



Baird Technology Sector Strategy Earnings review of Q320 Set up for Q420

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The Earnings data and commentary in this presentation is derived from public quarterly conference calls. The Baird Technology Research Team when annotated is available to go into further detail on this data. This is a product of Baird Technology Sale.

Technology Market Metrics (11/16/20):

The macro:

For now, the market is following stimulus signals and virus infection rates to determine market direction. It all about the “V” recovery=>Vaccine

11/20/20 (Bloomberg data)

CCMP (NASDAQ Composite Index): up 3.5% in the last 30 days but up 32.9% YTD

- Digital Transformation/Cloud/Data Center and 5G macros well understood

SPX (S&P 500 Index): up 3.7% in the last 30 days but up 10.5% YTD

- 5 names make up 23% of the index: **MSFT** (up 37% YTD), **AAPL** (up 62% YTD), **AMZN** (up 69% YTD), **FB** (up 35% YTD), **GOOG** (up 33% YTD)

RTY (Russell Index): up 9.8% in the last 30 days and now up 6.4% YTD

SOX (Semi Index): up 8.4% in the last 30 days but up 39.8% YTD

- Buffer inventory builds driving sector accumulation
- Higher content in 5G and Data center silicon
- The new 7nm, 5nm and 3nm manufacturing nodes represents a multi-year investment cycle (scale matters)

INDU (Dow Jones Industrial Index): up 4% in the last 30 days and up 2.8% YTD

IGV (Cloud Index): up 1% in the last 30 days but up 41.4% YTD

- The drumbeat from management Teams: “ seeing a pull in of Digital Transformation, Cloud, AI and web enabled SaaS applications” (V shape recovery, momentum investors and short covering)
- The perfect FOMO melt up since 4/1/20

The Vaccine trade MUST be monitored (sector rotation top of mind)

- Some of the biggest moves on a Vaccine break through on **11/9/20** : **CHGG** (down 10%), **CRWD** (down 10.8%), **DOCU** (down 14.7%), **LPSN** (down 16%), **NFLX** (down 8.6%), **OKTA** (down 6.8%), **PTON** (down 20.3%), **RNG** (down 9.3%), **SHOP** (down 13.6%), **TWOU** (down 20.5%), **W** (down 21.8%), **WIX** (down 11.3%), **ZM** (down 7.4%), **ZS** (down 12%).

Key Economic Macro inputs: "STIMULUS HAS ELIMINATED TRADITIONAL RECESSIONARY SIGNALS"

- There is a daily battle between "believe in the dream" vs fundamentals vs stimulus investing".
 - **Q120:** Covid froze demand and the supply chain in March 2020. **GDP fell 5% y/y**
 - **Q220:** The majority of the Covid impacts was felt in Q220 with **GDP declining 31.4%**. Stimulus spend in the first phase totaled **\$3.5 TRILLION** (\$2.6 Trillion in stimulus and \$900B in Stimulus Tax breaks)
 - The Covid dislocation brought forward secular trends around Digital Transformation were brought forward by **YEARS** (WFH, PFH, LFH)
 - **Q320:** "The bounce", violent 2nd derivative. Normalized production but less than pre-Covid levels. **Q3 US GDP up 33%**
 - **Q420:** Lag Digital Transformation deals close rates must materialize. SaaS: retention metrics, renewals are under the microscope.
 - **Long term Technology shifts driving long term earnings (Cloud producing IT savings of greater than 30%. AI replacing labor)**
 - **Deficits:** Year to date the **US budget deficit is \$3.1T with a national debt of ~\$27T**
 - T&E leverage a BIG driver in Q320. **Now reversing on increased hiring and higher marketing**
- **The top 10 Technology macros have not changed.** This cycle these macros are interrelated
 - **Digital Transformation, Cloud, E-commerce, Hyperscale data centers, 5G, AI, SaaS, higher Silicon content** and next gen. **Security** all secular.
 - Q420 CE product cycles strong (Nintendo Switch, Consoles (SNE/MSFT), AAPL iPhone 12)
 - M&A is back: **ADI/MXIM, NVDA/ARM, AMD/XLNX and MRVL/IPHI**
- Wall Street's Forward Focus:
 - **SMB/Commercial (<100M in revs) and on-premise enterprise spend weak**
 - **China: the Trade War** (Dept. of Commerce ruling **expanded to 38 Huawei entities** vs Huawei, TikTok) and **SMIC**
 - **The Biden call option** (Huawei now taken out of all models. 2nd derivative only can be up
 - **The Covid cycle:** Phase 1=> liquidity, Phase 2=>solvency, Phase 3=>paydown vs FCF, Phase 4: Q420 lockdown).
 - **The Global Covid 2nd wave is a headwind into Q420.**
 - **Most Tech companies have ~20% exposure on average to affected industries.**
 - **Multiple companies highlighting weakness in EMEA materializing (UK, Germany and France shutting down)=>on average US Tech companies have 32% exposure to EMEA**
 - **The impact of bankruptcies is currently NOT factored in models**
 - **A VACCINE will drive some sector rotation (into banks, cyclical, healthcare) out of high valuation remote architecture names.**
 - **The Election Cycle** is now topical across Tax policy and Federal spend (DOD, **Corp Tax** and lower Capex).
 - (+) Split government. No blue wave. The US Senate run offs in Georgia are a focus.
 - **Biden's** projected to raise corporate taxes from 21% to 28% now in question. Pull back on tariffs? (Globalist focus)
 - Monitor the 2nd phase of **Stimulus** levels and the impact on 10-year Treasury bonds (filling a deep hole of losses vs promoting growth?)



