

Prepared for IK 2514 Wireless Infrastructure Deployment & Economics

Intro to telecom markets - From monopoly to oligopoly, de-regulation, liberalization



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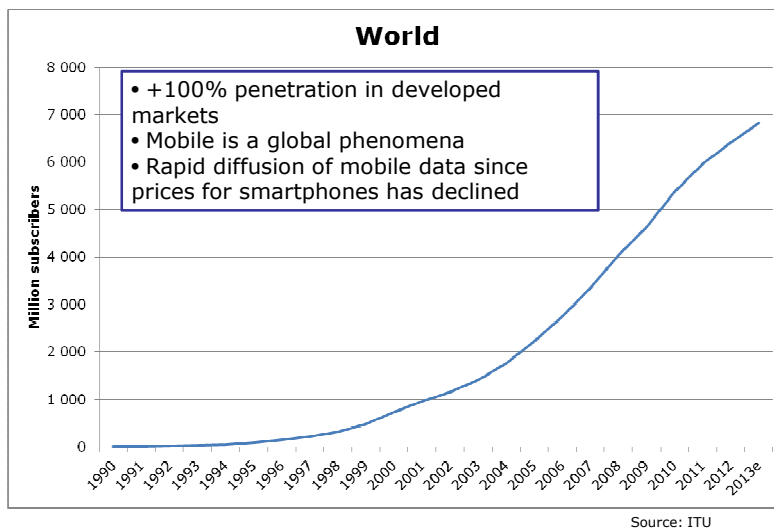
Agenda



- Telecom market
- Market structure
- Market development
- Data growth
- Network sharing

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Almost 7 bn mobile subscribers



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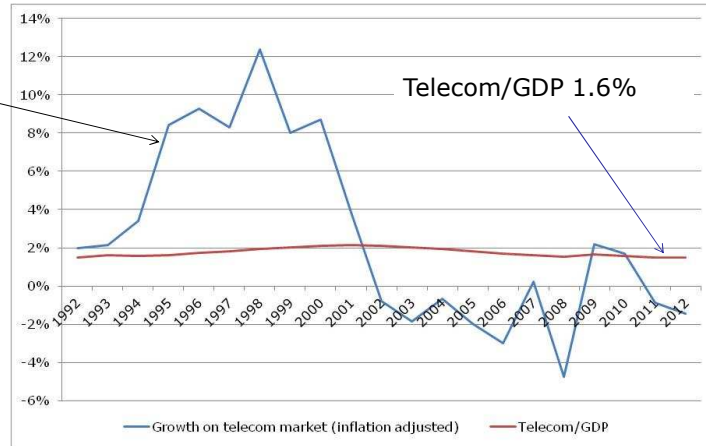
Concept	Definition
ARPU	Average Revenue per User
Capex	Funds used to acquire physical assets
Free cash flow	Operating cash flow minus capex
GDP	Gross Domestic Product
EBITDA	Earnings before interest, taxes, depreciation and amortization
EBIT	Earnings before interest and taxes
Gearing	Leverage, difference between fixed-interest capital and equity capital
Market cap	The company's worth calculated as outstanding shares multiplied by the price per share,
MoU	Minutes of Use
Net debt	Netting the value of a company's liabilities and debts with its cash and other liquid assets
Revenues	The amount of money that a company actually receives during a specific period

Source: Bloomberg

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Sweden: A mature market

Growth of telecom revenues* (inflation adjusted)



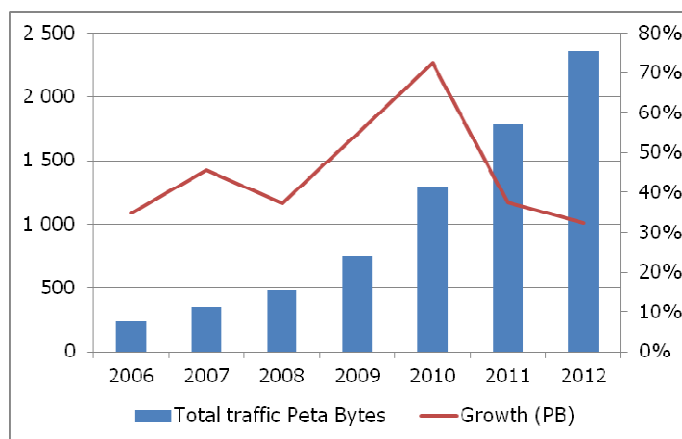
Mobile data is a growth engine but not sufficient to offset decline on fixed

*Total end-customer revenues. Source: PTS

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Sweden: total telecom traffic

Average traffic growth 30% per annum

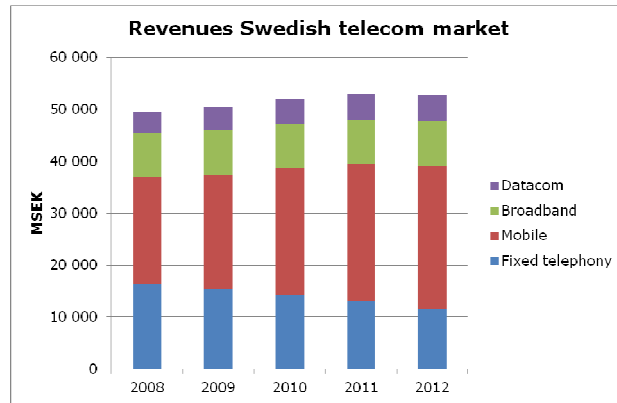


Relation between traffic and revenue growth?

