Financial Performance & Trends in the Telecom Industry

Telecom Report

APPLIED VALUE

Q3 2016

Applied Value
World Trade Center
Kungsbron 1 (G2), PO Box 5047
SE-111 22 Stockholm, Sweden
Phone: +46 (0)8 562 787 00
Fax: +46 (0)8 562 787 01

www.appliedvaluegroup.com

Introduction.

The purpose of this report is to track the financial performance of major players in the telecommunications industry, from Operators to Infrastructure OEMs and Mobile Device Makers.

We hope that you will find this report insightful. Our experienced team welcomes any feedback or opportunities for further discussion.

Principal Contacts

Jonas Båtelson
Telecom Practice Leader (EU)

Applied Value (Stockholm)
Phone: +46 7 255 272 32
jonas.batelson@appliedvalue.com

Dan Frohm
Telecom Practice Leader (US)

Applied Value (New York)
Phone: +1 646 467 4586
dan.frohm@appliedvalue.com

Key Telecom Industry Segments.

Operators

Operators are communication service providers (CSP) and provide fixed and mobile telephony and data services to businesses and consumers

Infrastructure OEMs

Infrastructure OEMs provide communications technology including services, software and infrastructure hardware to telecom operators and others

Device OEMs

Device OEMs manufacture mobile devices and consumer electronics to businesses and consumers

1) **Summary and Key Data**

2) **Financial Trends and Performance**

- **Operators**
- **Infrastructure OEMs**
- **Device OEMs**

3) **About Applied Value**

Report Summary.

	Current trend	Selected key findings
Operators	• Even though the margins in the operator segment fell LTM the ROIC remained stable because of improved capital efficiency • Overall trend is that regions converge in terms of ROIC performance (levels)	• Slightly declining NOPAT and EBITDA margin trends LTM, most extensive declines in MEA and CALA • Overall, CAPEX spend has stagnated, mainly driven by declines among Global and APAC operators • The declining trend in Invested Capital Turnover (CTR) is reversing due to considerable improvements by CALA and CIS operators
Infrastructure OEMs	• Huawei is the only one of its peers to see positive ROIC development • ZTE and Nokia have had significant deterioration to their ROIC in the last couple of years, and for Ericsson specifically in the last quarter	• Majority of OEMs have had limited organic growth over the past years; as a result companies turn to acquisitions for growth • Ericsson's and Nokia's LTM trends are flat but performance in last quarters implies 2016 full-year margins are assumed to be lower than 2015 actuals
Device OEMs	• Apple continues to outperform peers in terms of ROIC, with Samsung a distant second • Apple currently catch >80% of the total smartphone profits	• Revenues and profits expected to decline in 2016 due to increased saturation in mature markets • Revenues remained flat with the exception of HTC, whose revenues decreased significantly LTM • Profit margins have stagnated and HTCs NOPAT margin fell to -22% in the LTM

Note: LTM = Last Twelve Months.

Key Financial Metrics in Report.

Yearly Performance Table

Metric	*Industry Group*	*2012*	*2013*	*2014*	*2015*	*LTM*
Return on Invested Capital (ROIC)	Operator	9%	10%	8%	8%	8%
	Infrastructure OEMs	8%	15%	20%	22%	19%
	Device OEMs	40%	36%	31%	37%	35%
Net Operating Profit After Taxes Margin (NOPAT)	Operator	11%	12%	10%	11%	10%
	Infrastructure OEMs	4%	7%	8%	7%	7%
	Device OEMs	11%	10%	9%	11%	10%
Invested Capital Turnover (CTR)	Operator	0.8	0.8	0.8	0.7	0.8
	Infrastructure OEMs	2.3	2.3	2.5	3.0	2.6
	Device OEMs	3.5	3.5	3.3	3.5	3.5

Quarterly Performance Table (excluding selected operators due to lack of quarterly data)

Metric	*Industry Group*	*Q4 2015*	*Q1 2016*	*Q2 2016*	*Q3 2016*
Sales Growth Q to Q [%]	Operator	5%	4%	3%	1%
	Infrastructure OEMs	9%	-4%	-8%	-7%
	Device OEMs	-8%	-5%	-6%	0%
NOPAT [%]	Operator	10%	10%	11%	11%
	Infrastructure OEMs[1]	11%	4%	5%	4%
	Device OEMs	9%	10%	10%	12%
EBITDA [%]	Operator	29%	31%	32%	33%
	Infrastructure OEMs[1]	18%	12%	12%	11%
	Device OEMs	20%	22%	23%	24%

Notes: 1. Huawei quarterly NOPAT and EBITDA data is not available and therefore FY 2015 is used.
2. ZTE are only releasing half year results.

1) Summary and Key Data

2) Financial Trends and Performance

- **Operators**
- Infrastructure OEMs
- Device OEMs

3) About Applied Value

We performed a financial benchmark with 49 operators, segmented by geographical scope.

North America
- AT&T
- Verizon
- BCE
- Rogers
- Telus

APAC
- Axiata
- China Mobile
- China Telecom
- China Unicom
- Hutchison
- KDDI
- KT Corp
- SingTel
- SK Telecom
- Telstra
- LG Uplus
- Telkom Indonesia

Europe
- BT
- KPN
- Orange
- Swisscom
- Tele2
- Telia
- Altice
- Proximus
- Elisa
- TDC

Global
- Bharti Airtel
- Deutsche Telekom
- NTT
- Ooredoo
- SoftBank
- Telecom Italia
- Telefonica
- Telenor
- Vodafone

ME & Africa
- Etisalat
- MTN
- STC
- Turkcell
- Vodacom
- Zain

CIS
- MTS
- VimpelCom
- Rostelecom
- Megafon

Central & Latin America
- America Movil
- Millicom
- Oi

Notes: Operators were classified as Global if >20% of revenues came from regions outside of their home region.

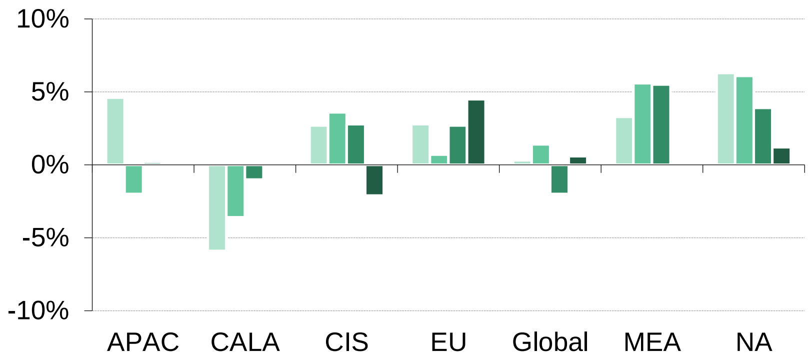
Key Takeaways from Operators segment:

	Long-term trend	Short-term trend
Ability to Create Shareholder value	• The overall **ROIC** for the segment has declined since 2012 but level has now stabilized • Overall trend is that regions converge in terms of **ROIC** performance (levels)	• Global and CIS operators were the only regions increasing their **ROIC** LTM, but region MEA keeps its position as best in class • Deep-dive analysis shows large variation in **ROIC** performance among peers, with top performers typically operate in emerging markets.
Margin Performance	• Operators in MEA have the highest **profitability** • The overall segment **profitability** has declined compared to 2012 levels, with CIS and CALA operators experiencing the largest declines	• Positive **profitability** trend for EU, CIS and Global operators during last three quarters, but LTM levels in EU still below 2015 totals • CALA, EU and APAC are currently the regions with lowest **profitability**
Capital Efficiency	• **Capital turnover** has deteriorated across the industry since 2012, primarily driven by drops for operators in the MEA region	• Segment **capital turnover** rebounded during LTM, primarily driven by CIS and CALA regions, with CALA currently being best in class • Other regions keep current levels
Capital Expenditure	• The increase in **CAPEX** stagnated after 2014 and spend has slightly declined during last years • **CAPEX** is continuously increasing in the MEA region	• The **CAPEX** over sales and EBITDA declined LTM, primarily driven by Global, APAC and CIS operators

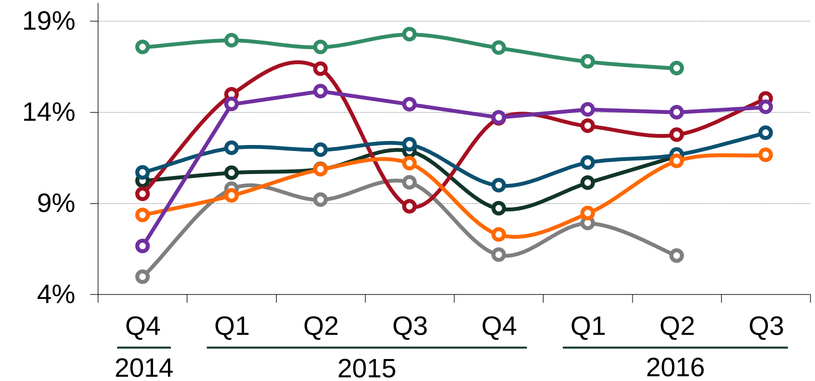
Notes: 1. Operators in the study are estimated to cover 60-70% of the market by value.
2. LTM is an abbreviation for Last Twelve Months.
3. If no data is available for an operator one quarter an LTM average has been calculated based on the other quarters with data available.

Recent quarters the CAPEX spend has remained stable and the margins for Global, EU and APAC operators have increased.

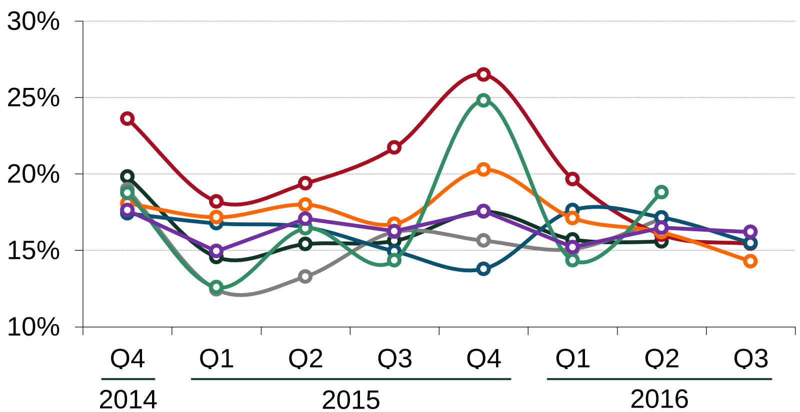
Indexed sales



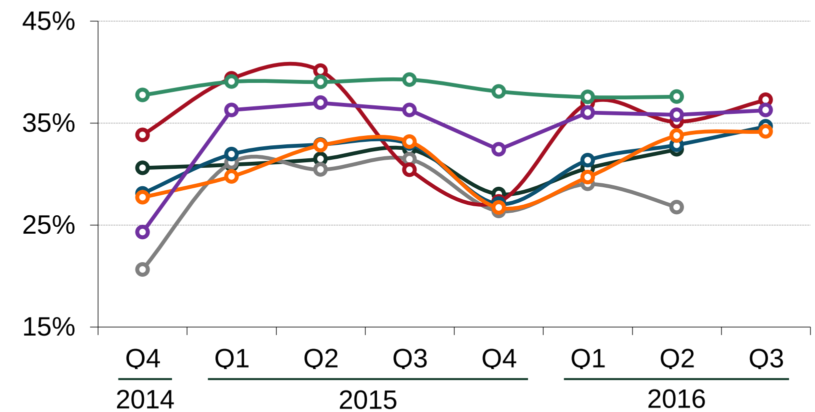
Quarterly NOPAT Margin, (%)



CAPEX / Sales, (%)



Quarterly EBITDA Margin, (%)

