

Global Thematic Note

5G Best Ideas

Global Telecom And Technology Picks For The 5G Era

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- **What's new:** Ahead of our first annual BCG & NSR 5G Conference on Thursday, November 21st (Agenda [HERE](#), Registration [HERE](#)), we are publishing details of our favorite stocks that play to the 5G theme across global technology and telecoms.
- **Top ways to invest in the 5G theme:** Our ideas range across the broader telecom world, encompassing suppliers, telcos and towercos:
 - In global technology, we remain on the sidelines for telecom equipment vendors as we believe increasing 5G spend will be offset by declining legacy spend. Our best ideas within technology infrastructure are smartphone radios, FPGAs and x86 CPUs.
 - In the US, **Dish** has the potential to upend the market with disruptive pricing, as a new 5G network will yield a cost structure far below that of existing US carriers; **Intelsat's** 5G spectrum holdings are woefully undervalued, and; while 5G will enable convergence between Fixed and Mobile networks, we think **Comcast, Charter** and **Altice** has far more to gain by entering wireless than they have to lose from greater competition in fixed.
 - In Europe, the additional capacity that 5G brings is enabling MVNOs to build out hybrid-MNO networks. This represents a substantial opportunity for **United Internet/ 1&1 Drillisch**.
 - And in Asia, **LG Uplus** is the prime beneficiary of 5G in the first “real” 5G market. **China Tower** should benefit from extreme 5G rollout, which will hurt **China Unicom**, while **KDDI** should benefit from 5G upside in Japan.
- **The 5G conference edge:** For each idea, we highlight the speakers and sessions at our conference that investors should focus on to challenge the assumptions that underpin our theses.

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New Street's Top Picks For Playing The 5G Theme*

Company	Ticker	Price Target	Upside	Analyst	Sector
Intelsat	I	\$34	458%	Vivek Stalam	US Communications
Dish	DISH	\$96	168%	Jonathan Chaplin	US Communications
Altice USA	ATUS	\$40	49%	Jonathan Chaplin	US Communications
China Tower	788:HK	HKD 2.4	45%	Chris Hoare	Asian Communications
United Internet	UTDI	€ 44	46%	James Ratzer	European Communications
KDDI	9433:JP	JPY 4,400	39%	Chris Hoare	Asian Communications
LG Uplus	32640:KS	KRW 18,200	30%	Alastair Jones	Asian Communications
Intel	INTC	\$75	29%	Pierre Ferragu	Technology Infrastructure
Nokia	NOKIA	€ 4	22%	Pierre Ferragu	Technology Infrastructure
Comcast	CMCSA	\$53	18%	Jonathan Chaplin	US Communications
Charter	CHTR	\$540	13%	Jonathan Chaplin	US Communications
Ericsson	ERIC	SEK 95	8%	Pierre Ferragu	Technology Infrastructure
Broadcom	AVGO	\$335	5%	Pierre Ferragu	Technology Infrastructure
China Unicom	762:HK	HKD 6.8	-8%	Chris Hoare	Asian Communications

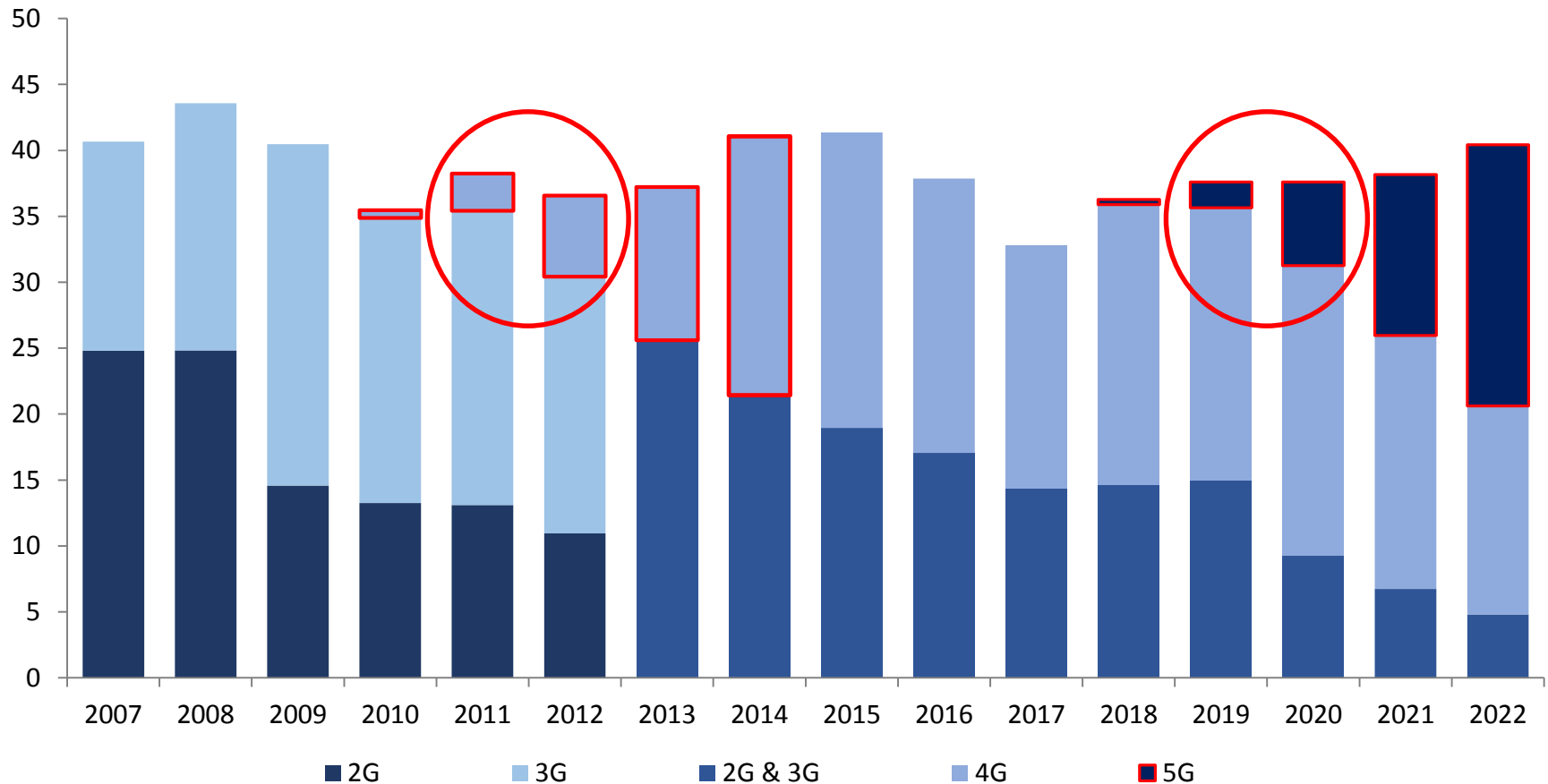
*See slide 6 for further 5G ideas of stocks not covered by the NSR team.