Source: PTS

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Sweden: revenues from telecom services

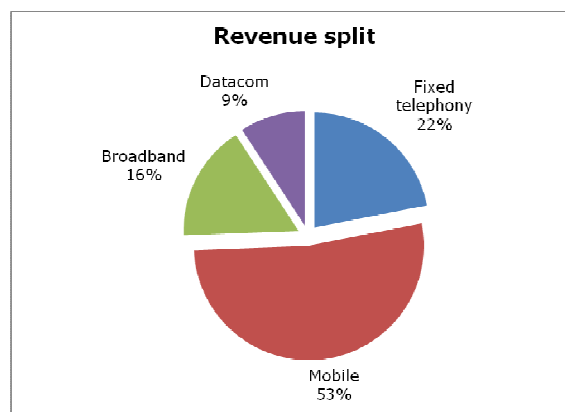


What factors influence the revenue development?

Revenues = total end customer revenues Source: PTS

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Sweden: Revenue split telecom services

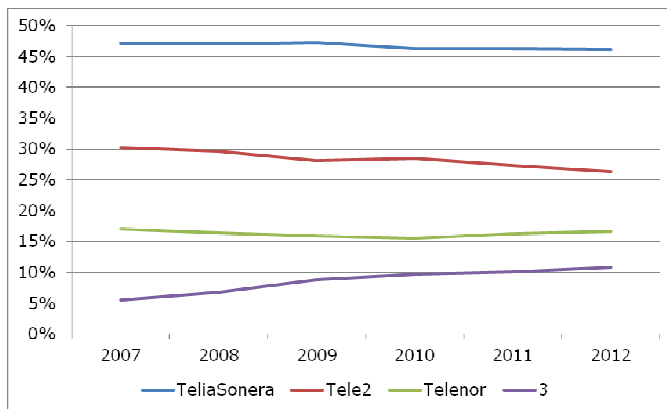


What does the split tells us about the market?

Source: PTS

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Market shares (subs) Swedish mobile

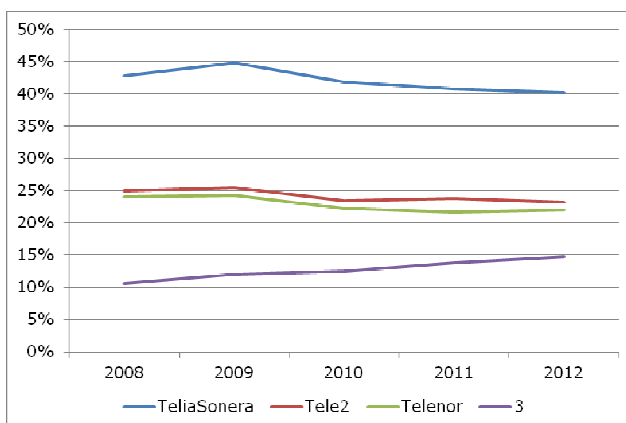


Source: PTS

TeliaSonera dominates, 3 is gaining shares, Tele2 declining

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Market shares (revenues) Swedish mobile



Source: PTS

What conclusions could be drawn from the deviation: market shares on subscribers vs revenues?

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Actors – different roles and functions



- Network Operators
- Mobile Virtual Network Operators (MVNO)
- Tower companies
- Distributors
- Equipment manufactures
- Handset suppliers
- Application providers
- Online companies
- Other...



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Core competence



- Distributors
- Equipment suppliers
- Handset suppliers
- Network operators
- MVNOs
- Applications
- Payments



- Financial
- Innovation
- Management
- Operational
- Sales and marketing
- Services
- Software
- Technical
- Other

What competences are critical?

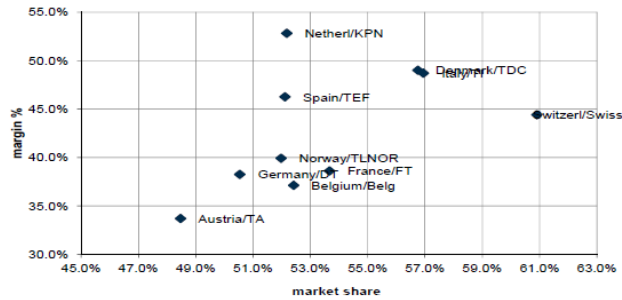
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Economy of scale

- Larger market share - higher margin



Figure 1: Margins and market share



Source: Handelsbanken Capital Markets

Source: Handelsbanken Capital Markets

What factors explain the relation between size and profitability?

