



Applied Value

Q2 2021

Applied Value

Kungsgatan 2 111 43 Stockholm, Sweden Phone: +46(0)8 562 787 00

www.appliedvaluegroup.com

Applied Value Telecommunications Practice

Telecommunication has been a core practice area for Applied Value since our inception in 1997. Over the last 20+ years, we have supported a wide range of clients across the telecommunications value chain and across continents.

We generate client value and provide tangible results by applying an unbiased perspective, having a hands-on approach, and recognizing the importance of delivering value fast.

About this report

This report tracks the financial performance of major players in the telecommunications industry ranging from operators to infrastructure OEMs and mobile device makers.

We hope that you find this report insightful, and we welcome feedback or opportunities for further discussions.

Principal Contacts

Johan Lindqvist
Global Telecom Practice Leader

Applied Value Phone: +46 704 26 92 52 johan.lindqvist@appliedvalue.com



Applied Value's telecom report tracks the financial performance of major players in the industry

Operators AT&T **BCE** 000ed00 **SK** telecom pro%imus elis airtel swisscom TELE2 **Telefónica** O ROGERS" TURKCELL **Telia Company** MILLICOM tigo AIS TELUS verizon[/]

Infrastructure OEMs



HUAWEI

















Device OEMs



Contents

Executive Summary

- 1. Operators
- 2. Infrastructure OEMs
- 3. Device OEMs

About Applied Value



Executive summary

Key takeaways per segment

Operators

- 1. YoY Operator revenue of all regions showed a positive development in Q2'21, LATAM operators led the segment with 16% of growth
- 2. Yearly EBITDA margins of the Operator segment demonstrate and upward trend over the past years, meanwhile NOPAT margins remain flat

Infrastructure OEMs

- 1. Nokia continues to achieve top-line results and has updated its full-year outlook; ZTE recorded double-digit revenue growth both domestically and internationally in H1'21
- 2. Ericsson and Nokia's NOPAT margin has been under steady expansion, reaching 11.2% and 8.6% respectively

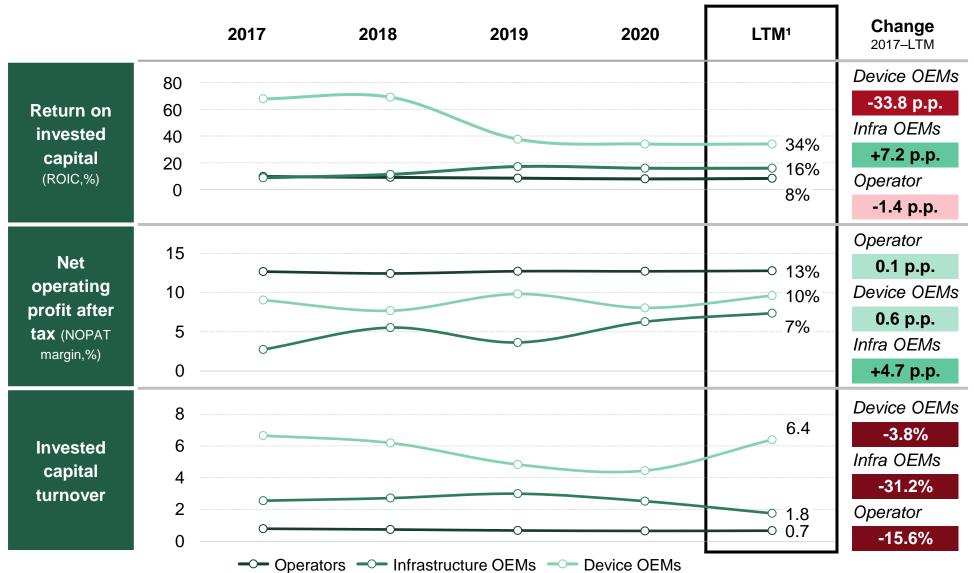
Device OEMs

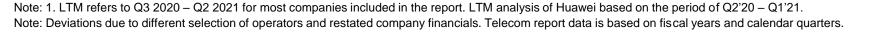
- 1. Global smartphone and wearables shipment growth momentum is still in effect for Q2'21, while that of tablets begins to wane
- 2. Xiaomi overtook Apple to become the second-largest smartphone vendor globally, while rapidly approaching Samsung





Financial overview (1/2): Yearly performance







Financial overview (2/2): Quarterly performance

	Segment	Q2 '21	Q1 '21	Q4 '20	Q3 '20
Sales	Operators	7.9%	9.7%	5.8%	2.8%
Y-o-Y	Infrastructure OEMs ¹	-20.3%	-1.0%	16.4%	10.1%
(% change)	Device OEMs ²	20.5%	34.7%	13.9%	7.9%
Net operating profit after tax (NOPAT)	Operators	0.5 pp.	0.1 pp.	0.5 pp.	0.0 pp.
Y-o-Y	Infrastructure OEMs ¹	0.1 pp.	1.5 pp.	4.0 pp.	0.0 pp.
(p.p. change)	Device OEMs ²	0.6 pp.	3.4 pp.	0.8 pp.	0.2 pp.
EBITDA	Operators	-0.2 pp.	0.7 pp.	5.8 pp.	2.8 pp.
Y-o-Y	Infrastructure OEMs ¹	0.0 pp.	2.0 pp.	5.5 pp.	-0.8 pp.
(p.p. change)	Device OEMs ²	0.0 pp.	4.1 pp.	1.0 pp.	0.3 pp.

Notes: Telecom report data is based on fiscal years and calendar quarters. Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.



Contents

Executive Summary

1. Operators

- 2. Infrastructure OEMs
- 3. Device OEMs

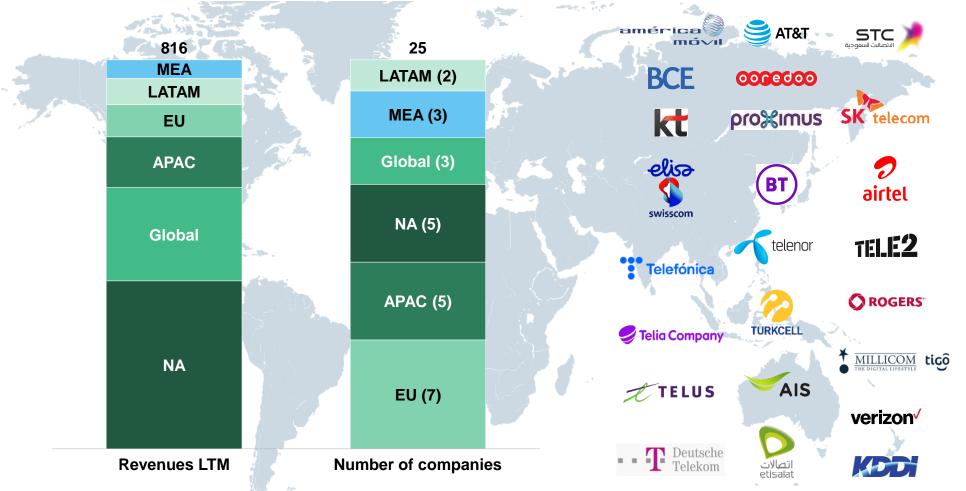
About Applied Value



The Q2 '21 report covers 25 of the largest operators globally, accounting for over 800 billion USD in revenues

Report overview

Revenue in BUSD, and company breakdown



Note: The included companies differ from previous quarter. Global operator refers to those with transregional business establishments.