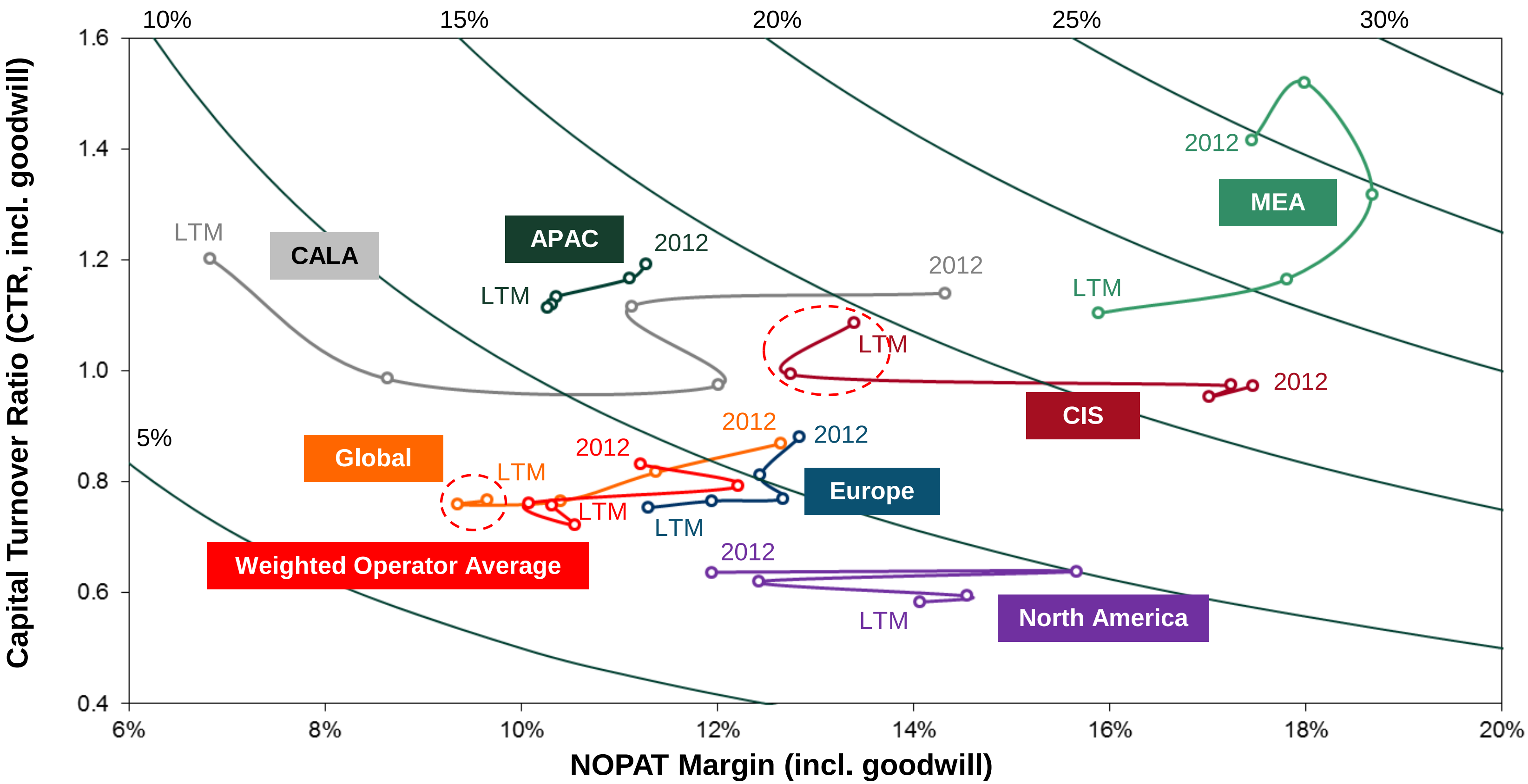


Notes: 1. EBIT & EBITDA are normalized to remove one-time or unusual influences.
2. Q3 2016 data for APAC, CALA and MEA region has been left out since no data is available for a considerable part of the sample companies in these regions.

Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.

The Global and CIS region operators were the only ones managing to improve ROIC LTM.

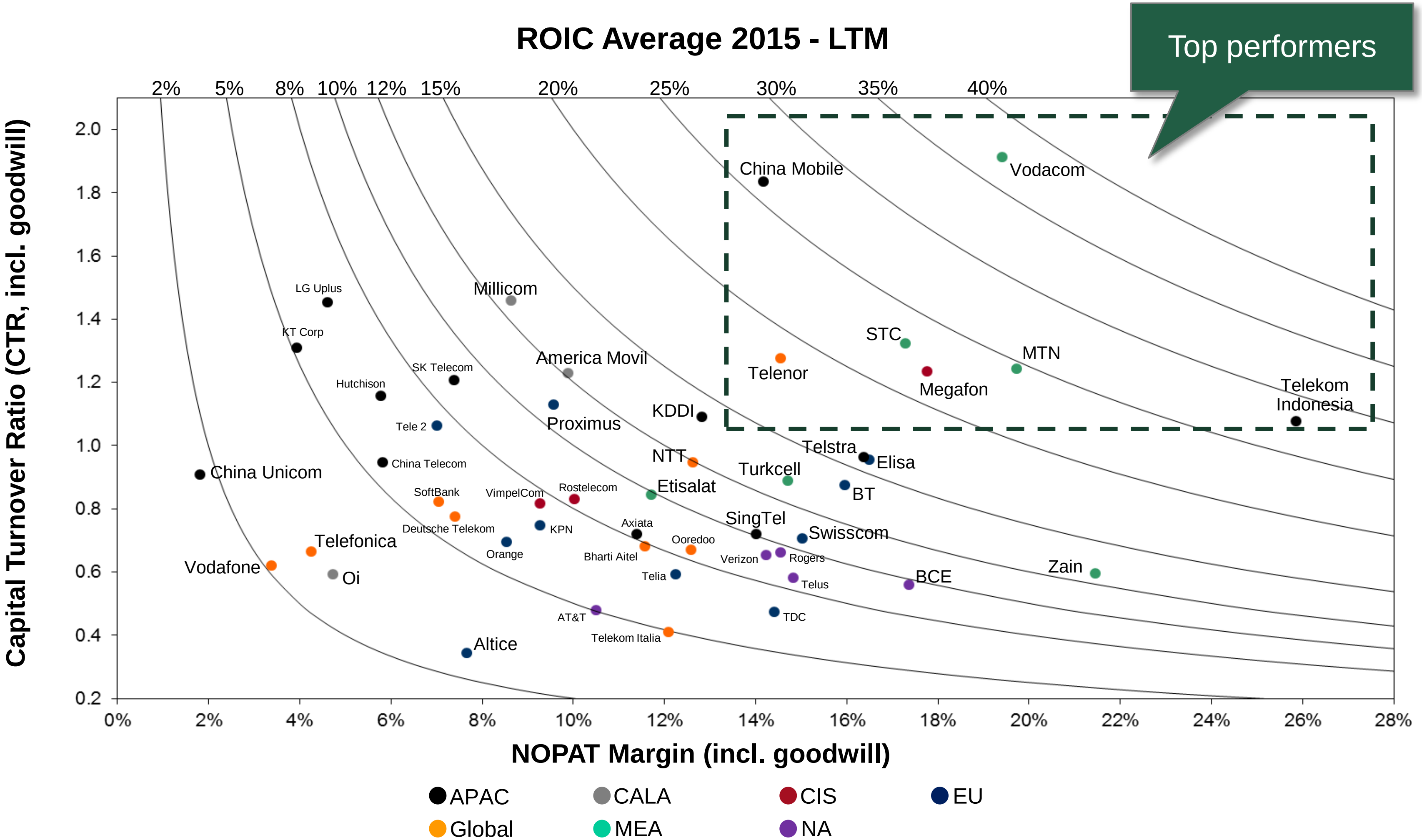
ROIC Development 2012 - LTM



ROIC = Return on Invested Capital (actual return that the company has generated after tax)

Notes: Throughout the ROIC calculation, EBIT is normalized to remove one-time or unusual influences.
Source: Capital IQ, Applied Value Analysis.

Large variation in ROIC performance among peers – top performers typically operate in emerging markets.



ROIC = Return on Invested Capital (actual return that the company has generated after tax)

Notes: Throughout the ROIC calculation, EBIT is normalized to remove one-time or unusual influences.
Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.

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Operators in emerging markets also experience largest shifts 2015 vs. LTM, due to both changing NOPAT and CTR.

Operator	ROIC LTM	ROIC Δ 2015 – LTM	Comment
Top ROIC gainers			
1. VimpelCom	14%	12pp.	*Improving from very low NOPAT % in 2015*
2. China Mobile	31%	10pp.	*Increased ROIC by major improvements NOPAT % and CTR*
3. Millicom	16%	6pp.	*Increased ROIC by major improvements in CTR*
4. Telkom Indonesia	30%	4pp.	*Increased ROIC by major improvements in NOPAT % (+~2pp. 2015 – LTM)*
5. Elisa	17%	2pp.	*Increased ROIC by major improvements NOPAT % and CTR*
Top ROIC losers			
45. America Movil	11%	-3pp.	*NOPAT % decreased by ~2pp. 2015 – LTM*
46. MTN	23%	-3pp.	*NOPAT % decrease combined with minor decline in capital efficiency*
47. Telstra	14%	-4pp.	*Substantial NOPAT % decrease combined with slight decline in CTR*
48. Turkcell	11%	-5pp.	*Substaintail declines in both NOPAT % and capital efficiency*
49. Megafon	19%	-6pp.	*NOPAT % decreased by ~4pp combined with slight decline in CTR*

Note: Throughout the ROIC calculation, EBIT is normalized to remove one-time or unusual influences.
Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.

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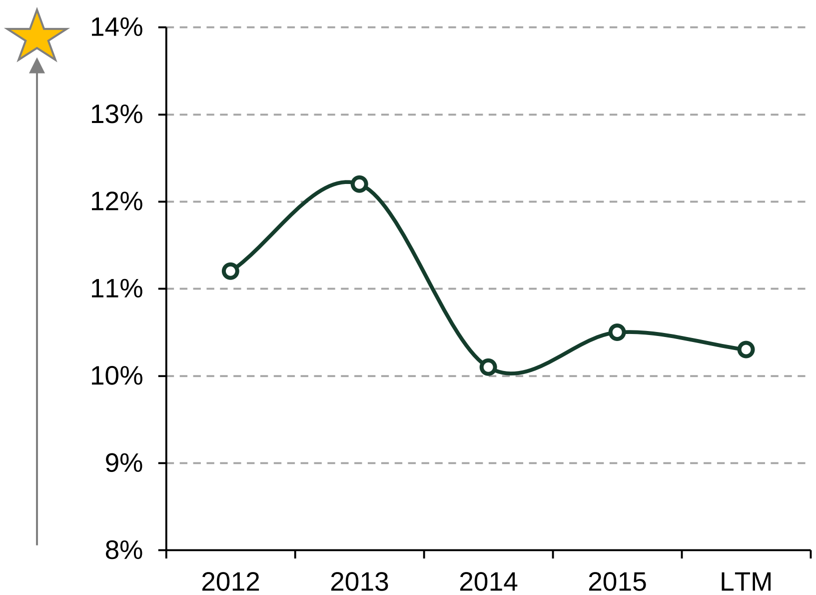
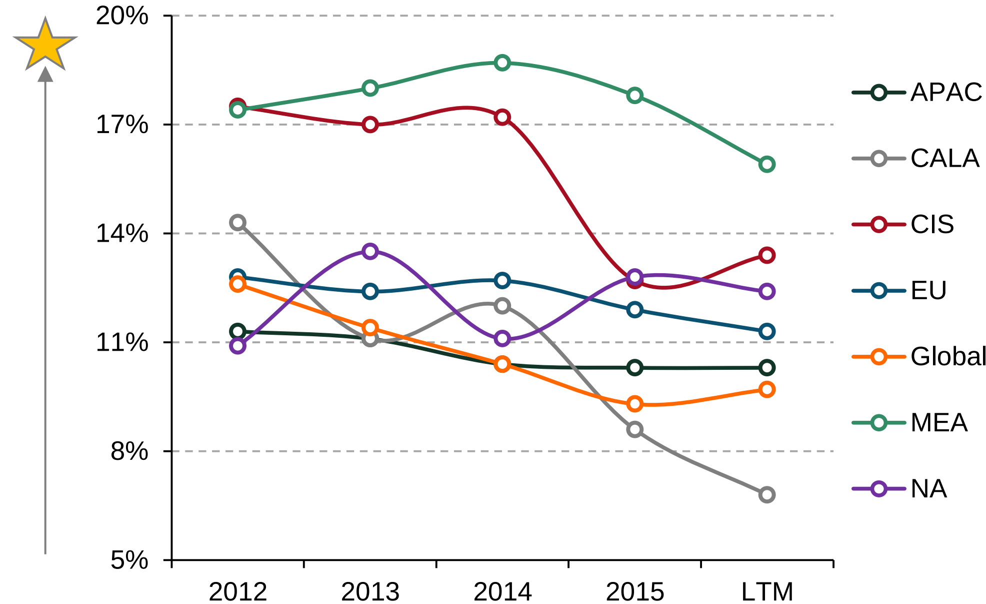
Industry NOPAT has decreased LTM; the Global, APAC and CIS operators managed to stop their negative trends.

NOPAT Margin, weighted for all companies
2012-LTM



NOPAT Margin, arithmetic average per region
2012-LTM

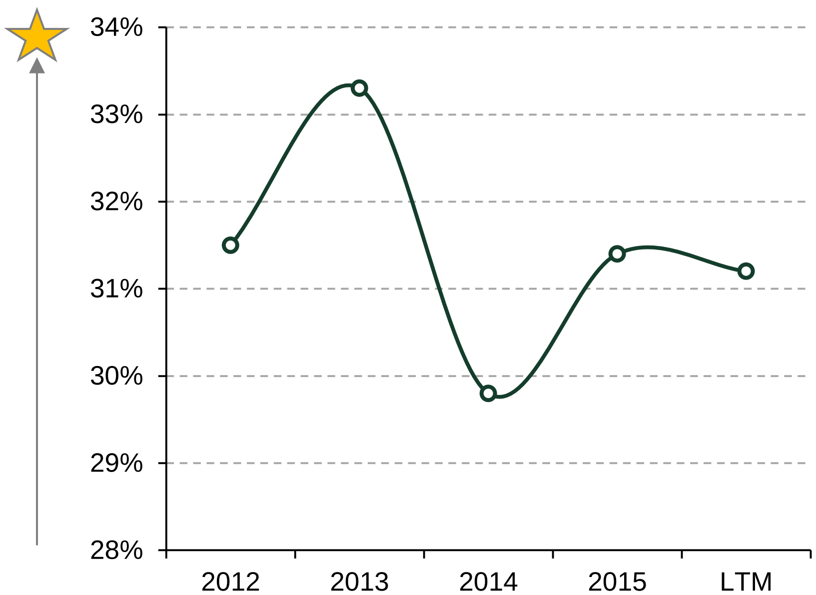


Note: 1. Throughout the ROIC calculation, EBIT is normalized to remove one-time or unusual influences.
2. The CALA regions poor performance LTM mainly depends on Oi.