The Top 10 2020 Technology Macros: (Accelerating Secular, Core Secular, Secular but seeing peak growth)

- ***Digital Transformation:** the digital future is arriving much sooner. Digital RE-PLATFORMING a multi-year macro
 - ACN, CRM, CTSB, INFY, AMZN, GOOG, MSFT, NOW
- ***Artificial Intelligence (AI)/Machine Learning** (ML)=>all industries impacted
 - AMD, AMZN, AYX, BABA, FB, INTC, GOOG (Bert), MSFT, NVDA, SPLK, XLNX
- ***Cloud:** Public, Hybrid, Private deployments (\$21B+ in quarterly spend across cloud Titans)
 - AMZN, ANET, BABA, CRM, GOOG, MRVL, MSFT, NOW, NVDA (A100) IBM (RHT), SPLK, VMW
 - ***Edge Data Center** macro accelerating
 - ***Observability:** DDOG, DTC, ESTC, SPLK
- ***E-commerce** : AI/ML driving same day delivery/Covid supply chain
 - AMZN redefining logistics. The company spent \$800M in Q219 to go to 1-day delivery. Spending \$4B in Q2 for Covid AMZN, BABA, FB, GOOG, PYPL, SHOP, SQ
- ***5G=>Handset Mobility** (silicon content up ~4x)/**WiFi 6:** infrastructure, handsets (5G 15% of the TAM or ~200M units (140M into China), enablement of IOT/AI at the edge
 - AAPL, ADI, AVGO, BAND, ERIC, KEYS, MRVL, NATI, QCOM, QROV, SWKS, TER, XLNX
- ***Software as a Service (SaaS)/Security**
 - SaaS: ADBE, ANSS, CRM, NOW, SPLK, TEAM, TWLO, VEEV, WDAY
 - Security: the pivot to cloud based “zero trust” architectures: NET, PANW, VMW, ZS
- ***Semiconductors:** increased content across 5G, DC, Auto, Industrial and IOT end markets. Near term macro pull ins on Tariffs, Huawei/Chinese. Inventory below seasonal (restocking will continue into Q121)
 - ADI (MXIM), INTC (\$10B ASP), NVDA (ARM), NXPI, ON, TXN, XLNX
 - *Focus on Fabless: AMD, MRVL (IPHI), NVDA, QCOM, XLNX (AMD)=> TSM enabled at 7 and 5nm
 - Huawei sitting on ~1 year of inventory
 - Higher content across 5G (250M handsets in 2020 going to 550M in 2021 (3x the content))
- ***Semi IC design/Equipment:** Moore’s Law compromised. The move to 7nm-3nm nodes game changing (EUV)
 - AMAT, ASML, KLAC, LRCX, TSM, Software=>CDNS, SNPS
 - Supply tight, capex being increased (EUV, Test and Assembly)
- ***Internet of Things (IOT)/AI** and the proliferation of “edge computing”
 - AKAM, AMZN, CSCO, FSLY, GOOG, INTC, QCOM, SMTC (LoRa)
- ***Remote Infrastructure (COVID 19)** : 95% of employees now remote. Seeing moderation. Monitor a sell off on a vaccine
 - AAPL (Mac/iPad), AKAM, AMD (NB), AMZN, BAND, CHGG, CHKP, CSCO, CTXS, CRWD, DOCU, FFIV, FIVN, FSLY, FTNT, GDDY, INTC (NB), LLNW, LPSN, MSFT, NET, NFLX, PANW, OKTA, PTON, RNG, SHOP, SPLK, TWLO, TWOU, VG, VMW, W, WIX, ZM, ZS

