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J.P.Morgan

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Rod Hall's Daily Download

CIEN converts tender, MediaTek EPS, NEG raises FY guidance, HLIT EPS and more…

- **Apple FQ3'17 Preview: Updating Forecasts for Slower OLED Production Start, *Rod Hall, CFA*.** With this quarterly preview (report published on July 19) we are reducing our iPhone Pro volume expectation to reflect data points we have been picking up since late May related to a slower production start for the flagship OLED phone. These data points have long been known by the market, in our opinion, so we believe these model changes are already largely reflected by Apple's stock and the supply chain. Click here for the report.
- **Ciena Announces that 82.5% 2018 Converts were Tendered (CIEN: Positive):** Ciena announced the final results of its offer to exchange its currently outstanding 3.75% Convertible Senior Notes due 2018 for a new series of 3.75% Convertible Senior Notes due 2018 and an exchange fee of $2.50 per $1,000 original principal amount, to provide Ciena with cash settlement options upon any conversion election by the holders. The exchange offer expired on Friday. An aggregate principal amount of $288.7m at maturity of the old notes, representing ~82.5% of the old Notes, were validly tendered for exchange and not withdrawn. (Ciena) ***Our View:*** *In the prospectus filed on Friday (7/28), the company mentioned that it has not made a determination that it will use the treasury stock method to account for these modified converts. However, we note that if the company decides to use the Treasury method it will help reduce dilution from the converts and boost estimated EPS looking forward by around 6% for the consensus on our calcs. In our opinion, this is a shareholder friendly move on Ciena's part that shows not only confidence in their business but also a willingness to return cash to shareholders.*
- **MediaTek: Smartphone Margins on the Mend; Product Mix Getting Better; Raise PT to NT$340, *Gokul Hariharan*.** Click here for the report.
- **Nippon Electric Glass: Full-Year Guidance Raised; Risk-Reward Remains Favourable, *Narci Chang* (GLW: Neutral Impact).** Click here for the report.
- **Harmonic Reports Weak G (Cable Equipment: Neutral Impact):** Harmonic reported Q2 revenue of $82m (-25% Y/Y), beating consensus by 2%. Bookings fell 22% Y/Y to $91m. Service Provider revenues at $46m declined 30% Y/Y, while Broadcast and Media revenues at $36m declined 19% Y/Y. The company guided for Q3 revenue of $85m at the midpoint missing consensus by 12%, and for Q4 revenue of $95m at the midpoint missing consensus by 16%. (Harmonic)
- **Charter/Sprint: Some Thoughts on Headlines about Cable and Sprint, *Philip Cusick, CFA*.** Click here for the report.

Table 2: Coverage Universe: Multiples and Performance

Company	Rec	Current Price	EV/Sales CY18E	P/E CY18E	Absolute Perf. QTD	Absolute Perf. YTD
AAPL	OW	$148.73	2.1x	10.5x	3%	28%
ADTN	OW	$23.45	1.2x	20.8x	14%	5%
ANET	N	$149.29	5.7x	31.2x	(0%)	54%
ATEN	OW	$7.07	1.7x	NM	(16%)	(15%)
BDC	N	$71.94	1.6x	12.9x	(5%)	(4%)
BRCD	N	$12.63	2.2x	17.6x	0%	1%
CIEN	OW	$25.75	1.2x	10.8x	3%	5%
COMM	OW	$36.78	2.2x	11.9x	(3%)	(1%)
CSCO	N	$31.45	2.5x	12.5x	0%	4%
ERIC	N	SEK 52.45	0.7x	20.1x	(13%)	(2%)
FFIV	N	$120.75	2.9x	12.9x	(5%)	(17%)
GLW	N	$29.14	2.5x	15.1x	(3%)	20%
HPQ	N	$19.10	0.7x	10.6x	9%	29%
HPE	NR	$17.51	1.2x	13.5x	6%	1%
INFN	N	$11.73	1.7x	NM	10%	38%
JNPR	OW	$27.95	1.8x	11.6x	0%	(1%)
LITE	OW	$62.60	2.2x	13.2x	10%	62%
MSI	N	$90.68	2.9x	16.4x	5%	9%
NOK	OW	€ 5.38	1.1x	16.6x	2%	19%
NTAP	N	$43.42	1.6x	13.3x	8%	23%
PSTG	N	$12.07	1.5x	NM	(6%)	7%
QCOM	OW	$53.19	3.0x	21.9x	(4%)	(18%)
STX	N	$32.96	1.2x	7.2x	(15%)	(14%)
VIAV	OW	$10.97	2.4x	20.0x	4%	34%
WDC	OW	$85.12	1.4x	6.3x	(4%)	25%

Source: J.P. Morgan estimates, Bloomberg, Priced as of July 31, 2017

Telecom & Networking Equipment/IT Hardware

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Upcoming events

01 August
- **AAPL:** *Earnings*

02 August
- **BDC:** *Earnings*

Table 1: One-Day Index Performance

	Index	1 day
DJ Stoxx 600	379	0.3%
S&P 500	2470	(0.1%)
Nasdaq Comp	6348	(0.4%)
DJ Tech	418	(0.1%)
DJ Telco	297	0.1%

Source: Bloomberg. Priced at close on July 31, 2017

Overnight News

Qualcomm CEO Says Apple Lawsuit will Likely be Settled Out of Court: In an interview, Qualcomm CEO Steve Mollenkopf says it's the uniqueness of the company's business model that has drawn such international scrutiny. "It's unique so it's easy to attack," Qualcomm Mollenkopf told CNBC's Squawk on the Street Monday. "It just takes a while to go legally and defend yourself. But it's worth doing. It's very valuable to our shareholders." Qualcomm's business is divided into two main revenue streams: Chips and licensing. The two business, he says, have to stand on their own. He reportedly said a solution to its lawsuit with Apple will likely be settled out of court. (CNBC)

Apple Says It is Removing VPN Services from China App Store: Apple says it is removing virtual private network (VPN) services from its app store in China, drawing criticism from VPN service providers, who accuse the company of bowing to pressure from Beijing cyber regulators. VPNs allow users to bypass China's so-called "Great Firewall" aimed at restricting access to overseas sites. In January, Beijing passed laws seeking to ban all VPNs that are not approved by state regulators. Approved VPNs must use state network infrastructure. In a statement on Sunday, an Apple spokeswoman reportedly confirmed it will remove apps that don't comply with the law from its China App Store, including services based outside the country. Beijing has shut down dozens of China-based providers and it has been targeting overseas services as it bids to tighten its control over the internet, especially ahead of the Communist Party congress in August. (Reuters)