Key takeaways from the operator segment

Key takeaways

Creating Shareholder Value

- 1. ROIC of the operator segment averaged at 8.4%, KDDI leads the segment with a ROIC of 13.4%
- 2. Driven by revenue boost, Bharti Airtel and Turkcell lead the segment with 3 pp. and 2.3 pp. ROIC development respectively

Revenue Performance

- 1. LATAM operators saw considerable YoY revenue growth of 16% owing to subscriber addition and higher data consumption
- 2. APAC operators experienced two consecutive quarters of QoQ revenue decline, all regions in APAC except for India has been stagnant

Margin Performance

- 1. Average EBITDA margin of the segment grew from 32% to 35.4% during 2017 to LTM, while NOPAT margins have flattened around 12.7%
- 2. Seeing strong growth in Europe with its fixed-mobile package, Deutsche Telekom raised its 2021 guidance for the second time

Capital Expenditure

- 1. From 2017 to LTM, North American operators cut back on CAPEX the most by 25%, while spending in MEA has grown by 13%
- 2. More than half of the operators analyzed reduced CAPEX YoY, CAPEX over sales ratio averaged 15%



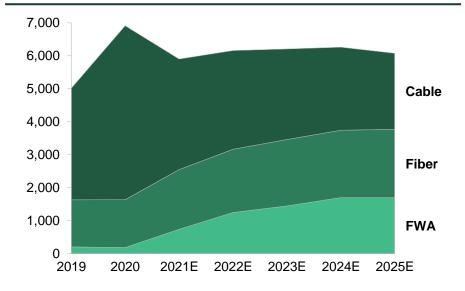


Q2'21 events across the Operator sector

News and happenings for operators

AT&T is shifting its existing 5G mobile core network to Microsoft Azure's hybrid cloud. Microsoft is acquiring AT&T's Network Cloud platform technology Jun-2021 that runs the 5G core, and engineering and lifecycle management software. Rakuten Mobile tapped Cisco to overhaul its optical and IP infrastructure, planning to deploy technologies Jun-2021 which will drastically simplify its architecture and yield substantial cost savings. **Telefonica** sought to bolster its cloud position, announcing its Telefonica Tech division inked a deal Jul-2021 to acquire Spain-based migration and multi-cloud specialist Altostratus Cloud Consulting. Virgin Media O2 outlined a plan to upgrade its entire fixed network to full fiber-to-the-premises to enable Jul-2021 delivery of symmetrical 10 Gbps speed, with a target completion date of 2028. Bell Canada and Google Cloud will begin to collaborate by shifting some of its critical workloads Jul-2021 and applications from its on-premise IT infrastructure to Google Cloud. Bharti Airtel announced it will expand its existing SD-WAN deal with Cisco to include managed SD-Jul-2021 WAN and secure access service edge (SASE)

Decomposition of High-Speed Internet (HSI) Market Growth Net Adds, United States



Credit Suisse forecasts residential broadband subscribers to grow from 109m in 2020 (86.5% penetration) to 128m in 2025 (95.3% penetration).

This view is driven by the increased availability of broadband in unserved rural areas via FWA and LEO, efforts by the current administration to close the digital divide, the economic recovery improving affordability, and increasing utility of broadband service.



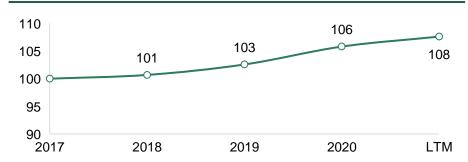
Source: Press & News, Credit Suisse, Applied Value Analysis.

architecture.

In Q2'21, revenue of the operator segment leveled with the previous quarter; LATAM operators saw the largest YoY growth of 16%

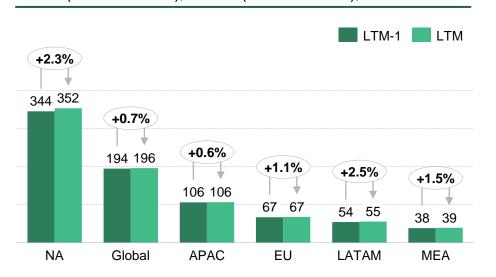
Indexed Yearly revenues

2017 - LTM (index 2017=100)



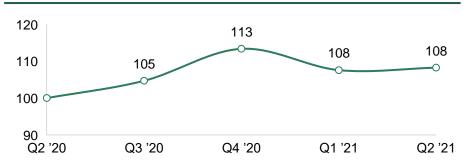
Yearly revenues by region

LTM-1 (Q3'19 – Q2'20), to LTM (Q3'20 – Q2'21), BUSD



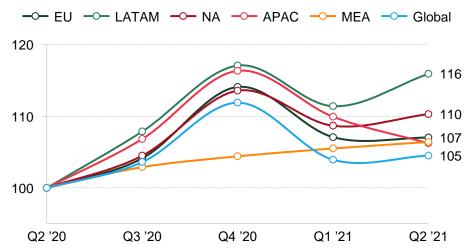
Indexed Quarterly revenues

Q2'20 - Q2'21 (index Q2'20=100)



Indexed Quarterly revenues by region

Q2'20 - Q2'21 (index Q2'20=100)

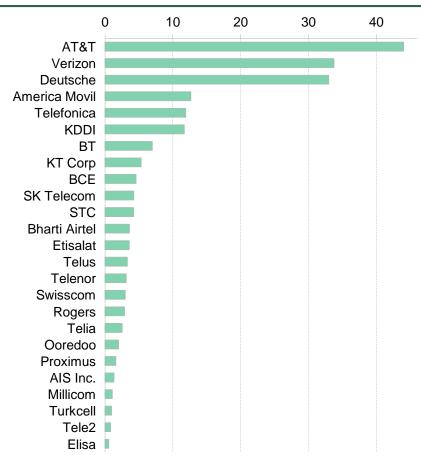




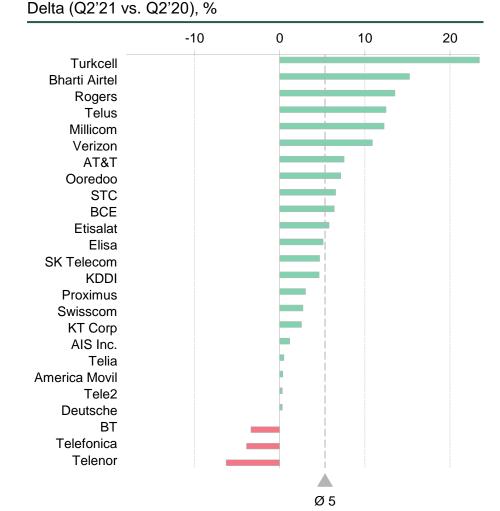


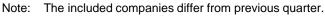
Most operators saw positive YoY revenue development; Turkcell leads the segment with 23.5% growth due to strong ARPU and subscriber addition