2020 Key “Secondary” Technology Macros (7)

- ***Telehealth**: Covid 19 has changed healthcare in 2 months
 - AAPL, GOOG, TDOC, VEEV
- **Hyperscale Infrastructure Software**: scale out data bases/containers
 - NTNX, VMW (NVDA)
- ***Next Generation Security**: on premise migration to “zero trust” (**ZS, NET, PANW**) Cloud based security (monitor consolidation). PLATFORMS win this cycle
 - OKTA, FEYE, FTNT, NET, PANW, VMW, ZS
- **Over the Top**: OTT=>migration away from linear TV dramatic. Long term, explosion of new content
 - AKAM, AMZN, BABA, CMCSA (Peacock/Hulu), DIS, **FSLY**, GOOG, NFLX
- **Social Media/Digital Advertising**: traditional channels and access to the cord cutters
 - AMZN, FB, GOOG, PINS, SNAP, TTD, TWTR
- **Autonomous Driving**: AI, real time mapping, ADAS, enabling silicon
 - GOOG, INTC, NVDA
- **Gaming**: E-Sports, scale out cloud streaming platforms vs consoles
 - EA, GOOG, MSFT, NVDA, SNE
- ***Telecom** (5G, 100G migration to 400G optical cycles=>800G on the horizon)
 - ANET, AVGO, CIEN, CSCO, IIVI, IPHI, JNPR, KEYS (400G in DC), LITE, NPTN
- **Payments/*Blockchain/Bitcoin**

Recent Tech Prints: What was new**Key Tech reports** (what was new/where the street is focused)

Week of 10/5/20

NVDA (GTC)

- Moore's Law has ended (INTC)
- NVDA's new DPU's architecture is like an iPhone moment"
- Shift=>ARM the most energy efficient processor vs X86 (implied finished)
- NVDA Announced 80 SDK's that run on NVDA Cuda stack
 - Cuda which now has 2.3M developers
- NVDA targeting all sub industries across 6,500 AI start ups
- NVDA AI
 - Adoption doubling every couple of months
 - A100 has taken off (Ampere)
- The 34 pillars of NVDA AI
 - Training
 - Inference
- Frameworks
 - Clara: computational full stack for Healthcare
 - Drive: autonomous driving (Mercedes using the entire NVDA stack)
 - Jarvis: conversational AI
 - Isaac: AI robots
 - Merlin: GPU training
 - Metropolis: AI City
- Next generation data centers will be software defined=>Networking, Storage and Security on every DPU
 - NVDA accelerated computing on VMW Cloud Foundation and **CLDR**

Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 10/12/20

ASML:

- (+) Macro Drivers AI/ML, HPC, Big Data and 5G
- (+/-) 2020=>will be a bit shy of 35 EUV systems (\$4.5B)
 - INTC delayed node transition
- (+) 2021 targeting 40-45 systems (will be a strong year)
 - ASML's focus is to reduce cycle times (not a demand issue/capacity issue)
- Revs \$4B vs street of \$3.7B
 - 79% Logic
 - 21% Memory (slope of recovery more 3D NAND)
- EPS \$2.54 vs street of \$2.25

TSM:

- (+) For 2020, TSM is now looking for the Semi industry ex of memory to be **up ~5% vs flat to up slightly previously**
- (+) For 2020, Foundry growth was taken up to **20% vs 17%-18% growth previously. TSM is expected to grow greater than 30% y/y** due to exposure to 5G build outs and HPC
- (-) Inventory above seasonal due to 5G/HPC launches and "supply chain security" (increase in buffer inventories), Huawei pull in of wafers before the US BIS supply ban also a factor
 - Higher inventory levels will continue for some time
- (-) GM will be impacted by 2%-3% in 2021 due to 5nm ramp. 2H20 utilization very high ("wont be at that level forever")
- (+) 7nm: 35% of wafer revs (very strong demand). Reminder: For 2019, 7nm was 27% revs
- (+) 5nm: 8% of wafer revs (very strong demand=>AAPL).
- (+) Smartphone (46% revs) was up 12% q/q. Reminder: for 2019, smartphone was 49% revs
- (+) HPC (37% revs) was up 25% q/q
- (+) Q3: Revs \$12.14B USD (guide was \$11.2B-\$11.5B) up 16.9% q/q and up 21.6% y/y
- (+) Q4 guide: Revs guided to \$12.4B-\$12.7B up 3.4% q/q vs the Street of \$11.98B

INFY (David Koning)