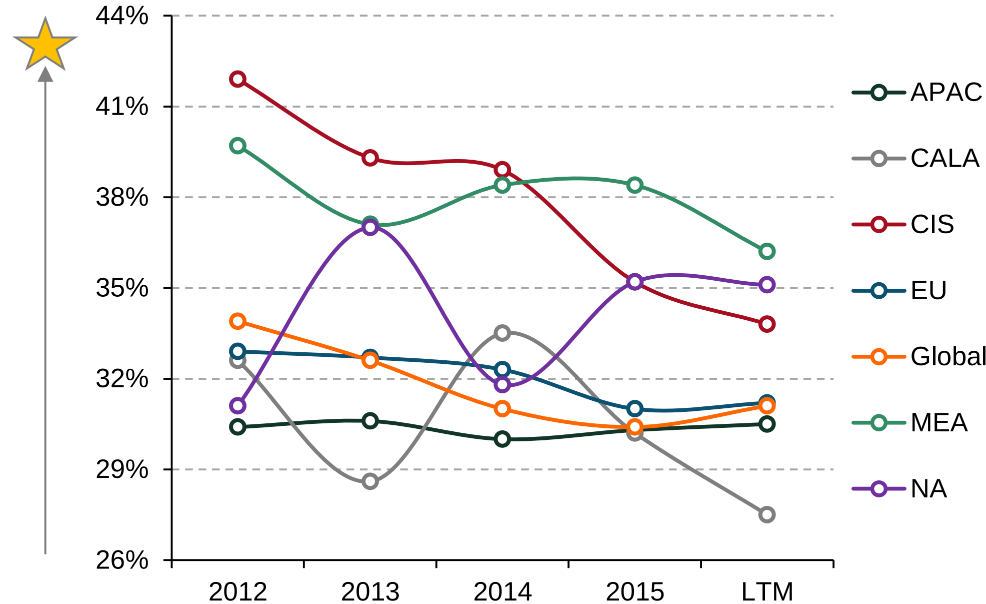
Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.

The industry EBITDA margin is slightly declining, since 2012 the CIS operators have experienced the most comprehensive decline.

EBITDA Margin, weighted for all companies
2012-LTM



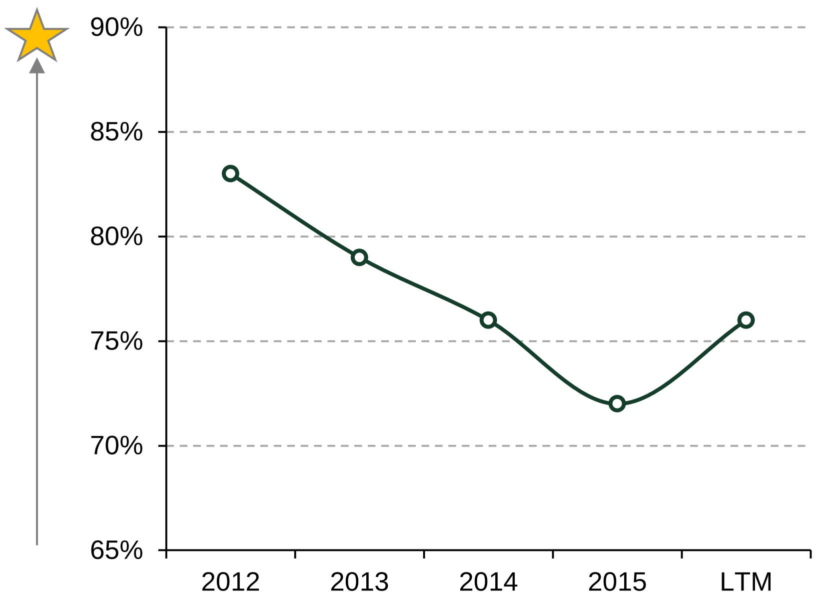
EBITDA Margin, arithmetic average per region
2012-LTM



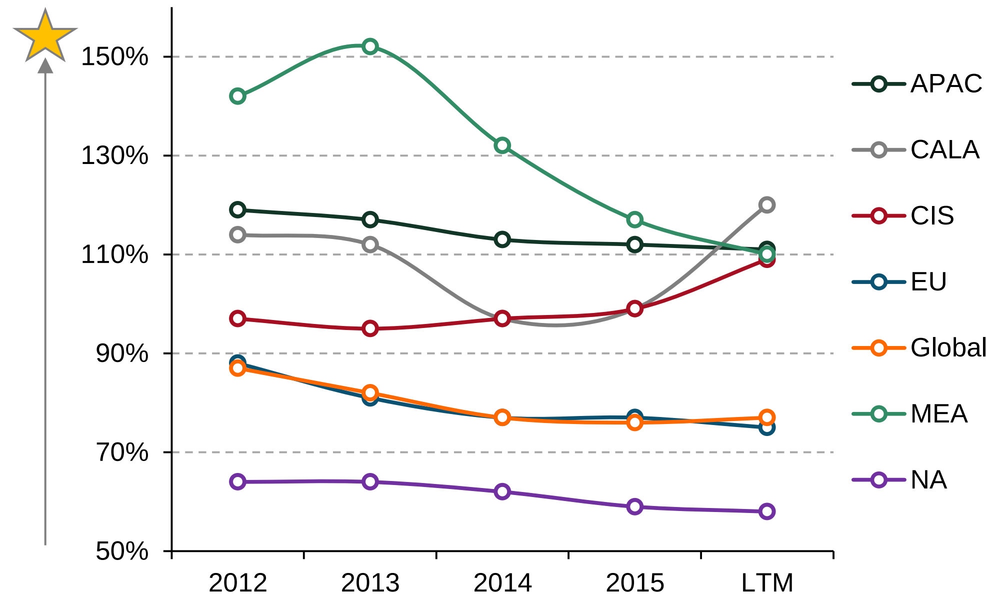
Note: Throughout the ROIC calculation, EBIT is normalized to remove one-time or unusual influences.
Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.

The industry invested capital turnover increased LTM for the first time since 2012, primarily driven by CALA and CIS operators.

Invested Capital Turnover, weighted for all companies 2012-LTM



Invested Capital Turnover, arithmetic average per region 2012-LTM

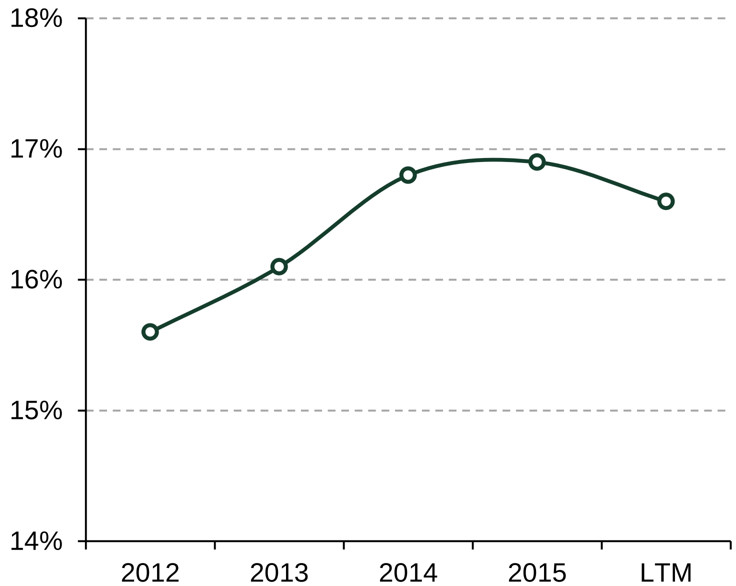


Note: 1. Throughout the ROIC calculation, EBIT is normalized to remove one-time or unusual influences.
2. The CALA regions poor performance LTM mainly depends on Oi.

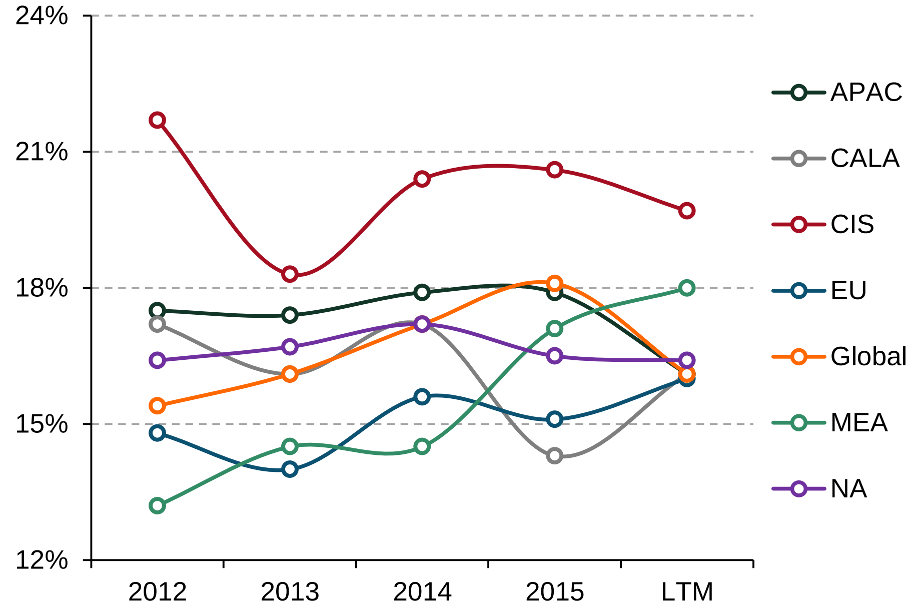
Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.

CAPEX spend in relation to sales declined LTM, driven by CIS, APAC and Global operators.

CAPEX / Sales, weighted for all companies
2012-LTM



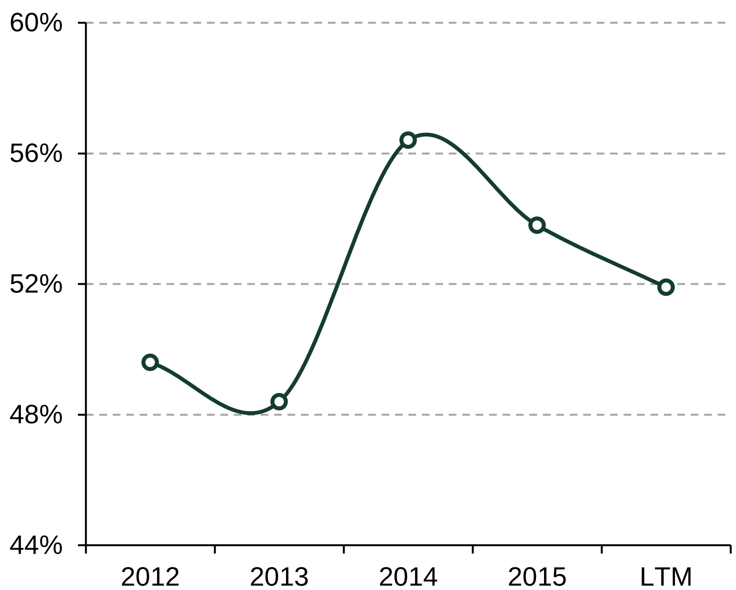
CAPEX / Sales, arithmetic average per region
2012-LTM



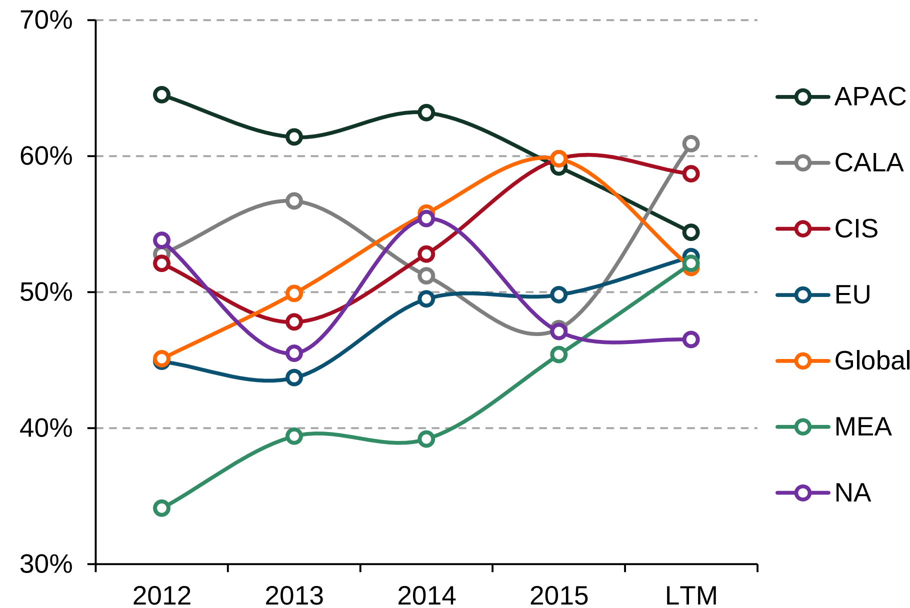
Note: Throughout the ROIC calculation, EBIT is normalized to remove one-time or unusual influences.
Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.

Cash generation is improving driven by APAC, Global and CIS operators.