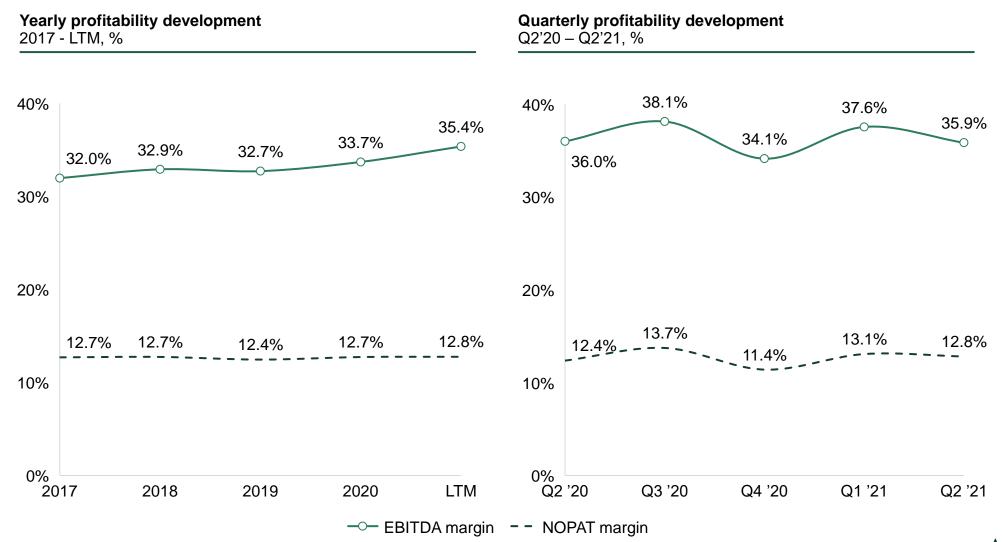
Revenue development by operator







EBITDA margin displays an upward trend from 2017 to LTM, while NOPAT margin remains flat

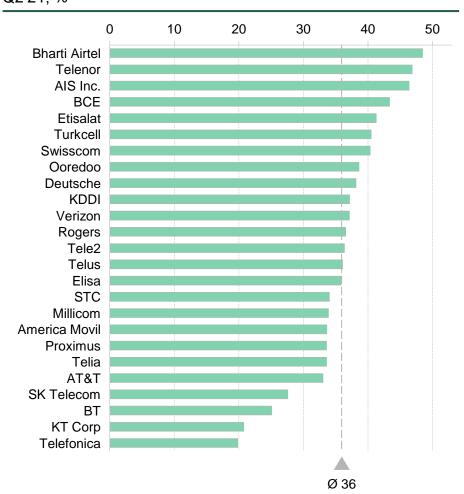


Note: The included companies differ from previous quarter.

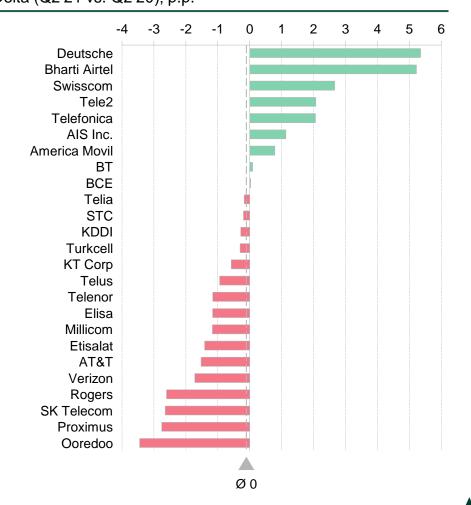


Segment EBITDA margin averaged at 36% for Q2'21; margins of more than half of the operators analyzed narrowed comparing to Q2'20

EBITDA margin by operator Q2'21, %



EBITDA margin development by operator Delta (Q2'21 vs. Q2'20), p.p.

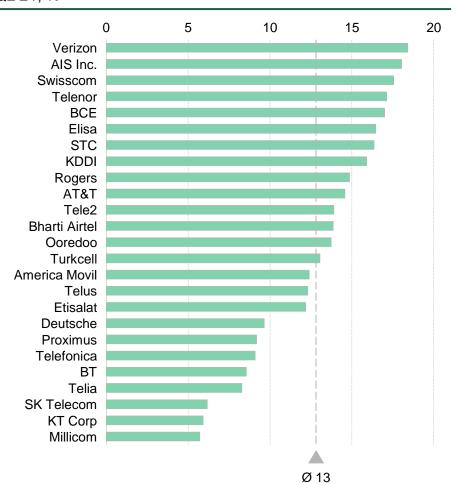


Note: The included companies differ from previous quarter.

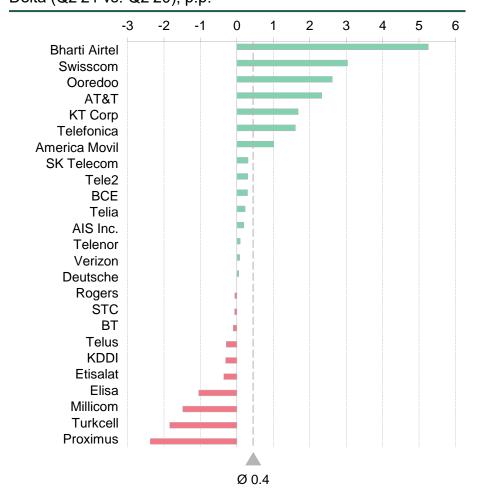


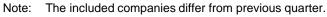
YoY revenue of Bharti Airtel grew by33.1% and 19.2% in Africa and India respectively, leading to significant profit improvement

NOPAT margin by operator Q2'21, %



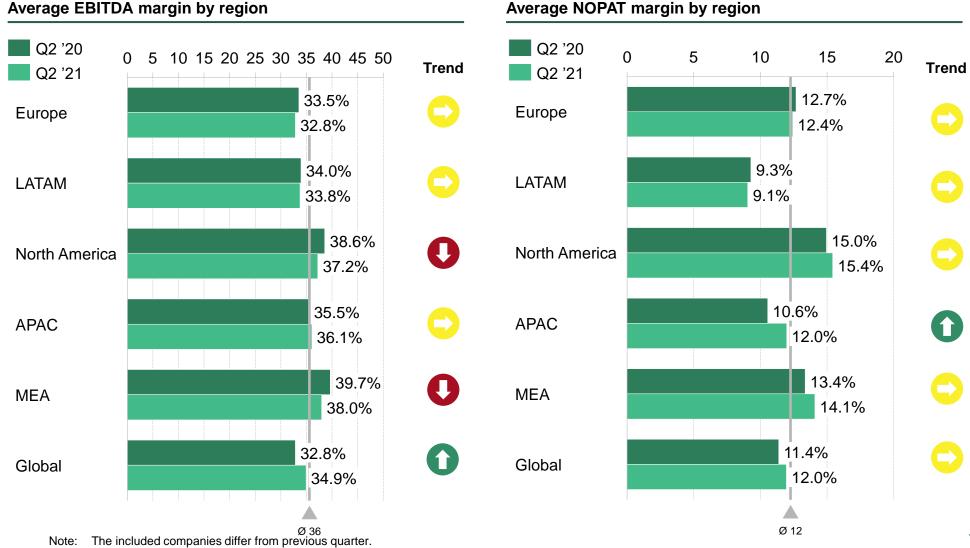
NOPAT margin development by operator Delta (Q2'21 vs. Q2'20), p.p.