- (+) Digital Transformation spend strong before the virus onslaught (47.3% revs, up ~25.4% y/y)
- Large deals solid. Signed 16 large deals in the quarter (8 in the Financial vertical, 3 Retail, 2 Comm, 1 Manufacturing)
- (-) GM peaked in FQ221. Salaries will normalize post Covid phase 1. Instituting a one-time bonus payments

Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 10/19/20

IBM

- Separating services (GTS/GBS) from cloud offerings (RHT the foundation). CEO claiming the hybrid cloud addressable market is a \$1T market opportunity.
 - **IBM VERY late** vs **MSFT, AWS** and **GOOG**
- **(+) Cloud/Cognitive Solutions** Revs \$5.6B (31.8% revs) was up 6% y/y in CC
 - Cloud and Data Platforms (~45% of segment) up 19% y/y
- **(-) Global Technology Services** at \$6.5B (35% revs) was down 4% y/y in CC
- **(-) Global Business Services** at \$4B (23% revs) was down 6% y/y
- **(-) Systems Segment** at \$1.3B (7.4% revs) was down 16% y/y in CC
- **(-) Systems Hardware (~70% of the segment) down 19% y/y in CC**
 - **(-) IBM Z15** was 20% y/y (fourth quarter of the new cycle). Cloud impacting mainframe (the mainframe tax. Cycle dynamics changing. The /MOVE TO THE PUBLIC CLOUD not addressed=>no questions in Q&A
 - Storage declined of 20% y/y due to weakness in high end offering (DS8900)
 - Power decreased 16% y/y

CDNS (Joe Vruwink)

- (+) 5G, AI, Hyperscale, Industrial IOT driving designs. The move to data centric architectures pulling in designs (**Cloud Titans strong**)
- (+) Revenue \$667M (guide \$630M-\$650M), Street \$642.1M
 - **China 17% revs (10% for 2019, historically revs from China at 14% level)**
 - \$40M in China rev spike across hardware and IP (Non-recurring) for 2H20. Pull in?
- (+) Q4 Guide: Revs \$720M-740M, Street of \$703.7M
- (-) Department of Commerce restriction around “emerging technologies” (in this case EDA computational lithography).

NFLX: (Will Power)

- (+) For 9 months, NFLX saw 28.1M 1H20 vs 27.8M in all of 2019.
- **(-) Q3 added 2.2M vs guidance of 2.5M so essentially in line (some on the street much higher)**
- For Q4, forecasting 6M global net adds vs 8.8M in Q419
- (+) FCF \$1.15 vs (\$551M) y/y. Content spend pushed outs
- (+) FCF for 2020, FCF raised from BE to positive to \$2B vs (\$1B) y/y
- 2021:
 - (-) Paid net adds will be down y/y for the 1H21 (he dreaded Covid compare)
 - (+/-) FCF projected to be (\$1B to BE) but much less than (\$3.13B) in 2019

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Key Tech reports (what was new/where the street is focused)

Week of 10/19/20

TXN: (Tristan Gerra)

- (+) Macro improved. Demand experienced less of a fall off than anticipated
- (+) Rev \$3.82B up 18% q/q and up down 1% y/y. Auto and consumer recovered. street \$3.45B
 - **(+/-) Industrial (36% revs)**=>Q320 Industrial was down 3% q/q and flat y/y
 - **(+) Auto (21% revs)**=>Q320 Auto was up 75% q/q and flat y/y (bottom in cycle was in Q2/content up)
 - **(+) Personal Electronics (23% revs)**=>Q320 PE was up 20% q/q and up 15% y/y
 - **Communication Equipment (11% revs)**=>Q320 Comm was down 5% q/q but up 5% y/y
 - (+) Reported \$1.45 in EPS vs the street at \$1.28
- (+) Q420 guide:
 - Rev \$3.41B-\$3.69B vs the street \$3.32B
 - EPS \$1.20-\$1.40 vs. street \$1.18

TER: (Rick Eastman) Another blow out quarter

- (+) Results being driven by 5G (DDR5) and memory test (higher transistor counts/complexity driving the business). **PEAK?**
- (+) Rev \$819M up 41% y/y, street at \$787M
 - (+) Semi Test: \$592M (72.3% revs) up 49% y/y
 - (+/-) Industrial Automation \$69M (8.4% revs) up 17% q/q and flat y/y (Q2 the bottom)
 - (+) System Test \$118M (14.3% revs) up 61% y/y
 - Storage Test strong (HDD and System level test very strong)
- (+) EPS \$.90-\$1.06 vs street of \$.45
- (+) Q4 guide
 - Revs \$680M-\$740M vs street of \$522M
 - EPS \$.90-\$1.06 vs street of \$.45

