



Applied Value

Q1 2022

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

Niklas Schultz

Telecom Practice Lead

Applied Value

Phone: +46 (0) 734 390 812 niklas.schultz@appliedvalue.com



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

Operators

Infrastructure OEMs

Device OEMs





































































Contents

Executive Summary

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

About Applied Value



Executive summary

Key takeaways per segment

Operators

- 1. The operator segment Q1'22 revenue fell by 2% YoY, driven by 4% and 9% YoY decline in EU and APAC operators. Millicom outperformed its peers in Q1'22 with 41% YoY revenue growth driven by a robust subscriber growth as well as a B2B expansion.
- 2. Yearly average NOPAT and EBITDA declined by 0.1pp. and 0.2pp. respectively YoY. LATAM operators' profitability improved the most during Q1'22 with 5% YoY rise in NOPAT margin and 3% for EBITDA margin.
- 3. ROIC for operators averaged at 7.7% in LTM, a 0.1pp. decline from 2021, Ooredoo lead the peer group with 1.1% YoY increase over LTM.

Infrastructure OEMs

- 1. Infrastructure OEM yearly revenue grew by 0.5pp. YoY on average driven by growth in capacity and 5G investments. ZTE's lead the rise with 10% increase in revenues, followed by Ericsson with a revenue improvement of 3.5%.
- 2. Average NOPAT in LTM for selected infrastructure OEMs reached to 7.4%, Ericsson obtained the highest NOPAT margin of 11%, representing a 7.4pp. rise since 2018
- 3. CTR for Huawei dropped by 1.2 in LTM comparing with FY2021 which then led to a 13% decline in ROIC. Ericsson's CTR fell by 0.4 while Nokia gained 0.1 over the same time period.

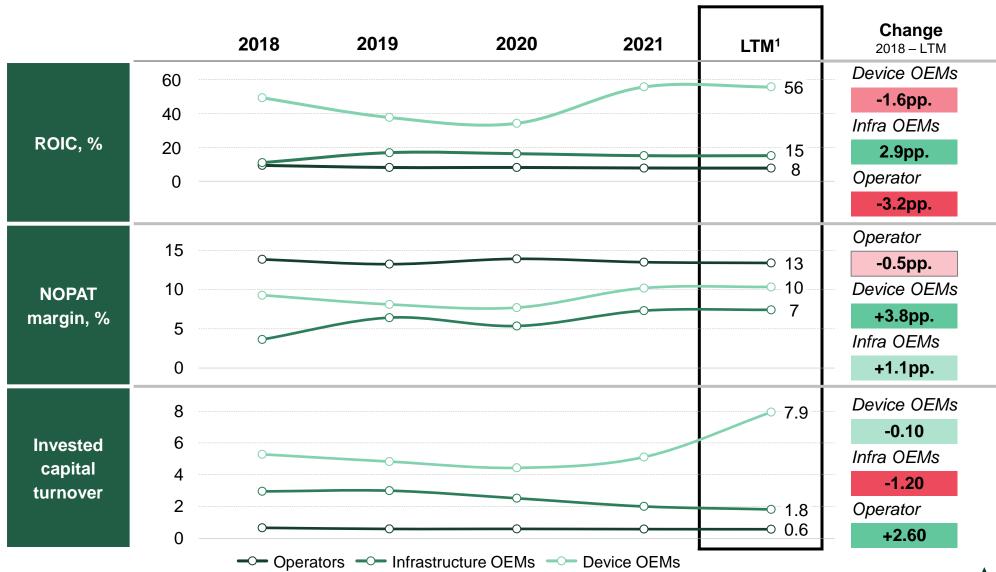
Device OEMs

- 1. Selected global device OEMs revenue increased YoY by 2% with Xiaomi and Apple being the primary drivers. Apple has had a steady growth in sales since 2019, whereas Samsung's quarterly revenue increased by 10% YoY. Total sales for Xiaomi fell YoY but has more than doubled in LTM compared with 2018.
- 2. Both global smartphone and PC shipments suffered in Q1'22 by 6% and 4% YoY, respectively, while an 11% YoY improvement was seen in global wearable shipments volume as market momentum continues.
- 3. Over LTM, Apple, Lenovo and Xiaomi all achieved a ROIC that is greater than industry average WACC of 15%.





Financial overview (1/2): Yearly performance



Notes: 1. LTM refers to Q2'21 – Q1'22 for most companies included in the report. LTM analysis of Xiaomi and Apple based on the period of Q1'21 – Q4'21; ROIC (Return on Invested Capital), NOPAT (Net Operating Profit After Tax); Deviations due to different selection of operators and restated company financials. Telecom report data is based on fiscal years and calendar quarters.



Financial overview (2/2): Quarterly performance

	Segment	Q1'22	Q4'21	Q3'21	Q2'21
Sales Y-o-Y (% change)	Operators	-2.0%	2.7%	2.7%	9.4%
	Infrastructure OEMs	-5.2%	-11.1%	-20.6%	-20.2%
	Device OEMs	-8.6%	8.8%	10.0%	19.1%
NOPAT Y-o-Y (p.p. change)	Operators	0.1 pp.	0.2 pp.	0.6 pp.	0.2 pp.
	Infrastructure OEMs	-2.0 pp.	-1.5 pp.	1.7 pp.	1.5 pp.
	Device OEMs	-2.5 pp.	1.7 pp.	2.2 pp.	1.9 pp.
EBITDA Y-o-Y (p.p. change)	Operators	-1.6 pp.	-0.1 pp.	-0.3 pp.	-1.7 pp.
	Infrastructure OEMs	-3.8 pp.	-1.5 pp.	2.9 pp.	1.9 pp.
	Device OEMs	-3.3 pp.	2.2 pp.	3.5 pp.	2.4 pp.

Notes: Telecom report data is based on fiscal years and calendar quarters; NOPAT: Net Operating Profit After Tax Source: S&P Capital IQ, Annual & quarterly reports, Applied Value Analysis.



Contents

Executive Summary

1. Operators

- 2. Infrastructure OEMs
- 3. Device OEMs

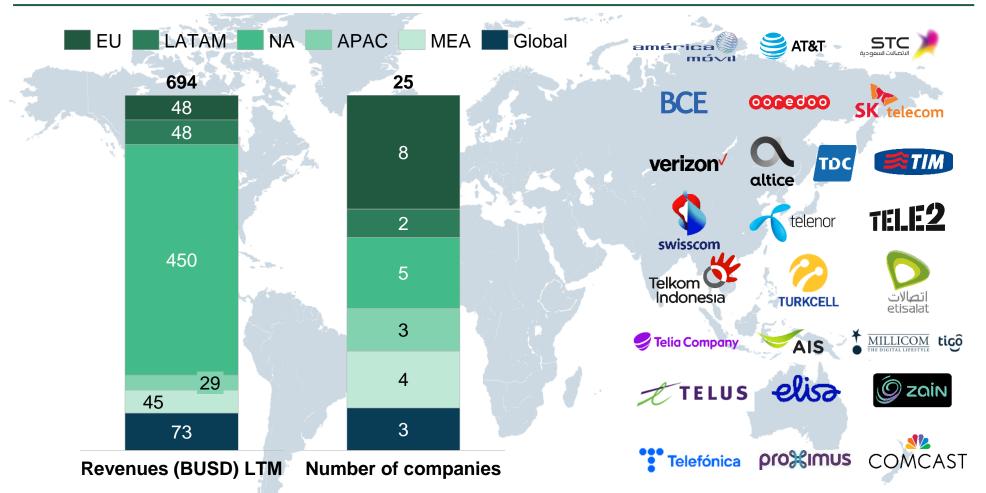
About Applied Value



The Q1'22 report covers 25 of the largest operators globally, accounting for nearly \$694B in revenues LTM

Report overview

Revenue in BUSD, and company breakdown by regions



Note: Global operator refers to those with transregional business establishments. Source: S&P Capital IQ, Annual & quarterly reports, Applied Value Analysis.



Key takeaways from the operator segment

Key takeaways

Creating Shareholder Value

- 1. The ROIC for selected operators averaged at 7.7% during LTM declined for the third consecutive year, driven by a slight decrease in both NOPAT margin and CTR.
- 2. Telkom Indonesia recorded the highest ROIC in the peer group at 17%, followed by STC (15%) and Elisa (13%). Ooredoo improved ROIC most significantly by 1.1pp. in LTM comparing to LTM-1 as a result of improved operating performance.