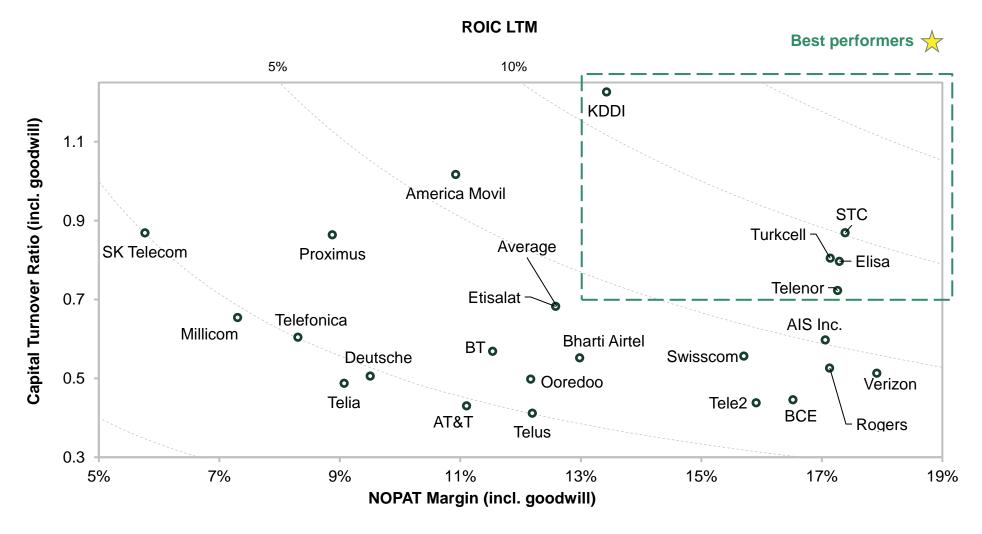




Operators of North America and MEA regions are more profitable than the others; NOPAT margin of LATAM operators is behind the peer group



STC and KDDI outperformed their peers in terms of ROIC due to high NOPAT margin and high capital turnover ratio respectively

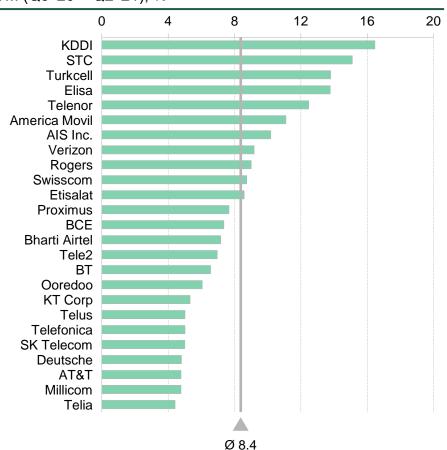


Notes: ROIC = Return on Invested Capital (actual return that the company has generated after tax). The included companies differ from previous quarter. Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.



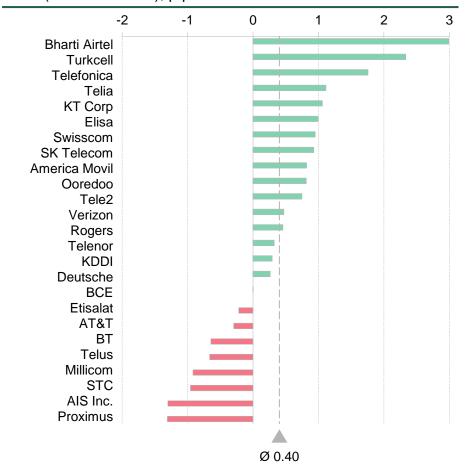
ROIC of the operator segment averaged at 8.4% in LTM, most operators saw positive ROIC development compared to LTM-1





ROIC development by operator

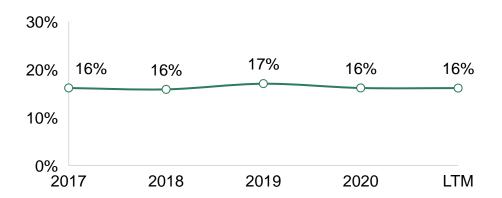
Delta (LTM vs. LTM-1), p.p.



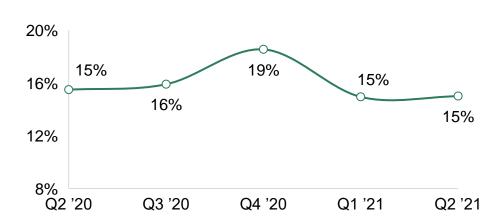


From 2017 to LTM, North American operators saw the largest CAPEX cut of 25%, while MEA operators spent 13% more

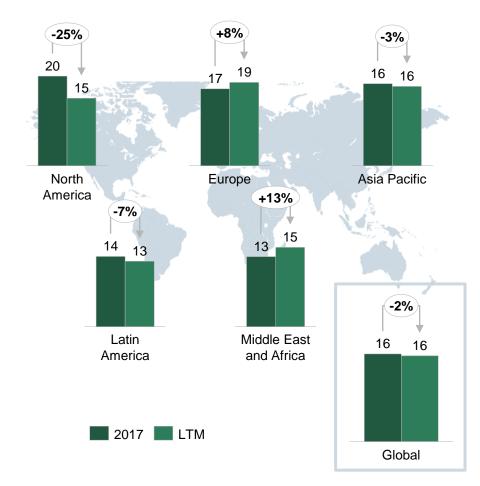
Yearly CAPEX over sales development 2017 - LTM, %



Quarterly CAPEX over sales development Q2'20 – Q2'21, %



CAPEX over sales by region % of sales. 2017 and LTM

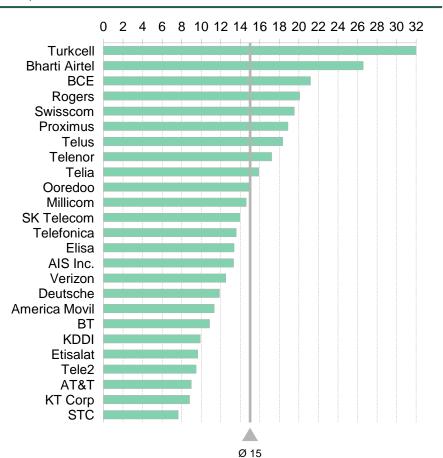


Note: The included companies differ from previous quarter.

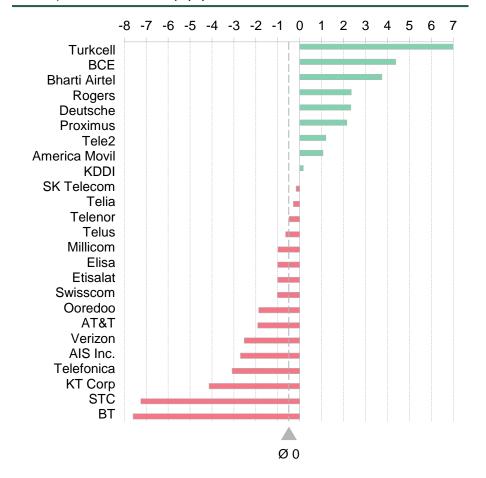


To accommodate strong growth in subscribers and data usage, Turkcell has been ramping up operational capabilities aggressively

CAPEX over sales by operator Q2'21, %



CAPEX over sales development by operator Delta (Q2'21 vs. Q2'20), p.p.





Note: The included companies differ from previous quarter. British Telecom excluded from analysis due to missing data. Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.