Competition from on-line companies





- Connectivity:** Vodafone, America Movil, BT, AT&T, NTT, bharat, Airtel, Orascom, Turkcell, MTS, Swisscom, TDC, TeliaSonera, Deutsche Telekom, DoCoMo, VimpelCom, KPN, France Telecom.
- Enabling technology/services:** Akamai, MasterCard, Visa, SEB, PayPal, Nielsen, WPP.
- User interface:** Real, Adobe, iTunes, Android, Microsoft, Apple, Sony Ericsson, HTC, Nokia, BlackBerry.
- Online Services:** Yahoo!, MSN, Hotmail, Facebook, Google, Amazon.com, Bing, Spotify, Viber, Vonage, eBay, FT.com, Skype, YouTube.


What impact have Apple's, Google's and Facebook's expansion on operators?

tigo Old world telco

Feature phone

New world: Digital lifestyle company




- Increased stickiness
- Higher share of wallet
- Millicom has the payment mechanism

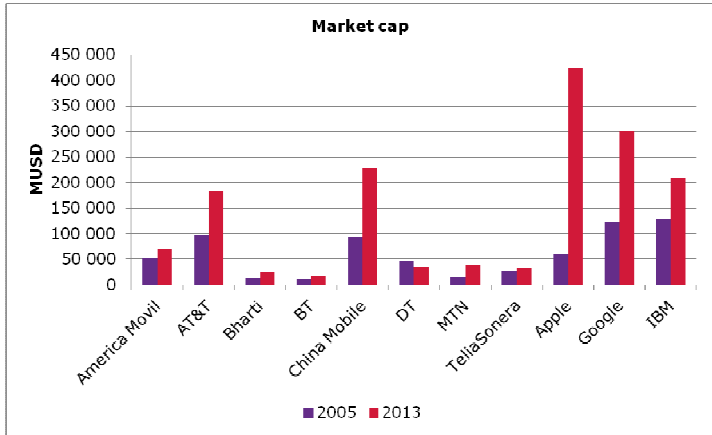
Source: Millicom

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Growing or dropping in value



Market cap



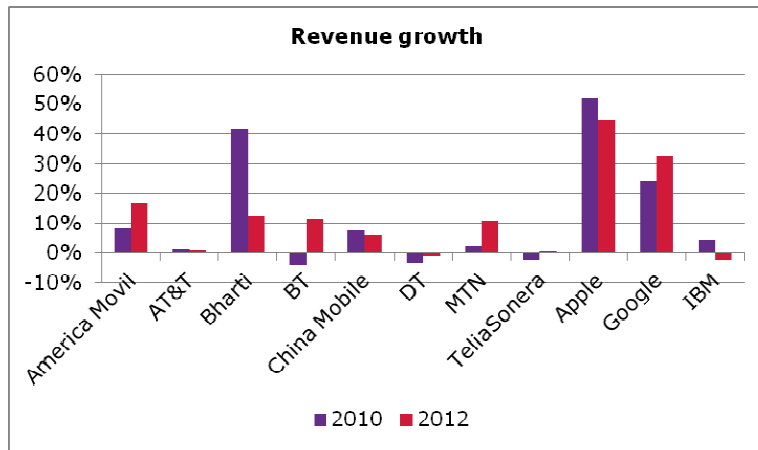
Company	2005	2013
America Movil	50,000	60,000
AT&T	100,000	180,000
Bharti	20,000	25,000
BT	10,000	15,000
China Mobile	80,000	220,000
DT	40,000	30,000
MTN	20,000	30,000
TeliaSonera	30,000	30,000
Apple	50,000	420,000
Google	120,000	300,000
IBM	130,000	200,000

What factors determine the market capitalization of a company?
 Why has Apple's value increased while TeliaSonera has hardly moved?

Source: Bloomberg

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Apple outperform

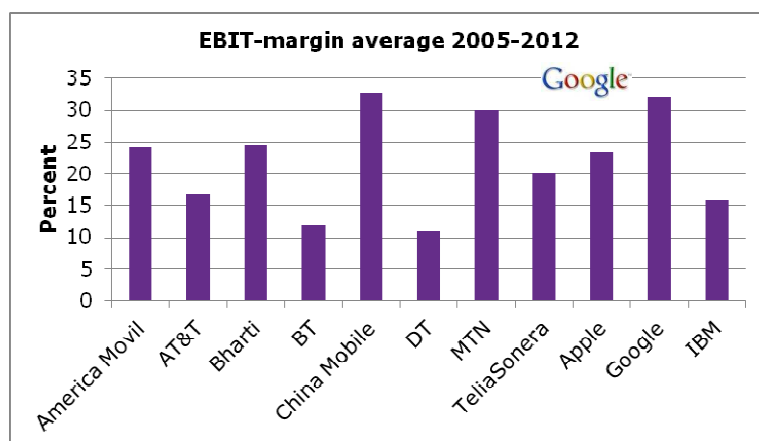


Source: Bloomberg

What can explain the differences between the companies?

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...and high margin



Source: Bloomberg

What explains TeliaSonera's high margin?