Revenue Performance

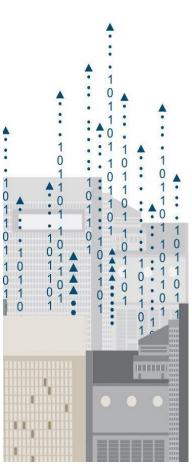
- 1. LATAM operators revenue improved the most in Q1'22 YoY by 8%, whereas EU operators suffered 4% loss in sales during the same period.
- 2. Millicom displayed the most significant revenue improvement of 41% YoY, owing to a robust subscriber growth, sustained growth in all countries and business units, and expansion in the B2B businesses.

Margin Performance

- 1. Averaged yearly EBITDA margins for selected operators stabilized at around 37%, while NOPAT margins flattened at around 14%.
- 2. Millicom achieved the highest profitability in Q1'22 with a YoY EBITDA margin and NOPAT margin growth of 5pp. and 9pp. Respectively; whereas both Ooredoo and Telus both experienced 6pp. YoY EBITDA decline.

Capital Expenditure

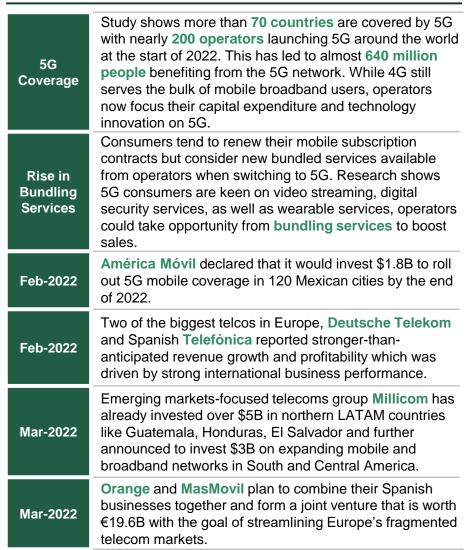
- 1. Quarterly CAPEX over sales for selected operators averaged at 14.8% in Q1'22 compared to 15% in Q1'21.
- 2. Altice, Proximus and Telecom Italia all increased their CAPEX/sales the most out of the peer group by 8pp. while SK Telecom reduced its spending by 12pp YoY.

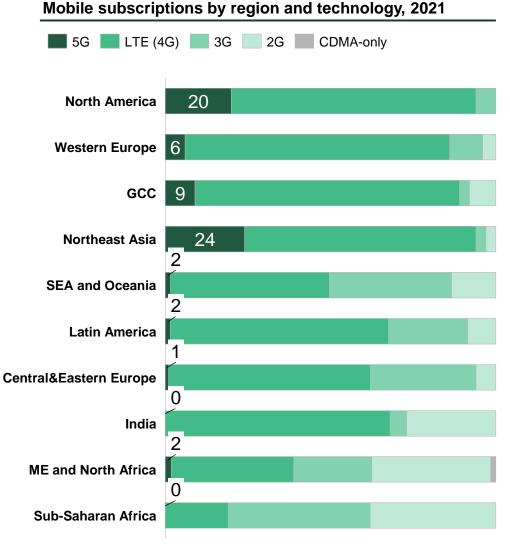




Q1'22 events across the operator segment

Industry & operator news





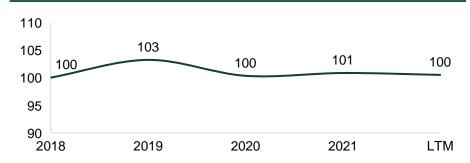


Source: Press & News, Financial Times, GSMA, Ericsson Mobility Report, Applied Value Analysis.

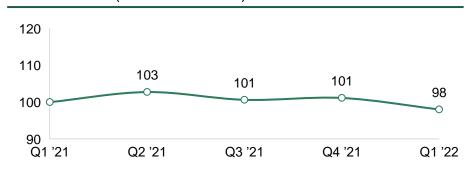
LATAM operators' revenue grew by 4% in LTM driven by an 8% YoY rise in Q1'22; Yearly revenue for other regions are relatively more stable

Indexed Yearly revenues

2018 - LTM (index 2018=100)

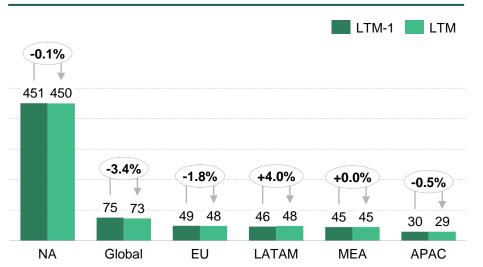


Indexed Quarterly revenues Q1'21 – Q1'22 (index Q1'21=100)



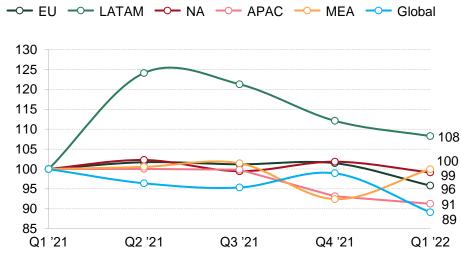
Yearly revenues by region

LTM-1 (Q2'20 - Q1'21), to LTM (Q2'21 - Q1'22), BUSD



Indexed Quarterly revenues by region

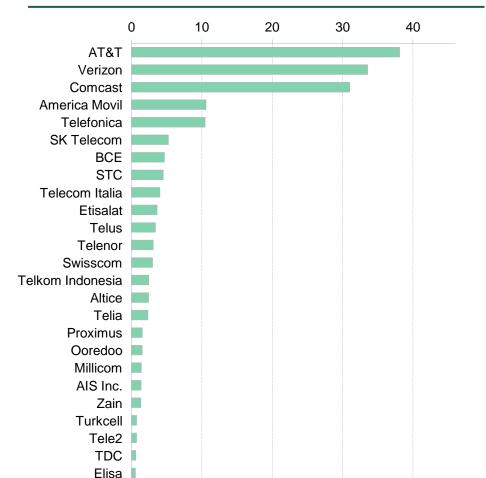
Q1'21 – Q1'22 (index Q1'21=100)





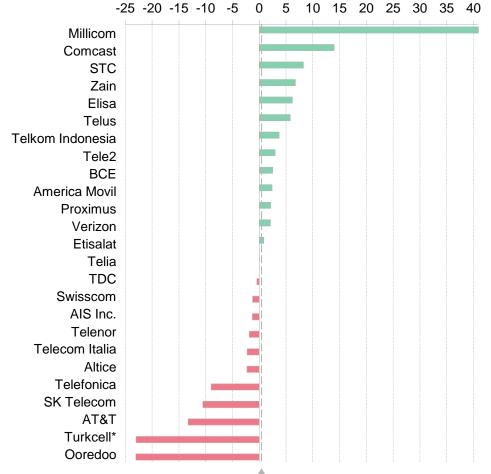
Most operators reported positive YoY revenue development; Millicom continued its robust revenue growth in Q1'22 ~41% YoY





Revenue development by operator

Delta (Q1'22 vs. Q1'21), %, filing currency



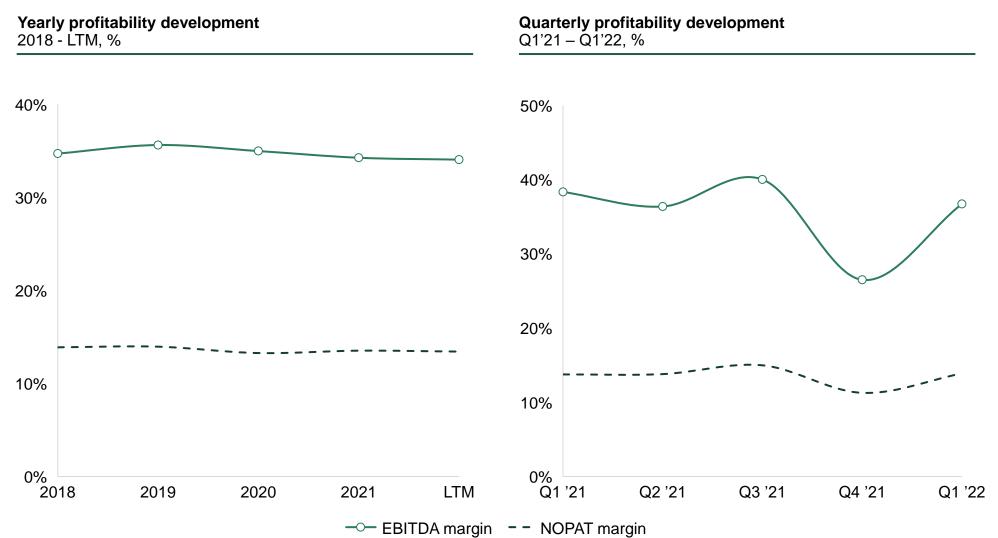
Ø0

Turkcell revenue development calculated in USD to equalize inflation in Turkish Lira Note:

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



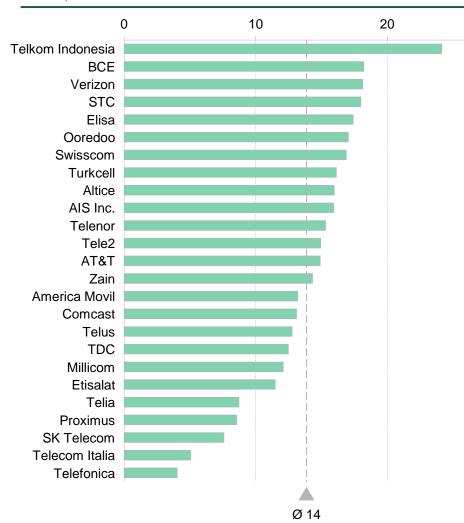
Both quarterly EBITDA and NOPAT margins have experienced seasonality in the operator sector, ended at 37% and 14% average respectively in Q1'22



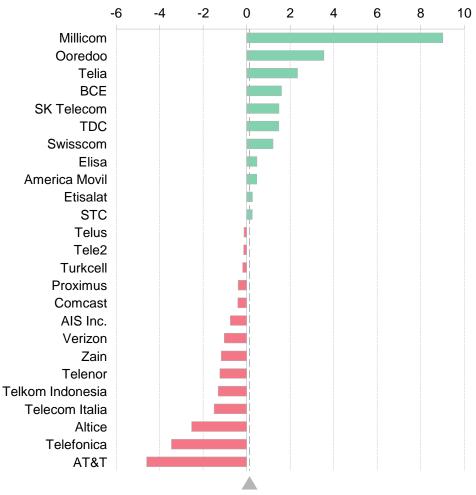


NOPAT margins averaged at 14% in Q1'22 for selected operators; Millicom's YoY NOPAT improved by 9% as a result of strong subscriber growth





NOPAT margin development by operator Delta (Q1'22 vs. Q1'21), p.p.



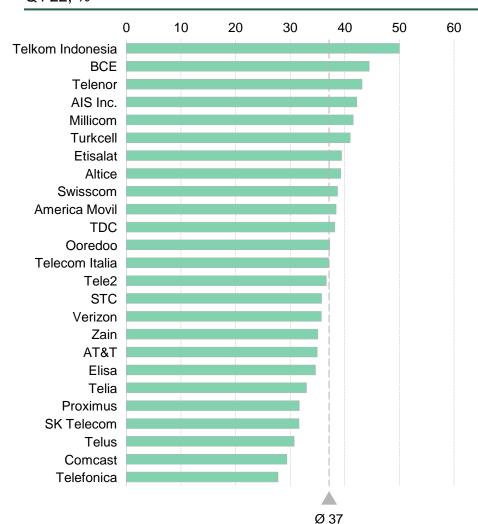
Ø0



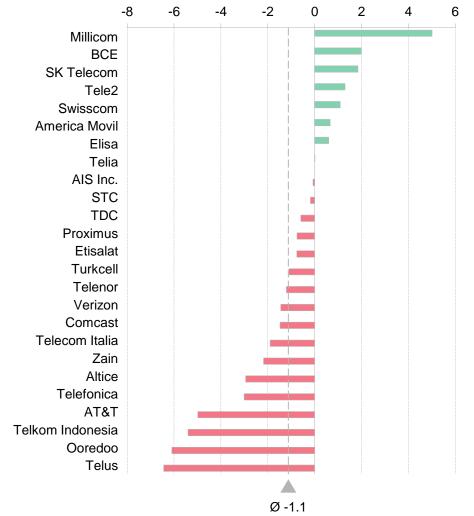
Source: S&P Capital IQ, Annual & quarterly reports, Applied Value Analysis.

Most selected operators suffered a negative YoY EBITDA margin development

EBITDA margin by operator Q1'22, %



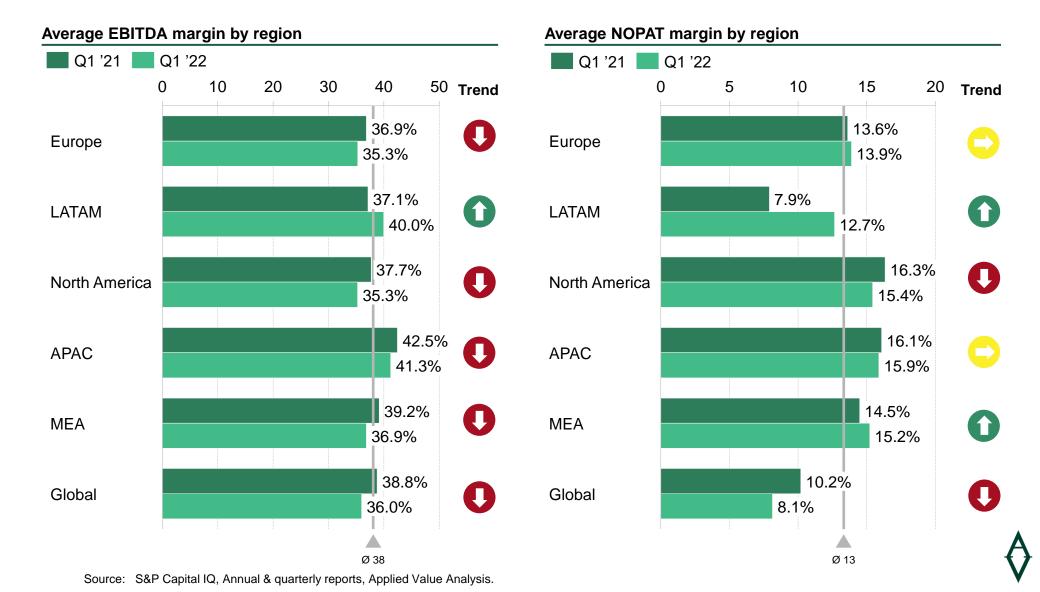
EBITDA margin development by operator Delta (Q1'22 vs. Q1'21), pp.



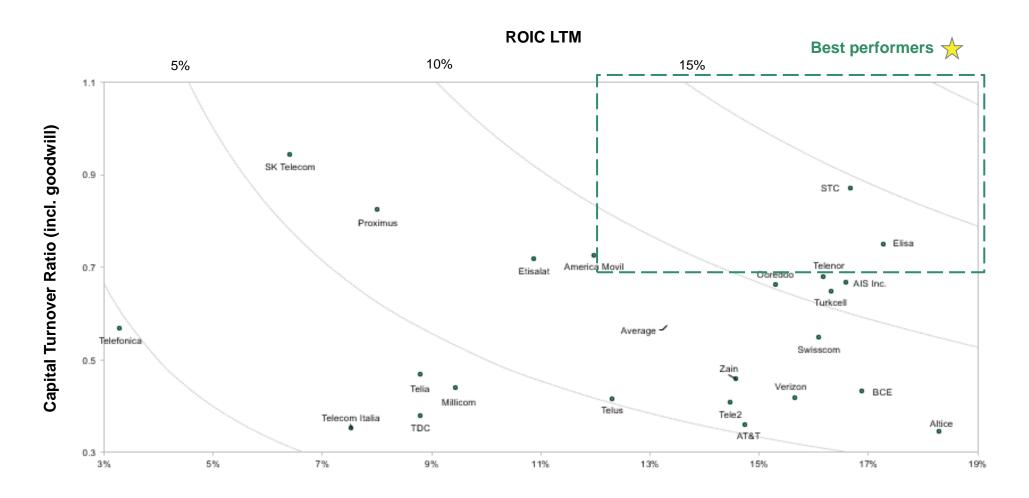


Source: S&P Capital IQ, Annual & quarterly reports, Applied Value Analysis.