Contents

Executive Summary

1. Operators

2. Infrastructure OEMs

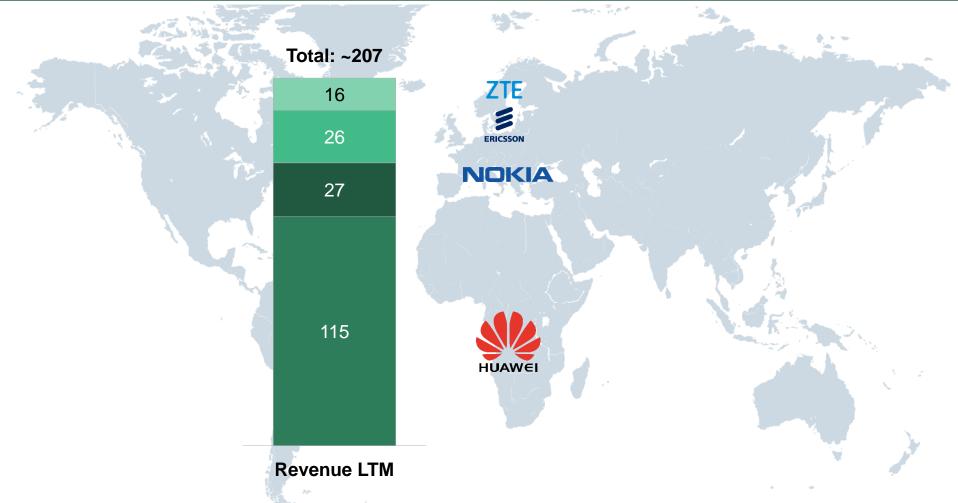
3. Device OEMs

About Applied Value



The Q2 2021 report includes the four major infrastructure players

Report overview Revenue in BUSD





Note: Revenue based on group revenue. Huawei LTM revenue data based on market projections. Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.

Key takeaways from the Infrastructure OEM segment

Key takeaways

Creating Shareholder Value

- 1. Ericsson is the only company among the peer group to have achieved a ROIC above the industry average
- 2. ROIC of Nokia improved by 3.9 pp in LTM compared with that of 2020 as NOPAT margin expanded by 2.4 pp.

Revenue Performance

- 1. Apart from Huawei, YoY quarterly revenue development of the segment clustered around 7%
- 2. Over the past five years, ZTE has seen the largest revenue growth of 25%, followed by Ericsson at 9%

Margin Performance

- 1. NOPAT margins of Ericsson and Nokia lead the peer group at 11.2% and 8.6% respectively
- 2. Despite fall in revenue, Huawei has managed to stabilize its NOPAT margin at around 6.6% in LTM

Capital Efficiency

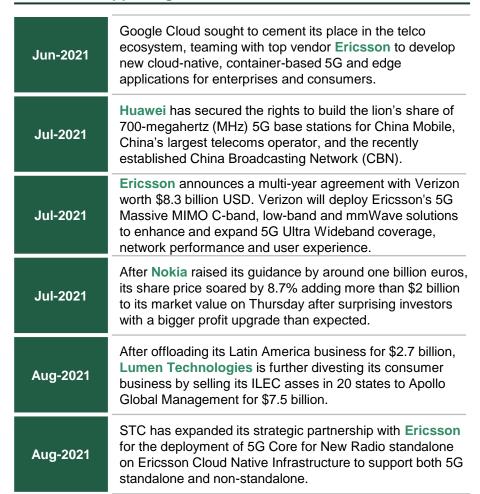
- 1. Comparing with 2019, capital turnover rate of Huawei slowed by ~60% to 1.6
- 2. Ericsson outperformed the others with a CTR of 2.3, while that of the others clustered around 1.6



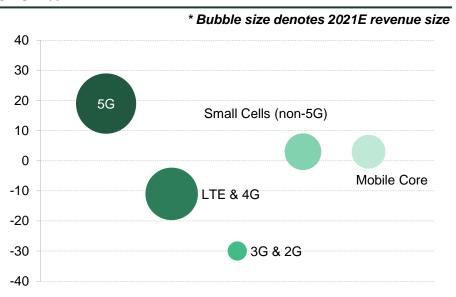


Events across the Infrastructure OEMs sector from the quarter

News and happenings for infrastructure OEMs



Wireless Network Infrastructure Revenue 2020-2022 CAGR %



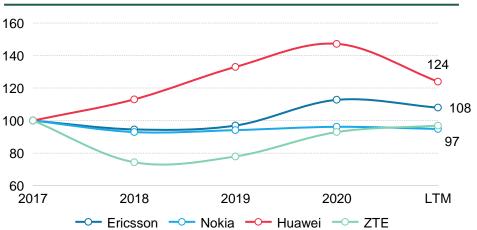
Worldwide 5G network infrastructure revenue is on pace to grow 39% to total \$19.1 billion in 2021, up from \$13.7 billion in 2020. Investment in legacy wireless generations is rapidly deteriorating across all regions and spending on non-5G small cells is poised to decline as CSPs move to 5G small cells.



YoY quarterly revenue development of the peer group clustered around 7% except for Huawei, whose revenue fell by 32% YoY

Indexed Yearly Group Revenues

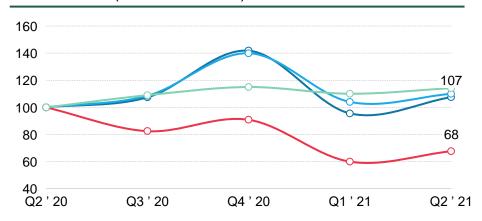
2017 - LTM (index 2017=100)



- In H1'21 Huawei generated 49.6 BUSD of revenue with a net profit margin of 9.8%. Carrier Business accounted for 42.7% of total sales, Enterprise Business and Consumer Business accounted for 13.4% and 43.9% respectively
- Driven by double-digit sales growth both domestically and internationally, ZTE recorded a revenue of 8.22 BUSD in H1'21, a 12.4% increase comparing to H1'20
- As top-line results continue to be achieved, Nokia has adjusted its 2021 full-year revenue outlook from 20.6-21.8 BEUR to 21.7-22.7 BEUR, and operating margin from 7-10% to 10-12%
- Despite decline in Mainland China, Ericsson saw YoY organic sales growth of 8% in Q2'21, of which the Networks segment grew by 11%

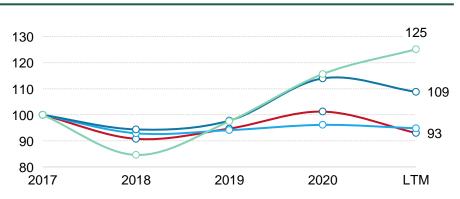
Indexed Quarterly Group revenues

Q2'20- Q2'21 (index Q4'19=100)



Indexed yearly segment revenues

2017 – LTM (index 2017=100)

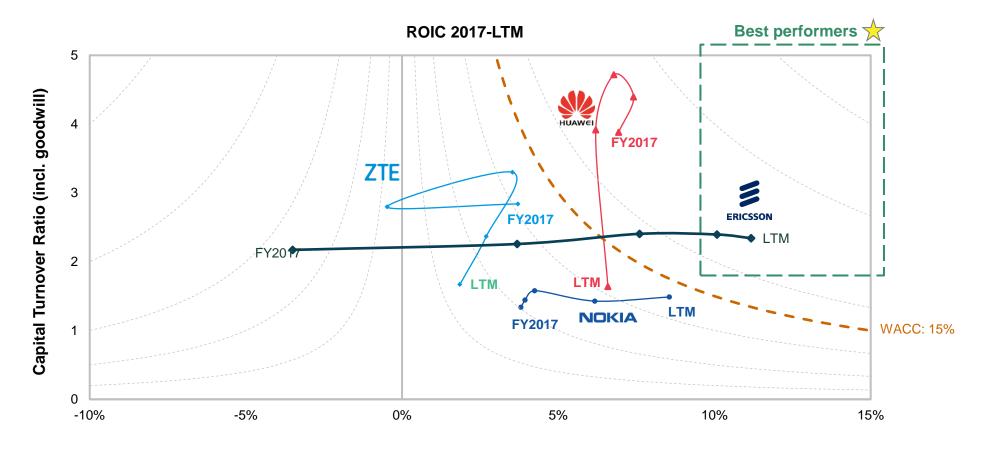


Notes: Fiscal years are used in the yearly analysis. Included segments per company: Huawei (Carrier), Ericsson (Networks, Digital Services, Managed Services), Nokia (All Segments), ZTE (Carrier's Network).





