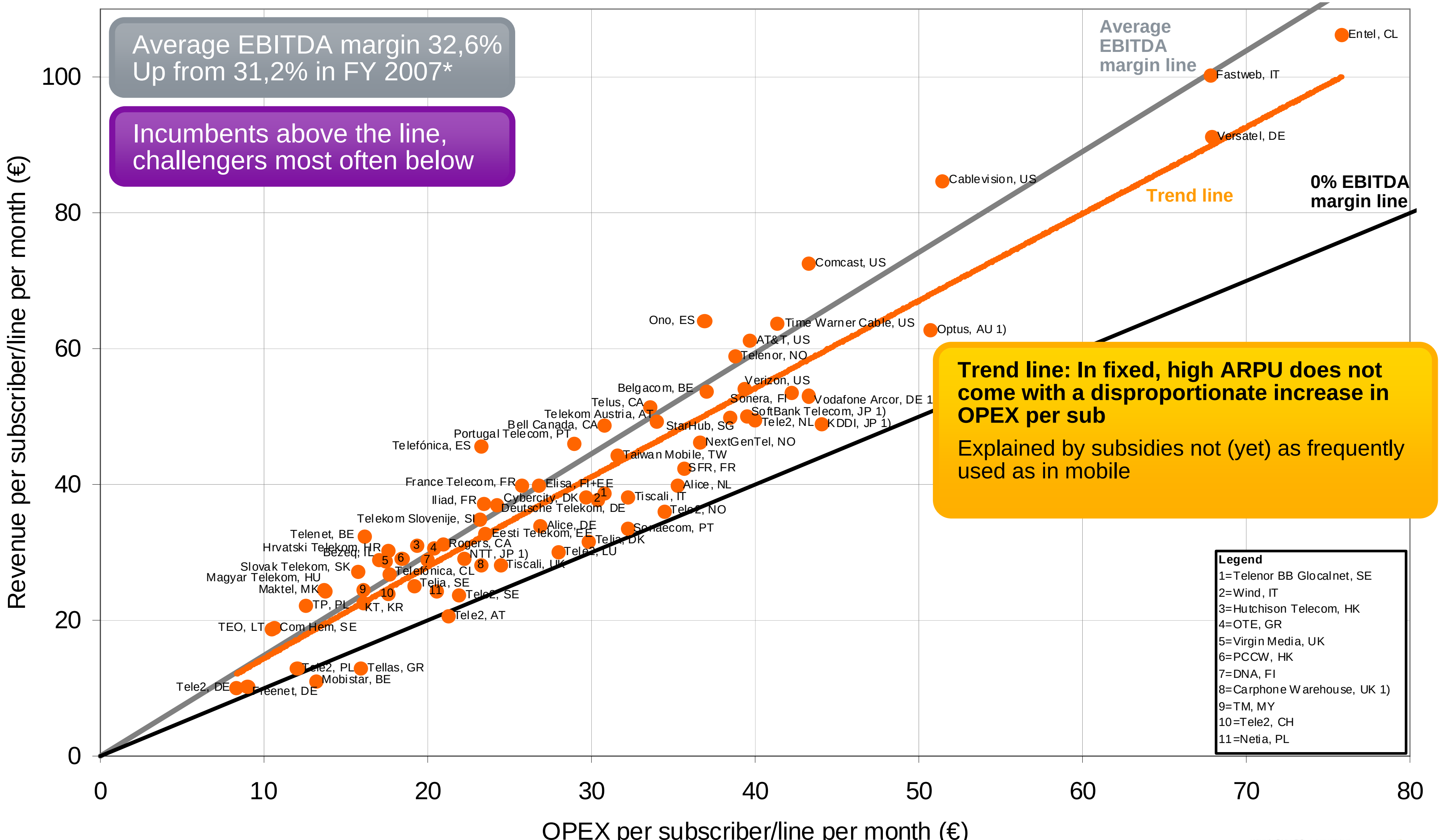
In fixed/broadband, the curve isn't bending