Global Technology

Telecom Equipment: slow start in 2020 as 5G growth is offset by 4G decline

The 5G spending cycle will be similar to 4G: slow start in the year the previous generation goes to the back burner

Mobile RAN equipment spending across technology shifts (US\$bn)

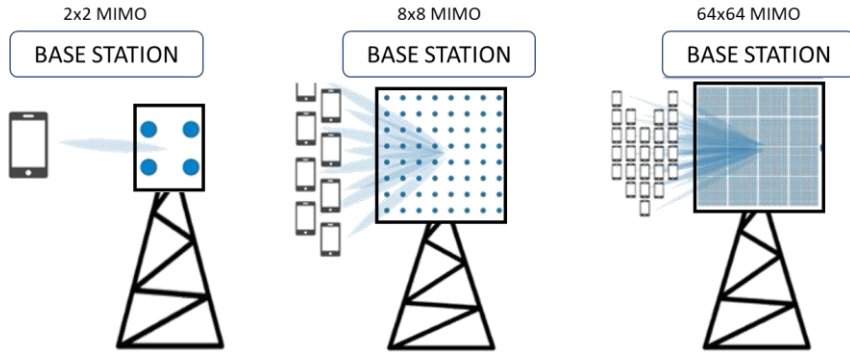


Source: IHS, Group650, Gartner, and NSR estimates and analysis.

Semiconductors are the best way to play 5G with increasing content

Massive MIMO increases semi content in 5G infrastructure

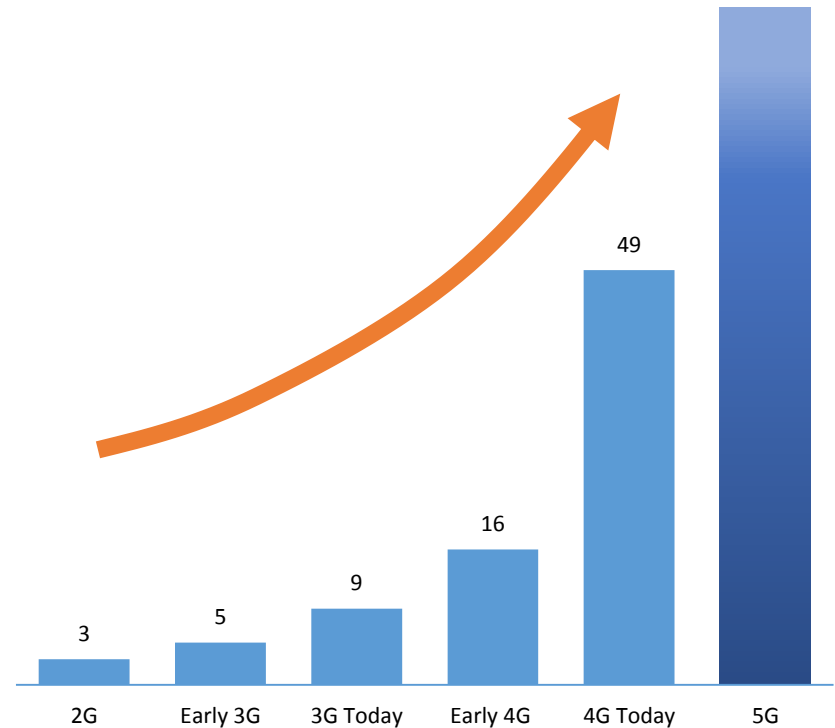
Massive MIMO concept



- The principle of massive MIMO is to pack multiple arrays into one antenna with each array handling its own communications.
- The semiconductor content of a massive MIMO base station increases significantly as each array requires its own RF signal chain (filter, amplifier, etc), i.e. moving from 8x8 MIMO to 64x64 MIMO increases content by 8x.
- Additionally, interference management between arrays (beam forming) is complex and requires more real-time processing power, usually delivered by FPGAs.

5G results in increasing filtering requirements in smartphones

Number of filters required in a smartphone



Source: Resonant and NSR analysis.