MSI Files Proceedings in Australia against Hytera: Motorola Solutions announced that it has commenced patent infringement proceedings against Hytera in the Federal Court of Australia by filing an Originating Application and Statement of Claim. This legal action follows the patent infringement and trade secret misappropriation complaints filed by MSI against Hytera in the U.S. District Court for the Northern District of Illinois; the patent infringement complaint filed with the U.S. ITC; and the patent infringement complaints filed in Germany. The Statement of Claim filed on July 31 asserts that certain Hytera digital mobile radios offered in Australia infringe three of MSI's Australian patents. MSI seeks a declaration from the Court that Hytera has infringed MSI's patents and an order permanently restraining Hytera from continued infringement, as well as damages and additional relief. (Motorola Solutions)

Russia Passes Law to Ban VPNs: Russia has banned VPNs and other technology that allows users to gain anonymous access to websites. The new law, signed by President Vladimir Putin, goes into effect on Nov. 1 and represents another major blow to an open Internet. (TechCrunch)

Apple Fails to End Lawsuit Claiming It 'Broke' FaceTime: Apple has failed in its bid to dismiss a lawsuit claiming it disabled the popular FaceTime video conferencing feature on older iPhones to force users to upgrade. U.S. District Judge Lucy Koh ruled late on Friday that iPhone 4 and 4S users can pursue nationwide class action claims that Apple intentionally "broke" FaceTime to save money from routing calls through servers owned by Akamai Technologies. Apple began using Akamai's servers after losing a lawsuit in 2012 in which VirnetX Holding claimed that FaceTime technology infringed its patents. Testimony from a 2016 retrial in that case showed that Apple paid Akamai $50m in one six-month period. The plaintiffs said Apple eventually created a cheaper alternative for its iOS 7 operating system, and in April 2014 disabled FaceTime on iOS 6 and earlier systems. (Reuters)

BT Offers to Spend £600M on Rural Broadband: BT has offered to spend up to £600m ($787m) on extending 10Mbit/s services into rural parts of the UK as it looks to meet a government target of providing "universal" broadband connectivity and ward off regulation. The scheme would ensure that 99% of the UK population could receive a broadband service of at least 10 Mbit/s -- a level that meets the needs of a typical household, according to regulatory authority Ofcom. (LightReading)

ONF Continues its Work on Intent-Based Networking for ONOS: Amidst all the shuffling that's gone on between On.Lab, the Open Networking Foundation (ONF), and MEF, On.Lab is still doing intent-based work in relation to its ONOS controller. On.Lab is merging with the ONF. The two groups are already operating as one organization led by On.Lab Executive Director Guru Parulkar. The merged entity will retain the ONF name. (SDxCentral)

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Overnight Research

The following extracts are from recently published research. Please see the relevant research report and important disclosures, including a discussion of valuation and risks, for any security recommended herein before forming any investment opinion whatsoever. J.P. Morgan research is available at http://www.jpmorganmarkets.com, or you can contact the analyst named below.

US

Talend

Good Demand But Q2 Linearity Worth Monitoring; Winning vs. Legacy Competitors

(Analyst: Mark R Murphy)

We recently spoke with two key Talend partners to update our view of trends which will shape Talend's growth profile for the next 1-2 years. **Key highlights: (1) Overall Talend demand sustained, though Q2 linearity could be variable.** Broadly, partners comment that "the pipeline feels strong" and "1H demand has been really fantastic…"; however one contact believes Q2 "was a little under expectations" from lower conversions and that industry reps were in a "pinch in the final days of Q2 to close deals." However, the scope of this feedback is likely limited and could potentially be offset by pockets of strength elsewhere. Another also adds that free-to-paid conversion can be a hurdle for reps at times. **(2) AWS as the biggest threat to Talend in the LT.** As companies consolidate onto AWS, one partner says that the need for integration tools like Talend could be impacted: "…it can make a lot more sense to use whatever's available on AWS. That's the biggest risk to Talend's business model." He adds, "…but that said, there's always going to be disparate data sources out there, and a lot of need tends to come from established companies and not from tech savvy startups." **(3) Talend competing well vs. incumbents.** A contact notes that "I just don't see anything from clients who have wanted Informatica, nor customers who have wanted to switch back from Talend." He says that pricing (cheaper by 8-10x, per one partner) and the open source model have been "a big difference." **(4) Talend's high growth segment driven by Big Data.** In the last year, one partner observes clients "moving that way [towards Big Data] and supporting Hadoop and now with real time streaming." Conversely, partners say Talend's cloud offering is "really limited, and it makes sense for people just starting out. That's been changing in the past year though." We believe that Talend remains well-positioned to disrupt the traditional integration market driven by its user-based pricing model. In addition, favorable movement in the Euro and Pound should provide a tailwind for the P&L. For now, we believe these favorable dynamics are fairly reflected in the valuation at 8.1x EV/FTM recurring revenue, and that maintaining billings growth rates in the 40-60% range could become tougher in the coming quarters. Remain Neutral, raising PT to $34 to reflect higher peer group multiples.

- Maintain N rating and establishing CY178 PT of $34 (from $30) based on ~5x EV/CY18E rev.

Integrated Device Technology

June-Q Positive Surprise/In-Line Sept-Q Guide; On Track For FY18 Targets; New Product Traction Continues to Expand TAM

(Analyst: Harlan Sur)

IDT reported better than expected June-Q (F1Q) revenues/EPS on better-than-expected growth from memory interface and automotive/industrial products (excluding partial quarter of GigPeak which was in line with expectations). Gross and operating margins came in 20 bps better than expected and drove the $0.01 EPS beat. IDT guided Sept-Q revenues and EPS in-line with expectations on continued share gains and new timing/RF product ramps in its communication business and continued strength in datacenter (Skylake ramp), partially offset by seasonal declines in automotive/industrial and consumer segments. The company continues to gain new product traction and has expanded its market opportunity with the addition of multiple new automotive/industrial sensor products as well as its new RF millimeter wave solutions (RF TAM of $0.8-$1.0 billion, up from $0.4 billion previously.).While the company is unlikely to comment on its FY2018 targets every quarter, during the call the team did say they are on track to hit their FY2018 targets, with FY18 revenues of $830 million and expectations for non-GAAP gross margins of 62% and operating margins of 30% in FY2H18. We believe the company is seeing better revenue performance growth across all segments, and should achieve its targets based off current business growth and its new products pipeline. We are adjusting CY2018 estimates and are maintaining our Dec-17 price target of $31.