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Focus on access and/or services



- Should operators focus on services or only access?
- How to capitalize on the social network trend?
- A myriad of services: each being small versus operators' revenues
- Different business models
- Many new competitors with established brands: operators market share will be small
- Enabler, 3rd party service

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Operators losing ground on services and apps



- Operators have lost the Apps battle
- But subscribers have moved from prepaid to post paid, and buying data packages
- Handset and Apps developers are in the forefront
- Over the top services is in focus which US firms have capitalized on
- QoS, specialized services, net neutrality

Smartphones and apps are driving substitution of SMS.
Source Bloomberg

Elisa: Smartphone users spend 10-15% more than other mobile users.
Source Bloomberg

Revenues from applications

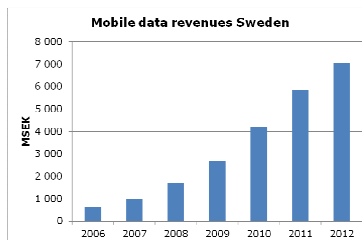
	Previous	Now
Developer	20%	70%
Publisher	20%	0%
Aggregator	20%	0%
Operator	40%	0%
Handset supplier	0%	30%

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Support from mobile data



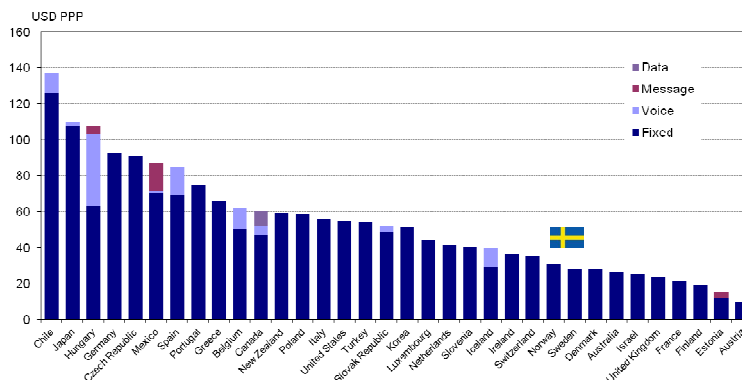
- Non-SMS data drives growth
- No growth on dongles while the share of smartphones are increasing rapidly, now ~70% of the subscribers use smartphones and subscribe to data packages
- Rapid growth of mobile data traffic +75% 2012 while revenues increased 21% 2012, illustrating that operators have difficulties to monetize on mobile data



Source: PTS

International comparison on prices

300 calls + 1 GB mobile basket, August 2012, VAT included

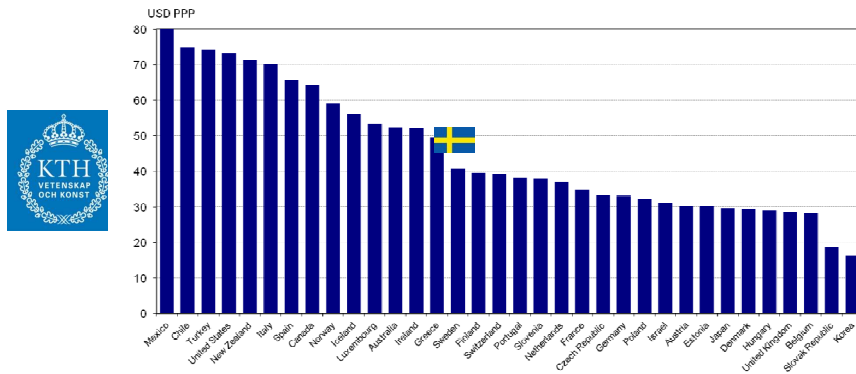


Identify loopholes in comparison of prices

Source: OECD Communications Outlook 2013

Comparison on prices for MBB

Fixed Broadband basket High 4: 42 GB, 30 Mbit/s and above, Sept. 2012



What explains the price difference between Sweden and the US?

Source: OECD Communications Outlook 2013

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Concluding

- The operator landscape is changing
- Increased competition from online services
- Although mobile is maturing with lower influx of new subscribers, the diffusion of smartphones is having a fundamental impact on the industry



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From monopoly to oligopoly, de-regulation, liberalizing

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From monopoly to liberalization



Monopoly

- Why monopoly
- Monopoly on telecom services and the relevant competence
- Micro electronics
- Undeveloped market

Liberalization

- BT paved the way (network vs financial position)
- New operators, competition, mobile expansion
- EU framework
- Internationalization
- Capital market

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Value chain – mobile operators

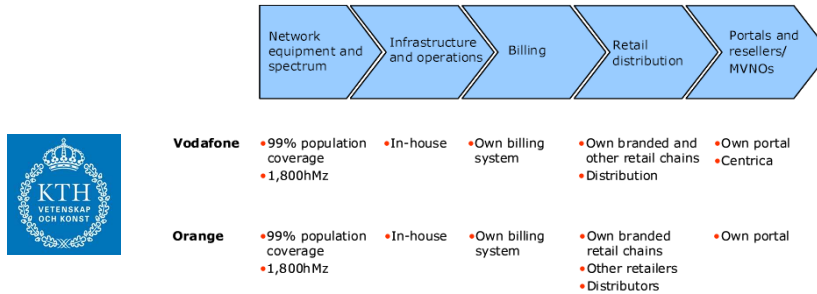


FIGURE 3 The traditional industry value chain view of the mobile network operator: Vodafone and Orange.