CAPEX / EBITDA, weighted for all companies
2012-LTM



CAPEX / EBITDA, arithmetic average per region
2012-LTM



Note: Throughout the ROIC calculation, EBIT is normalized to remove one-time or unusual influences.
Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.

1) Summary and Key Data

2) Financial Trends and Performance

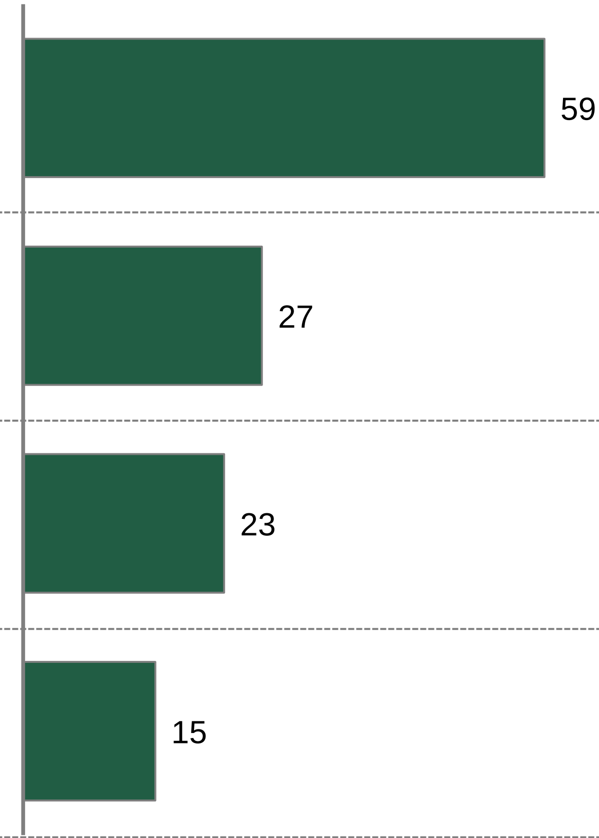
- Operators
- Infrastructure OEMs
- Device OEMs

3) About Applied Value

We performed a financial benchmarking analysis comparing Huawei, Ericsson, Nokia Networks, and ZTE.

Company Group	
HUAWEI	Huawei Technologies is a Chinese multinational networking and telecommunications equipment and services company headquartered in Shenzhen, China
ERICSSON	Ericsson is a multinational provider of communications technology that offers services, software and infrastructure hardware
NOKIA	Nokia is an international provider of fixed and mobile network infrastructure, location-based technologies and advanced technologies
ZTE中兴	ZTE Corporation is a Chinese multinational telecommunications equipment and systems company headquartered in Shenzhen, China

Revenues
2015, BUSD

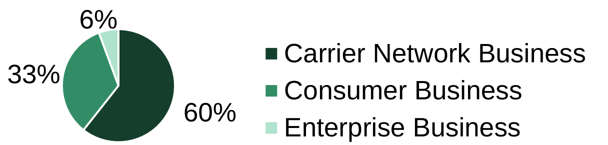


Notes: (1) Nokia data is LTM to highlight revenues from Alcatel acquisition.
Source: Annual & quarterly reports, Applied Value Analysis.

Huawei and ZTE have significant mobile device segments while their peers all focus on telecom infrastructure.

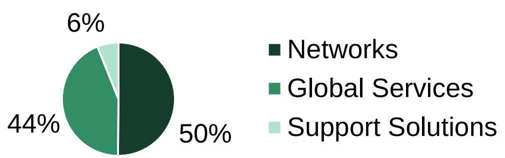
Company | **Business Segments** | **Description**

HUAWEI



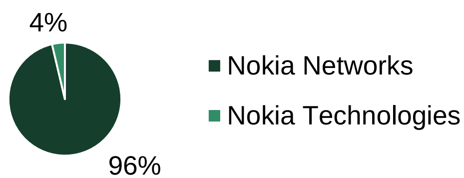
- Carrier Network Business: Wireless/Fixed/Core Networks, Carrier SW
- Consumer Business: Mobile Broadband/Home Devices, Smartphones
- Enterprise Business: ICT Products

ERICSSON



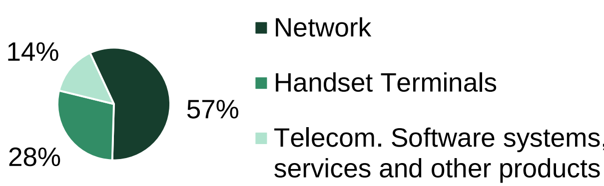
- Network Products, Network Services: 4G and 5G development, Radio and Transport, Managed Services and Customer Support
- Cloud & IT Products & Services: Software, Systems Integration
- Media: Broadcast systems, TV/Media
- *Available financials stated with pre-reorganization segmenting*

NOKIA



- Nokia Networks: Network Infrastructure Business
- Nokia Technologies: Technology Development and IPR Activities

ZTE中兴



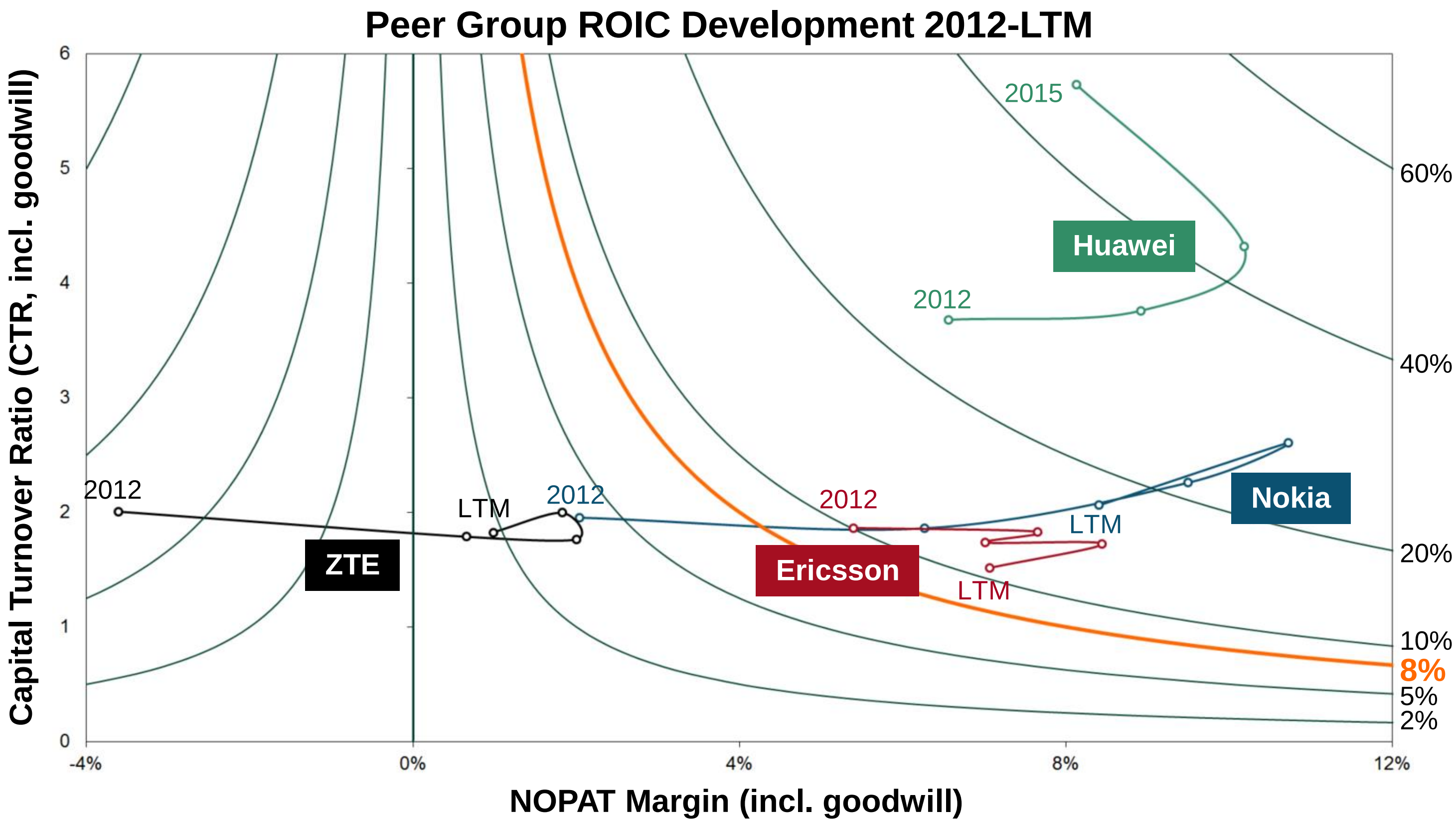
- Networks: Wireless communications, wireline switch and access and optical and data communications
- Handset terminals: Manufacture and sale of mobile phone handsets and data card products
- Telecommunications software systems, services and other products: Telecommunications software systems and fee-based services

Note: ZTE Corp. data is form 2014.
Source: Annual & quarterly reports, Applied Value Analysis.

Key Takeaways from Infrastructure OEM segment.

	Long-term trend	Short-term trend
Ability to Create Shareholder value	• All peers have improved **ROIC** since 2012 • Majority of peers have continuously delivered **ROICs** above **WACC**, thereby increasing shareholder value	• Nokia, Ericsson and ZTE have deteriorating **ROICs** LTM • Huawei keeps its position as best in class
Revenue	• Aside from Huawei and ZTE, organic growth among peers has been low over the period	• Huawei and ZTE are the only peers with increasing **revenues** (Nokia's increasing revenues is driven from Alcatel acquisition) • Most recent **acquisitions** driven by ambition to improve selected competence areas
Margin Performance	• All peers have improved **profitability** since 2012 but trend in last years is flat • Nokia and Huawei have best in class **margins** • Ericsson's and Nokia's LTM trends are flat but performance in last quarters implies 2016 full-year **margins** are assumed to be lower than 2015 actuals	• Declining **profitability** for all peers compared to historical levels • Ericsson's margin deterioration is accelerating with a significant drop in Q3 • Nokia's **NOPAT margin** is hurt by acquisition of Alcatel-Lucent
Capital Efficiency	• Huawei has continuously higher **CTR** than peers (2x) as a result of increased focus on services, hence higher **fixed asset turnover** • Other peers are on par and have delivered stable **capital turnover** ratios over the period	• Nokia, Ericsson and ZTE have increased **inventory levels** LTM, leading to lower **CTR** • **Days of sales receivables** and **payables** are stable, but all peers still pay suppliers quicker than collecting cash from customers

Huawei has higher CTR than peers as a result of increased focus on services – all peers has improved NOPAT since 2012.



ROIC = Return on Invested Capital (actual return that the company has generated after tax)

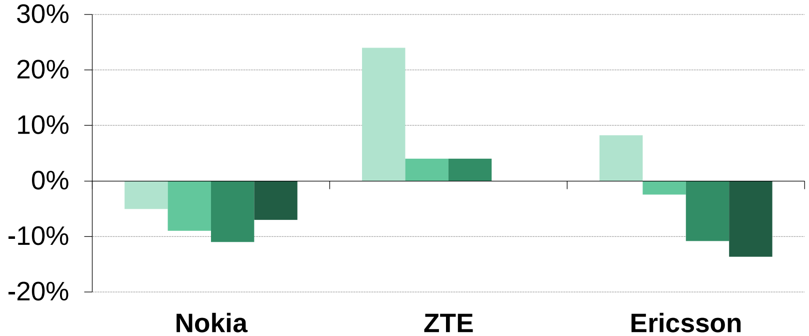
WACC = Weighted Average Cost of Capital (the required return that the company must generate in order create value, i.e. a ROIC>WACC creates shareholder value)

Notes: NOPAT is normalized to remove one-time or unusual influences.
Huawei does not publish quarterly reports. ZTE only publish half year reports.
Nokia 2012 excludes device business, Nokia LTM includes Alcatel-Lucent on a consolidated basis.

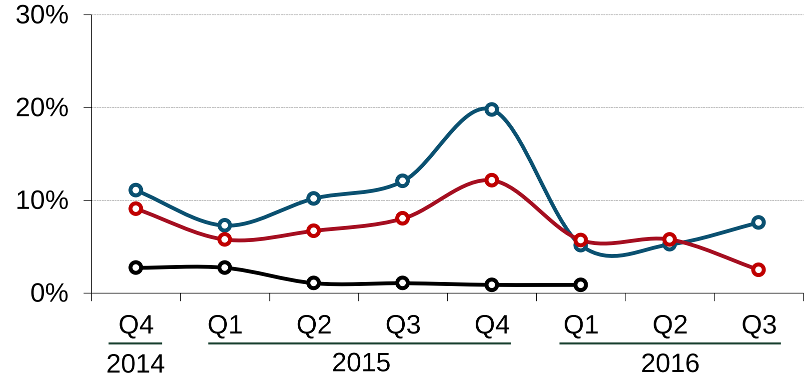
Source: Annual & quarterly reports, Applied Value Analysis.

Nokia's margin is recovering while Ericsson's deteriorating shows a rapid acceleration in Q3 – ZTE is gaining market share during 2016.