LRCX

- LRCX estimates 2020 WFE in the range of **\$55B to \$59B** (where they started the year)
- Longer term WFE could approach \$60B per year due to node complexities and macros
- (+) Revs \$3.18B up 14% q/q and up 46.7% y/y vs the street of \$3.11B
 - **China spend (37% revs)=>major area of investor focus (~10B of WFE)**
 - LRCX has applied for a DOC license to supply SMIC with equipment (currently not shipping)
- (+) EPS \$5.67 vs street of \$4.12
- (+) Q4 guide: Revs \$3.3B +/- \$200M vs street at \$3.09B

Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 10/19/20

XLNX (Tristan Gerra)

- Not willing to discuss M&A rumors (**AMD**)
- From a macro perspective XLNX saw improvements in Auto, Broadcast and Consumer (ABC) end markets were up 36% q/q. Aero and Defense also strong
- Rev \$767M up 5% q/q (higher than midpoint of guidance), Street \$756M
 - (+) A&D (Aero/Defense), Industrial and TME \$337.5M or 44% revs was up 3% q/q and up 11% y/y
 - (+) Auto, Broadcast, Consumer and Auto \$122.7M or 16% of rev was up 36% q/q and down 8% y/y
 - Broadcast expected to strengthen (Election coverage, Live sports)
 - **Wired and Wireless \$199.4M or 26% of revs was down 13% q/q and down 36% y/y**
 - (+)Data Center Group revs \$107.4M or 14% of revs was up 23% q/q and up 30% y/y

MANH (Joe Vruwink)

- Continue to see strong pipeline demand for cloud solutions with notable strength in Manhattan Active WM, Manhattan Active Omni, and TMS solutions
 - In the early stage of a fairly significant replacement cycle
 - Two new Manhattan Active Warehouse Management deals (Recently released). Both global Tier 1 customers
- Rev \$149.8M down 8% y/y vs. street \$138.9M
- Op margins 29.4%, Street 24.1%
- EPS \$0.51, Street \$0.39
- (+) RPO totaled \$257.3M up 69% y/y and 14% sequentially

FY2020 Guide:

- EPS \$1.62-\$1.66 (Prior \$1.53-\$1.59) vs. Street \$1.56
- Rev \$574M-\$579M (Prior \$554M-\$570M) vs. Street \$565.9M

Prelim FY21 Guide: **MANH** moving to cloud and subscription just like a **SPLK** subscription transition)

- EPS \$1.37-\$1.54
- Rev \$585M-\$625M
 - Cloud revs \$108M-\$110M (cloud subscription uptake impacts revenue growth, and GM)
 - License revs \$15M-\$20M (major change in mix)

Recent Tech Prints: What was new**Key Tech reports** (what was new/where the street is focused)

Week of 10/19/20

INTC: (Tristan Gerra)

- (+) Selling NAND business to Hynix for \$9B
- (+/-) Initiated an accelerated \$10B buy back while losing their manufacturing node advantage
- (-) As margins go, so does INTC (down)
- Revenue \$18.33B decreased 4.5% y/y. Street \$18.26B
 - Datacentric revenues of \$8.5B (~46% of revs) declined 10% y/y
 - PC centric revenues (54% revs) of \$9.8B as up 1% y/y
- Client Computing Group (53% of revs) \$9.8B was up 1% y/y
 - Notebook revs up 16% y/y/volumes up 11% y/y, ASP were down 7% y/y (more ed/Chrome books which pressure GM (WFH))
 - Desktop revs down 16% y/y with ASP flat y/y (Enterprise/govt weakness)
 - Op Margin 36% vs 44% y/y (mix and 10 nm mix)
- Datacenter Group Rev. (32% of revs) \$5.9B declined 7% y/y
 - 1H20 demand much greater than 2H20
 - Datacenter Group: units up 4% y/y (deceleration)
 - ASP's down 15% y/y
 - Cloud Service Providers up 15% y/y (to be fair last quarter 47% y/y)
 - Comm/Service Providers up 4% y/y (5G)=>deceleration from 44% growth last quarter
 - Enterprise/Govt declined 47% y/y (a problem on mix and GM)
 - Op Margin 32% vs 49% y/y (10 nm and mix)

Guides: Q420

- Revenue: ~\$17.4B down 14% y/y vs street \$17.39B
 - PC down ~3% y/y
 - Data centric revs projected to be down ~25% y/y (data center build peak in Q220)
- GM at 55% down 500 bps y/y (mix/10nm costs 2H20)
- Op Margin 26.5% down 900 bps y/y
- EPS \$1.10 vs Street at \$1.08

Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 10/26/20

SAP: (Similar to IBM/DASTY miss)=**Company specific (ORCL/CRM)**

Macro

- SAP going thru one of the largest restructuring in the company's history
 - Restructuring lowered discretionary spend, lower capex has the results boosting cash flow. Relying on MSFT (will be rolling out more Public and Private cloud solution)
- NEW: Spinning out Qualtrics (**MDLA**)
 - CEO claimed a win/win with no downside. Obvious from the call that the CEO of Qualtrics in charge.
- (-) In the near term, large Digital Transformational deals on the table are being postponed due to Covid 19
 - Impact will be impacted thru the 1H of 2021
 - Concur and Ariba weak
- Accelerating move to cloud which will affect op margin 5-6% thru 2023 (more subscription and more investment)
 - Transition will go thru 2025
- FQ3: Rev €6.53B down 4% y/y in CC vs Street €6.85B street/ EPS €1.70 vs street €1.30
 - Recurring revs. 74% vs 63% q/q and 69% y/y
 - Cloud and software revenue €5.54B down 2% y/y in CC (deceleration)
 - Cloud rev €1.94B up 14% y/y in CC (deceleration)
 - Cloud backlog up 16% CC to \$6.6B
 - Software licenses of €714M (11% revs) were down 19% in CC
- FY20: Total revs reduced from €27.8M-€28.5B to €27.2M-€27.8B up now flat to up 2% vs 1-3% y/y
 - Demand environment recovery muted

Derivatives:

- **IBM** (miss)
- **DASTY** (miss)
- **BL**: ties to SAP (24% revs/90% of large deals)=>exceeded Q3

Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 10/26/20

AMD (blow out quarter vs INTC) Tristan Gerra

- (+) Revenue \$2.8B up 45% q/q and up 56% y/y Street \$2.56B
 - (+) Compute and Graphics (60% revs) \$1.67B up 22% q/q (lower graphic sales due to product timing=>Radeon 6000 coming) but up 31% y/y
 - (+) Enterprise, Embedded, Semi-Custom (40% of revs) \$1.13B was **up 101% q/q and up 116% y/y**.
 - Record server sales (doubled y/y due to HPC, Hyperscale and Enterprise servers)
 - EPYC (Rome) share gains evident
 - Very positive on follow on Milan server offering (100 new platforms=>share gains evident across hyperscale and HPC)
 - Supplying SNE/MSFT with new gaming console silicon

Guide: Q420

- (+) Revenues of \$3B +/- \$100M vs the Street \$2.62B

Acquiring XLNX for \$143/share (all stock)

- Expands total addressable market to \$110B (\$80B from AMD, \$30B from XLNX)
- Immediate accretive due to all stock structure
- The Combined AMD/XLNX company
 - 20% grower
 - Cash \$4.9B
 - Debt \$2.4B (now investment grade) with a .85x leverage ratio
 - Op margins 21%
 - FCF of \$1.8B
- \$300M in synergies
- AMD & XLNX share TSM manufacturing leverage at 7, 5 and 3nm nodes
- Data Center , Telecom opportunities significant
 - AMD has CPU/GPU, XLNX has FPGA/Smart Nic technologies
- Next gen 3D packaging a theme on the call. XLNX expertise in 3D evident (Chiplet macro)
 - The other way to play is **CDNS** and **SNPS**. A call with Joe Vruwink recommended
- AMD and XLNX will be combining software to be more competitive with NVDA's Cuda offering over time

Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 10/26/20

AKAM (Will Power)

- AKAM management went out of their way to put a stake on their scale at the edge vs FSLY
 - 325K servers, 4,000 data center locations across 135 countries
 - Positioned for 5G at the edge
- (+0 Rev \$793M up 12% y/y as reported and 11% in CC street \$775M
 - Cloud Titans was \$51M up 15% y/y in CC
 - Web Division revs were \$418M up 8% y/y as reported and up 7% in CC
 - Media/Carrier revs were \$375M up 16% in CC
 - Cloud Security Solutions revs were \$266M up 23% y/y in CC
- International revs of \$355M was up 18% y/y in CC
 - India did restrict 59 China application (impacted growth)

Q420 Guide:

- Very seasonal quarter which makes forecast tough
- (-) Revenue \$812M-\$837M up 4%-8% y/y. Street at \$823M
- (-) EPS \$1.28-\$1.32. Street at \$1.30
- Capex \$193M-\$199M