Mature markets, 9m 2008



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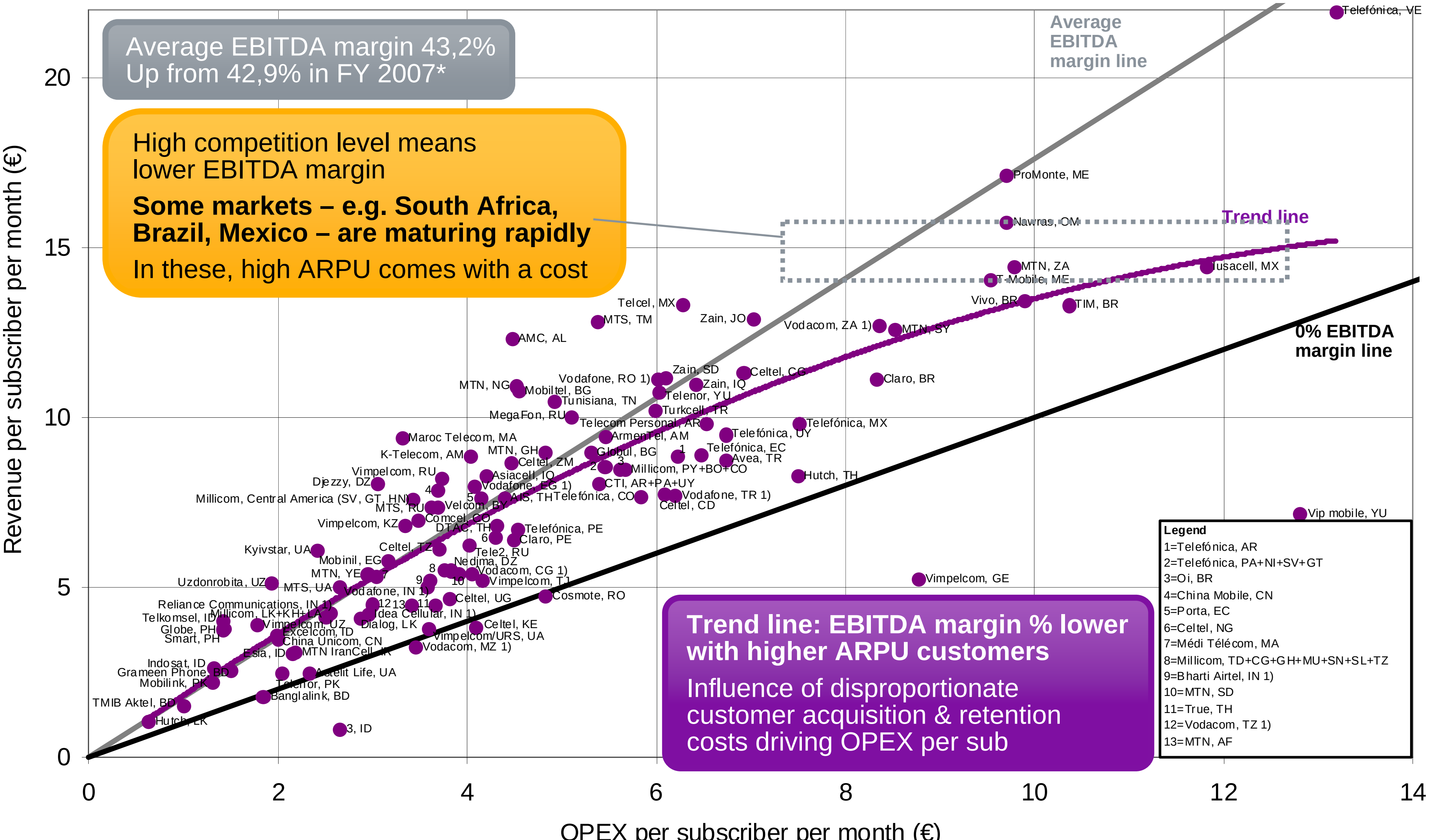
Margins overall high in growth markets

Thanks to low OPEX per sub

Mobile, 9m 2008



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Can customer loyalty be bought?

Risks going forward

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Mobile: From voice to data
From handset to handset & laptop subsidisation

- Handset subsidies have **decreased in mature markets**
  - Driven by **lowered gross handset prices** + operators' ambition to use **subsidies with longer, higher value, contracts**
- Outcome: **Lower volumes of handsets sold**
  (also attributable to macro economics)
- Some of **subsidisation has steered over to mobile broadband**, though
  - Represents a margin risk if trend continues as laptops are more expensive than handsets

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Fixed: From voice to data
From no subsidisation to router, HDTV & PC subsidisation

- In fixed voice, no subsidies were needed
- In the **initial broadband market**, operators could **recover costs for supplied modems & routers** immediately
  - Unlike in mobile, there was no end-user pull for new user equipment
- In mature markets, broadband growth comes from **customers churned over**
  - And then operators try to **create pull with new end user equipment**
  - Represents a margin risk if trend continues as TV boxes & PCs are more expensive than modems & routers

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Is price erosion bad for business?