Implications for investors: How to play 5G across tech infrastructure

Company	Exposure to 5G		Valuation ¹				
	Description	Exposure (%)	EV/Sales	P/E	EV/EBIT	8-year EV/EBIT avg.	EV/EBIT vs. 8-year avg.
NSR Coverage							
Broadcom (AVGO)	Increased RF content in smartphones. Exposed to high-end (Apple, Samsung only).		6.8x	13.4x	12.9x	11.3x	1.1x
Intel (INTC)	CPUs - Increasing adoption of telco cloud servers. Baseband - Increase content in iPhones post 2020		3.8x	12.4x	11.9x	9.7x	1.2x
Ericsson (ERIC)	Networking Equipment - Increase in 5G Telco Capex. Offset by declining 4G capex		1.2x	16.6x	10.5x	10.4x	1.0x
Nokia (NOKIA)	Networking Equipment - Increase in 5G Telco Capex. Offset by declining 4G capex		0.8x	12.2x	8.1x	10.5x	0.8x
Other Companies							
NXP Semi (NXPI)	Increasing power & frequency requirements driving industry towards GaN. #1 RF power market share		4.2x	14.0x	13.6x	12.0x	1.1x
Qualcomm (QCOM)	Baseband & RF - Increasing content in 5G devices		4.2x	14.8x	13.7x	11.4x	1.2x
Qorvo (QRVO)	Adoption of GaN power amplifiers in infrastructure. Increasing RF complexity in devices and infrastructure		3.8x	15.8x	14.5x	9.5x	1.5x
Wolfspeed (CREE ²)	Adoption of GaN power amplifiers in telco infrastructure. #2 Market share in GaN RF power		4.2x	101.0x	-130.6x	141.5x	-0.9x
Xilinx (XLNX)	Increasing complexity of 5G driving more compute in radio and servers. FPGAs used to accelerate compute		6.4x	25.9x	22.7x	16.1x	1.4x
Analog Devices (ADI)	#1 RF semiconductor supplier. Increasing complexity due to mMIMO and mmWave driving increased content		7.8x	21.4x	19.2x	13.2x	1.5x
Skyworks (SWKS)	Mainly exposed to increasing content in devices. Although lacking high-frequency BAW filtering		4.3x	13.4x	12.0x	9.9x	1.2x
MediaTek (2454-TW)	#2 supplier of baseband chips. 5G baseband arriving in 2020.		1.8x	20.5x	15.4x	12.0x	1.3x
Marvell (MRVL)	Broad portfolio of baseband processors, embedded processors, ethernet switches. Expanding telco applications. Claims content up ~4x in 5G vs 4G.		6.2x	24.0x	23.1x	9.9x	2.3x

Source: Corporate reports, Gartner, FactSet and NSR estimates and analysis.

¹ – One year forward multiples.

² – Cree currently operates at approximately flat operating margins, explaining the high current multiples.

Global Telcos

How to Play 5G Across Global Telecoms

Company	Description	Share Price	Target	Upside	2020 Valuation				
					Market Cap (mn.)	EV (mn.)	EV / EBITDA	P / E	P / FCF
Intelsat	Owns 45% of C-Band, which could fetch \$50BN to US carriers at auction in 2020.	\$6	\$34	458%	\$987	\$7,526	5.3x	-1.1x	-10.2x
Dish	Deploying a brand new 5G network that will deliver unit costs that are just 25% of the biggest incumbent carriers.	\$36	\$96	168%	\$19,739	\$29,220	11.8x	12.0x	15.7x
Altice USA	Wireless and Fixed industries are converging; however, the market that Cable is attacking is twice the size of the one they are defending. Cable also have a timing advantage, as it will be quicker and cheaper for Cable to add 5G spectrum to their infrastructure than it will be for mobile carriers to densify their networks with fiber.	\$27	\$40	49%	\$17,067	\$39,880	8.5x	18.7x	13.7x
Comcast		\$45	\$53	18%	\$207,197	\$292,903	7.9x	12.7x	11.7x
Charter		\$479	\$540	13%	\$118,092	\$188,845	10.2x	35.7x	18.2x
United Internet	Acquired EUR1.1BN of 5G spectrum this year that could dramatically lower its cost structure.	€ 30	€ 44	46%	\$6,255	\$8,957	6.6x	6.7x	5.1x
LG Uplus	5G has commanded a 20% ARPU increase in South Korea and LG is the most geared telco to 5G subscribers.	KRW 14,000	KRW 18,200	30%	KRW 6,090,570	KRW 10,266,691	3.5x	12.1x	27.5x
KDDI	Intends to charge a ¥1,000-1,500 premium for 5G, driving meaningful increase in revenues next year.	JPY 3,167	JPY 4,400	39%	JPY 7,314,712	JPY 7,237,871	4.1x	11.7x	9.9x
China Tower	As a key beneficiary of Chinese mobile capex, revenue growth will accelerate next year as 5G capex begins.	HKD 1.7	HKD 2.4	45%	HKD 257,982.5	HKD 313,922.2	5.2x	14.3x	12.4x
China Unicom	Chinese telecoms are planning to deploy 5G aggressively; however, the deployment will drive significantly higher costs that are not reflected in Consensus estimates.	HKD 7.4	HKD 6.8	-8%	HKD 193,428.2	HKD 144,125.3	1.5x	14.0x	29.2x

Dish: The Ultimate 5G Disruptor

Thesis: Dish will deploy a brand new 5G network that will deliver unit costs that are just 25% of the biggest incumbent carriers. This will enable Dish to offer prices that are well below current market prices, and possibly well below some current carrier's cost. This could pave the way for dramatic disruption of the world's richest wireless market.