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- **Slightly better than expected June-Q results on memory interface and automotive/industrial growth.** IDT reported F1Q18 revenues of $196.7 million (including $15.1 million from GigPeak, in-line with guidance), above consensus estimates of $195.1 million and up 2.4% on higher sales of memory interface and automotive/industrial products. Non-GAAP gross margins expanded by 100 bps to 61.4%, slightly above consensus estimates of 61.2% on a more favorable product mix. Resulting adjusted EPS came in at $0.33, $0.01 above consensus estimates. All segments were up Q/Q, with communications (up 5% Q/Q), computing (up 17% Q/Q), and automotive (up 35% Q/Q) benefitting from the inclusion of GigPeak (computing ~60%, communications ~20%, industrial ~20%). Automotive and industrial was up Q/Q on new product ramps (notably sensors) and also benefited from GigPeak products (industrial controls, aviation, and aerospace). Communications continued to see RF and advanced timing products design win traction, while computing saw growth in its timing and memory interface business. Consumer was up 3% Q/Q on continued adoption for its wireless power products, which are expected to gain mainstream adoption in late CY2017 and into 2018.
- **Solid Sept-Q revenue on continued share gains from RF and advanced timing products and continued ramp of memory interface.** IDT guided for F2Q18 revenues of $201.0 million, slightly above consensus estimates of $199.8 million and including a full quarter of GigPeak. Sept-Q gross margins were guided to 61.3%, down 10 bps and below consensus estimates of 61.6%, and opex was guided to $71.8 million, and is expected to stay roughly flat in FY2H18. Resulting Sept-Q adjusted EPS is expected to be $0.34, in-line with consensus estimates. By business segment, computing is expected to be up 3% Q/Q, and is expected to see a strong FY2H18 on the continued ramp of Intel's Skylake processors. Communications is expected to grow 7% Q/Q as a result of IDT share gains and stronger sales from RF and advanced timing products. Consumer is expected to be down 6% Q/Q on normal seasonality in the wireless power business. Automotive and industrial is expected to be flat Q/Q on a temporary pause following multiple consecutive quarters of growth and normal summer seasonal trends, but is expected to resume growth with new product ramps expected to ship later in FY18.
- Continues to gain new product traction and expand market opportunity with millimeter wave RF products and automotive sensor products. IDT recently announced that it would be providing major customers with millimeter wave RF products before the end of CY2017. IDT's millimeter wave products are expected to expand its RF business from cellular frequencies of 6 GHz to mmwave frequencies of 28GHz and above, extending the business into millimeter wave satellite backhaul and military avionics/defense markets. Overall, IDT's RF TAM is expected to expand from $350-$400 million to a TAM of $0.8-$1 billion. IDT's automotive/industrial business continues to grow strongly on the back of its advanced sensors portfolio, with the company recently introducing contactless position sensors, flow sensors, and environmental sensors. The company's position sensors are expected to target automotive applications such as the interface of the brake and gas pedal or an application gauging the position of the steering wheel.
- **Adjusting CY2018 estimates; maintaining Dec-17 price target of $31.** We are adjusting our CY2018 estimates to revenues of $897.0 million from $898.7 million and maintaining our adjusted EPS of $1.83. Our Dec-17 price target of $31 is based on our semiconductor group multiple of 15.8x times our earnings power of $1.99 exiting FY2H19.

Twilio

Key Ecosystem Partner Illuminates CPaaS Market, Uber, and Whether "Multi-Sourcing" Is a Trend

(Analyst: Mark R Murphy)

We recently spoke with a key Twilio partner and also with Twilio management multiple times in late June to update our view of trends that will shape Twilio's growth profile for the next one to two years. **Our view is that shares can outperform as investors eventually move past the fixation on a few unusual customer relationships (Uber, WhatsApp, Airbnb) to refocus on the healthy growth trajectory of the core diversified business across the other 40K+ customers in a very large market.** Key highlights: 1) **Uber multi-sourcing situation unusual and not representative of broader customer base.** The partner stated that the concept of multi-sourcing "is too much of an undertaking and none of these companies are at a stage where that needs to happen." He notes that to multi-source, a company would need "relationships with ~500 different [telco] companies and monitoring systems for each of those countries"—an enormous undertaking, particularly when "you cannot just say 'I'm moving to live trading' and determine quality and delivery very easily." Bottom line, we do not see the Uber type of concentration risk happening again, and we view the reduction in customer concentration as a long-term positive for Twilio. 2) **80-90% of companies focus on quality (i.e., Twilio) rather than pricing (i.e.,**

competitors). For a long time, the partner firm has advised prospects that if they want quality they should go with Twilio, whereas if they are more concerned with pricing, they should go with a competitor. That said, only 10-20% of his customers even "bother about price" and the rest focus on quality. Moreover, the 30% pricing differential has narrowed substantially according to the partner, which would seem to tilt the playing field further in Twilio's favor. 3) **Growing awareness of Twilio as SMS volumes hold firm, local presence and webRTC drive activity.** Awareness of Twilio seems to be spreading even beyond devs/programmers as call centers move beyond legacy client/server products to embrace browser-based calling with a local presence. Reaffirm OW and $33 price target.

- **Positive comments.** (1) "In the past year what I have seen is that more people are aware of Twilio. People who aren't even technologically savvy have heard of Twilio, and how it can meet their needs." (2) "I don't see how any of these companies would go fully in house. . . . Then with multi sourcing you have to negotiate individual SMS providers multiplied by the countries they're in." (3) The contact remembers hearing from Uber that they said their first preference is Twilio and then "they look at the next person."
- **Negative comments.** (1) "When you reach a certain scale, there's a lot of room to take things internally, but that's a problem for all platform plays and that's certainly a problem for Twilio."
- Maintain OW rating and establish Dec 2018 price target of $33 using ~7x EV/CY18E revenue.

Cornerstone OnDemand

Mixed Partner Feedback: Enterprise Sluggishness in US & Continued Pricing Pressure Offset by European Strength, Q3 Pipe

(Analyst: Mark R Murphy)

We spoke with two key contacts in Cornerstone's partner ecosystem (see pages 2-3 for detailed feedback) to shed light on recent dynamics and inform our view of trends we expect will drive the stock through this year and beyond. Key Takeaways: (1) **Mixed Feedback**: Overall partner feedback was mixed, as one of the key partners observed a "soft" demand environment, while another indicated "steady growth"; (2) **Enterprise Sluggishness in US, Strength in Europe**: One contact indicated that the softness he noticed was centered on the enterprise segment primarily in US, with a number of deals pushing out of the quarter, leading to a sub-optimal close rate. As a reminder, Cornerstone appointed a new sales leader in charge of its strategic and enterprise teams in the US in late Q1. The partner, however, referred to strength in Europe, which could offset the US softness; (3) **Pricing Pressure**: One of the partners referred to continued pricing pressures stemming from SABA and for the first time noticed Cornerstone following through by cutting prices to remain competitive; (4) **Startups Talking Enterprise Learning:** On rising competition, another point raised by one of the partners is that he is seeing new informal learning platforms like **Degreed**, **Pathgather and EdCast** make "enough noise" around the enterprise side of Talent Management; and (5) **Healthy Pipeline**: As US deals seemingly might have pushed from Q2, one of the partners referred to a healthy pipeline which could potentially lead to a good Q3. Net/net, while we recognize the approach of very easy billings comps in 2H, we reaffirm our thesis and see potential for the Cornerstone shares to reflect a mid-teens multi-year trajectory as the growth slows without any earnings valuation support.