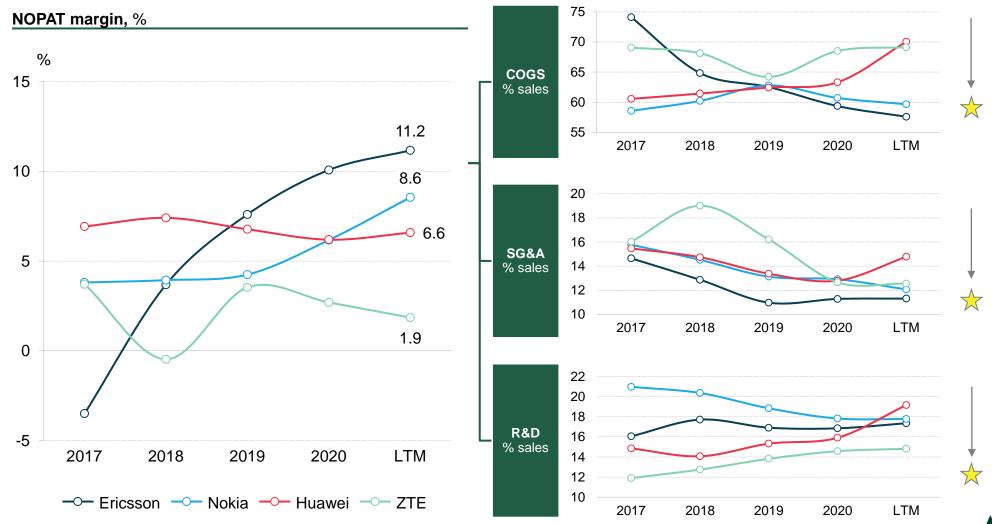
Within the peer group, only Ericsson managed to achieve a ROIC above the industry average WACC of 15%



NOPAT Margin (incl. goodwill)



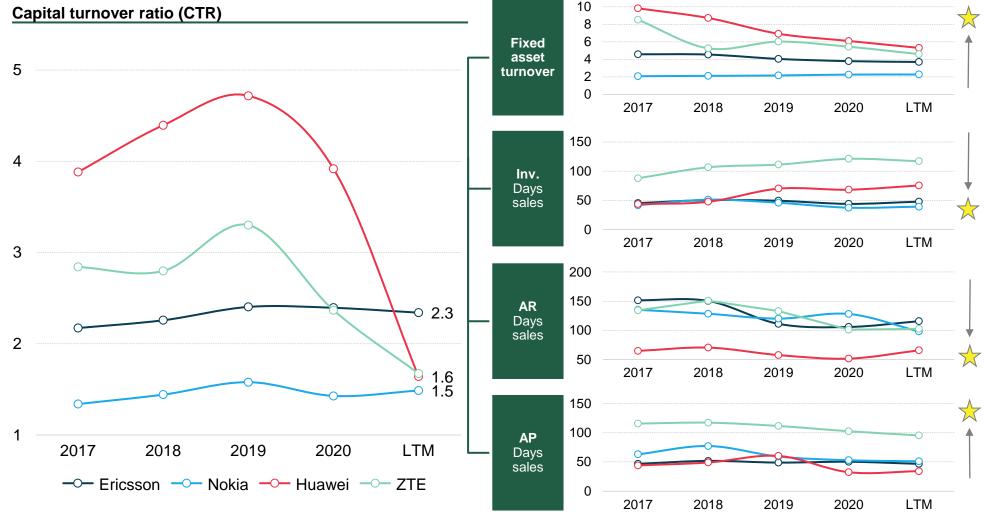
Revenue decline of Huawei has led to ballooning COGS, SG&A and R&D ratios; however, NOPAT margin of Huawei has been intact



Notes: Fiscal years are used in the yearly analysis. LTM analysis of Huawei is based on data from 3Q'20 – 1Q'21. Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.



Ericsson leads the group with a stable CTR of around 2.3, while CTR of its peers fluctuated and converged to 1.6 in LTM



Notes: Fiscal years are used in the yearly analysis. LTM analysis of Huawei is based on data from 3Q'20 – 1Q'21. Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.



Contents

Executive Summary

- 1. Operators
- 2. Infrastructure OEMs

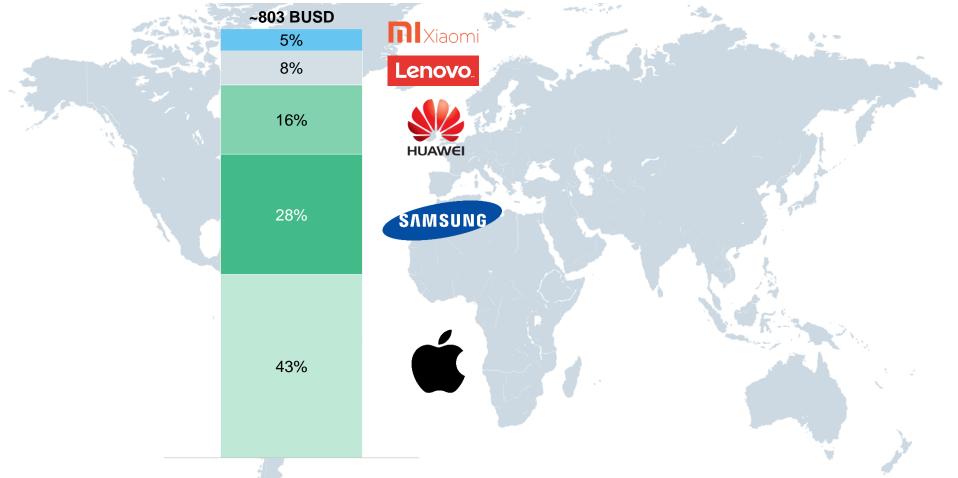
3. Device OEMs

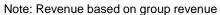
About Applied Value



The Q2 2021 report includes five major device manufacturers

Report overview Revenue in BUSD, LTM







Key takeaways from the Device OEM segment

Key takeaways

Creating Shareholder Value

- 1. Apple's ROIC in LTM reached 284.1% rapidly approaching its 2017 ROIC of 258.9%, as CTR and NOPAT both advanced considerably
- 2. Meanwhile Huawei and Samsung's ROIC in LTM are over 10 pp. behind their 2017 ROIC, trailing in the peer group

Revenue Performance

- 1. As Xiaomi overtook Apple and became the second-largest phone vendor by shipment in Q2'21, its quarterly revenue has increased by 79% YoY
- 2. All companies in the segment achieved YoY revenue growth during Q2'21, Samsung lagged with 12% of YoY sales increase

Margin Performance

- 1. Apple and Samsung lead the peer group with NOPAT margin of 21% and 13% respectively in LTM
- 2. NOPAT margin of Xiaomi and Lenovo experienced an uptick in LTM despite still trailing in the segment

Capital Efficiency

- 1. CTR of the peer group ranged between 0.8 of Samsung and 13.5 of Apple
- 2. Fixed asset turnover of Xiaomi improved significantly by 13.4 from 2020 to LTM, advancing its CTR by 1.8