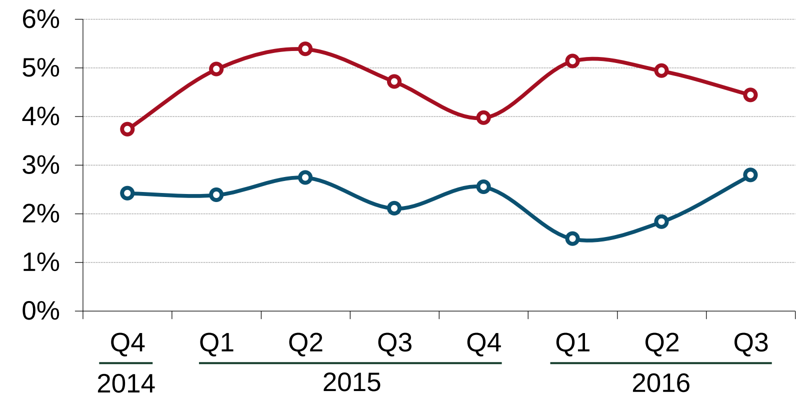
Sales, Quarter-to-Quarter development %



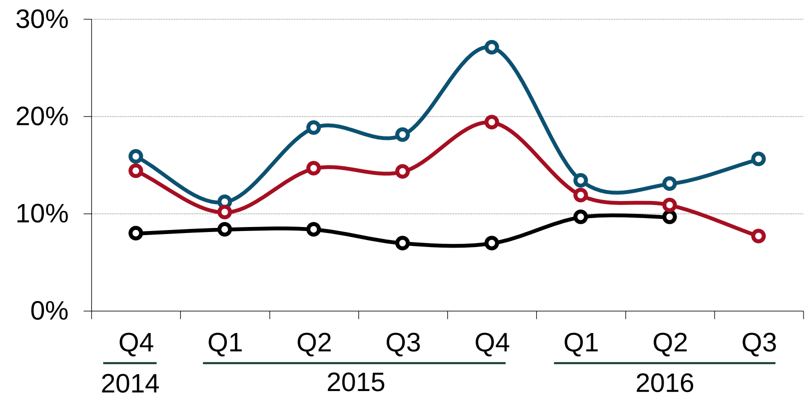
Quarterly NOPAT Margin, (%)



CAPEX / Sales, (%)



Quarterly EBITDA Margin, (%)



Q4 14 vs.15 | Q2 15 vs.16 | ZTE | Ericsson
Q1 15 vs.16 | Q3 15 vs.16 | Nokia

Notes: NOPAT is normalized to remove one-time or unusual influences.
Huawei does not publish quarterly reports. ZTE only publish half year reports.
Source: Annual & quarterly reports, Applied Value Analysis.

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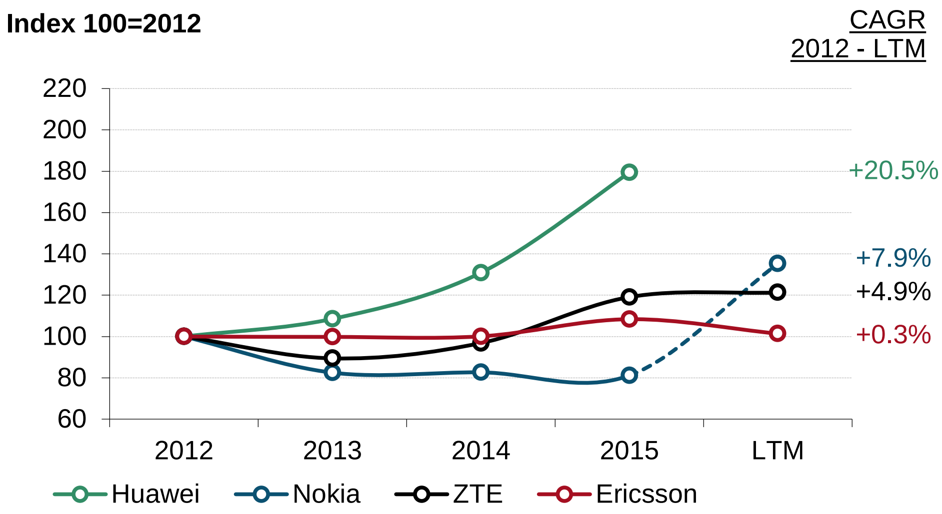
Aside from Huawei and ZTE, organic growth among peers is low, with sales either flat or increasing due to acquisitions.

Indexed Revenue Development
2012 – Last Twelve Months



- Huawei's CAGR of 20.5% from 2012 leads the group. Huawei's carrier and consumer businesses have driven the upward trend (a 21.4% and 72.9% increase, respectively, from 2014 to 2015)
- Nokia's increased revenue over the past year is driven by the Alcatel acquisition, which closed in January

M&A Activity
2015 – 2016

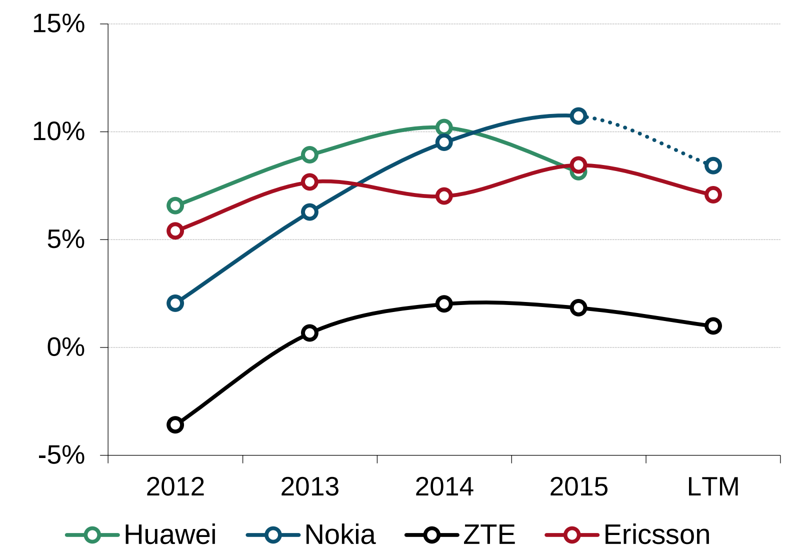
Oct-2016	**Nokia** acquires Eta Devices, start-up specializing in power efficiency solutions for base stations
Aug-2016	**Nokia** acquisition of Gainspeed, pioneer of DAA cable, to close Q3'16
Apr-2016	**Ericsson** acquires Ericpol, a software development company specialized in telecommunications and IT
Jan-2016	**Nokia** secures 17 BUSD takeover of Alcatel-Lucent via tender offer
Jan-2016	**Nokia** acquires French internet and software company Withings SAS for 192 MUSD
Dec-2015	**Nokia** completes the sale of its HERE business to Audi, BMW and Daimler for 2.8 BEUR
Oct-2015	**Ericsson** completed the acquisition of Envivio by means of a tender offer for approx. 125 MUSD
Jul-2015	**Huawei** acquired its SDN software technology from Amartus

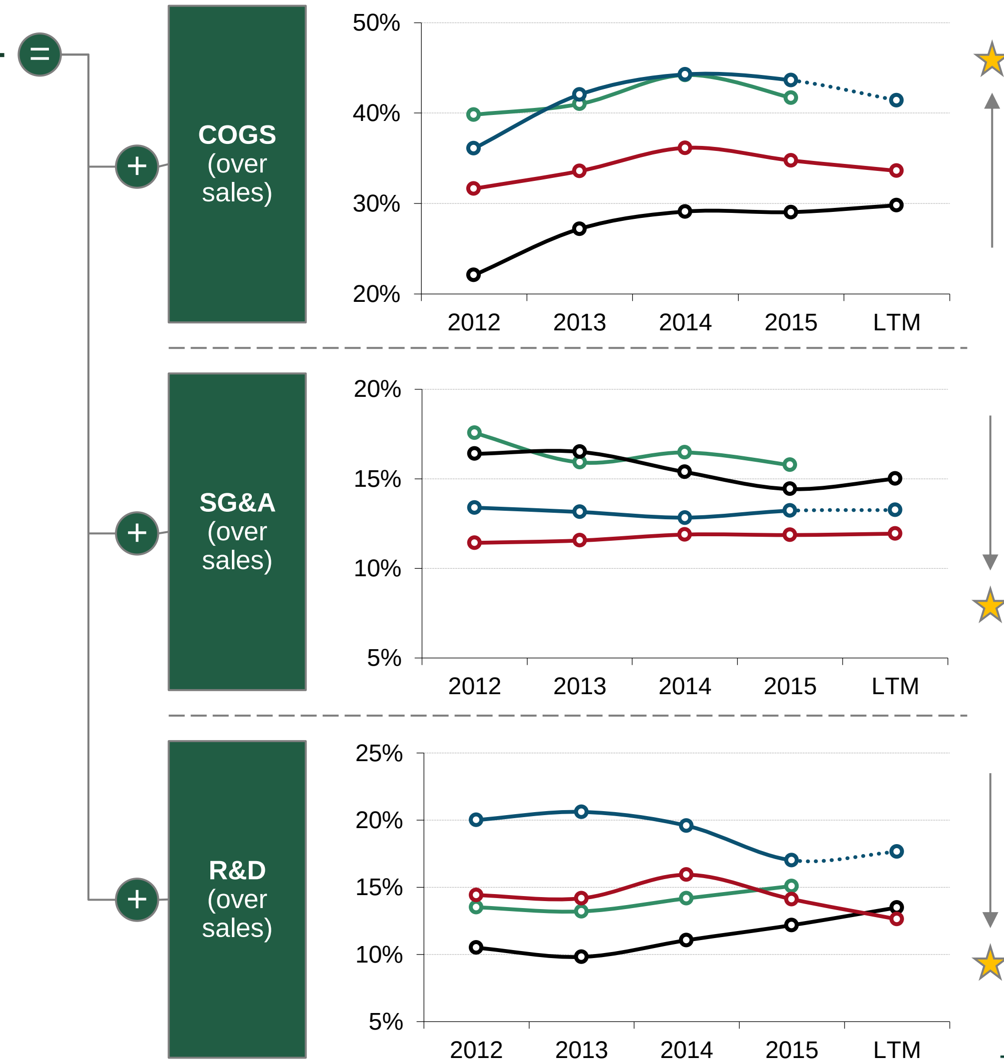
Notes: Huawei does not publish quarterly reports. ZTE only publish half year reports.
Nokia 2012 excludes device business, Nokia LTM includes Alcatel-Lucent on a consolidated basis.

Source: Annual & quarterly reports, Applied Value Analysis.

Declining profitability for all peers - Ericsson's poor performance during 2016 is offset by strong Q4 2015 resulting in flat trend.