- **Positive Feedback.** 1) "Still seems to be going along well….I don't think it is accelerating...I think it is steady growth;" 2) One partner notes that Cornerstone signed a couple of "good size seven figure deals" in Europe; and 3) "There is a load of stuff [in the pipeline] in Q3 from a Cornerstone standpoint."
- **Negative Feedback.** (1) One partner reports that a "number of deals" that his team was working on got "pushed and pushed and pushed"; (2) one of the contacts noticed that activity levels around the Enterprise segment were "fairly slow" during Q2; (3) "There are a number of deals that we are aware of that are being sold that Cornerstone was not even in or included on"; (4) "I think the market is saturating right now...I think the market right now is in a typical cycle where it is saying we are not buying"; and (5) "They [Cornerstone] are cutting prices at every corner" to remain competitive in the market.
- We reiterate our Underweight rating and raising PT to $32.

Sirius XM Radio Inc.

Guidance Increased Following Strong 2Q17 Results Across the Board

(Analyst: Philip Cusick, CFA)

Sirius XM reported a strong 2Q17 with financials and subscriber results mostly better vs. expectations. The company reported total revenues of $1.35b vs. our and consensus est. of $1.32b, with adj. EBITDA of $522m vs. our $511m and consensus of $500m. Total 2Q net subscriber adds came in at 446k vs. our 376k with self-pay net adds of 466k (JPMe of +385k) offset by -20k paid-promo net adds (vs. our -9k). We remain Neutral on Sirius XM as we believe shares already reflect the company's strong EBITDA and FCF growth story. We establish an EOY 2018 Price Target of $5.

- Remain Neutral, establish a $5 price target on robust EBITDA/FCF growth and levered equity return but high multiple already; awaiting visibility on additional growth drivers. We continue to like the SIRI story despite somewhat softer new auto sales YTD given the company's strong top-line growth and solid EBITDA/FCF generation, but believe shares are fully-valued at a 4.0% FCF yield (fully-taxed) on 2018E. While new auto sales may be weaker YTD – predominantly fleet vehicles rather than consumer – in 2Q only 46% of total self-pay gross adds were from this channel with the remainder coming from used car, winback, etc. We continue to look for additional used car contribution to self-pay net adds driven by growing dealer and service lane partnerships – with a focus on the latter – and a growing SIRI-enabled fleet (~100m exiting 2Q). The above helped drive a 14% increase in used car gross adds in 2Q which should persist as SIRI drives deeper used car penetration (~34% in 2Q) with expectations for SIRI-equipped used vehicle sales to grow ~50% between 2016 and 2019. Additionally, while ramping slower than management expected the connected vehicle initiative is beginning to gain momentum following launches on four major OEMs and should also benefit from the recent Automatic Labs acquisition. SIRI also remains bullish on the benefits/opportunities of 360L which is planned to launch in early 2018 which should help drive higher engagement, better winback, and improved CRM.
- **Guidance increased, is typically conservative.** Sirius XM raised its 2017 revenue, adjusted EBITDA, and subscriber guidance following better than expected 2Q17 results which is consistent with historical practice given the company's traditional level of conservativism. SIRI now looks for self-pay net adds of approximately 1.4m (vs ~1.3m prior), approximately $5.375b in revenues (from $5.30b), and adj. EBITDA of approximately $2.025b (vs $5.30b previously). However, SIRI maintained its free cash flow guidance of approximately $1.5b. Below we adjust our previous 2017 estimates to reflect the company's updated guidance.
- **Adjusting our 2017 subscriber estimates to reflect guidance.** We are tweaking subscriber net add estimates to reflect stronger than expected 2Q results and SIRI's new guidance. In 2017 we now look for self-pay net adds of 1.44m vs 1.34m previous and guidance of ~1.4m driven by slightly better churn (~1.9%) following 2Q's strong 1.7% with new vehicle conversion steady at 39%. For paid promos, we model +59k in 2017 (from +116k) vs +90k in 2016. Overall, we estimate total net adds of 1.50m vs. 1.75m in 2016 and 1.46m previously.
- **Raising 2017 financials on guidance and strong 2Q results.** We raise our 2017 revenue estimates to $5.39b (vs. guidance of approximately $5.375b) from $5.33b on flow through of subscriber expectations from above and strong 2Q17 ARPU. We raise 2017 adj. EBITDA 1% to $2.053b from $2.033b previously (vs. guidance of approximately $2.05b), with a margin of 38.1%, which is up ~70bps y/y. We maintain our 2017 FCF estimate of $1.51b (vs. guidance of approximately $1.5b – unchanged) as flow through from above is offset by lower 2Q FCF ($417m vs $423m estimate) as capex remains elevated due to the future 2019/2020 satellite launches. We continue to estimate ~$1.8b worth of share buybacks in 2017 and still expect ~$2b in total capital returns in 2017 (~$1.8b in buybacks plus ~$210m in dividends) – a ~7% cash payout.
- **Pandora investment to help drive additional learnings with potential for deeper partnerships long-term.** SIRI management noted that its Pandora (covered by JPM Internet Analyst Doug Anmuth) investment is to learn more about its free offering and discover potential ways to work together in the future (i.e. upselling, cross-selling, content/tech-sharing, etc.) and that the deal was not contingent on any such arrangement. It continues to expect regulatory approval by year-end.

Telesites

Highlights from the 2Q17 Conference Call

(Analyst: Andre Baggio, CFA)

Telesites just concluded its 2Q17 earnings conference call. Key highlights included:

- **Demand from AT&T, Telefonica and Red Compartida (Altan) in 2Q,** though Telesites could not provide a breakdown given contractual clauses. It is optimistic for 2H, as well for a continuous increase in the tenancy ratio over time.
- **Expenses were higher in 2Q given higher commercial activity,** and it takes a couple of months for new signed sites to generate revenue.
- **Share of Red Compartida sites should be higher when coverage is extended beyond large centers,** as there is more limited competition for towers in these regions. This would take place when coverage is beyond 50%. Currently, Telesites keeps its short-term guidance of 30% share in sites deployed, though it wants to achieve a higher share.