Two examples of the contrary

Price erosion is good for business…

…if you are in the driver's seat

“We are not lowering prices because we need to

…but because we can.”

IKEA®

The mature market example: Germany
Price erosion provided E-plus with an opportunity

In 2005, E-plus transformed their business:

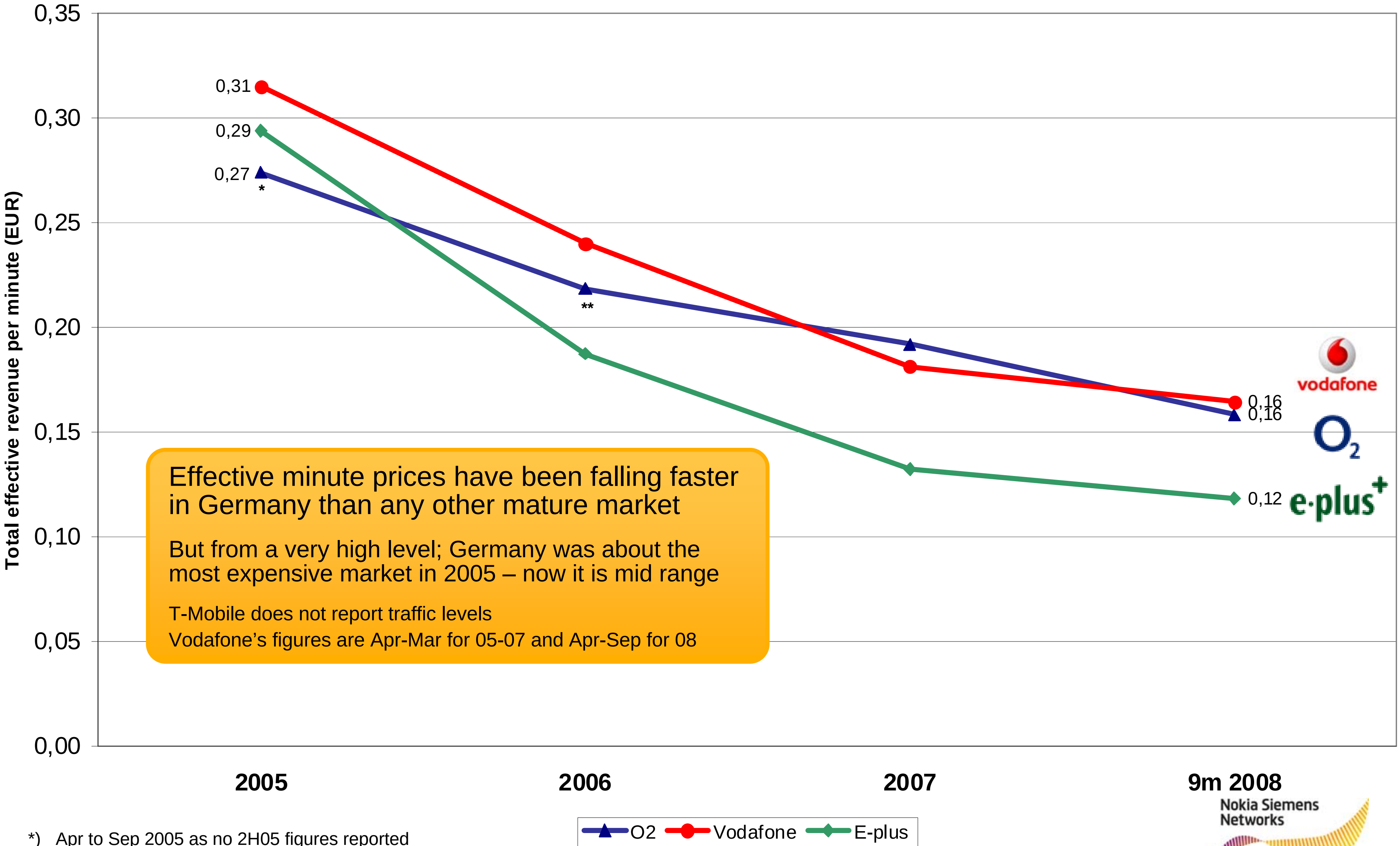
- **Multi-brand strategy** [BASE, simyo, Ay Yildiz, YOUNI, Vybe] + **partnerships** [Aldi, VIVA, …]
- Established itself as **MVNE to numerous MVNOs and service providers**
- **Maximised operational efficiency** – minimising subsidies, differentiating with price