Net Operating Margin After Tax, %



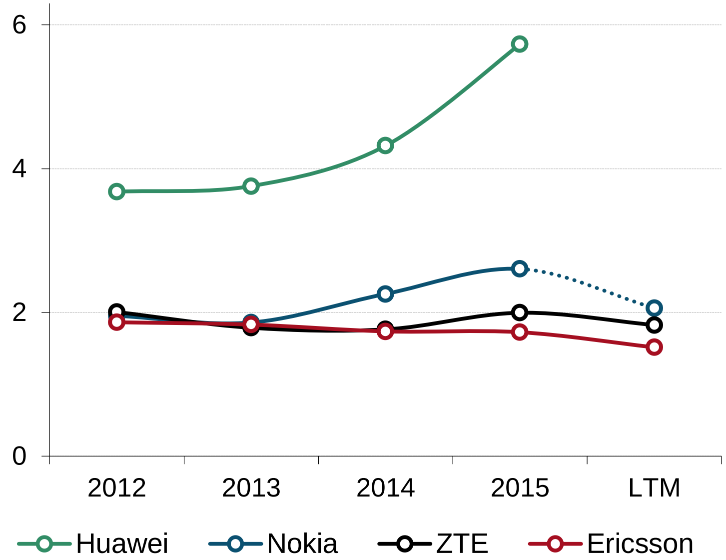


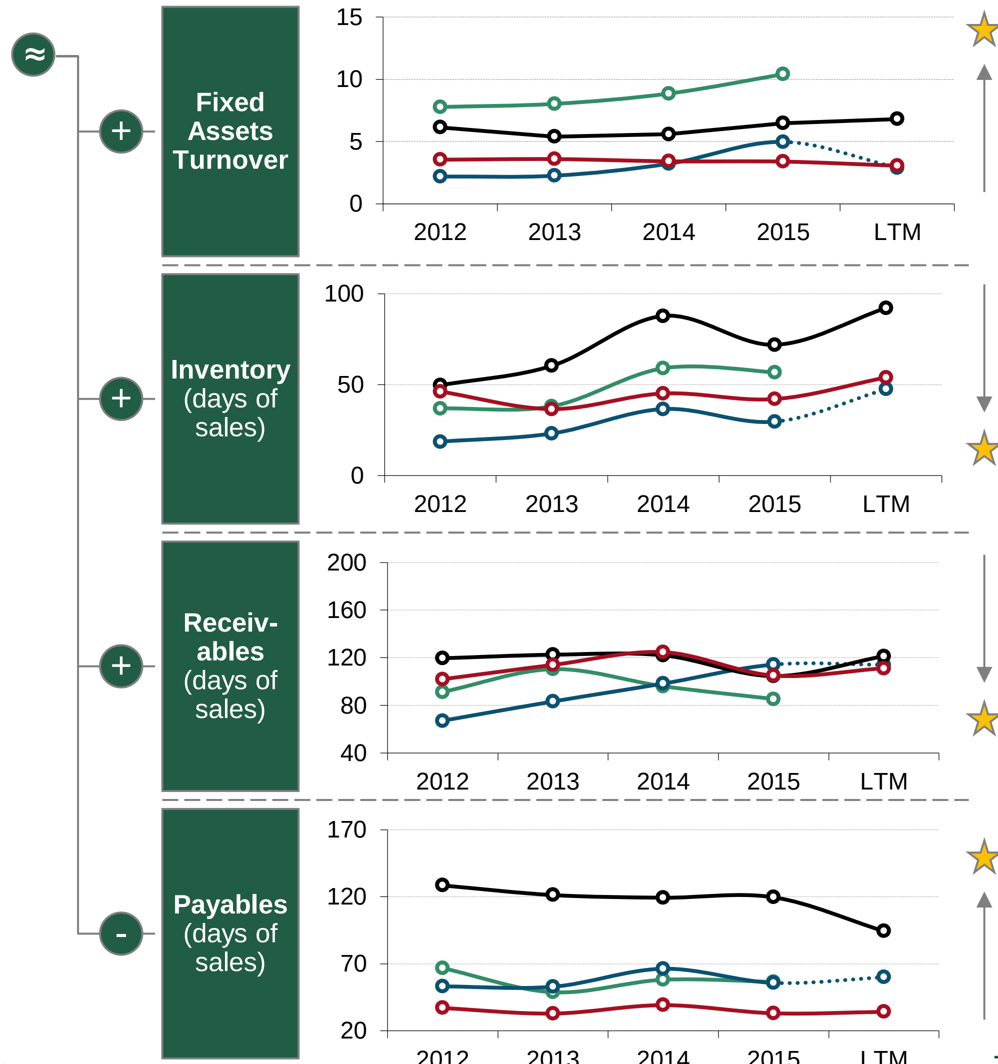
Notes: NOPAT is normalized to remove one-time or unusual influences.
Huawei does not publish quarterly reports. ZTE only publish half year reports.
Nokia 2012 excludes device business, Nokia LTM includes Alcatel-Lucent on a consolidated basis.

Source: Annual & quarterly reports, Applied Value Analysis.

Increasing inventory levels and overall poor cash management – all peers pay suppliers quicker than collecting cash from customers.

Capital Turnover Ratio





Notes: Huawei does not publish quarterly reports. ZTE only publish half year reports.
Nokia 2012 excludes device business, Nokia LTM includes Alcatel-Lucent on a consolidated basis.

Source: Annual & quarterly reports, Applied Value Analysis.

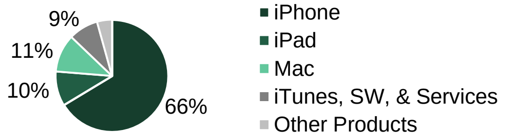
We performed a financial benchmarking analysis comparing Apple, Samsung Electronics, Sony, LG Electronics, Lenovo and HTC.

Company Group		Revenues 2015, BUSD
Apple	Apple Inc. (Apple) designs, manufactures and markets mobile communication and media devices, personal computers, and portable digital music players	234
Samsung	Samsung Electronics is mainly engaged in the production of consumer electronic products. It operates in two divisions: DMC and DS	181
Sony	Sony principally manufactures imaging products and solutions, game and mobile products, communication, home entertainment, and sound products, among other products	75
LG	LG Electronics is a manufacturer of various electronic goods such as LCD TVs, mobile communication devices, and home appliances, among other products	51
Lenovo	Lenovo is personal technology company that manufactures PCs under Think and Idea brands as well as servers, workstations and a family of mobile devices	47
HTC	HTC Corporation is principally engaged in the research, development and manufacturing of smart handheld devices	4

Notes: Samsung, Apple, Sony, Lenovo and LG's financials include revenue of other business in addition to mobile devices.
Source: Thomson Reuters, Annual Reports.

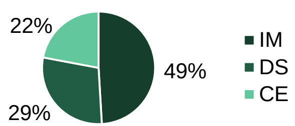
All peers except HTC are diversified technology companies.

Company | Business Segments | Description



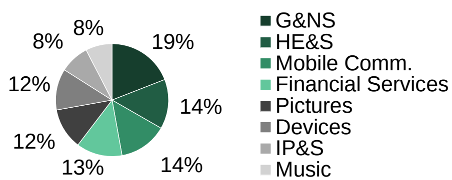
- iPhone: Mobile Phones
- iPad: Tablets
- Mac: Laptops & Personal Computers
- Services: iTunes Store, iCloud, Apple Pay, other services
- Other products: Apple Watch, Beats products and Apple branded accessories for iPhone, iPad, Mac, & iPod

SAMSUNG



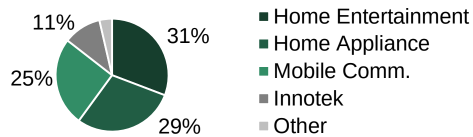
- Information Technology & Mobile Communications: Mobile Phones, Communication systems and computers
- Device Solutions: Semiconductor Business, LCD and OLED panels
- Consumer Electronics: TVs, monitors, printers, air conditioners and refrigerators

SONY



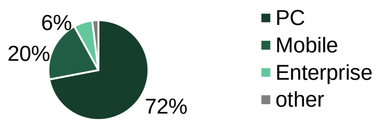
- Game and Network Services: Computer entertainment and network usage
- Home Entertainment & Sound: LCD TVs, Home/Portable Audio, Blu-Ray
- Mobile Communication: Mobile Phones
- Financial Services: Banking and Insurances
- Pictures: Motion Pictures, TV Production, Operation of TV & Digital Networks
- Devices: Semiconductors & Components
- Imaging Products & Solutions: Digital/Video cameras, Broadcast products
- Music: Recorded Music, Music Publishing, Visual Media & Platform

LG



- Home Entertainment: TV, Monitors, PCs, Security Devices, Audio/Video
- Mobile Communications: Mobile communications, handsets
- Home Appliance & AC: Fridges, Washing Machines, Microwaves, Vacuums, residential/commercial air conditioners
- Innotek: LED, Display & Network, Substrate & Material, Optics Solution

lenovo



- PC: Commercial and Consumer Computer
- Mobile: Mobile devices, Smartphone, Tablet
- Enterprise: Server Business, System X
- Other: Eco-system, Cloud Services, App Stores

htc

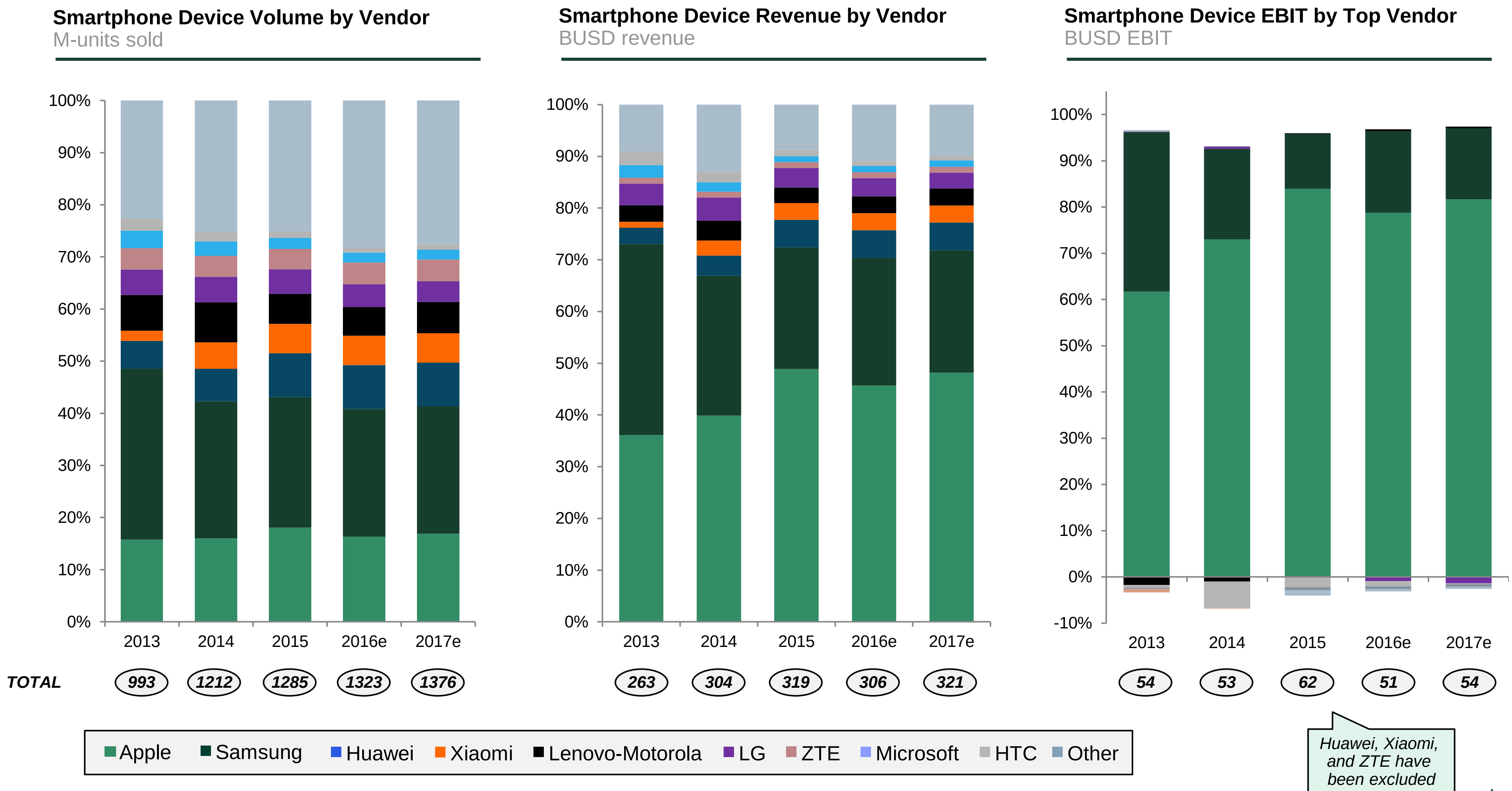
- Mobile: Research, design, manufacture, and sale of smart mobile devices

Source: Annual Reports, Investor Presentations.

Key Takeaways from Device OEM segment.

	Long-term trend	Short-term trend
Ability to Create Shareholder value	• Samsung and Apple are performing a **ROIC** above WACC but other peers are struggling around or below WACC • Apple's significant cash assets has a positive impact on **CTR** and **ROIC** which separates them from peers	• Major change in **ROIC** performance for; Lenovo due to Motorola **acquisition**; HTC due to falling **margins**; for Apple because of improved **capital efficiency**
Revenue	• Apple and Lenovo have the highest **revenue growth** among Device OEMs since 2012 • HTCs **revenues** have declined more than 70% since 2012	• Declining **revenue** during 2016 for all peer companies • Smartphone **revenues** are expected to continue to decline in 2016 due to increased saturation in mature mobile device markets.
Margin Performance	• All peers except HTC deliver stable **margins** • Apple (17%) and Samsung (10%) outperform other peers (0-3%) in terms of **NOPAT margin** • **Apple** currently **catch >80% of the total smartphone profits**	• **NOPAT margins** have been stable for all peers except for HTC during last eight quarters • HTC's **NOPAT margin** fell to -22% over the past year, mainly due to unsuccessful launches of new devices
Capital Efficiency	• Overall stable invested **CTR** among peers except for Apple that has seen performance improvement since 2014	• Last two years **capital turnover** has been either flat or increasing for peer companies • Apple's significant cash resources give them outstanding invested CTR (12x) compared to peers (4x)