LATAM was the only region to reach positive development in EBITDA and NOPAT margin, whereas NA operators saw both EBITDA and NOPAT decline



STC and Elisa are top ROIC performers within the peer group; Altice reached the highest NOPAT margin, while SK Telecom outperformed in terms of CTR

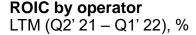


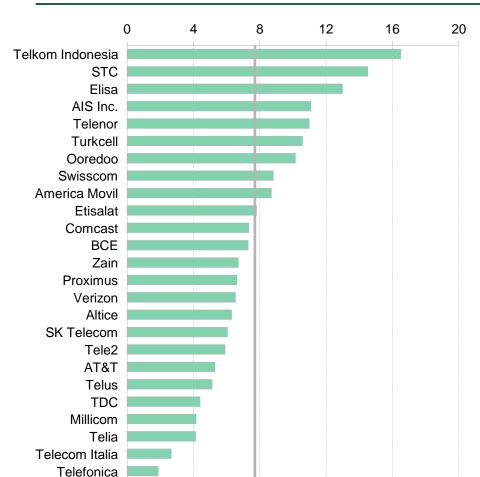
NOPAT Margin (incl. goodwill)

Note: ROIC = Return on Invested Capital (actual return that the company has generated after tax); BT is excluded due to missing data Source: S&P Capital IQ, Annual & guarterly reports, Applied Value Analysis.

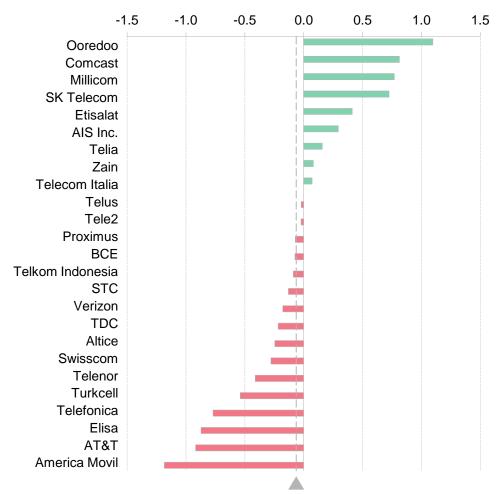


The segment average ROIC declined from 7.8% to 7.7% YoY in LTM, driven by a 1.2% YoY decrease from America Movil and 0.9% fall at AT&T and Elisa





ROIC development by operator Delta (LTM vs. LTM-1), p.p.



Ø -0.06



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

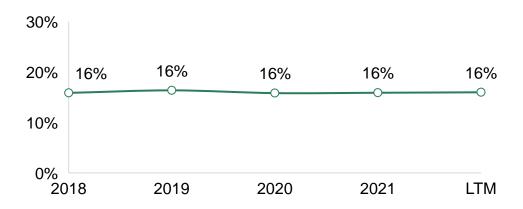
Ø 7.7

Yearly CAPEX/Sales remained virtually unchanged over last 4 years; NA and MEA operators CAPEX/Sales fell ~25% and 16% in LTM comparing with 2018

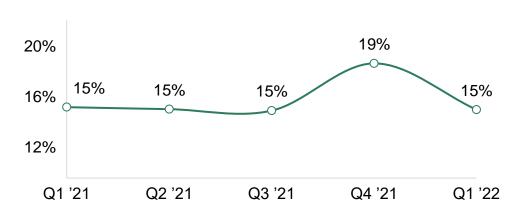


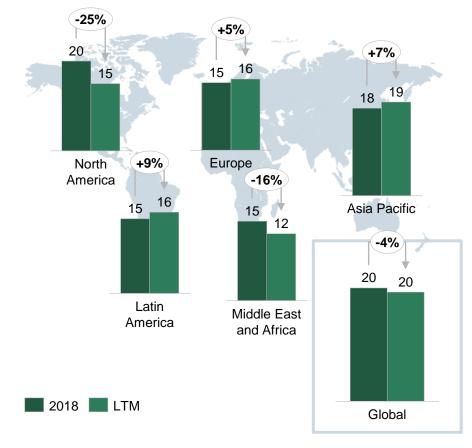


CAPEX over sales by region 2018 vs. LTM, %



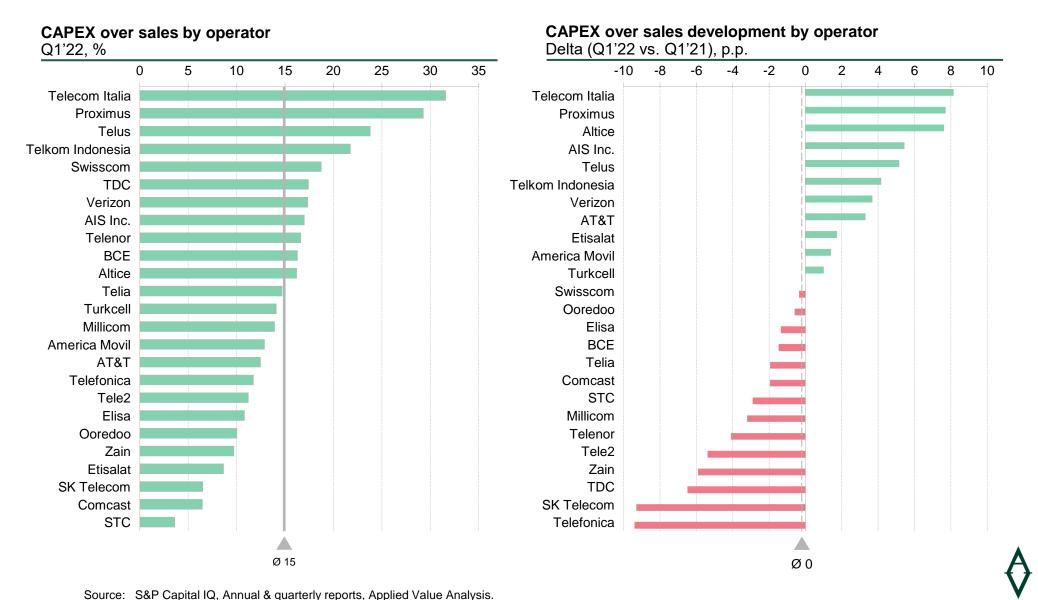
Quarterly CAPEX over sales Q1'21 – Q1'22, %







Telecom Italia CAPEX over sales increased by 35% YoY to €932M as a result of higher investments in FTTH, mobile coverage, Cloud and Data Centers



Contents

Executive Summary

1. Operators

2. Infrastructure OEMs

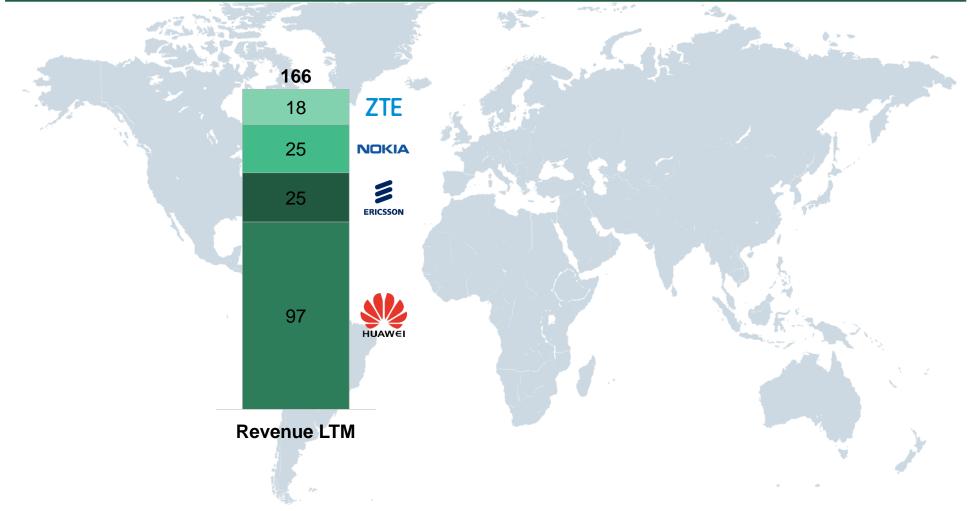
3. Device OEMs

About Applied Value



The Q1 2022 Report includes four major infrastructure players – ZTE, Ericsson, Nokia and Huawei, revenue summed up to \$166B in LTM

Report overview Revenue in BUSD



Notes: Revenue based on group revenue; LTM analysis of Huawei is based on data from Q1'21 - Q4'21.