2005→2008 trends* [EUR]	e·plus	T-Mobile	vodafone	O2
Total revenue	+14%	-10%	-10%	+12%
EBITDA	+84%	-13%	-16%	-2%
Number of SIMs	+58%	+31%	+24%	+56%
Minutes of use	+80% (to 142)	Not reported	+37% (to 109)	+24% (to 141)
Subscriber acquisition cost (blended)	-64% (to 53 EUR)	+3% (to 96 EUR)	Not reported	Not reported
EBITDA per own employee	+120%	+11%**	-12%**	-6%**

*) 2008 results for period up to September annualised
**) Assuming that 2008 headcount is same as end of 2007 as not reported since

In Germany, effective revenue per minute has fallen faster than any other market

2005 → Sep 2008



Effective minute prices have been falling faster in Germany than any other mature market

But from a very high level; Germany was about the most expensive market in 2005 – now it is mid range

T-Mobile does not report traffic levels
Vodafone's figures are Apr-Mar for 05-07 and Apr-Sep for 08

*) Apr to Sep 2005 as no 2H05 figures reported
**) Feb to Dec 2006

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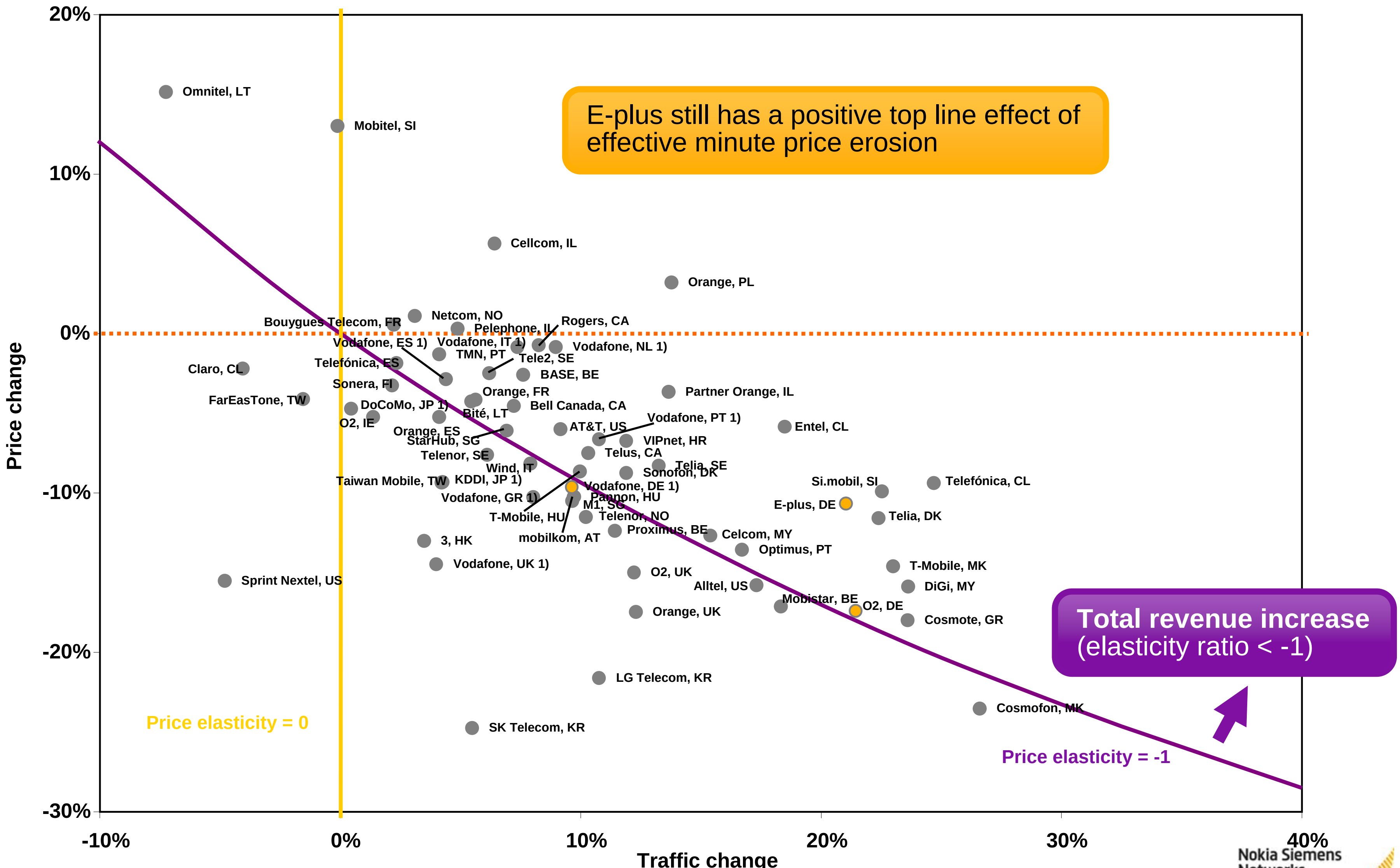
Most operators in mature markets drive total revenue with minute price erosion