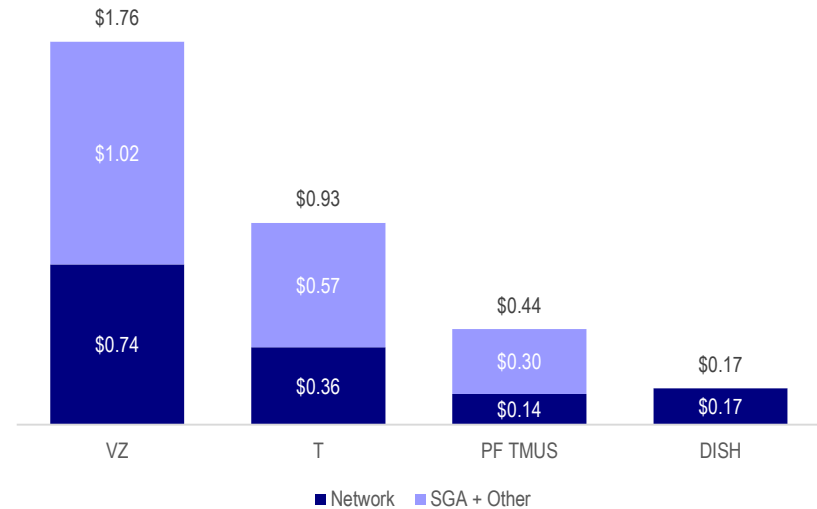
The 5G Angle: Dish will have three advantages over their competitors. First, they will deploy all their spectrum using 5G, ensuring that the spectrum is optimally used. The other carriers have scarce capacity deployed across 2G, 3G, 4G, with only a small part of their best spectrum available for 5G. This gives Dish more capacity per unit of spectrum (they have the same amount of spectrum as T-Mobile and Verizon). Second, Dish will have a single network technology to support compared to competitors with 2G networks, 3G networks, 4G networks and 5G networks. This results in lower fixed costs. Third, advances with 5G and the fact that Dish is deploying a greenfield network will allow them to virtualize their network driving fixed costs down further.

Leveraging the NSR 5G conference: There are a number of equipment vendors that have a role in virtualized network deployments in other markets and may well be part of Dish's network build. These include AltioStar (A New Architecture for 5G at 1:40) and Airspan (Last Mile Innovations at 10:55).

Relevant research: DISH: Putting It All Together; Valuing the Operating Assets ([LINK](#)). DISH: The Grand Unified Theory ([LINK](#)). 5G Virtualization: Rakuten Case Study ([LINK](#)).

Fully-loaded Cost Per GB at 100% Utilization

\$/GB, 2029



Intelsat: Spectrum Dealer In A Market Hooked On Spectrum

Thesis: A group of satellite companies that includes Intelsat (collectively the CBA) is sitting on 500MHz of prime 5G spectrum. They are exploring ways to sell 280MHz of the spectrum to wireless carriers. We think the auction could fetch \$50BN. CBA's share of the proceeds is in question; however, even if they only receive 25%, Intelsat stock could double.

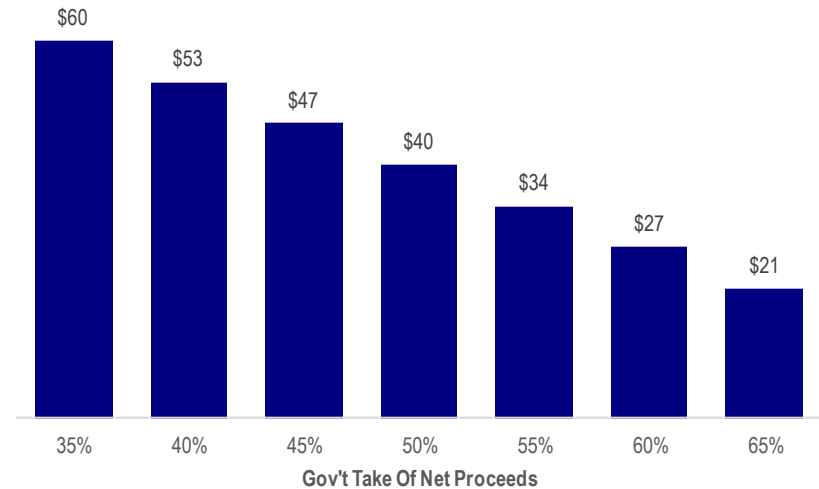
The 5G Angle: Spectrum in the 3.5GHz range is ideal for 5G deployments because the frequencies are high enough that they allow for massive-MIMO and beamforming and low enough that they still penetrate buildings. The US will be late among developed markets to hold an auction for spectrum in the C-Band, and 280 MHz is small compared to the amount of C-Band that will have been auctioned globally by the time it is deployed in the US. Spectrum constraints in the richest wireless market on the planet should ensure a high price.

Leveraging the NSR 5G conference: This spectrum has been deployed in South Korea by LG Uplus (State of 5G at 9:00). Participants on the spectrum and regulatory panel will be able to speak to the demand for C-Band in the US as well as the difficult regulatory process ahead for the CBA (Spectrum - Lifeblood for 5G at 11:30). Verizon will not doubt speak to the importance of C-Band (Fireside Chat: 5G In the US at 8:15).