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



Key takeaways from the Infrastructure OEM segment

Key takeaways

Creating Shareholder Value

- 1. Among all selected OEMs, Ericsson and Huawei have had created shareholders' value over LTM with ROIC equaling 20% and 18% respectively compared to WACC of 15%, this could be explained by improved NOPAT margin and consistent CTR.
- 2. Huawei maintained a relatively stable NOPAT margin while CTR continued to drop for the third consecutive year as a result of lowered fixed asset turnover and longer inventory days.

Revenue Performance

- 1. Total revenue for selected infrastructure OEMs fell by 5% LTM comparing with FY2020, mainly driven by a 14% drop in Huawei's total sales.
- 2. ZTE continued to outperform its peers in LTM with 47% improvement in revenue comparing with 2018 while quarterly revenue increased by 10% YoY; Strong seasonality is shown for Huawei, Nokia and Ericsson rise in sales in Q2 and Q4, decline in Q1 and Q3.

Margin Performance

- 1. LTM NOPAT margin for selected infrastructure OEMs averaged at 7.1%. Ericsson, Nokia and ZTE show persistent rise since 2018, while Huawei's NOPAT dropped significantly in FY2020 due to sanctions but started to recover in H2 2021.
- 2. Huawei initiated several cost-efficiency activities in 2021 to reduce operational expenses which has strengthened profitability by 15% compared with FY2020.

Capital Efficiency

- 1. Both Huawei and ZTE experienced halved capital turnover ratio LTM comparing with FY2019, driven by significant reduced fixed asset turnover and longer inventory days.
- Nokia is the only infrastructure OEM within the peer group who has achieved positive development in CTR during LTM in comparison with FY2021; backed by very short inventory days and long account payable days.
- Although ZTE achieved the highest fixed asset turnover ratio and accounts payable days in LTM, long inventory days and account receivable days dragged CTR down by 26% compared with FY2021.

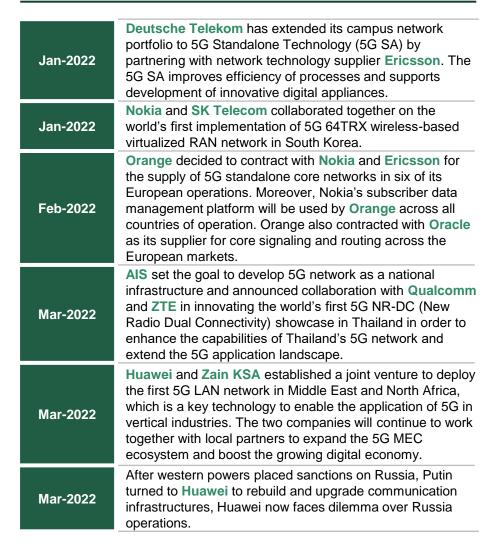


Note: LTM analysis of Huawei is based on data from Q1'21 – Q4'21. Source: Press & News, S&P Capital IQ, Applied Value Analysis

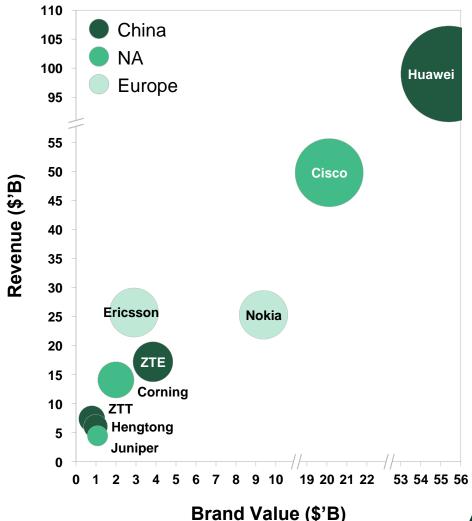


Events across the Infrastructure OEMs sector from the quarter

News and happenings for infrastructure OEMs

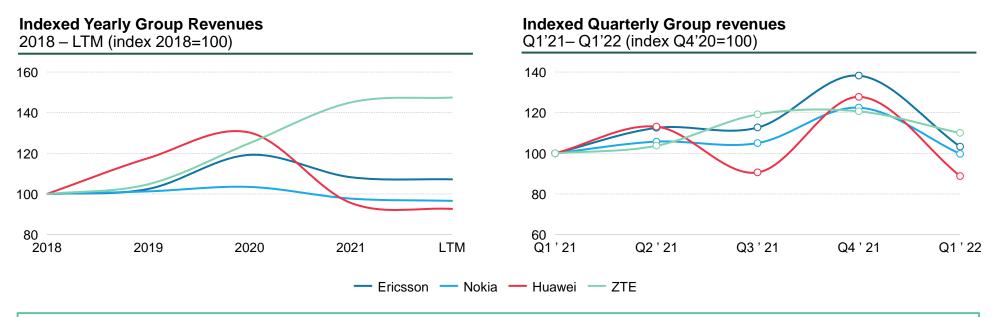


Top infrastructure OEMs brand value & revenue 2021 (BUSD)





All companies except for ZTE displayed clear seasonality trends over the past year – presenting relatively higher sales volumes in Q2 and Q4



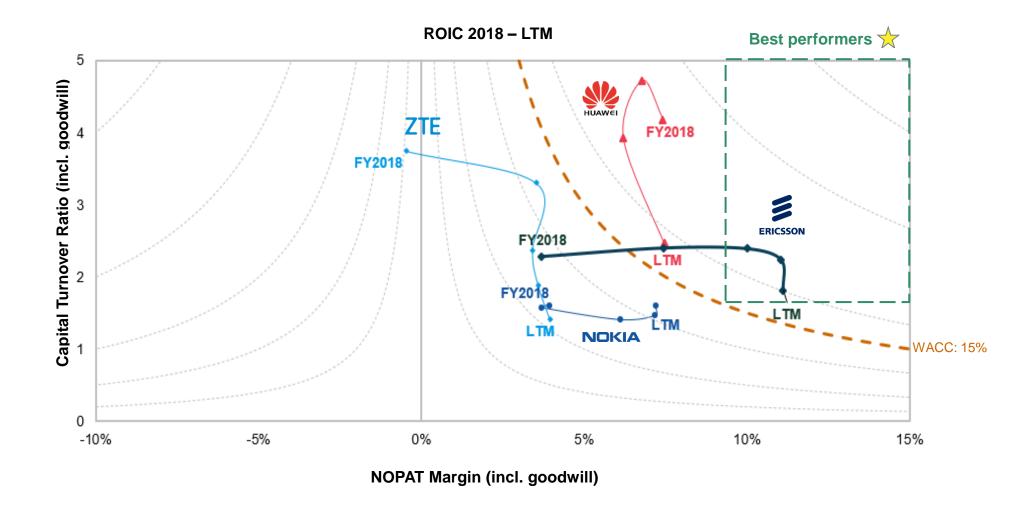
- ZTE outperformed peers in LTM with revenue improved by 47% comparing with 2018 and quarterly revenue increased by 6% YoY, driven by eased competition for ZTE's main telecom carrier business.
- Huawei is still reeling from the imposed restrictions and sanctions resulting in a first-ever decline in revenue of 29% in FY2021 which is driven by 50% YoY decline in Consumer Business sector and 7% YoY decrease in Carrier Business sector. However, Huawei's yearly net profit surged by 76% in FY2021 reflecting efficient cost management activities and growing in homegrown components to weather the fallout from sanctions.
- Nokia net sales stayed relatively constant in Q1'22 comparing with Q1'21 mainly due to withdrawal from the Russian market. However, Nokia's
 net sales still grew by 5% YoY with Network Infrastructure growing 9% while the Mobile Network segment dropped 4%. Rise in Network
 Infrastructure sector could be explained by strong demand in both Fixed and Submarine Networks and strong performance from Cloud and
 Network Services.
- Ericsson's quarterly revenue went up by 3% YoY in Q1'22 driven by solid increase in domestic market reflecting a strengthened market position. Ericsson has also captured opportunities in the Emerging Business segment, displaying a 15% YoY growth backed by Cradlepoint acquisition.