2007 → 9m 2008



Source: 9m08 reports for operators with fiscal year ending December, 1H08 reports for operators with fiscal year ending March [marked 1)]; Q1 reports for operators with fiscal year ending June [marked 2)] – if reported 18 November

The growth market example: India
Price erosion is a prerequisite for growth

All major Indian operators have **benefited from the price erosion**
- Driven by an understanding in the Indian operator community that **affordability of mobile services is critical for growth …**
- …and by a very high level of competition!

Operators like Bharti Airtel have been **very focused on costs from start**
- Using partners' capacity for "non-core" to a high extent

2006→2008 trends* [EUR]	Airtel	Reliance Communications (Anil Dhirubhai Ambani Group)	Vodafone (Hutch Essar until 2007)	Idea (Aditya Birla Group)
Total revenue	+78%	+46%	+87%	+80%
EBITDA	+47%	+55%	+68%	+56%
Number of SIMs	+109%	+100%	+134%	+117%
Minutes of use	+16% (to 530)	-17% (to 423)	-4% (to 386)	+16% (to 422)
EBITDA per own employee	+27%	-7%**	Employees not reported since 2006	+32%

*) 2008 results for period up to September annualised – all figures for mobile only
**) Using total headcount incl. fixed in 06 and 08 as mobile not reported separately – and assuming that Sep 08 employee count is same as March 08

In India, effective revenue per minute is the lowest in the world; erosion continues

2006 → Sep 2008

*) Hutch Essar results for calendar year 2006

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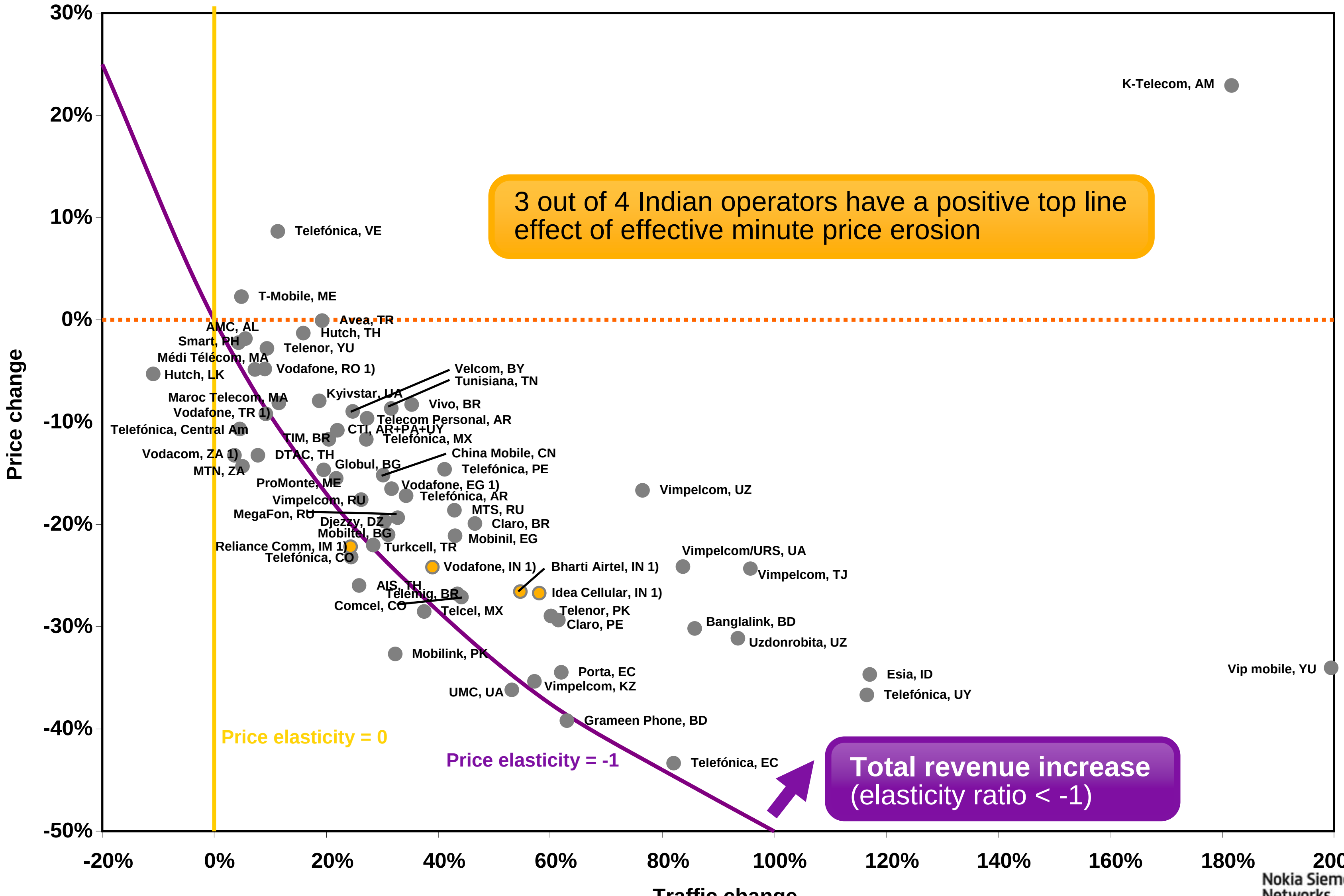
Most operators in growth markets drive total revenue with minute price erosion