Relevant research: Resolution Closer, But Expect More Volatility As Public Negotiations Continue ([LINK](#)). Initiation: Investors Are Underestimating Demand For C-Band ([LINK](#)).

Intelsat Equity Value, Sensitized To Gov't Cut Of Net Proceeds

\$/share; assumes \$50BN in gross auction proceeds



Cable: 5G Is An Opportunity (Not A Threat)

Thesis: Investors worry that wireless carriers will use the increase in capacity and speed that will come with 5G to enter the home broadband market. They will, and they will upset the cozy duopoly that cable companies enjoy in much of the country today. Investors tend to overlook the far bigger opportunity for Cable companies to attack the mobile market.

The mobile market is double the size of the home broadband market. Moreover, Cable companies have a strong head start (they are adding wireless subscribers at a pace of close to 2MM annually today and this could be 3MM in a year). The Cable companies also have an asset advantage: it will be quicker and cheaper for them to add spectrum to their fixed infrastructure than it will be for mobile carriers to deploy fiber beneath their wireless networks. Cable has far more to gain from this convergence than they have to lose.

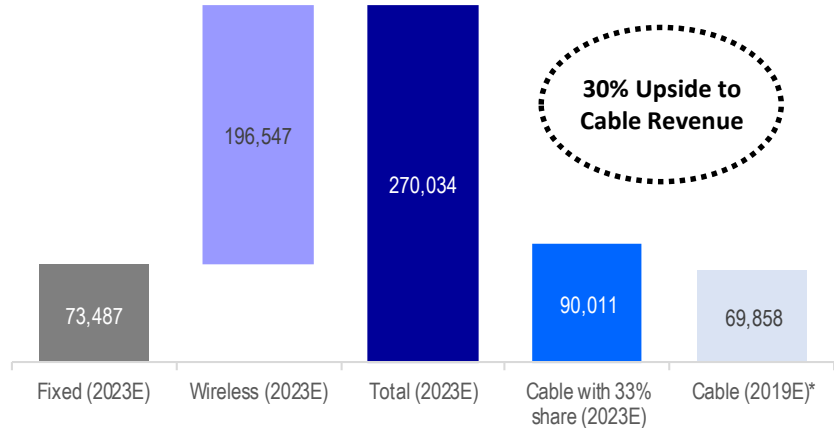
The 5G Angle: 5G will break down barriers to entry that have protected pricing in both the fixed and mobile markets. In fixed, 5G will increase the useable spectrum and increase the speeds that can be delivered over spectrum, making wireless broadband a viable alternative to fixed broadband. In mobile, the same increase in available spectrum will give the Cable industry the means to enter the mobile market with disruptive economics.

Leveraging the NSR 5G conference: Charter will be discussing the wireless opportunity on a panel with Starry, who is using spectrum to go after the home broadband market (5G Convergence and New Wireless Opportunities at 3:30). Federated Wireless, on the same panel, will be able to speak to the viability of Cable companies using 3.5GHz spectrum to offer a mobile service. Verizon will be discussing their future ambitions in home broadband using 5G also (5G in the US at 8:15).

Relevant research: Disruptive Wireless Pricing Should Drive Strong Demand ([LINK](#)), Cable’s Wireless Ambitions...One Step Closer ([LINK](#)), Cable’s Wireless Economics: A Deeper Dive ([LINK](#)).

Revenue Opportunity For Cable

\$ in millions



United Internet/ 1&1 Drillisch: 5G offers transition to hybrid-MNO

Thesis: In Europe, the additional capacity that has come with 5G has provided MVNO operators a route to transition to hybrid-MNO networks. MVNO operators are able to acquire high-capacity spectrum at auction and build out mobile networks in urban areas, making an upfront capex investment to reduce ongoing wholesale roaming opex. These operators continue to rely on roaming for coverage in less-dense areas. Germany's United Internet/ 1&1 Drillisch is a primary example of this transition. United Internet/ 1&1 Drillisch has historically operated as an MVNO on Telefonica Deutschland's network, but acquired €1.1bn of spectrum in this year's 5G auction (primarily at 3.5GHz; Europe's 5G band). We estimate that the transition to hybrid-MNO could be significantly value-accretive for United Internet/ 1&1 Drillisch, even if it deploys its network without cooperation from the incumbent MNOs. The possibility of passive and active network sharing with the incumbent MNOs, represents a means to reduce the cost of deployment and increase the NPV of the transition.