Note: LTM analysis of Huawei is based on data from Q1'21 – Q4'21.

Source: S&P Capital IQ, Annual & quarterly reports, Press Release, Economic Times, Applied Value Analysis.

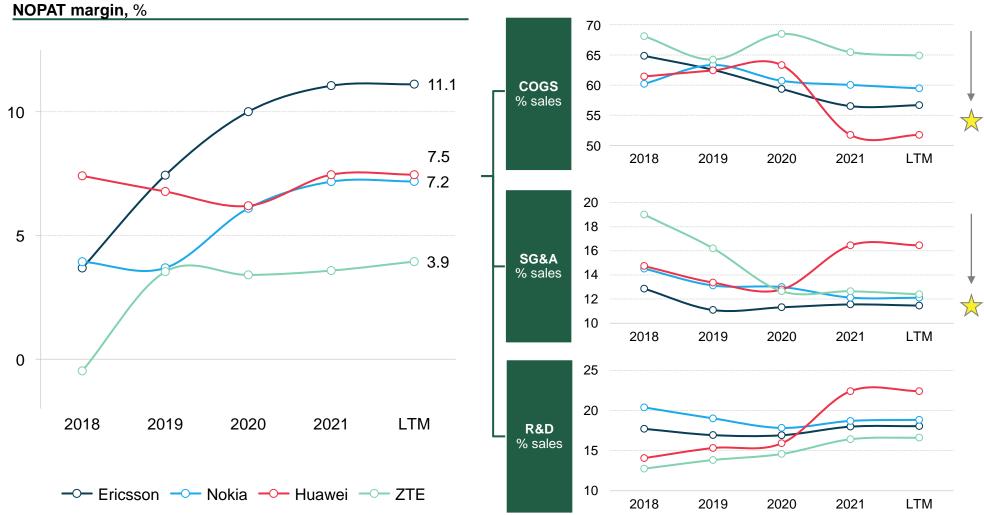


Huawei and Ericsson managed to achieve higher-than-WACC ROIC of 18% and 20% respectively, despite CTR for Huawei dropped significantly





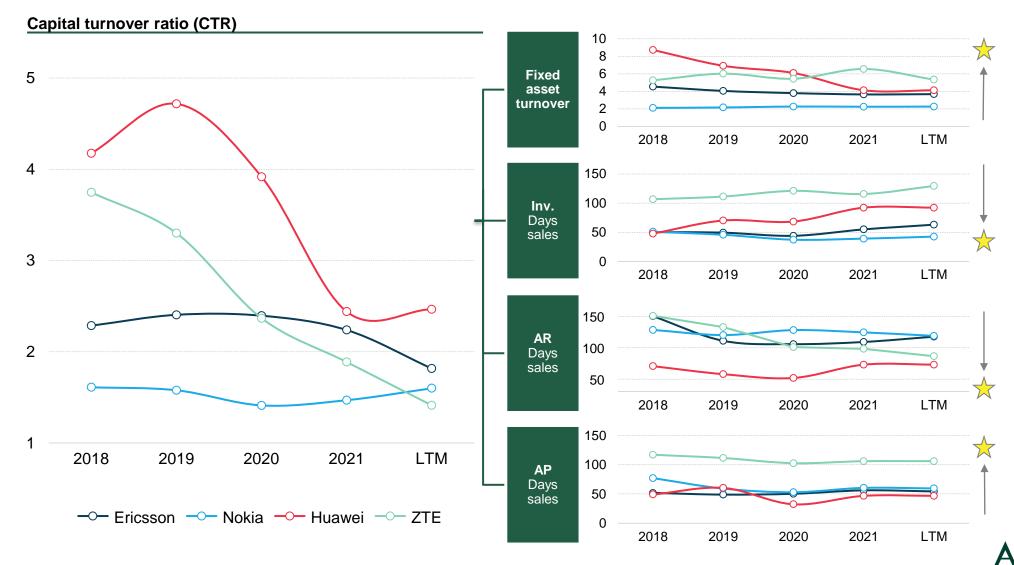
Ericsson retained highest NOPAT margin in the peer group driven by a relatively lower COGS/Sales and SG&A/Sales ratio



Note: LTM analysis of Huawei is based on data from Q1'21 – Q4'21. Source: S&P Capital IQ, Annual & quarterly reports, Applied Value Analysis.



ZTE and Ericsson CTR ratio declined significantly in LTM as a result of decrease in fixed asset turnover and higher AR days



Note: LTM analysis of Huawei is based on data from Q1'21 – Q4'21. Source: S&P Capital IQ, Annual & quarterly reports, Applied Value Analysis.

Contents

Executive Summary

- 1. Operators
- 2. Infrastructure OEMs

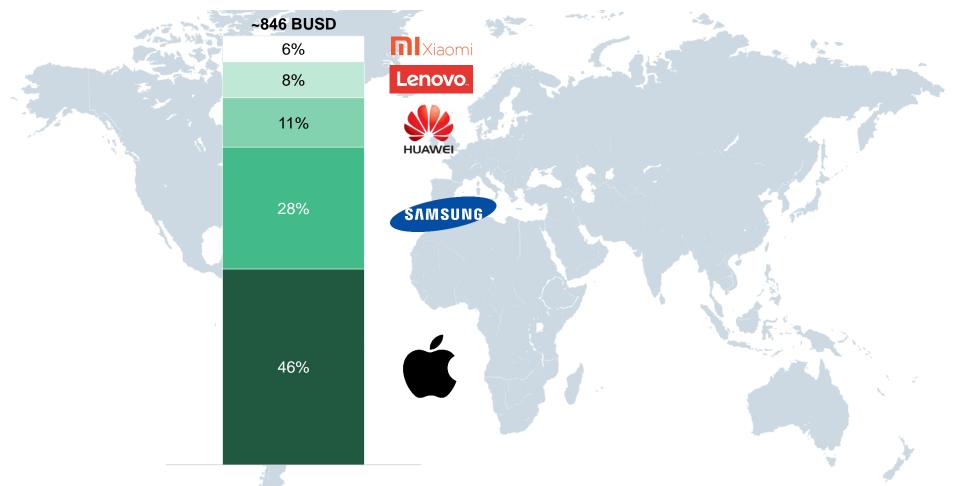
3. Device OEMs

About Applied Value



The Q1 2022 report includes five major device manufacturers

Report overview Revenue in BUSD, LTM



Note: Revenue based on group revenue

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



Key takeaways from the Device OEM segment

Key takeaways

Creating Shareholder Value

- 1. Apple, Lenovo and Xiaomi have obtained higher ROIC in LTM compared to 2020, indicating further value creation for shareholders.
- Both Lenovo and Xiaomi ROIC rose significantly driven by higher CTR, whereas Samsung's drop in NOPAT margin contributed to declined ROIC over LTM comparing with FY2021.
- 3. Huawei's ROIC fell by 6 pp. in 2021 compared to 2020 from both declining NOPAT margin and CTR.

Revenue Performance

- 1. The overall quarterly revenue for selected device OEMs increased by 2% YoY; Xiaomi yearly revenue is more than doubled in LTM compared with FY2018, followed by Lenovo (56%), Apple (45%), and Samsung (10%).
- 2. Samsung quarterly revenue improved the most within the peer group by 10% YoY, whereas Apple's revenue improved 9%. Huawei saw a corresponding decline in quarterly revenue (-11%).

Margin Performance

- 1. Average NOPAT margin for selected device OEMs is 10% in LTM, Apple led the peer group in terms of yearly NOPAT margin with an increase to 23% in LTM.
- 2. After the plunge in FY2019, Samsung's NOPAT has steadily recovered and reached 15% over LTM, Xiaomi and Lenovo have also managed operating activities efficiently in the past three years and achieved consistent improvement in NOPAT margin.