2007 → 9m 2008



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Is price erosion bad for business?

How to deal with the ever-increasing data traffic?

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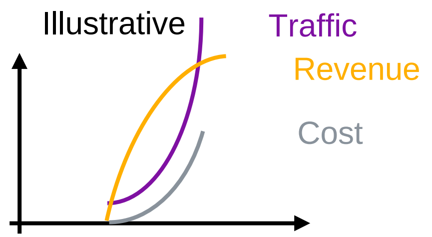
Mobile data became a flat rate thing – for data cards
Better situation than in fixed data where it is all flat



With flat rate, revenue is fixed, but **costs variable**

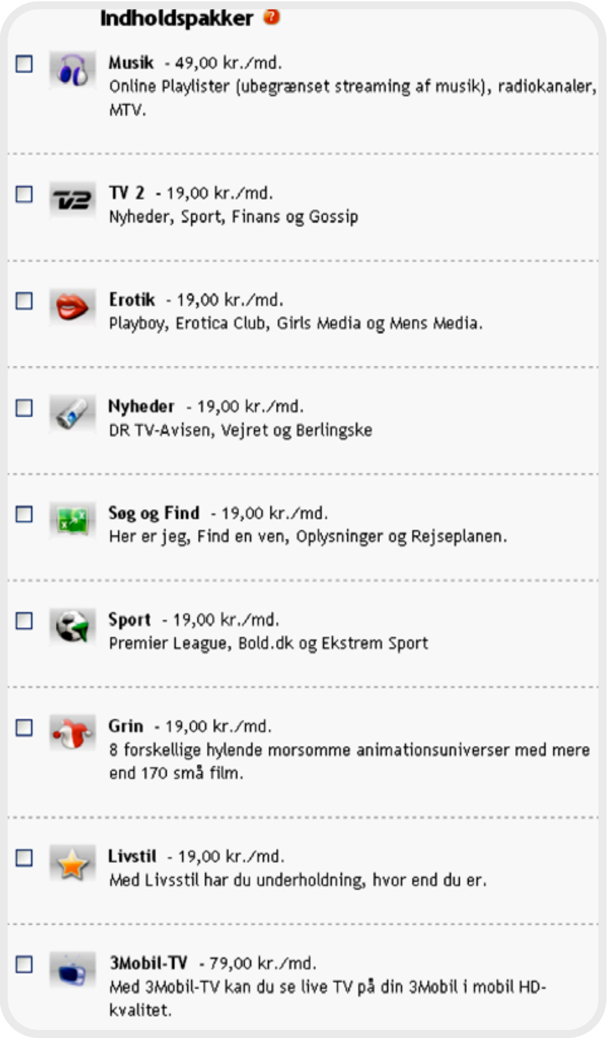
- What saves the mobile data situation is that **most users (95%) aren't on a flat rate plan**
  - Only the data card users…
- …and that **data roaming** adds revenues

Fair use policy critical – but do operators dare to enforce it?