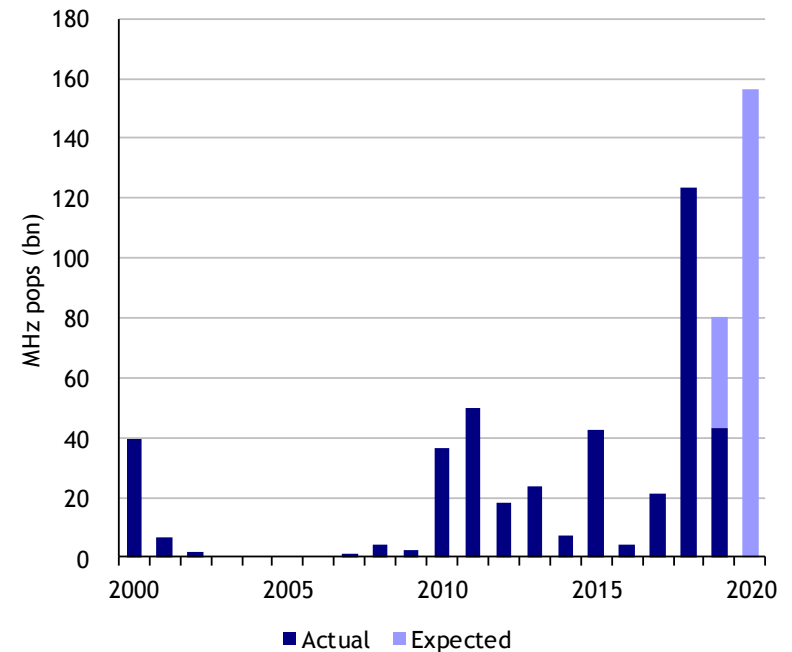
The 5G angle: In Europe, 5G brings with it access to large quantities of previously unused mid-band spectrum at relatively low prices. The propagation characteristic of this spectrum and new beam-forming techniques (e.g. MassiveMIMO) enable allow for thorough urban coverage on pre-existing network grids. This new spectrum has provided MVNO operators with a cos-effective route to transitioning to become an MNO.

Leveraging the NSR 5G conference: We are holding a panel discussion on the importance of spectrum to 5G, including the relative sparsity of mid-band spectrum in the US (Spectrum - Lifeblood for 5G, 11:30am).

Relevant research:

- UI/DRI loses price dispute with O2D, Oct 2019 ([LINK](#)),
- German challengers oversold, Sep 2019 ([LINK](#)),
- UI/DR hybrid MNO transition now base case, Nov 2018 ([LINK](#)).

W. Europe spectrum issuance over time



LG Uplus: Earliest beneficiary from first mass-market launch

Thesis: South Korea is probably the country with the most advanced 5G service offering globally. The operators are looking to have 80%+ population coverage by the end of 2019. Having already surprised the market with the scale of capex spend, the operators are now recovering this cost by pricing 5G at a 20% premium to similar 4G offerings. This has not dampened enthusiasm with 10% of subscribers expected to be signed up to 5G packages by the end of 2019 and ~30% of subscribers by the end of 2020.

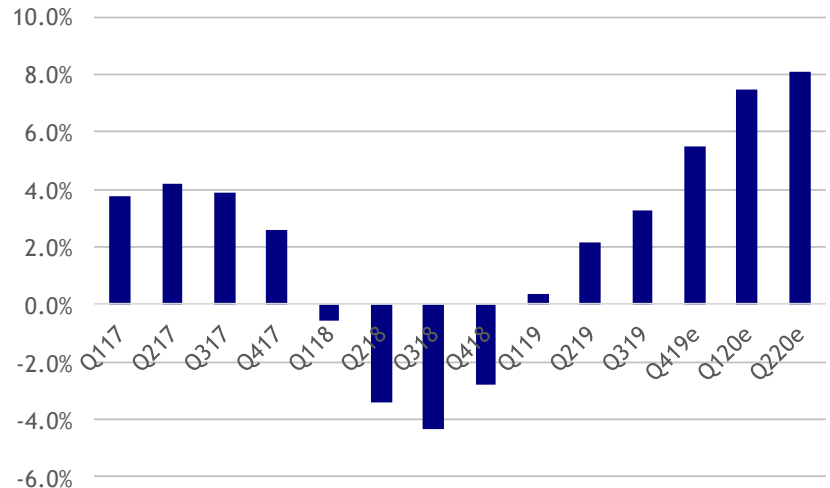
The 5G Angle: We see LG Uplus as the best way to play the 5G theme in Korea. Firstly, we have seen a rapid uptake in 5G despite the 20% ARPU premium as consumers are willing to pay for considerably higher speeds (1GBps+) with usage rising by ~50% compared to unlimited 4G usage. This is not the first time Korea has been through a similar transition. In the move to 4G (from 3G), tariffs were priced at a premium and revenue growth accelerated to high single digits. LG is the most geared into the mobile sector in Korea and is attracting a higher share of 5G subscribers relative to its overall market share given its exposure to early adopters. As a result we expect LG to report superior top-line growth and our numbers suggest growth reaches >8% by mid-2020 from +3% currently.

Leveraging the NSR 5G conference: The best way to further explore this theme is to attend Session 1 with Sangmin Lee, the CTO and Head of 5G services at LG Uplus (9am). Mr Lee will be able to provide context around the 5G deployment in Korea and what services are driving such high demand.

Relevant research: LG Uplus upgrade on 5G potential ([LINK](#)) puts all the facts together. A separate note ([LINK](#)) summarises the latest newsflow following the Q319 results and why our positive thesis remains relevant. This upgrade follows our recent visit to South Korea which we summarise in a separate note ([LINK](#)). Also, Traffic stats in Korea confirm 5G is driving incremental demand ([LINK](#)).