Source: Joe Peppard, Anna Rylander, From Value Chain to value Network, European Management Journal, Vol. 24, Issue 2, 2006.

Vertical integration vs disintegration?

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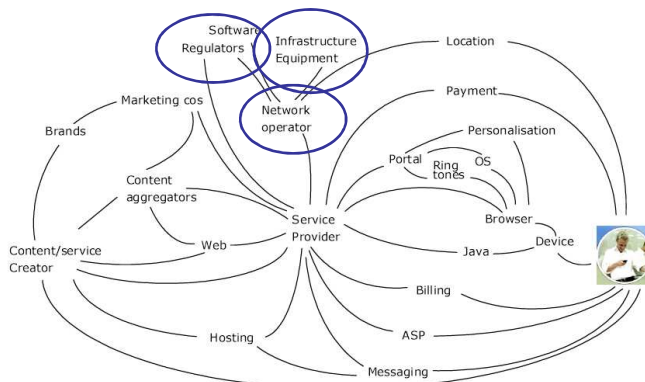


FIGURE 4 Partial network value map for mobile content.

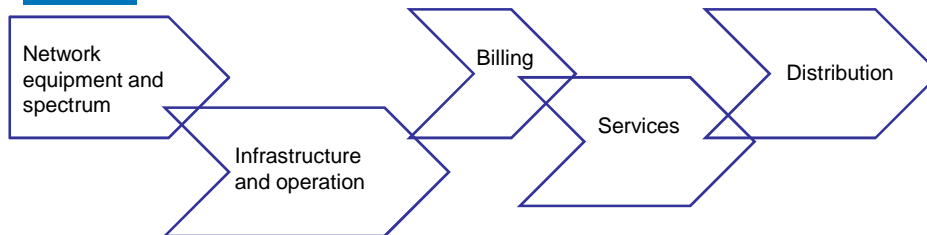
Who are driving the current development? Explore vital links...

Source: Joe Peppard, Anna Rylander, From Value Chain to value Network, European Management Journal, Vol. 24, Issue 2, 2006.

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A gradual disintegration

- The majority of network operators are still vertically integrated,
- But lower growth are driving operators to disconnect (phase out, outsource) various parts of their operations to reduce cost
- Larger extent of network sharing drive more specialization



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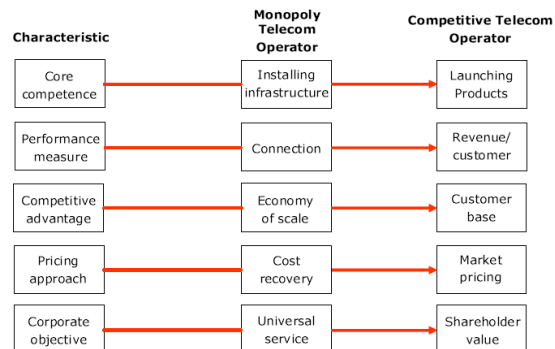


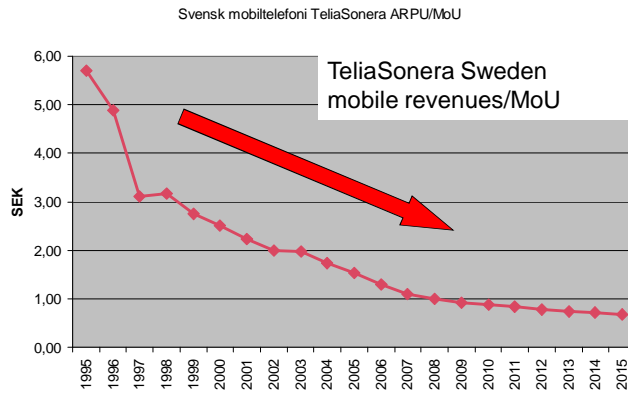
FIGURE 1 From monopoly to competition: challenges facing traditional telecom operators as they enter mobile space.

Source: From Value Chain to Value Network: Insights for Mobile Operators

Compare TeliaSonera and Tele2 in 1993 vs 2012

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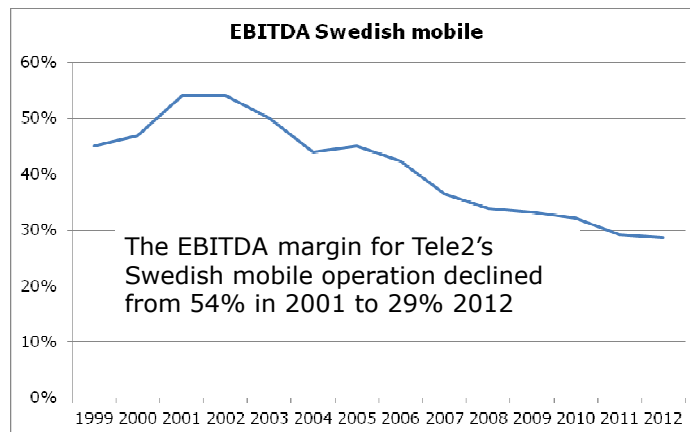
Competition pushing down prices



Revenues per minute has declined ~12% per year since 1995

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...and pressed down Tele2's profit margin