- With the risk of unhappy users talking to media or clogging customer service

Important to **partner & up-sell content packages**

- And not just get the (increased) bit stream



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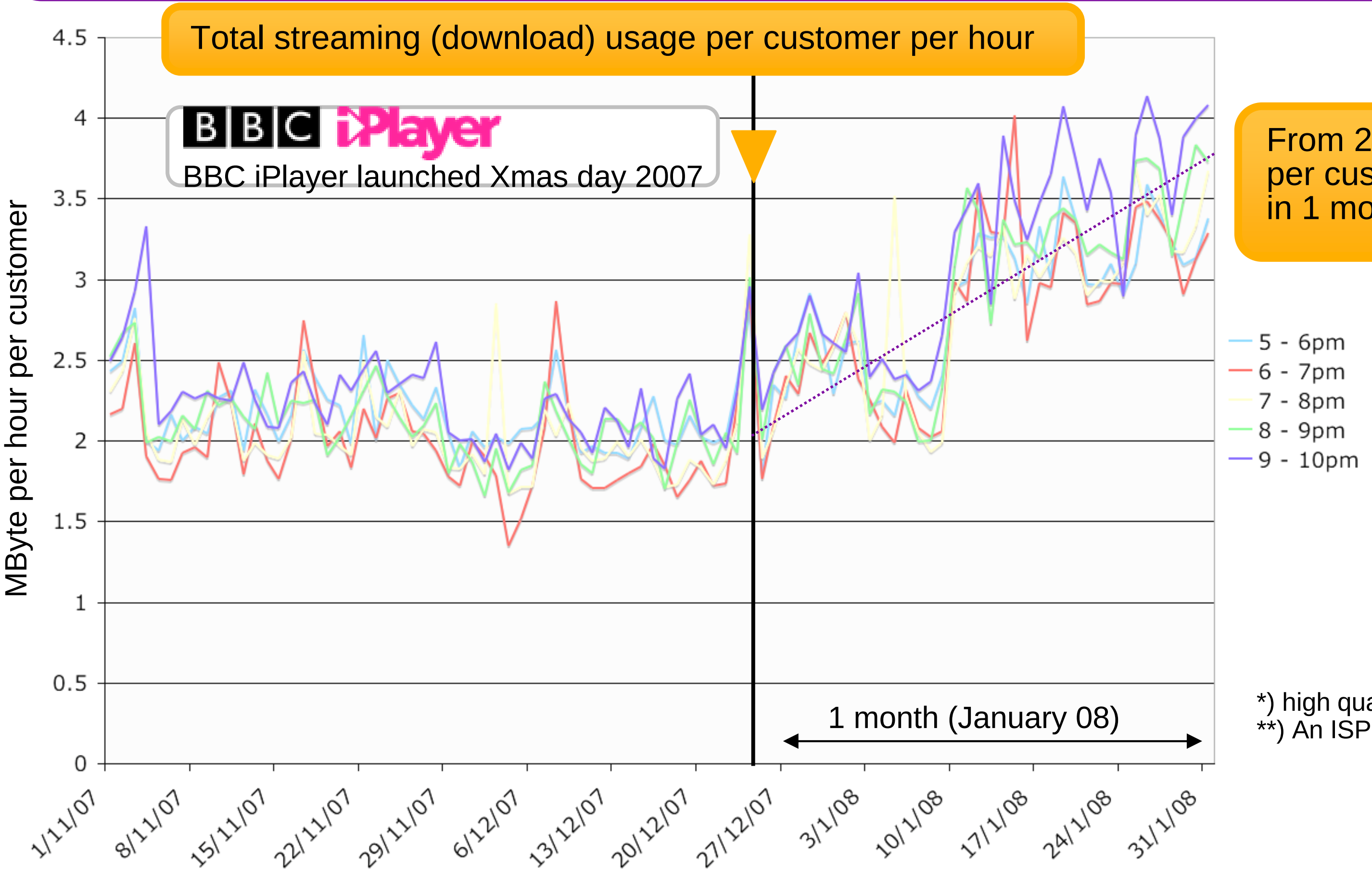
Bandwidth is not unlimited
but it has occasionally been sold as if it was

Changes done to *one* specific content site can dramatically increase total bandwidth use

- Example from BBC iPlayer* introduction effect on Plusnet's** total traffic
- Most likely e.g. intro of YouTube high quality can have a similar consequence



From 2M Byte to 3,5 MByte per customer and hour – in 1 month

*) high quality streaming of video and sound
**) An ISP in the UK

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Benchmark against the best –
but don’t be blinded by unit costs

Correlate with strategy & differentiation

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Having lowest unit costs is important but critical only for operators who differentiate with lowest cost