- **Telesites reiterates guidance to build 700-800 sites in Mexico during 2017**. The company notices that 2016 was an abnormal year, when 1.9k towers were built.
- There is room for some extra amendments from AMX, although the bulk has already been executed.

Asia Pacific

MediaTek Inc.

Smartphone margins on the mend; product mix getting better; raise PT to NT$340

(Analyst: Gokul Hariharan)

We are more confident about MediaTek's margin recovery trajectory after the 2Q17 earnings call, with positive messages about GM expansion, opex control and strong growth in non-smartphone areas. We raise our 2018E/19E by 4%/9% and our Jun-18 PT to NT$340 (NT$62 net cash per share + 16x 12-month fwd recurring EPS, a mid-cycle P/E.). The key messages from the call were: (1) faster improvement in GMs, driven by a higher non-smartphone mix (in 3Q) and a lower smartphone cost structure benefit kicking in from 4Q17 – MediaTek expects GMs in the high-30% range (Street at ~35%) by 2H18; (2) more emphasis on non-smartphone revenue drivers like IoT, set-top boxes and ASICs, with the growth engine segment growing steadily (30%+ this year and double-digits in the next two years); (3) opex to stay flattish; and (4) lower 3Q revenue guidance due to weak smartphone seasonality (CAT 7 issues from late 2016 affecting market share). We expect consensus EPS to move higher with better margin visibility despite the weaker 3Q17 sales guidance.

- **Smartphone share gain and margin improvement in 2018:** MediaTek expects its lower-cost smartphone modems to kick in from 4Q17 (in two P-series chipsets and multiple mainstream chipsets), which should help drive a GM uptick from 4Q17. Early traction in Chinese brands also indicates that MediaTek should win back some market share from QCOM after losing nearly all of the flagship market in the 2017 model cycle. We anticipate more strength in GMs into 1H18 as the lower-cost modem propagates into more chipsets.
- **More emphasis on non-smartphone growth areas:** MediaTek Co-CEO Rick Tsai highlighted the focus on non-smartphone growth areas (25-30% of revenues in 2Q17), with set-top boxes, IoT, PMIC and ASICs the key drivers. 2017 growth is now tracking 30%+, compared to 20%+ previously. As explained in our upgrade note, we expect growth areas to reach 29%/33% of the mix, with average margins above 40% GM, in 2018/2019.
- **GMs to reach high-30% range in 2H18 – return to 10%+ OP margins in 2019:** MediaTek guided for GMs to reach high-30% levels by 2H18, ahead of market expectations. We believe MediaTek's OPMs could rebound to double-digit territory with tight opex control (remaining at 29-30% sales).

Fujitsu (6702)

Still Bullish as We See Big Changes Ahead

(Analyst: Jun Tanabe)

We revise up our estimates and raise our price target from ¥1,100 to ¥1,200. We see no need to alter our bullish stance given that we see transformation of the business model materializing toward fiscal-year end, albeit somewhat later than management anticipated, plus further fruition in 2H onward of transformational spending to date. We estimate FY2017 operating profit of ¥192 billion (guidance: ¥185 billion) and think the share price could be lifted by potential upside to the consensus outlook. The main changes to our forecasts are as follows.

- **Raising FY2017 ubiquitous solutions operating profit from ¥4 billion to ¥18 billion:** We raise our estimates of PC and mobile phone shipments from 3.7 million to 3.9 million units and from 3.0 million to 3.3 million units, respectively, and our operating profit estimates from ¥3 billion to ¥13 billion and from zero to ¥4 billion, respectively. PCs are helping to achieve workstyle innovation and doing well in Japan, where models such as the world's lightest notebook are in strong personal and corporate demand. We see a certain continuity and anticipate a reversal of the recent downtrend based on potential for large scale replacement projects, given that extended Windows 7 support will end in January 2020. The Lenovo strategic partnership is going slowly but, assuming this is the situation, we suspect Fujitsu is still negotiating for better terms. Among mobile phones, "docomo with" models and Raku-Raku smartphones are selling well. Although profits of around ¥5.5 billion already booked to 1Q look unsustainable, we think our forecast of ¥4 billion looks achievable even after 4Q seasonal factors and development costs.
- **Lowering LSI operating profit from ¥12 billion to ¥9.5 billion, but still expecting strong upside to ¥3 billion guidance:** We now factor in lower assumed capacity utilization at the Aizu substrate line. We assume full LSI capacity utilization from 2Q on strong demand in smartphone applications.

- **Lowering services operating profit forecast slightly, to ¥203 billion from ¥205 billion:** We think the gradual uptrend in operating profit in the solutions/SI business will continue, with lower profits from projects for major financial institutions and projects related to the "My Number" system offset by profits from work for manufacturing, logistics, and services companies. Our forecasts are unchanged. Our forecast for the infrastructure services business reflects a ¥7 billion loss incurred in 1Q in connection with an overseas subsidiary's legal dispute. Were it not for this, profit growth would be positive. (Cont. on page 3)

Nippon Electric Glass (5214)

Full-year guidance raised; Risk-reward remains favourable

(Analyst: Narci Chang)

Today NEG reported strong 1H OP of ¥16.3bn, in line with the company's pre-announcement two weeks ago. The strength mainly came from: 1) stronger-than-expected glass fiber operation (flat Q/Q vs guidance for a moderate decline) and 2) display glass operations where shipments rose by high-single digits Q/Q, beating guidance of mid-single digit Q/Q growth. As we previously expected, the company further raised its full-year OP target to ¥30bn vis-à-vis previous guidance of ¥24bn (BBG consensus ¥28bn). With modest earnings revisions, we roll over our PT timeframe to Dec-18 with a PT of ¥4,500, based on 0.9x trailing 12-month P/B, one notch higher than our previous target multiple.

- **Display glass to defy gravity:** Although we believe the display cycle is turning south (see our sector downgrade note here), the LCD glass earnings contribution is much less than the previous cycle. In addition, display glass makers have a more diversified customer base than before. The worsening supply-demand situation at panel makers does not concern us as much as long as area demand could still hit mid-single digit annual growth targets from 2018-19.
- **Glass fiber could see a temporary dip in 2H:** The glass fiber business continues to perform beyond market expectations. The company announced in May that it would acquire PPG Industries, Inc.'s US glass fiber operation, which we believe could solidify NEG"s leadership in chopped strands further, diversifying away from display glass.
- **Retain OW on favourable risk-reward:** Although most of our OW thesis on NEG has played out, we think valuation remains undemanding at its current level. Downside risks include: 1) display glass margin deteriorates suddenly due to competition, and 2) the glass fiber business fails to grow, which could make us turn more cautious on the stock.