EBITDA= Earnings before interest, taxes, depreciations and amortizations

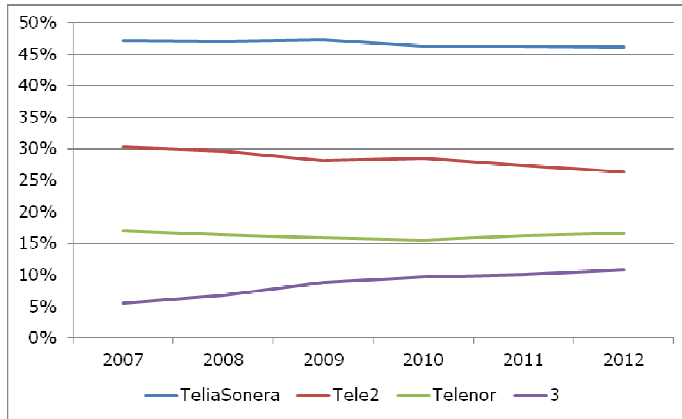
What factors explain lower profit margin?

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...but still healthy EBITDA margins for mobile



EBITDA
(Earnings before
interest taxation,
depreciation, and
amortization)

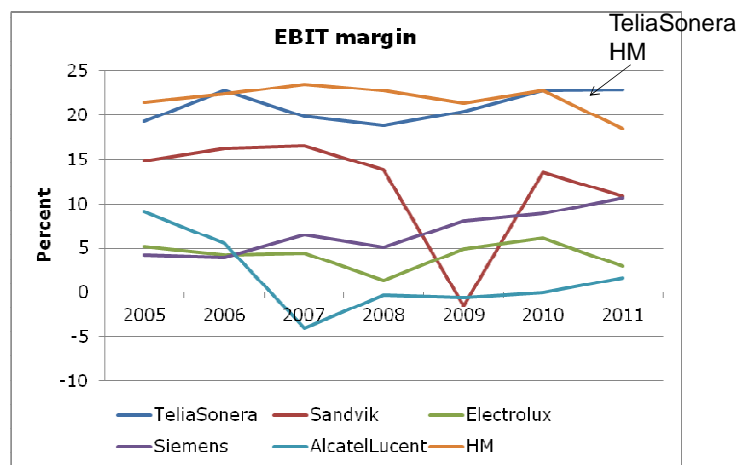


What should TeliaSonera's competitors do in order to improve profitability?

Source: Operator reports

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...and good profitability compared to other industries



Source: Bloomberg

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Becoming a mature industry



- Telecom => "commodity"
- Mobile broadband is changing traffic mix but not revenues
- Lower growth => Pressure on costs
- Searching for the next cash cow
- Infrastructure based competition demands capital "sunk cost"
- Spectrum auctions is favoring large operators
- Driving consolidation

What characterize a mature industry? What measures could be done in order to offset this development?

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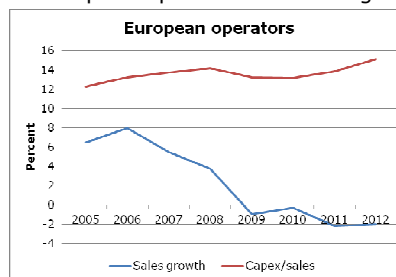
With lower growth



- Lower revenue growth
- Profitable growth requires lower Opex
- Improved cash flow requires reduction of Capex

Explore the interplay between operational expenditures (Opex) and capital expenditures (Capex)

European operators: revenue growth



Source: Bloomberg

Outlook



Organic revenue growth, lower margin erosion than in 2012

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European incumbents

Table 2: European incumbent benchmarking

12m Q4/2010	Neth	DK	Italy	Spain	Switz	Port	Nor	Fra	Ger	Belg	Swd	Aus	Fin
Local FX	KPN	TDC*	TI	TEF	Swiss	PT	TNOR	FT	DT	BELG	TLSN	TA	TLSN
Revenues	7,004	18,068	20,068	18,712	8,566	3,201	26,302	23,308	25,145	4,982	41,846	3,064	1,621
growth %	-3%	-5%	-7%	-5%	1%	-4%	0%	-1%	-1%	-2%	-1%	-4%	1%
EBITDA	3,700	8,855	9,774	8,657	3,804	1,378	10,500	8,999	9,618	1,853	15,798	1,032	482
growth %	3%	0%	-3%	-7%	4%	-6%	0%	-3%	0%	-1%	4%	-12%	-6%
margin %	52.8%	49.0%	48.7%	46.3%	44.4%	43.0%	39.9%	38.6%	38.3%	37.1%	37.8%	33.7%	30.3%
Capex	1,034	2,667	3,106	2,020	1,203	681	2,863	2,303	3,465	707	4,413	516	150
growth %	-5%	-12%	-12%	8%	0%	0%	10%	7%	0%	23%	2%	21%	2%
% of sales	14.8%	14.8%	15.5%	10.8%	14.0%	21.3%	10.9%	9.9%	13.8%	14.2%	10.5%	16.8%	9.2%
CFLOW % of sales	38.1%	34.2%	33.2%	35.5%	30.4%	21.8%	29.0%	28.7%	24.5%	23.0%	27.2%	16.9%	21.1%
Revenues split													
... % mobile	45%	40%	38%	46%	44%	43%	52%	46%	33%	40%	33%	43%	62%
... % other	55%	60%	62%	54%	56%	57%	48%	54%	67%	60%	67%	57%	38%
Margins %													
... Mobile	41.0%	32.0%	48.7%	44.3%	47.0%	46.0%	40.8%	36.9%	42.6%	37.1%	39.2%	39.0%	39.0%
... Fixed	62.5%	60.3%	48.7%	54.1%	42.3%	40.8%	38.9%	40.5%	35.4%	37.1%	37.1%	27.5%	29.7%
* excl Cable													