Mobile service revenue growth likely to accelerate with 5G launch

% y/y growth



KDDI - 5G likely to drive growth acceleration

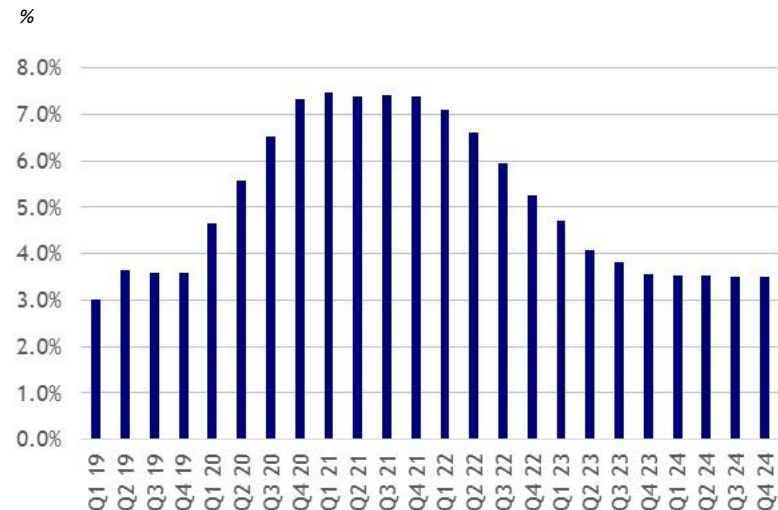
Thesis: KDDI is our top pick among the Japanese mobile operators which we think are likely to benefit from 5G roll out. We see Rakuten as providing pressure in the medium term, but in the short term Rakuten is a positive to KDDI because of roaming revenues. We see the potential for growth to continue to surprise to the upside driven by 5G and IoT and remain Buyers.

The 5G Angle: Many investors are concerned about the impact that Rakuten will have on the overall mobile industries' growth rate, but are ignoring the potential benefit from 5G. Japanese operators intend to charge a ¥1,000-1,500 premium for 5G. Experience in Korea suggests "real" 5G can sustain this in an Asian context. We therefore see revenues increasing not decreasing next year (see chart which is based on plausible assumptions for customer losses to Rakuten, offset by roaming revenues and 5G).

Leveraging the NSR 5G conference: LG Uplus's CTO & Head of 5G will be discussing the Korean experience in a roundtable (State of 5G at 9:00). AltioStar will be discussing the potential disruption they intend to bring to Japan through 5G (A New Architecture for 5G at 1:00). The panel discussion on Beyond 5G - Future 5G Use Cases and Opportunities (4:15) should also throw light on the longer term Japanese 5G opportunity.

Relevant research: KDDI, Growth Surprising ([LINK](#)), Japanese Mobile: 5G could see growth improve despite Rakuten ([LINK](#)), Japanese Telcos: Feedback from company visits, generally positive ([LINK](#)), Japanese Mobile: the big picture - why we are bullish and expect the rally to continue ([LINK](#)), Greenfield 5G: Rakuten update/launch delayed, revisiting our Japan telco long thesis ([LINK](#)), Japanese Telcos; Mobile Survey: Overall risk lower, DCM most exposed, Softbank least ([LINK](#))

Implied Personal Mobile Service Revenue Growth



China Tower - 5G mobile capex set to surprise to the upside

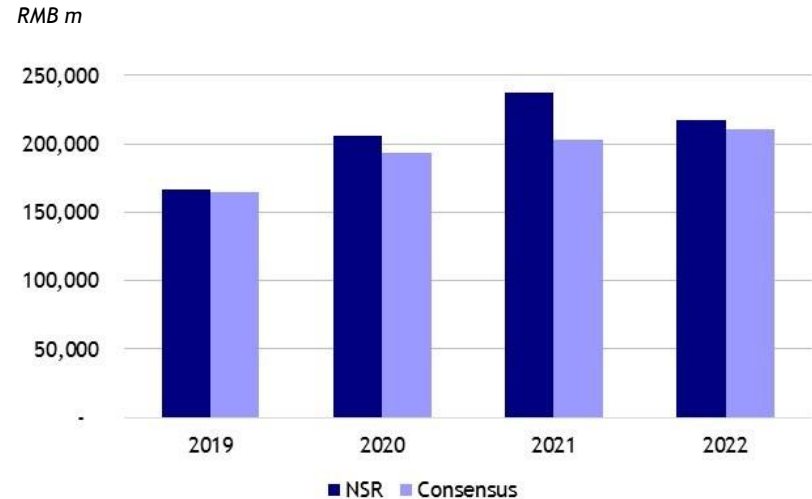
Thesis: Our view is that China is heading towards an extreme 5G rollout, because of the multiple benefits that 5G will deliver to the wider Chinese economy through helping Huawei, promoting related industries (smart cities/autonomous driving), and boosting the economy. MNO guidance remains that capex will be demand-lead and implies relatively modest growth in capex next year. However, this is exactly what the Korean operators were saying prior to their 5G launch and have subsequently increased capex guidance by 40-60% as demand has been ahead of expectations. We expect a similar trajectory in China.

The 5G Angle: China is headed towards an extreme 5G roll. 5G tariffs are cheap, implying rapid adoption. As 5G capex starts in earnest next year, we expect revenue growth for China Tower to accelerate. China Tower is the key beneficiary of Chinese mobile capex.

Leveraging the NSR 5G conference: LG UPlus's CTO & Head of 5G will be discussing the Korean experience in a roundtable (State of 5G at 9:00), which we see as a good analogy for what is likely to happen to Chinese 5G capex. The panel discussion: Infrastructure at the Edge: Where does Data live in a 5G World (2:15) should also throw light on the towers model in a 5G world.

Relevant research: Chinese Telcos - Korean analogy suggests capex to surprise higher ([LINK](#)). China 5G tariffs are cheap, expect rapid adoption ([LINK](#)). Chinese Telcos - Smoke and Mirrors - updated 5G capex ([LINK](#)). Chinese Telcos - feedback from company visits ([LINK](#)). Chinese telcos, 5G licences issued early, don't expect a capex holiday ([LINK](#)). Huawei on the entity list is a lose/lose ([LINK](#)). Chinese Telcos - Modelling an extreme 5G roll ([LINK](#)). China Tower Corporation: Pre-IPO valuation, updated thoughts including Q1/H1 financials ([LINK](#)). Explosive Chinese 5G shipments, favours Towers ([LINK](#)).