Panasonic (6752)

In-line 1QFY17 results and unchanged FY17E guidance; Few near-term catalysts

(Analyst: JJ Park)

Panasonic reported in-line 1QFY17 results vis-a-vis consensus numbers where Automotive business fared slightly better than our expectations mainly due to rechargeable battery while other divisions were broadly in-line with our published estimations. Due to sales decline in high margin Avionics, overall OP didn't beat market expectation. Also, Co maintained its FY17E guidance of OP of ¥335 billion on sales of ¥7.8 trillion.

- **Key takeaways from an analyst meeting**: During Q&A session, most questions concentrated on automotive-related business as well as progress on TSLA's Model 3 shipments. Management guided that loss at rechargeable battery is mainly due to higher costs associated with Gigafactory ramps and expect meaningful contribution to overall earnings in 2HFY17.
- **A&IS is a major swing factor:** Although the sales growth in A&IS was stronger than expectation thanks to growth in existing businesses along with new consolidation of Ficosa (¥36.4bn sales contribution in 1Q), OPM improvement was lower mainly due to the loss in rechargeable battery business given fixed cost increase. TSLA's Model 3 started selling from June but ongoing noise at an early stage of product cycle could provide a negative catalyst.
- **Appliance was a positive surprise:** Despite rising raw material and major component prices, Appliance division posted relatively robust earnings on the back of increasing high value-added products and favorable sales in A/C business. Hence, we expect Appliance to generate stable earnings throughout our forecasting periods.
- **Our estimate remains broadly unchanged:** With marginal earnings changes to our estimates, we maintain our P/E based PT of ¥1,450. Given potential noise surrounding Model 3 launch and demanding valuation, we recommend investors wait for a better entry point.

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Table 3: Peer Group Valuation Multiples

	JPM	Target	Price	Market Cap	Net Debt (Cash)	Sales (Local MM)		EV/Sales		EV/EBITDA		EPS (Local)		P/E (ex. Stock comp)		P/E (inc. Stock comp; ex. Cash)	
	Rating	price	7/31/2017	(Local mn)	(Local mn)	CY 17E	CY 18E	CY 17E	CY 18E	CY 17E	CY 18E	CY 17E	CY 18E	CY 17E	CY 18E	CY 17E	CY 18E
Large Cap																	
Apple	OW	$165.00	$148.73	775,454	(158,319)	242,172	294,082	2.5x	2.1x	7.6x	6.1x	10.89	14.20	13.7x	10.5x	12.4x	9.4x
Cisco Systems	N	$33.00	$31.45	157,252	(35,504)	48,007	49,204	2.5x	2.5x	7.4x	7.1x	2.40	2.52	13.1x	12.5x	11.6x	11.0x
Corning	N	$29.00	$29.14	26,319	(256)	10,247	10,386	2.5x	2.5x	8.0x	7.8x	1.75	1.93	16.6x	15.1x	17.0x	15.5x
Ericsson	N	SEK 58.00	SEK 52.45	171,457	(23,992)	209,293	210,259	0.7x	0.7x	8.7x	7.7x	1.81	2.61	29.0x	20.1x	24.9x	17.3x
F5 Networks	N	$120.00	$120.75	7,673	(1,215)	2,101	2,224	3.1x	2.9x	7.8x	7.2x	8.33	9.37	14.5x	12.9x	16.6x	14.5x
HP Inc	N	$19.50	$19.10	32,152	597	49,809	48,651	0.7x	0.7x	7.3x	7.2x	1.76	1.80	10.9x	10.6x	11.5x	11.2x
HPE	NR	NA	$17.51	28,762	5,813	30,213	29,998	1.1x	1.2x	6.6x	6.4x	1.32	1.30	13.3x	13.5x	15.3x	15.5x
HTC	UW	NT$51.00	NT$71.70	58,923	(22,782)	102,628	100,410	0.4x	0.4x	NM	NM	(2.86)	(4.69)	NM	NM	NM	NM
Juniper Networks	OW	$32.00	$27.95	10,680	(1,010)	5,236	5,416	1.8x	1.8x	6.6x	6.3x	2.24	2.41	12.5x	11.6x	15.1x	13.7x
Motorola Solutions	N	$83.00	$90.68	14,823	3,128	6,159	6,266	2.9x	2.9x	9.9x	9.7x	5.16	5.52	17.6x	16.4x	18.8x	17.6x
NetApp	N	$39.00	$43.42	11,799	(2,928)	5,567	5,614	1.6x	1.6x	7.4x	6.9x	2.92	3.27	14.9x	13.3x	14.6x	12.7x
Nokia	OW	€ 6.50	€ 5.38	31,399	(5,326)	23,517	23,712	1.1x	1.1x	9.2x	8.2x	0.23	0.32	23.1x	16.6x	NM	NM
Qualcomm	OW	$68.00	$53.19	78,512	(15,854)	23,265	20,814	2.7x	3.0x	8.0x	11.2x	3.73	2.43	14.3x	21.9x	13.6x	23.3x
Seagate	N	$34.00	$32.96	9,777	2,482	10,352	10,155	1.2x	1.2x	5.7x	5.6x	4.01	4.57	8.2x	7.2x	8.7x	7.6x
TE Connectivity	NC	NA	€ 80.39	28,409	3,236	13,040	13,518	2.4x	2.3x	11.4x	10.6x	4.70	5.07	17.1x	15.9x	18.1x	16.7x
Western Digital	OW	$120.00	$85.12	24,791	6,773	20,283	21,810	1.6x	1.4x	4.6x	4.2x	12.29	13.42	6.9x	6.3x	7.7x	6.9x
Average								1.9x	1.9x	8.3x	8.0x			15.6x	14.2x	15.5x	14.5x
Median								1.8x	1.8x	7.7x	7.2x			14.4x	13.4x	15.1x	14.5x
Small & Mid Cap																	
A10 Networks	OW	$9.00	$7.07	490	(46)	234	256	1.9x	1.7x	NM	NM	(0.07)	(0.07)	NM	NM	NM	NM
ADTRAN	OW	$25.00	$23.45	1,133	(269)	708	750	1.2x	1.2x	14.8x	13.3x	0.96	1.13	24.4x	20.8x	22.7x	18.6x
Arista Networks	N	$144.00	$149.29	10,750	(1,004)	1,466	1,723	6.6x	5.7x	20.8x	17.6x	4.02	4.79	37.1x	31.2x	39.6x	32.4x
Belden	N	$79.00	$71.94	3,041	826	2,414	2,461	1.6x	1.6x	8.3x	7.9x	5.24	5.57	13.7x	12.9x	13.7x	12.9x
Brocade	N	$12.50	$12.63	5,179	173	2,325	2,381	2.3x	2.2x	11.0x	NA	0.56	0.72	22.5x	17.6x	NM	26.9x
Ciena	OW	NA	$25.75	3,674	125	2,941	3,217	1.3x	1.2x	8.5x	7.2x	1.96	2.38	13.1x	10.8x	15.3x	12.3x
CommScope	OW	$41.00	$36.78	7,095	4,130	4,850	5,080	2.3x	2.2x	10.0x	9.1x	2.68	3.08	13.7x	11.9x	14.4x	12.5x
Finisar	NC	NA	$27.22	3,099	(529)	1,466	1,674	1.8x	1.5x	7.5x	6.3x	1.99	2.42	13.6x	11.3x	14.1x	11.2x
Infinera	N	$9.50	$11.73	1,719	(222)	756	856	2.0x	1.7x	NM	17.2x	(0.43)	0.04	NM	NM	NM	NM
Lumentum	OW	$68.00	$62.60	3,828	(265)	1,216	1,626	2.9x	2.2x	14.3x	8.8x	2.79	4.74	22.4x	13.2x	25.3x	13.7x
Oclaro	NC	NA	$9.78	1,636	(250)	627	684	2.2x	2.0x	8.7x	NA	0.76	0.79	12.8x	12.4x	11.6x	11.3x
Pure Storage	N	$13.00	$12.07	2,467	(536)	1,012	1,299	1.9x	1.5x	NM	24.4x	(0.32)	(0.06)	NM	NM	NM	NM
ShoreTel	NC	NA	$7.45	509	(105)	351	NA	1.2x	NA	27.6x	NA	0.04	0.00	NM	NM	NM	NM
Sonus Networks	NC	NA	$6.83	338	(92)	253	265	1.0x	0.9x	13.4x	12.1x	0.23	0.28	30.4x	24.0x	NM	NM
Viavi	OW	$12.50	$10.97	2,490	(485)	782	826	2.6x	2.4x	11.8x	9.5x	0.40	0.55	27.3x	20.0x	35.5x	22.2x
Average								2.2x	2.0x	13.1x	12.1x			21.0x	16.9x	21.4x	17.4x
Median								1.9x	1.7x	11.8x	10.8x			22.4x	13.2x	15.3x	13.3x