Stagnating business, but very profitable
EU telecom carrier revenue declined 2.1% during Q2 2011

Source: Handelsbanken Capital Markets, Bloomberg

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When the market is shrinking

- **Consolidation**, financially strong operators take over when competition become infrastructure based and services are integrated, brand become a differentiator
- **Lower competition** with no growth, declining margins drives cost cutting and efficiency programs
- **Consumer value lower** with fewer choices and higher prices, but offset from cost cutting and competition from new actors such as online companies
- **Operators** have to be enablers and provide a smart pipe in order to create growth



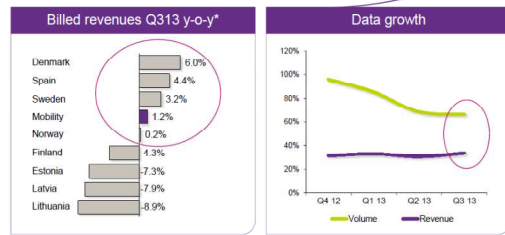
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How to cope with the data growth?



- Traffic is growing strongly, but flat revenues
- Increased load on networks
- Production costs has to be trimmed

Data centric models gain traction in Mobility Services



* In local currencies

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TeliaSonera

Source: TeliaSonera Q3 2013 presentation

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Creating a Leading Digital Telco in Germany (I)

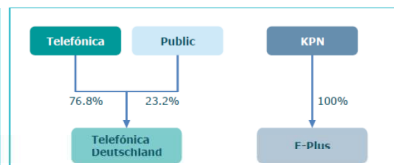
Transaction Summary

Total consideration of €5 Bn in cash and a 17.6% stake

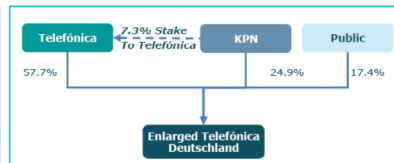
Two Step Structure

- 1 Acquisition of E-Plus by Telefónica Deutschland for a combination of cash and a stake in the enlarged Telefónica Deutschland
 - i. €3.70bn of cash, financed through a rights issue fully underwritten by Telefónica and a group of banks
 - ii. 24.9% stake in the enlarged Telefónica Deutschland (after capital increase)
- 2 Telefónica subsequently to acquire a 7.3% stake of the enlarged Telefónica Deutschland from KPN for €1.30bn, post-transaction, in order to maintain a 65% ownership in the enlarged Telefónica Deutschland