Business Segments of Device OEMs

Business segments and revenue share in 2020, % **Description** Company iPhone: Mobile Phones Wearables & Home Services: iTunes Store, iCloud, Apple Pay, other services Mac: Laptops & Personal Computers iPad: Tablets Wearables & Home: Apple Watch, Apple branded accessories for Apple products Information Technology & Mobile Communications: Mobile Phones. Consumer Electronics (CE) Harman Communication systems and computers Information Technology & Mobile Communications (IM) SAMSUNG Device Solutions: Semiconductor Business and display panels Devise Solutions (DS) - Semiconductor Consumer Electronics: TVs, monitors, printers, air conditioners and refrigerators Device Solutions (DS) - Display Panel (DP) Harman: Infotainment, connected solutions for automakers, and consumers Carrier: Building telecommunications networks and services Enterprise: Equipment, software and services to enterprise customers Enterprise <u>Consumer</u>: Manufacturing of electronic communication services (e.g. phones) Consumer Others: Communication services not applicable to above descriptions Intelligent Devices Group (IDG) IDG: Personal computer and smart devices, and mobile businesses Lenovo Data Center Group (DCG) DCG: Provide data center solutions Smartphones: Mobile devices, Smartphone, Tablet IoT & Lifestyle products: Smart TVs, scoters, vacuum cleaners, cameras, etc. IoT and Lifestyle Products **N** Xiaomi Internet Services: Preloaded apps, services and advertisements Internet Services Other: Miscellaneous additional services and products

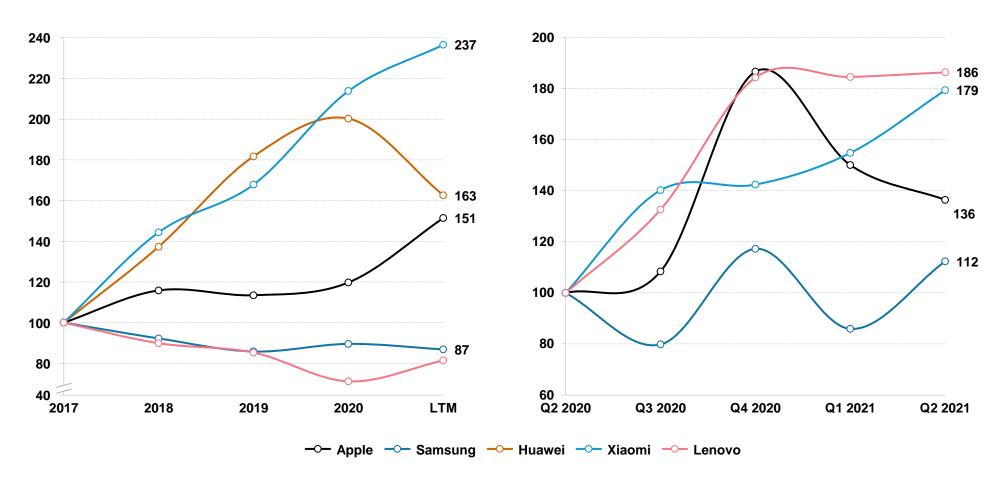


In Q2'21, Samsung and Xiaomi led the segment with revenue growth of 26% and 24% respectively

Segment Yearly revenue development

2017 - LTM (index 2016=100)

Segment Quarterly revenue development Q2'20 – Q2'21 (index Q4'19=100)



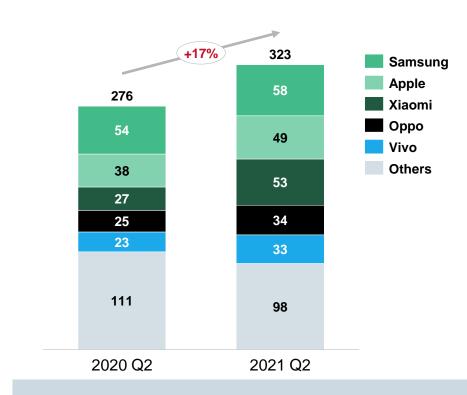


Events across the Device OEMs sector from the last quarter

News and happenings for Device OEMs

Dell Technologies is selling Boomi, a data integration company, for about \$4 billion to Francisco Partners May-2021 and TPG Capital. The proceeds should help Dell reduce its debt, which has been a focus of the company lately. The **shipments of smartphones** are forecast to reach 1.38 billion units globally in 2021, an increase of 7.7 percent over 2020 and its highest-ever level since May-2021 2015. This trend is expected to continue into 2022, when year-over-year growth will be 3.8 per cent with shipments reaching 1.43 billion, according to IDC. Xiaomi's sales grew 26% on-month, giving the company a 17.1% share of the total number of smartphones sold globally in June. For the guarter that Jun-2021 ended in June, Xiaomi was the second-largest smartphone maker by shipment — trailing Samsung. Huawei Technologies revealed its first premium smartphones equipped with the Chinese group's Jul-2021 alternative to Android software but without 5G connectivity on July 29, in a setback forced by restrictions on its access to American technology. Samsung launched Galaxy Z Flip3 folding-screen flipphone and Z Fold3 folding phone-tablet hybrid, , Aug-2021 alongside a Google watch co-developed to take on the dominant Apple Watch – the Galaxy Watch4.

Global smartphone shipments Million units

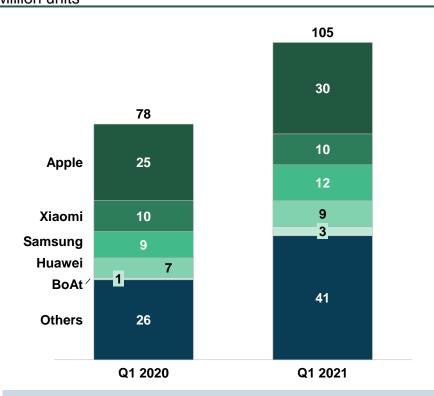


Global smartphone market grew 19% YoY but declined by 7%. Xiaomi eclipses 52 million smartphones, becoming the world's second-largest smartphone brand for the first time ever.



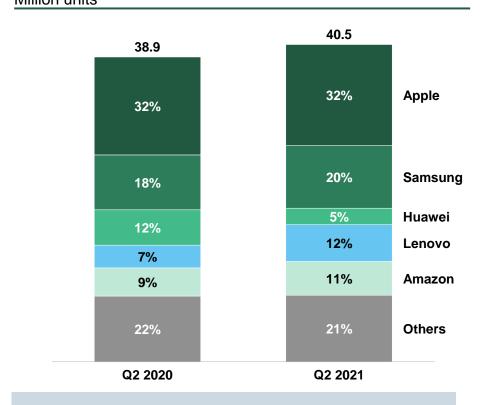
Global wearables shipments continues to see significantly YoY increase, while the heat around tablets begins to cool

Global wearables shipments Million units



The appetite for wearable devices remained strong in Q1'21 even as volumes retreated from record fourth quarter levels. Smaller brands focusing on specific markets are thriving with different solutions.