Source: Company data, Bloomberg, J.P. Morgan estimates.
JPM Rating: OW = Overweight, N = Neutral, UW = Underweight, NC = Not Covered.
JPM Analysts: HTC (Narci Chang)
Dec-18 PT end dates
Note: Enterprise Value adjusts for minority interest, pension deficit obligations and deferred tax assets, where applicable, in addition to net debt
Note: Priced as of CoB July 31, 2017
Note: P/E (Adjusted) is P/E adjusted for Cash

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Table 4: Peer Group Price Performance

		Target	Price	3-Yr Range		Short Interest		Absolute Performance					Relative to Index				
	CCY	Price	7/31/2017	High	Low	%	1M Chg	YTD	QTD	1 Day	1 M	12M	YTD	QTD	1 Day	1 M	12M
Large Cap																	
Apple	US$	$165.00	$148.73	156.10	90.34	1%	-30%	28%	3%	-1%	3%	40%	18%	1%	0%	1%	26%
Cisco Systems	US$	$33.00	$31.45	34.44	22.51	1%	-15%	4%	0%	0%	0%	2%	-6%	-1%	0%	-1%	-11%
Corning	US$	$29.00	$29.14	32.13	15.97	2%	44%	20%	-3%	0%	-3%	31%	10%	-5%	0%	-5%	17%
Ericsson	SEK	SEK 58.00	SEK 52.45	114.30	43.50	NA	NA	-2%	-13%	0%	-13%	-17%	-7%	-13%	0%	-13%	-28%
F5 Networks	US$	$120.00	$120.75	148.79	86.96	6%	1%	-17%	-5%	-1%	-5%	-2%	-34%	-8%	0%	-8%	-25%
HP Inc	US$	$19.50	$19.10	19.47	9.02	2%	-8%	29%	9%	0%	9%	35%	11%	6%	0%	6%	12%
HPE	US$	NA	$17.51	19.11	9.04	2%	-3%	1%	6%	0%	6%	11%	-17%	2%	0%	2%	-12%
HTC	NT$	NT$51.00	NT$71.70	159.00	40.35	11%	NA	-9%	-1%	0%	-1%	-25%	-22%	-2%	0%	-2%	-40%
Juniper Networks	US$	$32.00	$27.95	32.23	18.57	5%	2%	-1%	0%	1%	0%	24%	-11%	-2%	1%	-2%	10%
Motorola Solutions	US$	$83.00	$90.68	92.21	56.79	5%	-1%	9%	5%	0%	5%	30%	-1%	3%	0%	3%	16%
NetApp	US$	$39.00	$43.42	44.86	21.22	3%	-13%	23%	8%	0%	8%	63%	13%	6%	0%	6%	49%
Nokia	EUR	€ 6.50	€ 5.38	7.77	3.81	NA	NA	19%	2%	1%	2%	8%	14%	2%	1%	2%	-4%
Qualcomm	US$	$68.00	$53.19	78.51	42.96	2%	0%	-18%	-4%	1%	-4%	-14%	-29%	-6%	1%	-6%	-28%
Seagate	US$	$34.00	$32.96	68.82	18.72	12%	13%	-14%	-15%	1%	-15%	2%	-32%	-18%	1%	-18%	-21%
TE Connectivity	US$	NA	€ 80.39	83.22	51.47	1%	-20%	16%	2%	-2%	2%	34%	6%	0%	-2%	0%	20%
Western Digital	US$	$120.00	$85.12	114.28	35.44	2%	16%	25%	-4%	0%	-4%	85%	7%	-7%	1%	-7%	62%
Small & Mid Cap																	
A10 Networks	US$	$9.00	$7.07	11.76	3.93	1%	41%	-15%	-16%	-2%	-16%	-12%	-33%	-20%	-1%	-20%	-34%
ADTRAN	US$	$25.00	$23.45	23.80	14.38	1%	-6%	5%	14%	1%	14%	30%	-13%	10%	1%	10%	7%
Arista Networks	US$	$144.00	$149.29	161.62	53.00	6%	-11%	54%	0%	-1%	0%	107%	36%	-4%	0%	-4%	85%
Belden	US$	$79.00	$71.94	95.14	37.15	6%	-12%	-4%	-5%	0%	-5%	-1%	-22%	-8%	0%	-8%	-23%
Brocade	US$	$12.50	$12.63	12.85	7.67	6%	-11%	1%	0%	0%	0%	37%	-17%	-3%	1%	-3%	15%
Ciena	US$	NA	$25.75	27.50	14.16	12%	-1%	5%	3%	1%	3%	34%	-12%	0%	2%	0%	11%
CommScope	US$	$41.00	$36.78	42.32	19.80	4%	-12%	-1%	-3%	0%	-3%	24%	-19%	-7%	0%	-7%	2%
Finisar	US$	NA	$27.22	36.01	10.82	6%	1%	-10%	5%	0%	5%	46%	-28%	1%	0%	1%	24%
Infinera	US$	$9.50	$11.73	24.72	7.32	14%	-3%	38%	10%	0%	10%	36%	20%	7%	0%	7%	14%
Lumentum	US$	$68.00	$62.60	67.95	14.12	11%	31%	62%	10%	1%	10%	106%	44%	6%	2%	6%	83%
Oclaro	US$	NA	$9.78	11.02	1.32	28%	7%	9%	5%	-1%	5%	69%	-9%	1%	0%	1%	47%
Pure Storage	US$	$13.00	$12.07	19.74	9.40	7%	-2%	7%	-6%	-1%	-6%	-5%	-11%	-9%	-1%	-9%	-27%
ShoreTel	US$	NA	$7.45	10.42	5.65	2%	-7%	4%	28%	-1%	28%	-3%	-14%	25%	0%	25%	-25%
Sonus Networks	US$	NA	$6.83	20.60	5.26	2%	18%	8%	-8%	-1%	-8%	-21%	-10%	-12%	0%	-12%	-44%
Viavi	US$	$12.50	$10.97	11.66	4.73	4%	-12%	34%	4%	0%	4%	54%	16%	1%	0%	1%	31%
Index																	
DJ Stoxx 600			379	397	327			5%	(0%)	0%	(0%)	11%					
Nasdaq Comp			6348	6461	5034			18%	3%	(0%)	3%	22%					
S&P 500			2470	2484	2084			10%	2%	(0%)	2%	14%					
TWSE			10427	10546	8880			13%	0%	0%	0%	15%					