LSCC (the last FPGA company standing post the acquisition on XLNX by AMD=>Tristan Gerra)

- Rev. \$103M, up 2.4% q/q and flat y/y, street \$101M
- EPS \$.19, Street \$.16
- Communication/Compute (43% revs)
 - Off ~4% sequentially, up 6% y/y
 - Decline in communications in the near term
 - Huawei a headwind (Assuming no contribution in Q4)
 - y/y growth driven by servers and client computing
 - Continue to see as a long-term growth opportunity
- Industrial and Auto (41% revs)
 - Rev up 8% sequentially, up 14% y/y
 - Almost all driven by industrial
- Improvement in end market demand

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Week of 10/26/20

MSFT (expectations high)

- (+) CEO: Digitization now becoming pervasive. Digital transformation adoption accelerating (not a new concept and has accounted for multiple expansion in 2020)
 - Tech spend as a percentage of GDP is 5% now going to 10% due to the pull in of Digital Transformation
 - Cloud penetration 20% now, going to 80% over the long term
- MSFT building the next generation Modern Digital Stack ("swimming out of their traditional product lanes"). MSFT targeting all growth segments in the new digital world
 - **Cloud:** Azure up 47% y/y (gaining share due to Azure stack functionality)
 - Azure AI=>Open AI driving adoption of speech recognition across 49 languages
 - Office 365/ TEAMS for consumer being introduced (10B Win 10 devices)=>**ZM, WORK**
 - **Security:** targeting zero trust (cloud/remote) targeting industry players. Moving into edge/IOT security (**PANW, ZS**, etc)
 - **Developers:** GitHub (70% of the Fortune 50) now has 50M+ developers=>collaboration (**TEAM**)
 - **Communication services** allow voice, video and messaging to be ubiquitous (**RNG**)
 - **Power Platform**=>targeting a MSFT based easy to use workflow/automation solution. 10M active users (**NOW**)
 - **Dynamics 365**=>driving end to end business operations (finance, inventory management etc.) (**CRM**)
- (+) Rev \$37.2B up 12% y/y as reported and 12% in CC. Street \$35.8B
 - Productivity and Business Processes \$12.3B up 11% y/y as reported and up 11% in CC (Office 365 and LinkedIn drove results)
 - Intelligent Cloud \$13B up 20% as reported and 19% y/y in CC
 - Growth by server products and cloud services which were up 21% y/y in CC driven by Azure growth up 47% y/y in CC.
 - Personal Computing \$11.8B up 6% as reported and up 6% y/y in CC (peak, Covid pull in)
 - Better than expected due to WFH and LFH dynamics (few questions in Q&A of the duration of this growth)
- (+) Commercial booking growth 23% y/y as reported and 18% y/y in CC accelerated from 12% last quarter
- (+) Commercial RPO \$107B up 23% y/y in CC to \$107B
- GM 70% up 200 bps y/y
 - **Ex of the impact of the change in accounting treatment associate with the server useful life of servers/networking assets GM was down slightly**
- (+) EPS \$1.82 up 30% y/y in CC vs. street \$1.36
 - \$.10 upside was due to positive impact by the accounting change on server useful life
- **(-) Guide of FQ2 revenue of ~\$40B equated to growth of 8% less than street models of 9%**



Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 10/26/20

NOW (Rob Oliver)

- (+) Digital Transformation solution being brought forward
 - Legacy non cloud architectures buckled under Covid
 - Customers will be forced migrate to the Cloud sooner
- NOW “one platform” across HR, Customer Service Management, Security, Dev ops and IT service management a major advantage
 - One architecture, one data model
- Seeing a “Workflow Revolution”. NOW becoming the systems of record application
- The June quarter was linear
 - Total Revs \$1.15B up 30% y/y vs the street of \$1.11B
 - Subscription Revs (95%) of \$1.091B grew 29% y/y in CC (had guided \$1.058B)
 - Subscription Billings \$1.0810B up 24% y/y (had guided \$1.005B)
 - RPO \$7.3B up 28% y/y
 - Current RPO \$3.8B up 30% y/y
 - NA 66% revs
 - EMEA 25% revs
 - APJ 9% revs

Guide FQ420

- Pipeline strong
- Subscription Revenue \$1.155B - \$1.160B up 27% y/y
- Subscription Billings targeted at \$1.625-\$1.645B up 24-26% y/y
- Op Margin 21% down 100 bps (higher opex)

WDC (Tristan Gerra)