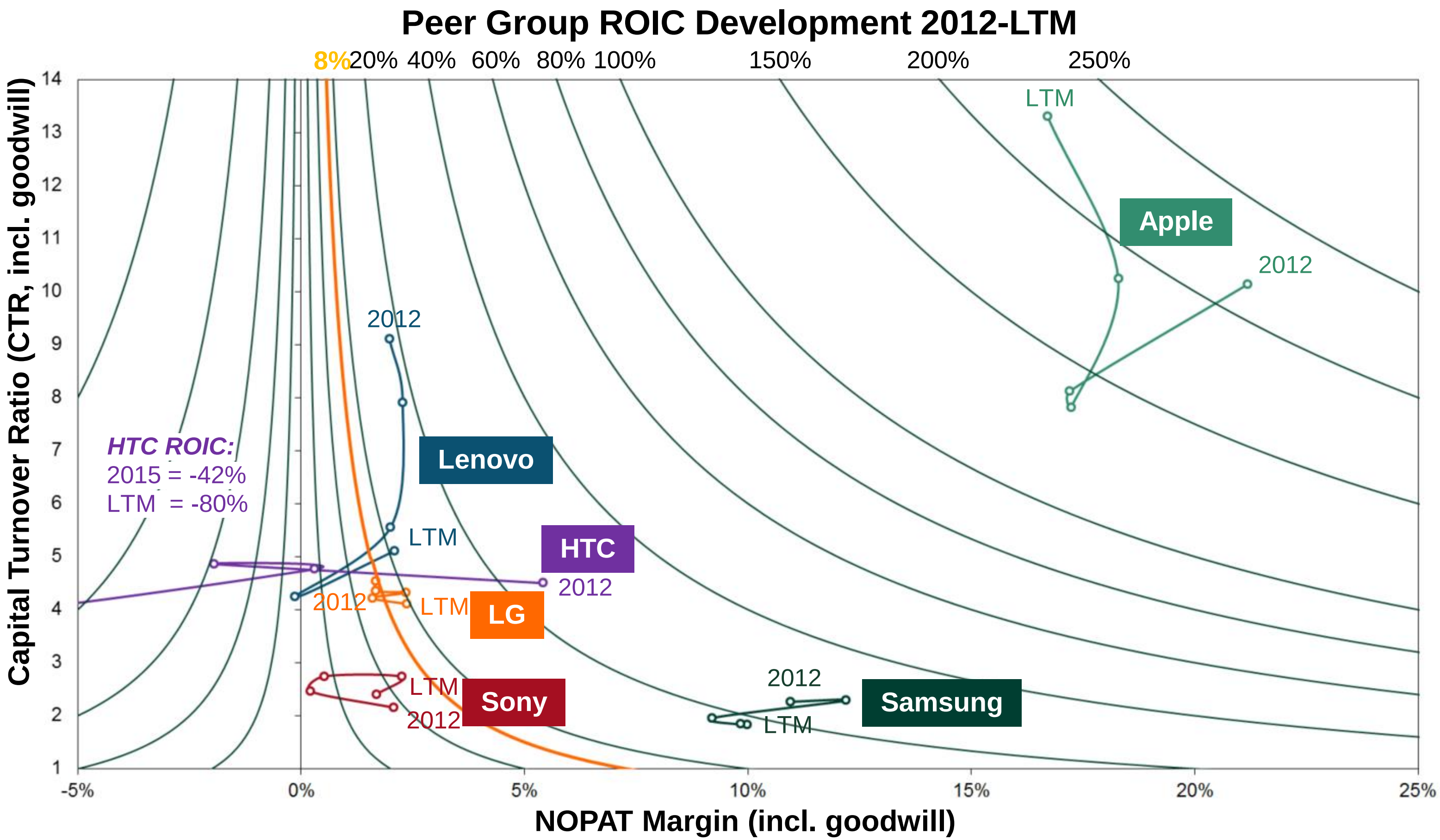
Smartphone revenues and profits are expected to decline in 2016 due to increasing penetration maturity in major markets.



Notes: Smartphone device results are shown here as more than 80% of the mobile volumes come from smartphones in 2015.
"Others" category include Sony, TCL, Coolpad but due to incomplete data, they have not been broken out. Totals for EBIT are not industry totals but totals of companies listed. Several companies (Huawei, Xiaomi, ZTE) did not report smartphone business EBIT results.

Source: UBS Evidence Lab, Company data.

Apple continues to outperform peers in terms of ROIC while its peers struggle with low or even negative ROIC.



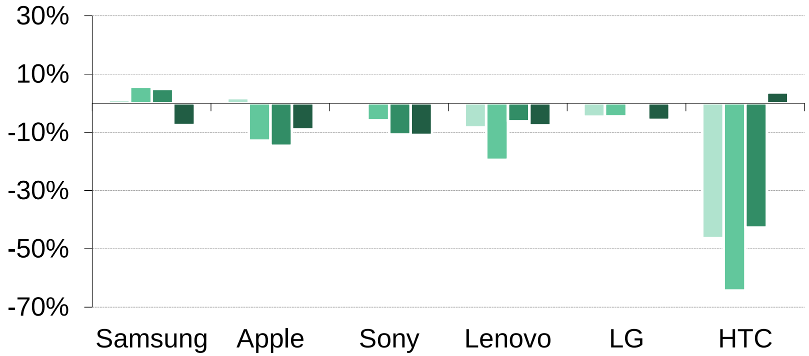
ROIC = Return on Invested Capital (actual return that the company has generated after tax)

WACC = Weighted Average Cost of Capital (the required return that the company must generate in order create value, i.e. a ROIC>WACC creates shareholder value)

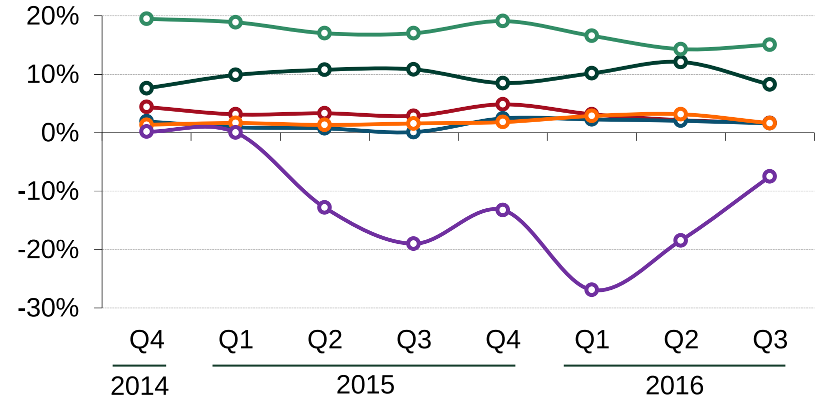
Source: Thomson One, Annual reports, Applied Value Analysis.

All peers except HTC manage to deliver stable margins despite declining sales.

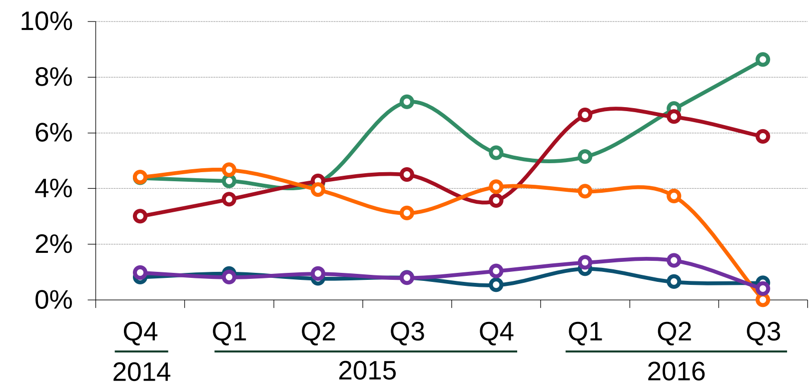
Sales, Quarter-to-Quarter development (%)



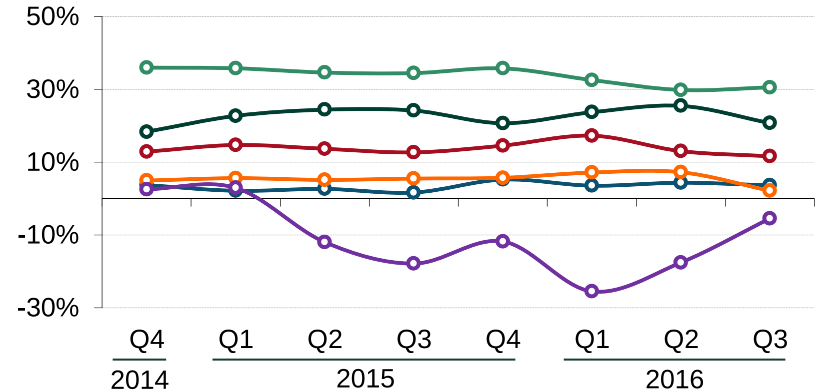
Quarterly NOPAT Margin, (%)

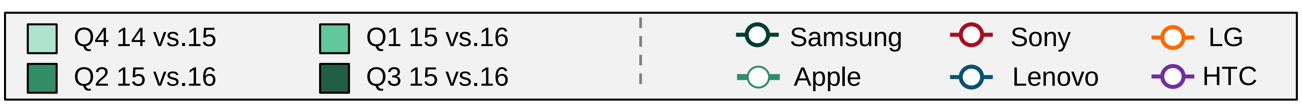


CAPEX / Sales, Quarter-to-Quarter development (%)



Quarterly EBITDA Margin, (%)





Notes: EBIT & EBITDA are normalized to remove one-time or unusual influences.
Source: Thomson, Applied Value Analysis.

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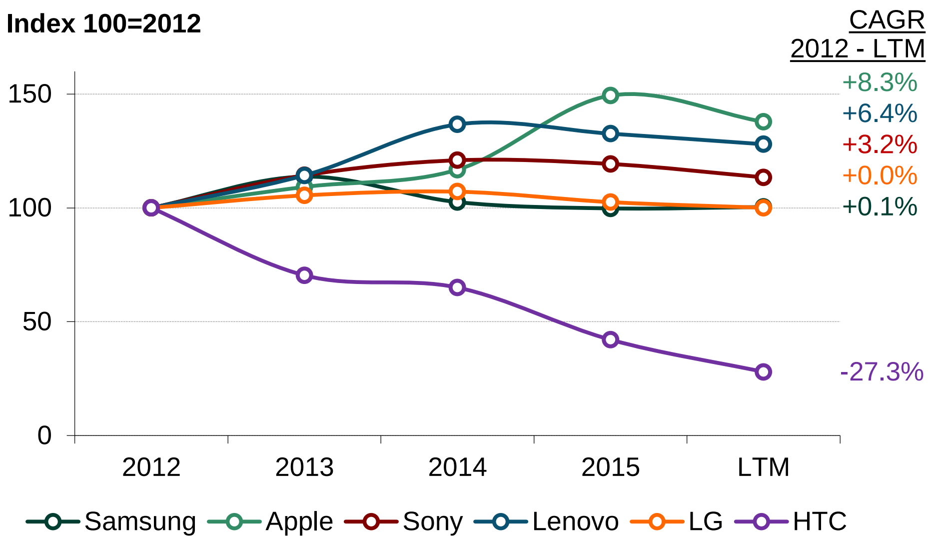
None of the peers have managed to significantly grow their revenues LTM – HTC's revenue has declined rapidly since 2012.

Indexed Revenue Development
2012 – LTM



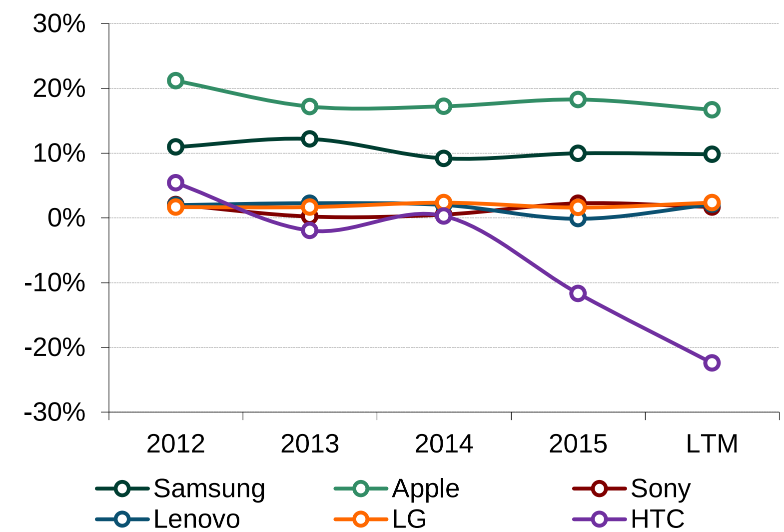
M&A Activity
2012 – 2016

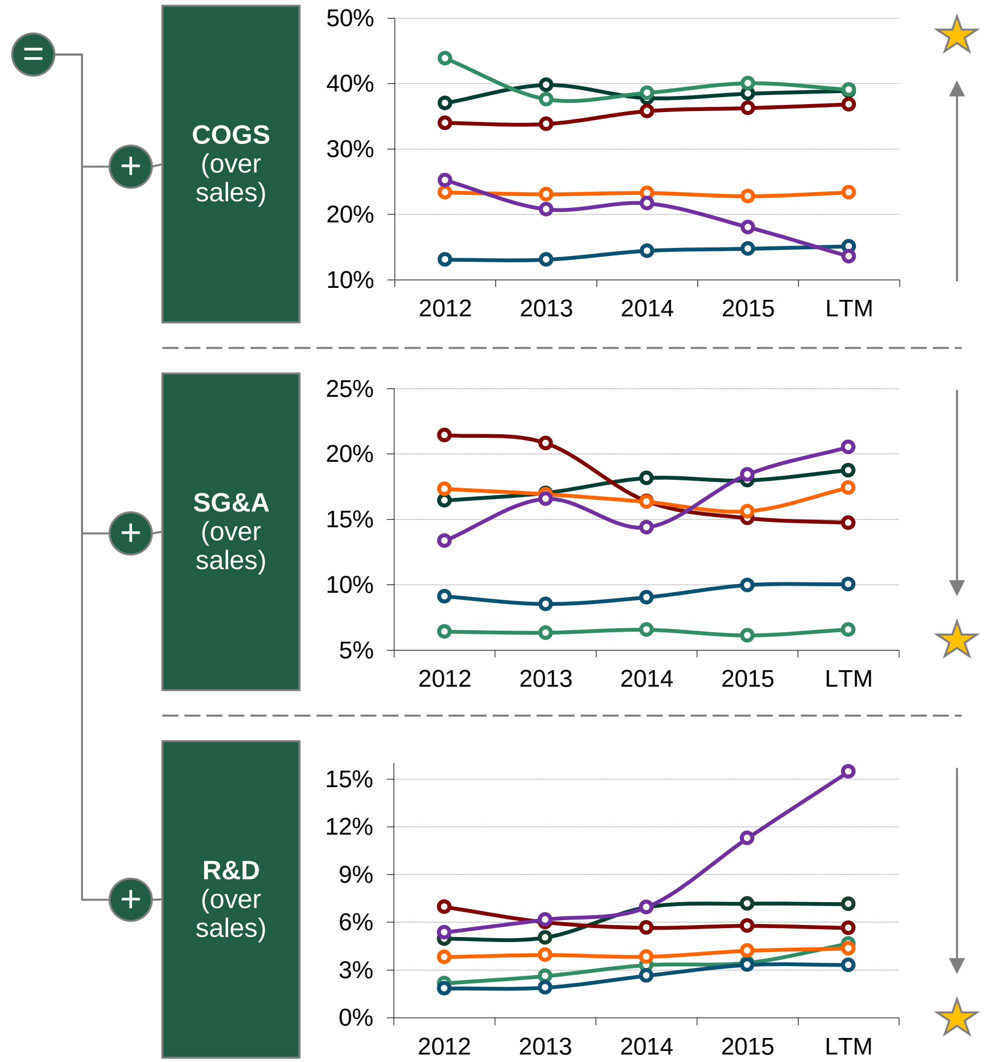
Oct-2016	**Samsung** acquired artificial intelligence company Viv
Aug-2016	**Sony** acquires Ten Sports, an Indian television company, for 385 MUSD
Aug-2016	**Apple** acquires machine learning company Turi for 200 MUSD
Jan-2016	**Sony** acquires Altair Semiconductor, an electronics company, for 212 MUSD
Sep-2015	**Apple** acquires map visualization software Mapsense ~30 MUSD
Feb-2015	**Samsung** buys LoopPay as Digital Wallet Platform for 250 MUSD
Jan-2015	**Apple** acquires music analytics software Semetric for 50 MUSD
Oct-2014	**Lenovo** acquired IBM's x86 Server business for 2.1 BUSD
Oct-2014	**Lenovo** acquires Motorola Mobility from Google for 2.9 BUSD
May-2014	**Apple** acquires Beats Music and Beats Electronics for 3 BUSD