Index: Relative to S&P 500/NASDAQ Composite for US stock, DJ Stoxx 600 for European and TWSE Index for Taiwan stocks
Source: Bloomberg; Index: Nasdaq Composite (US), S&P 500, TWSE, DJ STOXX 600, J.P. Morgan estimates
Note: Priced as of CoB July 31, 2017
JPM Analysts: HTC (Narci Chang)
Dec-18 PT end dates

Companies Discussed in This Report (all prices in this report as of market close on 31 July 2017, unless otherwise indicated)
Apple Inc. (AAPL/$148.73/Overweight), Charter Communications (CHTR/$391.91/Overweight), Cornerstone OnDemand (CSOD/$40.31/Underweight), Fujitsu (6702) (6702.T/¥814[01 August 2017]/Overweight), Integrated Device Technology (IDTI/$26.14/Overweight), MediaTek Inc. (2454.TW/NT$292.50[01 August 2017]/Overweight), Nippon Electric Glass (5214) (5214.T/¥3960[01 August 2017]/Overweight), Panasonic (6752) (6752.T/¥1488[01 August 2017]/Neutral), Sirius XM Radio Inc. (SIRI/$5.86/Neutral), Sprint Corp (S/$7.98/Neutral), Talend (TLND/$37.83/Neutral), Telesites (SITESB1.MX/Ps13.16/Overweight), Twilio (TWLO/$29.17/Overweight)

Analyst Certification: The research analyst(s) denoted by an "AC" on the cover of this report certifies (or, where multiple research analysts are primarily responsible for this report, the research analyst denoted by an "AC" on the cover or within the document individually certifies, with respect to each security or issuer that the research analyst covers in this research) that: (1) all of the views expressed in this report accurately reflect his or her personal views about any and all of the subject securities or issuers; and (2) no part of any of the research analyst's compensation was, is, or will be directly or indirectly related to the specific recommendations or views expressed by the research analyst(s) in this report. For all Korea-based research analysts listed on the front cover, they also certify, as per KOFIA requirements, that their analysis was made in good faith and that the views reflect their own opinion, without undue influence or intervention.

Important Disclosures

- **Market Maker:** JPMS makes a market in the stock of Apple Inc., Integrated Device Technology, Sirius XM Radio Inc., Charter Communications.
- **Market Maker/ Liquidity Provider:** J.P. Morgan Securities plc and/or an affiliate is a market maker and/or liquidity provider in securities issued by Apple Inc., Talend, Integrated Device Technology, Twilio, Cornerstone OnDemand, Sirius XM Radio Inc., Telesites, MediaTek Inc., Fujitsu (6702), Nippon Electric Glass (5214), Panasonic (6752), Charter Communications, Sprint Corp.
- **Lead or Co-manager:** J.P. Morgan acted as lead or co-manager in a public offering of equity and/or debt securities for Apple Inc., Talend, Twilio, Sirius XM Radio Inc. within the past 12 months.
- **Director:** An employee, executive officer or director of JPMorgan Chase & Co. and/or J.P. Morgan is a director and/or officer of Apple Inc..
- **Beneficial Ownership (1% or more):** J.P. Morgan beneficially owns 1% or more of a class of common equity securities of Nippon Electric Glass (5214).
- **Client:** J.P. Morgan currently has, or had within the past 12 months, the following entity(ies) as clients: Apple Inc., Talend, Integrated Device Technology, Twilio, Sirius XM Radio Inc., MediaTek Inc., Fujitsu (6702), Panasonic (6752), Charter Communications, Sprint Corp.
- **Client/Investment Banking:** J.P. Morgan currently has, or had within the past 12 months, the following entity(ies) as investment banking clients: Apple Inc., Talend, Integrated Device Technology, Twilio, Sirius XM Radio Inc., Panasonic (6752), Charter Communications.
- **Client/Non-Investment Banking, Securities-Related:** J.P. Morgan currently has, or had within the past 12 months, the following entity(ies) as clients, and the services provided were non-investment-banking, securities-related: Apple Inc., Talend, Integrated Device Technology, Sirius XM Radio Inc., MediaTek Inc., Fujitsu (6702), Panasonic (6752), Charter Communications, Sprint Corp.
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