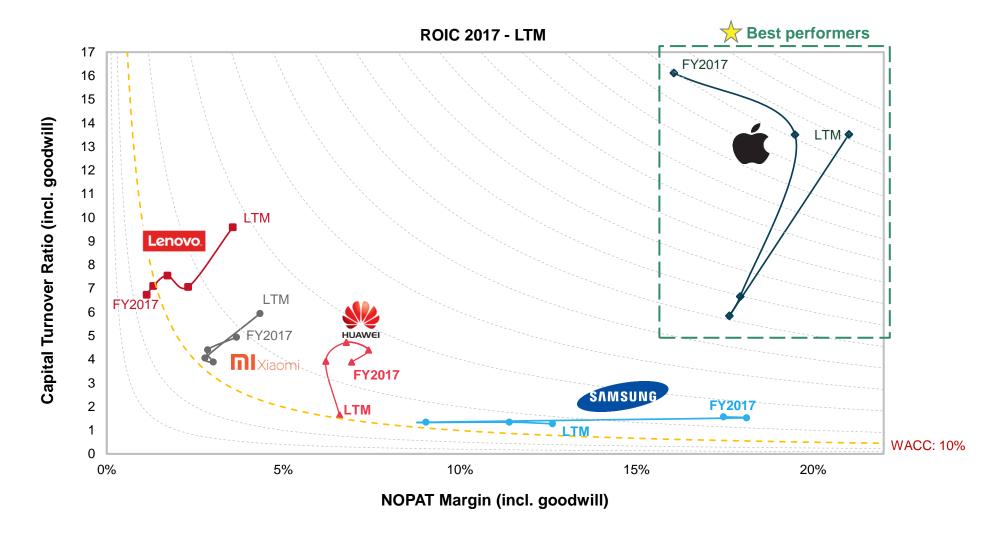
Global tablet shipments Million units

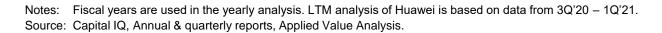


After three quarters of demand surge, tablet shipment began to experience slowdown in Q2'21. Moreover, IDC predicts that the tablet market cool-down will take place much more rapidly comparing to PCs and Chromebooks.



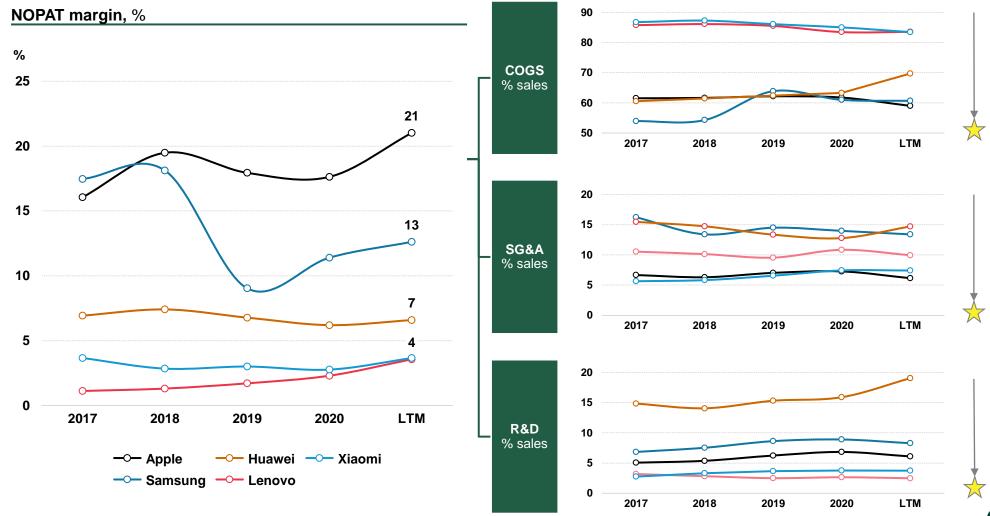
ROIC of Apple saw strong recovery in LTM mainly driven by acceleration in capital turnover







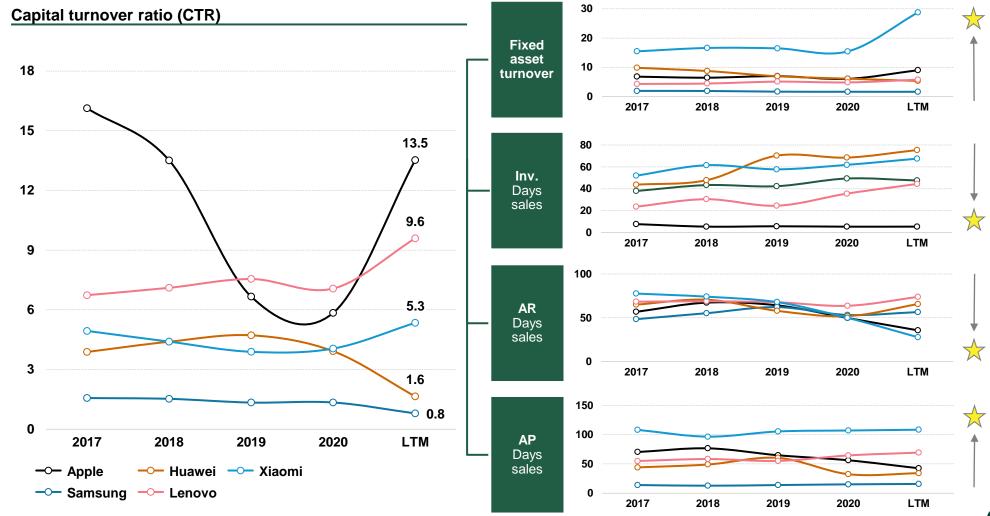
NOPAT margin of Samsung has seen an improvement of 2 pp. since 2019, owing it to reductions in COGS and SG&A ratios



Notes: Fiscal years are used in the yearly analysis. LTM analysis of Huawei is based on data from 3Q'20 – 1Q'21. Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.



CTR of Apple experienced considerable recovery in LTM with improvements in days sales outstanding and fixed asset turnover



Notes: Fiscal years are used in the yearly analysis. LTM analysis of Huawei is based on data from 3Q'20 – 1Q'21. Source: Capital IQ, Annual & quarterly reports, Applied Value Analysis.



Contents

Executive Summary

- 1. Operators
- 2. Infrastructure OEMs
- 3. Device OEMs

About Applied Value



Social

Impact

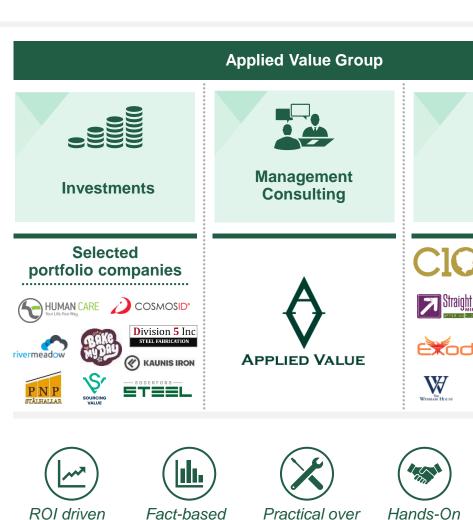
Applied Value is a management consulting & investment firm founded on the principles of lean growth and entrepreneurship



Industries of Expertise

- > Telecom & Media
- Chemicals & Process
- Industrials & Engineering
- Consumer Goods
- Automotive





theoretical



CODE FOR LIFE

Global

perspectives

Applied Value challenges and supports repeat global clients across industries from six offices

Selected Clients

Applied Value Offices and Footprint





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

+1 646 336 4971

Stockholm Kungsgatan 2 PO Box 5047 111 43 Stockholm Sweden

+46 8 562 787 00

Helsinki

Old Church Park Lönnrotinkatu 5 00120, Helsinki Finland

+358 40 84 110 60

Shanghai

Room 1504, Tower A, NA Plaza No. 518 Kunming Road, Shanghai, 200041 P.R. China

+86 21 5213 6390