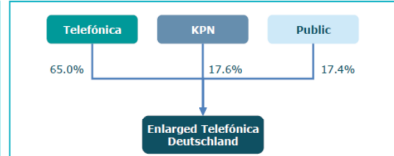
Pre-Transaction Structure



Intermediate structure



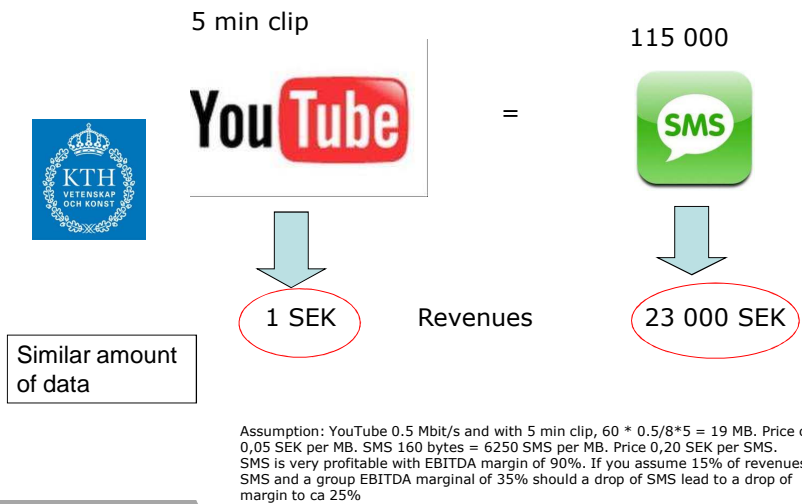
Final Ownership Structure



Source: Telefonica Q2 2013 presentation

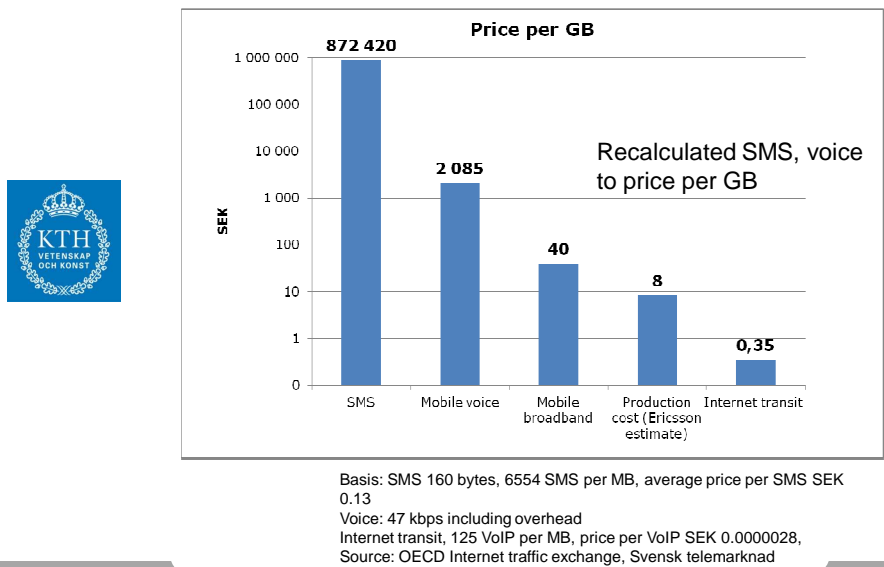
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The data challenge



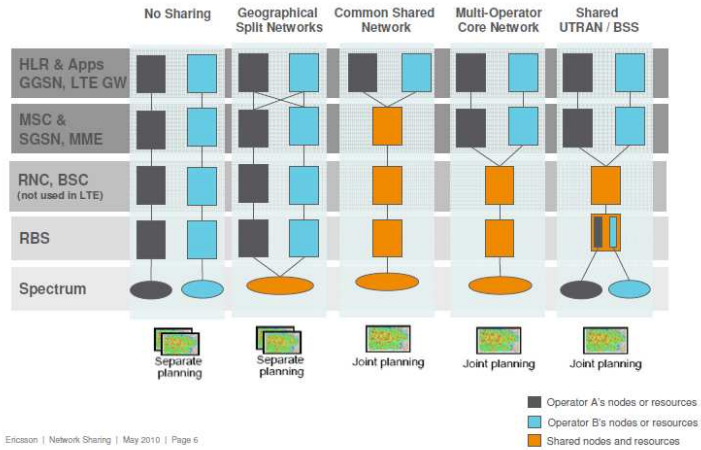
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Voice as an application



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Network sharing on the agenda

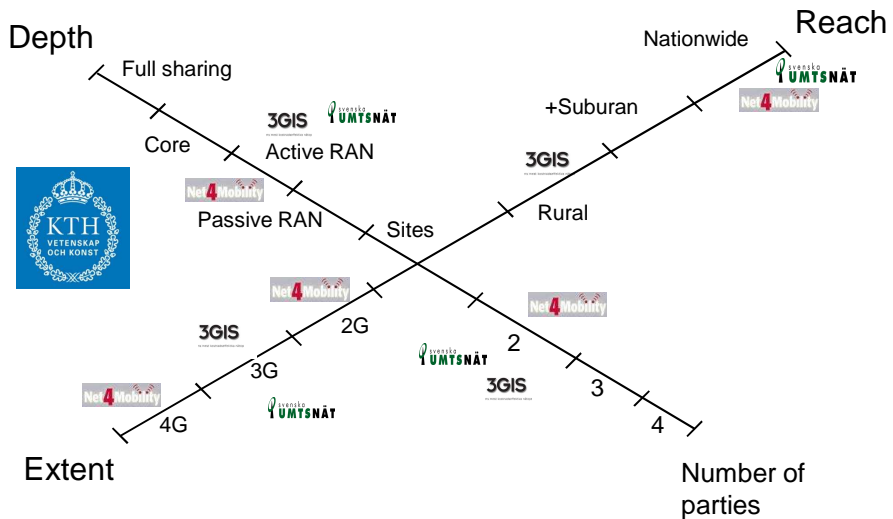


Ericsson | Network Sharing | May 2010 | Page 6

Source: Ericsson

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Network sharing – 4 dimensions



Source: T. Frisanco et al., Infrastructure Sharing and Shared Operations for Network Operators, IEEE, ICC 2008

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Pros and cons with mobile network sharing



- | | | | |
|---|--|---|--|
| + | <ul style="list-style-type: none"> • Lower capex • Lower opex • Maintained position on the market with its brand • Support from a better network than what it could afford to build on their own | - | <ul style="list-style-type: none"> • Cumbersome to reach consensus on all decisions and form a common view • Lose independence over network strategy • Hidden cost, impossible to foresee everything that has to be part of a network agreement |
|---|--|---|--|

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Revenues	The amount of money that a company actually receives during a specific period

Source: Bloomberg

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Conclusions



- Telecom is maturing, searching for a new revenue streams
- Strong volume growth with continuously lower prices
- Focus on lower costs, looking for new ways to rationalize