Source: Annual Reports, IDC, UBS, Applied Value Analysis.

Samsung's and Apple's NOPAT margins are stable and consistently higher than other peers.

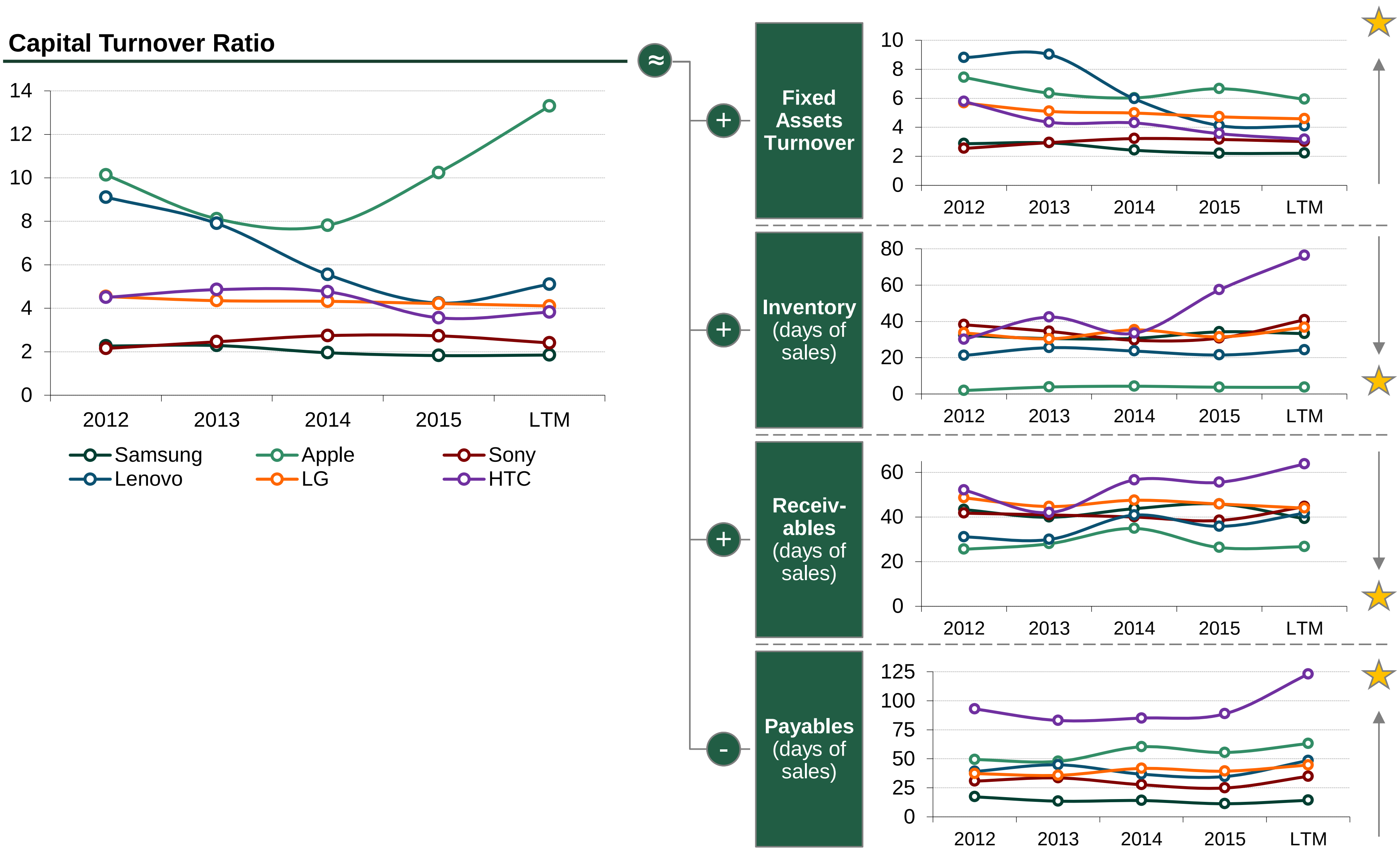
Net Operating Margin After Tax, %





Source: Annual Reports, Applied Value Analysis.

Apple has improved its CTR, but both Lenovo and HTC have had significant declines due to decreased FAT and increased inventory.



Notes: Lenovo acquired Motorola Mobility in 2014 which increased their invested capital and lowered their Fixed Asset Turnover ratio
Source: Annual Reports, Applied Value analysis.

1)	Summary and Key Data
2)	Financial Trends and Performance

- Operators
- Infrastructure OEMs
- Device OEMs

3)	About Applied Value

Applied Value is a boutique management consultancy advising clients on hands-on business improvement initiatives.

APPLIED VALUE GROUP

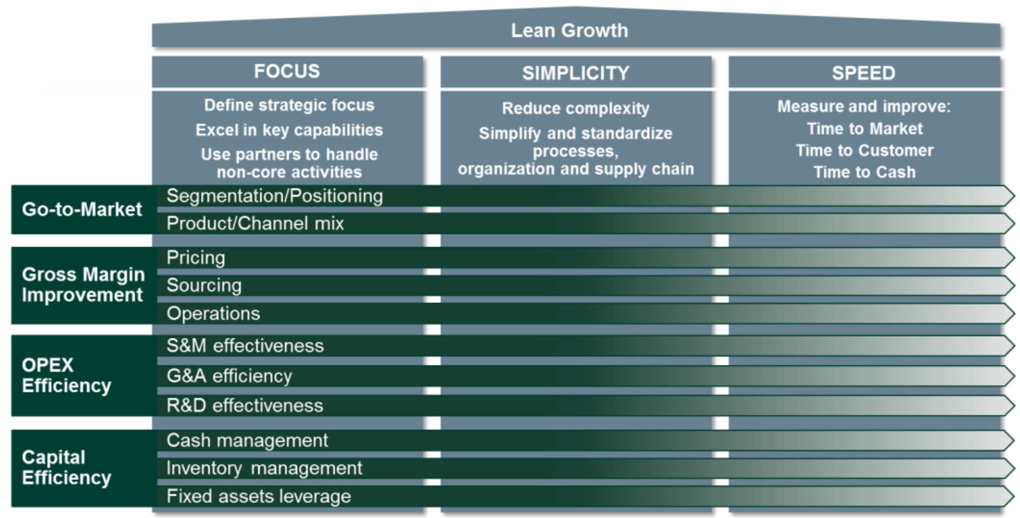
Who We Are

- *Management consultancy founded in 1999 by:*
  - *Late Jan Stenbeck, former Chairman of the Board of Kinnevik*
  - *Bruce Grant, former Managing Director of Arthur D. Little North America*
- *Office in the U.S., Sweden, and China*

The Applied Value Way

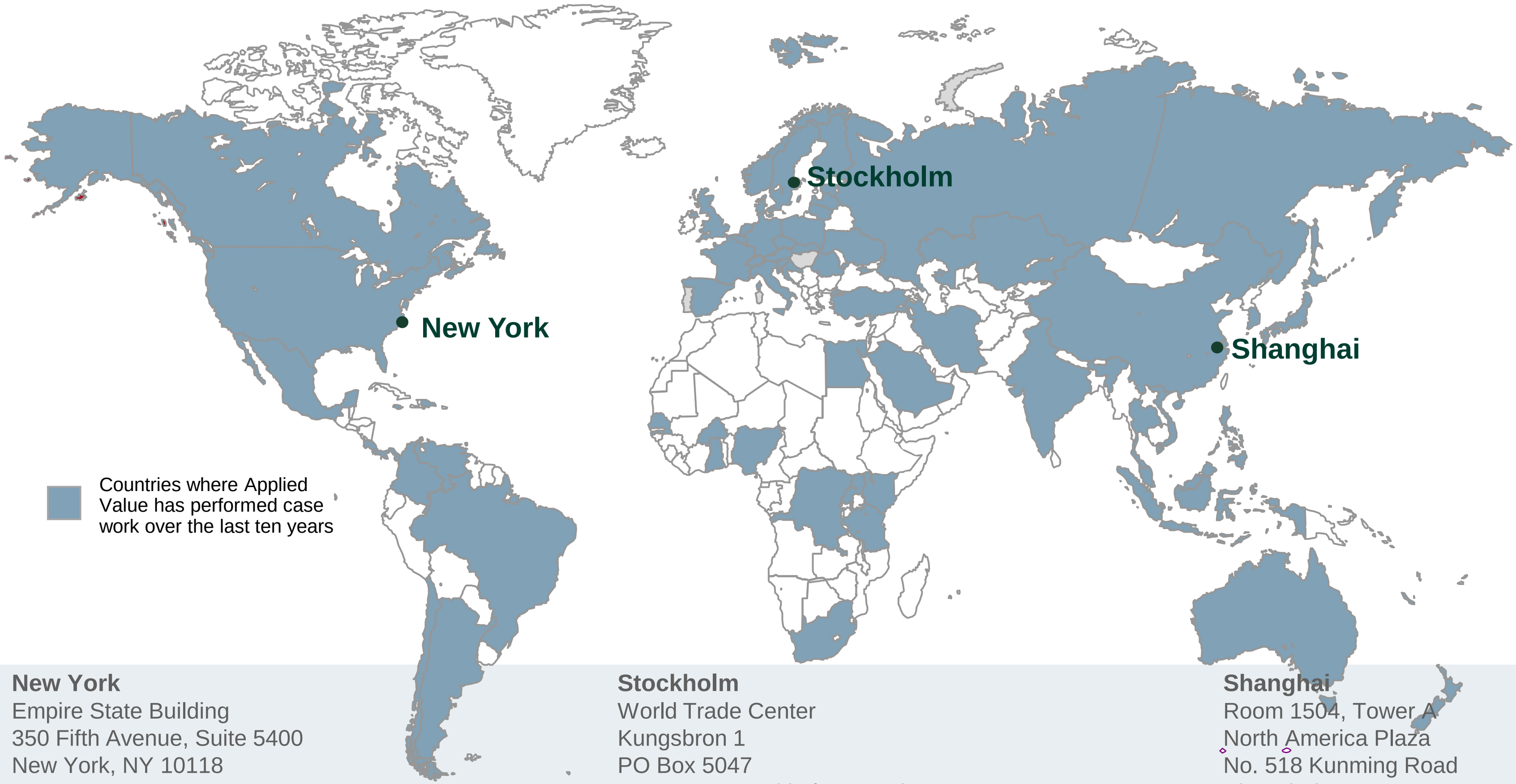
- *Global perspective and resources, but with a personal and value oriented approach*
- *ROI driven – Focus on tangible results*
- *Practical over theoretical – In order to create real value, real fast*
- *The work is done when the implementation is complete, not when the recommendation is made*

Our Business Philosophy – Lean Growth



Our Offerings – Hands-on Business Improvements

Our organization supports clients globally from 3 offices.



New York
Empire State Building
350 Fifth Avenue, Suite 5400
New York, NY 10118
USA

Phone: +1 646 336 4971
newyork@appliedvalue.com

Stockholm
World Trade Center
Kungsbron 1
PO Box 5047
SE-111 22 Stockholm, Sweden

Phone: +46 8 562 787 00
stockholm@appliedvalue.com

Shanghai
Room 1504, Tower A
North America Plaza
No. 518 Kunming Road
Shanghai, 200041
China

Phone: +86 21 5213 6390
shanghai@appliedvalue.com

Applied Value