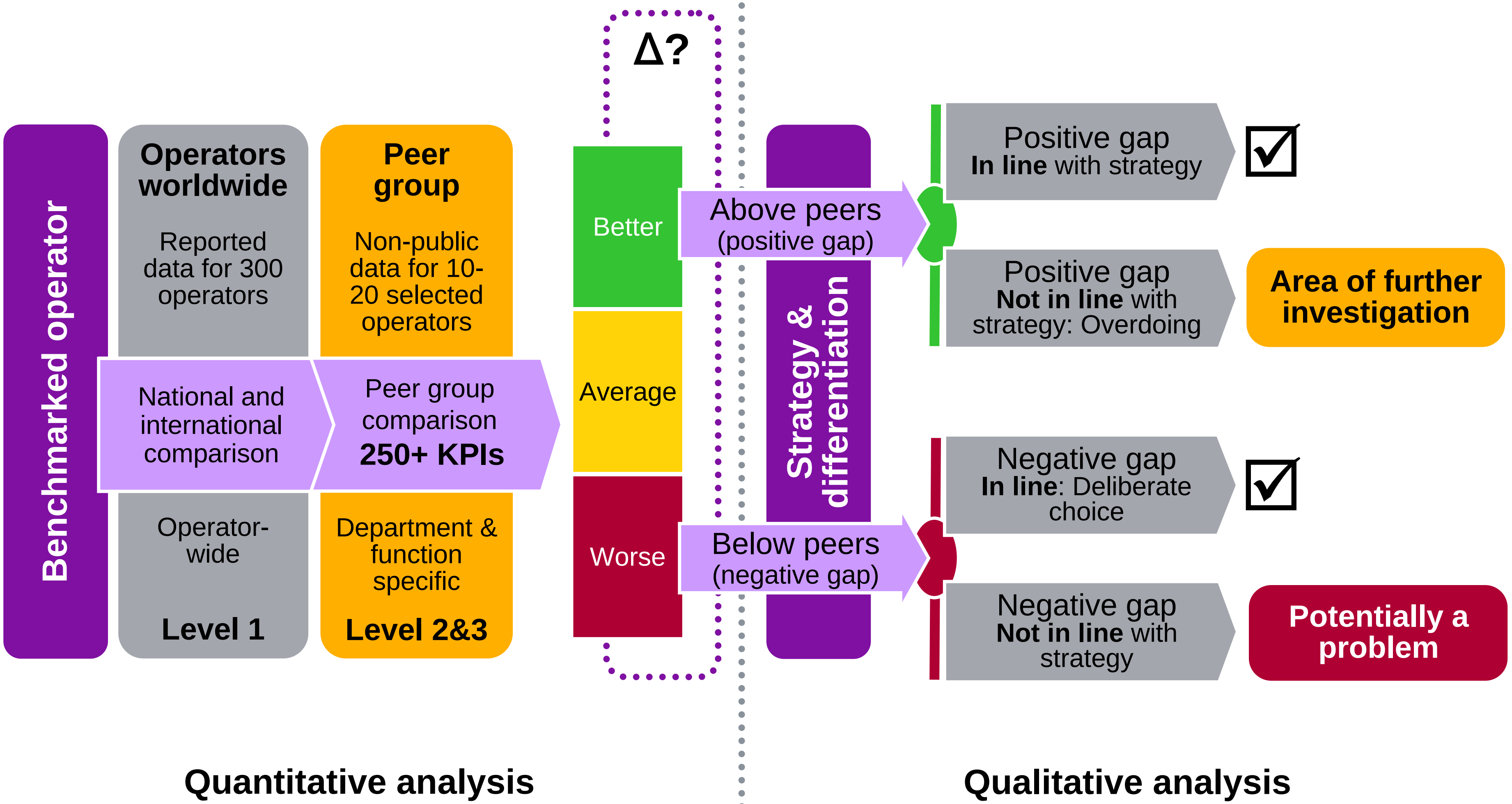
So if you differentiate with:

- Brand
- Market segmentation based offering
- Customer service quality
- Network quality
- Service innovation
- Data services experience

…there is a need to **correlate quantitative findings with your strategy**

If not done, all operators **chase lowest unit costs without looking into the consequence for revenue, quality, brand, customer loyalty and margin**

Analysis steps in Nokia Siemens Networks' operational efficiency benchmarking



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If you want to know more about operator benchmarking – and follow-up steps – today

Please approach either of us:

Eddie Chan

Head of efficiency consulting
Global

Malcolm Elliot

Head of consulting
West & South Europe

Marko Yli-Pietilä

Consulting
North Europe

Fredrik Jungermann

Head of operator benchmarking
Global