China Mobile Capex vs consensus



China Unicom - likely to struggle in the 5G era

Thesis: As above, our view is that China is heading towards an extreme 5G roll. China Unicom and China Telecom are building a single 5G network, but this is in response to being required to shoulder a higher share of the overall burden (50% of total) relative to the past. China Unicom is already under pressure on mobile, with revenues falling 5% in Q3. Cheap 5G tariffs suggest revenue pressure continues. 5G cost increases are likely to be intense, with tower rental fees, depreciation and interest all putting pressure on the bottom line. Yet the market expects net income to almost double in coming years. By contrast we think net income will start to fall. China Unicom is a key short in the 5G era, and we rate the stock Reduce, pt HK \$ 6.8.

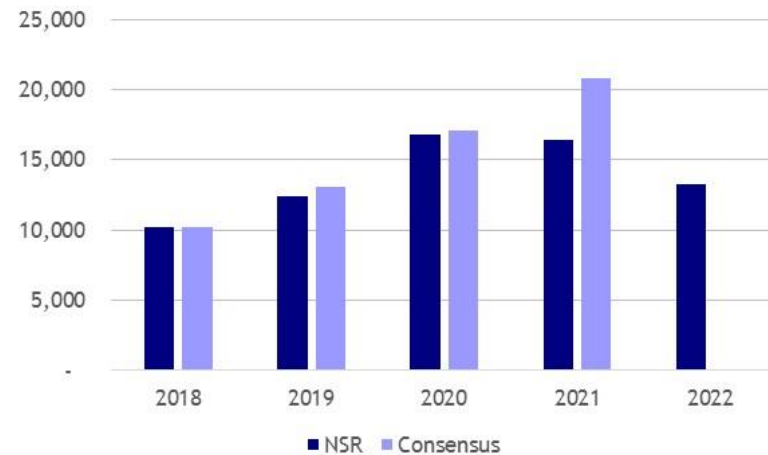
The 5G Angle: China is headed towards an extreme 5G roll. 5G tariffs are cheap, implying rapid adoption. 5G will put substantial pressure on CU's profitability which is not reflected in consensus forecasts.

Leveraging the NSR 5G conference: LG UPlus's CTO & Head of 5G will be discussing the Korean experience in a roundtable (State of 5G at 9:00), which we see as a good analogy for what is likely to happen to Chinese 5G capex.

Relevant research: Chinese Telcos - Korean analogy suggests capex to surprise higher ([LINK](#)). China 5G tariffs are cheap, expect rapid adoption ([LINK](#)). China Unicom: Squeezed by 5G downgrade to Reduce ([LINK](#)). Chinese Telcos - Smoke and Mirrors - updated 5G capex ([LINK](#)). China Unicom - False Rally, cut to Neutral ([LINK](#)). Chinese Telcos - feedback from company visits ([LINK](#)). Chinese telcos, 5G licences issued early, don't expect a capex holiday ([LINK](#)). Huawei on the entity list is a lose/lose ([LINK](#)). Chinese Telcos - Modelling an extreme 5G roll ([LINK](#)). Explosive Chinese 5G shipments, favours Towers ([LINK](#)).

China Unicom NSR net profit vs consensus

RMB m



NYC Conference - 5G & The Next Wave of Telecom Infrastructure

New Street Research and Boston Consulting Group will be hosting our first annual '5G & the Next Wave of Telecom Infrastructure' conference, this Thursday, November 21st, 2019, in NYC, at the InterContinental New York Times Square. We look forward to seeing you on Thursday!

Links:

- Detailed agenda: [HERE](#)
- Registration: [HERE](#)
- Conference website: [HERE](#)

When: Thursday, November 21st, 2019

Where: The InterContinental, 300 W 44th St, New York, NY 10036

Confirmed speakers/Corporate attendee list:

VERIZON, Frank Boulben, SVP Marketing
AT&T, Hank Hultquist, VP Federal Regulatory
AMERICAN TOWER, Ed Knapp, CTO
CHARTER COMMUNICATIONS, Craig Cowden, SVP Wireless Technology
INTEL, Caroline Chan, VP, Data Center Group, GM Network Business Incubator Division
QUALCOMM, Alejandro Holcman, SVP Engineering
ALTIOSTAR, Thierry Maupilé, EVP Chief Strategy
RED HAT, Chris Wright, CTO
DIGITAL BRIDGE, Marc Ganzi, CEO
STARRY, Alex Moulle-Berteaux, COO
FEDERATED WIRELESS, Iyad Tarazi, CEO
AIRSPAN, Eric Stonestrom, CEO
VAPOR IO, Alex Marcham, Technical Marketing Manager

PACKET, Zac Smith, CEO
LG UPLUS, Sangmin Lee, CTO and Head of Future Convergence
MAGIC LEAP, Rebecca Barkin, VP Experience
HATCH ENTERTAINMENT, Nick Thomas, VP Commercial Partnerships
ALTAEROS, Ben Glass, CEO
II-VI, Mary Jane Raymond, CFO
PIVOTAL COMMWARE, Brian Deutsch, CEO
RS ACCESS, Noah Campbell, CEO
WILEY REIN, Katy M. Ross, Partner

Disclosures

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