Capital Efficiency

- CTR for selected companies averaged at 5 in LTM. Apple and Lenovo outperformed peers and reached to 9 and 8, respectively, which contributed to their ROIC improvements.
- 2. Huawei and Samsung experienced declines in their CTR to 1.2 and 0.8 respectively, driven by long inventory days and low fixed asset turnover ratio.

Note: Analysis on Xiaomi and Apple are based on Q1'21 – Q4'21 Source: S&P Capital IQ, Annual & quarterly reports, Applied Value Analysis.





Business Segments of Device OEMs

Business segments and revenue shares over LTM, Company (Q2'21 - Q1'22)%**Description** iPhone: Mobile Phones Wearables, Home and Accessories Services: iTunes Store, iCloud, Apple Pay, other services Services Mac: Laptops & Personal Computers iPad: Tablets Wearables, Home and Accessories: Apple Watch, Apple branded accessories for Apple products Device Experience (DX) - VD / DA DX: Mobile and consumer electronics businesses Device Experience (DX) - Mobile Experience (MX) / Networks <u>Device Solutions</u>: Semiconductor Business and display panels SAMSUNG Device Solutions (DS) Consumer Electronics: TVs, monitors, printers, air conditioners and refrigerators SDC 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) Others: Communication services not applicable to above descriptions Consumer Other items Solutions and Services Group (SSG) <u>IDG:</u> Personal computer and smart devices, and mobile businesses DCG: Provide data center solutions Lenovo Intelligent Devices Group (IDG) SSG: Deliver enhanced services capabilities and new solutions Infrastructure Solutions Group (ISG) Smartphones: Mobile devices, Smartphone, Tablet Smartphones Others IoT & Lifestyle products: Smart TVs, scoters, vacuum cleaners, cameras, etc. **N** Xiaomi ■ IoT and Lifestyle Products Internet Services: Preloaded apps, services and advertisements Other: Miscellaneous additional services and products

Apple and Samsung (Q2'21-Q1'22); Huawei, Lenovo and Xiaomi (Q1'21 – Q4'21).

Internet Services

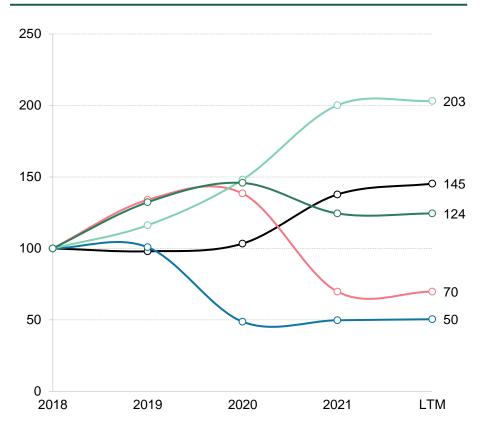
Source: S&P Capital IQ, Annual & quarterly reports, Applied Value Analysis.



Xiaomi stood out in the peer group in FY2021 in terms of revenue – 103% increase compared with FY2018

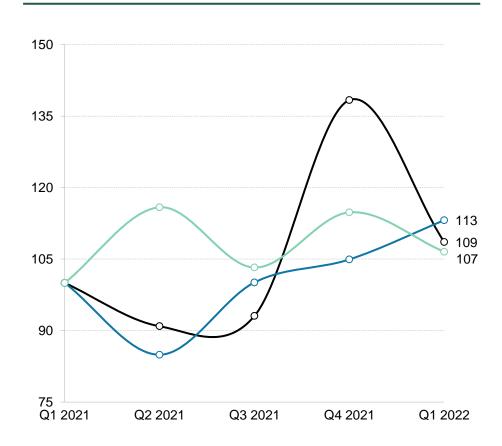
Segment Yearly revenue development

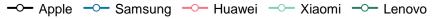
2018 - LTM (index 2018=100)



Segment quarterly revenue development

Q1'21 – Q1'22 (index Q1'21=100)





Note: Included segments per company: Samsung (DX); Apple and Xiaomi (All segments); Lenovo (IDG); Huawei (Consumer Business);

LTM analysis of Huawei, Lenovo are based on data from Q1'21 – Q4'21.

Source: S&P Capital IQ, Annual/Quarterly/Half Year Reports.



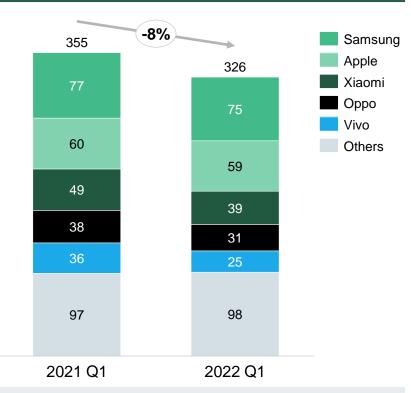
Events across the Device OEMs sector from the last quarter

News and happenings for Device OEMs

Lenovo unveiled a portfolio of innovative products and Jan-2022 solutions at CES 2022 to power hybrid life, including smarter work, home and gaming products. Samsung launched the new Galaxy S models to cope with the shrink in premium market share, the new Feb-2022 lineup is designed for new generation who's more interested in sharing videos on platforms like TikTok, Facebook. YouTube. Xiaomi, Vivio and Oppo negotiated with Indian contract manufacturers to assemble phones locally for global export, with the hope to establish India as a hub for Mar-2022 electronics production. If the plan goes ahead, Lava International Ltd. and Dixon Technologies India Ltd. will have the two major plant bases in India. Samsung and Apple suspended sales to Russia, the Mar-2022 two OEMs occupied 27% and 24% of Russia's market share in 2021. Despite the initial plunge in smart device shipments, Huawei is considered an early winner from the Russia-Ukraine conflict. During the first two weeks of March, Mar-2022 Huawei phone sales volume went up 300%, while other Chinese smartphone brands like Oppo and Vivo

also recorded triple-digit sales increases.

Global smartphone shipments Million units



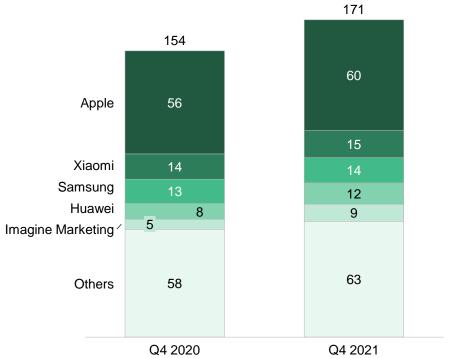
Global smartphone shipments declined by 8% YoY in Q1'22, reaching 325M units. **Samsung** continued to hold the leading position in global smartphone shipments of 23% despite the 3% YoY decline in shipment. **Apple** shipments declined by 1% YoY to 59M units in Q1'22. However, Xiaomi, Oppo and Vivo faced constraints in delivery of components that lead to decline in shipments on both annual and quarterly basis.



Global PC shipments declined for the first time after 7 quarters of growth while Global wearables shipments increased by 11% to 171M units

Global wearables shipments Million units

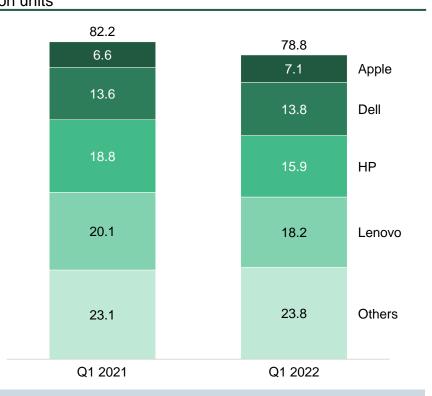
Willion units



Global wearables hit record highs in Q4'21 as shipments reached 171M units, representing 11% YoY rise. Continued demand for health and fitness tracking products along with hearables maintains the market momentum. Total shipments in FY2021 reached 534M units – 20% increase comparing with the previous year. Though Apple remains in leading position, Huawei (35%) and Imagine Marketing (70%) all posted market-beaten YoY growth in the quarter.

Note: Global wearables shipments Q1'22 data is missing. Source: IDC, Counterpoint Research and Applied Value Analysis.

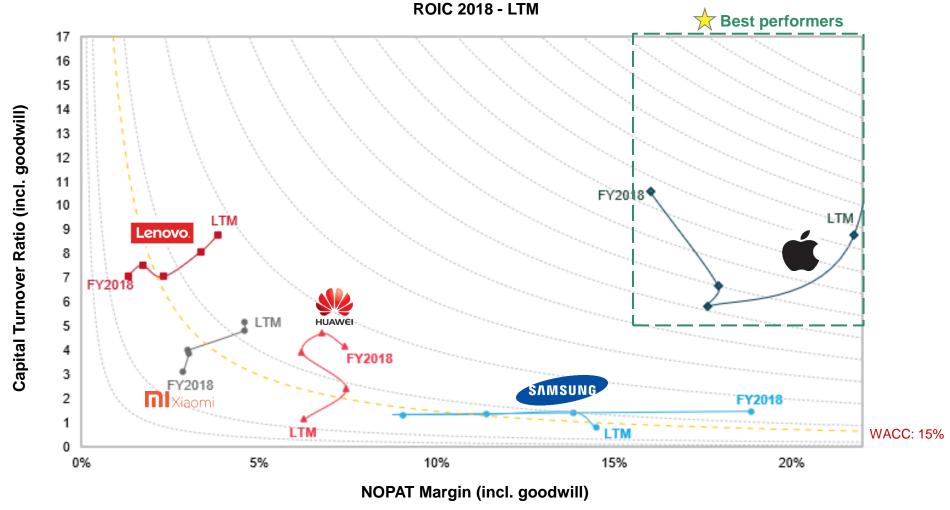
Global PC shipments Million units



World PC shipments fell by 4% YoY in Q4'22 to 79M units as supply chains turned conservative after global inflation and regional conflicts which brought uncertainties to the PC demand momentum. What's more, recent lockdowns in Shanghai where many manufacturing lines are located lead to further complications, but as restrictions ease it may lead to shipment corrections further on in 2022.

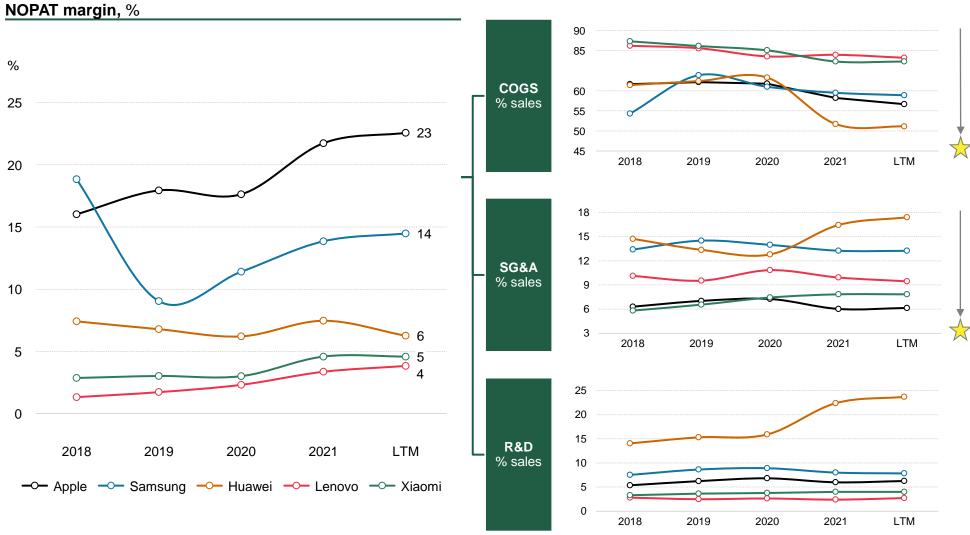


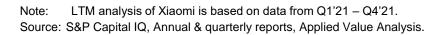
Most peers reported positive ROIC development in LTM





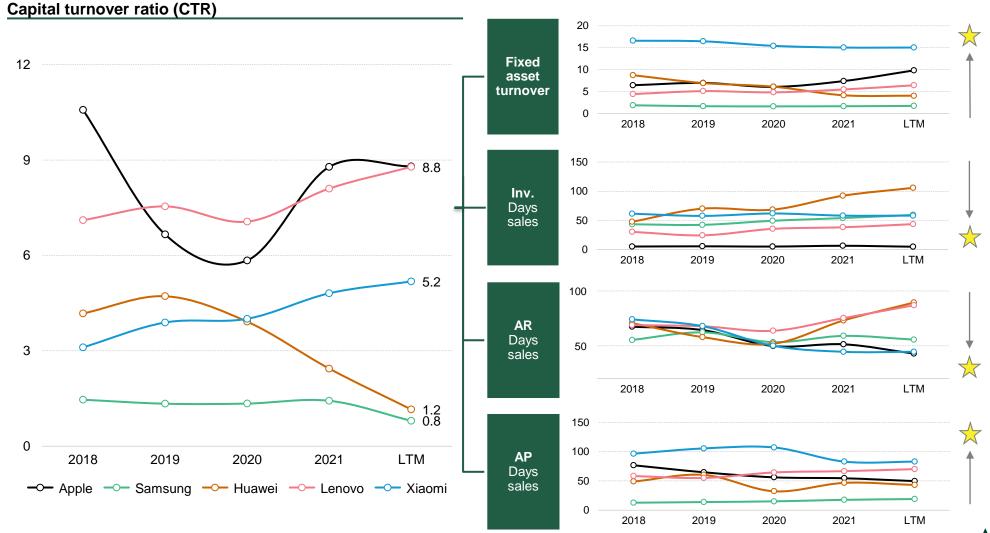
Apple NOPAT margin reached 23% in LTM, improvements seen for all OEMs except for Huawei







Huawei CTR continued to decline to 1.2 in LTM while CTR for Xiaomi and Lenovo has improved consistently since 2020



Note: LTM analysis of Apple and Xiaomi are based on data from Q1'21 – Q4'21. Source: S&P Capital IQ, Annual & quarterly reports, Applied Value Analysis.



Contents

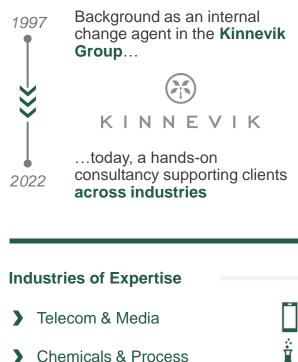
Executive Summary

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

About Applied Value



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

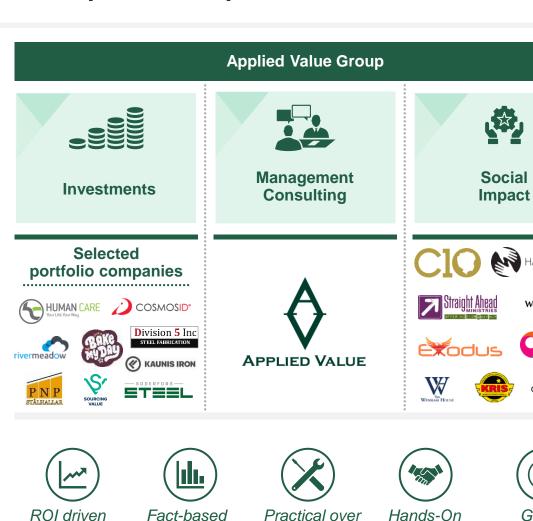


Industrials & Engineering

Consumer Goods

Automotive





theoretical



CODE FOR LIFE

Global

perspectives

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

Selected Clients

Applied Value Offices and Footprint





Stockholm Kungsgatan 2 PO Box 5047 111 43 Stockholm Sweden

Helsinki Bulevardi 6, 4th floor 00120, Helsinki Finland New York Empire State Building 350 Fifth Ave. New York, 10118 USA San Francisco Pier 35 1454 The Embarcadero, San Francisco, CA 94133, USA Miami Southeast Financial Ctr 200 S Biscayne Blvd, Miami, FL 33131, USA Istanbul Bebek Mah. Cevdet Paşa Cad. No:81 D:7 34342, Istanbul Turkey

Shanghai NA Plaza No. 518 Kunming Road, Shanghai, 200082 P.R. China