- Witnessed a pull in by Huawei (5% to 8% revs in FQ121/out of the model for FQ221
- Very hard to model demand looking forward
- Rev \$3.9B (guide \$3.7B to \$3.9B)_down 9% q/q and down 3% y/y. Street \$3.83B
- EPS \$.65 vs the street \$.55

FQ221 Guide: unprecedented time

- Challenged by Covid and Global Recession. Limited in the near term
- Rev \$3.75B to \$3.95B vs the Street \$3.86B
- GM 24% to 26%
- Opex \$680M to \$700M
- EPS \$.40 to \$.60 vs the Street \$.64



Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 10/26/20

FSLY (Will Power)

- (+) Continuing to see acceleration of digital transformation
 - Second highest quarter of new customer adds
 - Wins across multiple verticals (E-commerce, media, high tech)
- (-) TikTok remains FSLY's largest customer at 10.8% of revs for last 9 months (12% 2Q20)
 - Anticipate traffic reduction to continue into Q4. Regulatory uncertainty
 - Expect situation to remain unresolved for a "period of time". Remaining behind customer
- (-) Saw other customers having "timing impacts" in onboarding. Majority of timing issues resolved
- Anticipate traffic to come onto network and not have negative impact beyond Q4
- Rev \$70.6M up 42% y/y vs Street \$70.9M
- EPS (\$.04) vs (\$.09) vs. Street (\$.01)

Q420 Guide:

- Revenue \$80M-\$84M, Street at \$82.3M
 - \$8M rev contribution from Signal Sciences
- Op loss of (\$15.2M)-(\$11.2M)
- EPS (\$.12) to (\$.08). Street (\$.02)

PTC (Joe Vruwink)

- (+) Growing market demand from Digital Transformation, PLM, remote asset management and remote front-line worker training, with growing interest in SaaS
 - Software becoming more mission critical, COVID accelerating demand
- (+) ROK Alliance extended for two more years. Remain bullish on long-term opportunity
 - Landed more than 250 sizable companies YTD, 45 countries 75% new logos
- (+) **MSFT** strong quarter (>20% q/q bookings growth, Momentum growing in Europe)
- (+) **ANSS** – CSL delivers second-highest bookings quarter to date\
- (+) Onshape record bookings quarter (>80% y/y). ~70% new-logo bookings growth in Q4. Pipeline growth of 6x since acquisition (**DASTY** loss with Solidworks)

Financials:

- Revenue \$391M up 17% y/y in CC. Street \$356M
- EPS \$.78 vs the street of \$.57

FY21 guide:

- ARR revised up from \$1.22B-\$1.26B up 9%-12% y/y to \$1.39B-\$1.42B up 9%-12%, Street \$1.58B
- Rev guided up to \$1.55B-\$1.6B from \$1.4B-\$1.43B
- EPS guided up from \$2.20-\$2.35 to \$2.65-\$2.85, Street at 2.86



Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 10/26/20

SHOP (Colin Sebastian)

- (+) Covid has accelerated traditional retail (bricks/mortars) to ecommerce. What retail was supposed to look like in 2030 has been pulled into 2020
- (+) Share of US Retail e-commerce at 5.9% vs AMZN at 37%
- Rev. \$767.4M up 96% y/y vs the street \$652M
- Monthly reoccurring revenue (MRR) was \$74.4M up 47% y/y=> strong merchant additions
 - Benefitted from free trial double cohort leverage
- GMV \$30.9B up 109% y/y
- EPS \$1.13 vs. street .50
- Q420 and 2020 guidance suspended

AAPL (Will Power)

- (+) Record demand due to stimulus and easing of Covid lockdowns
- (+) Services a theme on the call. At \$14.6B, services grew at 16% at a GM of 66.9%
- (-) China (goes from 16% revs to 12% revs q/q) declined 28.6%
 - Tried to explain away but did not resonate with many on the street due to Trade War dynamics

Financial Metrics:

- Revenue \$64.7B up 1% y/y vs. street \$63.3B
- iPhones (40.9% of revs):
- Revenue \$26.44B **down 20.7% y/y**. Decline due to the delay of iPhone 12 (4 models). Not in this quarter/off cycles
 - EPS \$.73 vs street of \$.70
- (+) Macs (14% rev.): **LFH, WFH, PFH**
- Revenue \$9.03B was up 29% y/y (**street views as not sustainable=>Covid pull in**)
- (+) iPad (10.5% rev.): **LFH, WFH, PFH**
- Revenue \$6.8B up 46% y/y (**street views as not sustainable=>Covid pull in**)
- (+) Services: 22.5% on revs/~34% of GM dollars at 67% GM=**LFH, PFH**
- Revenue \$14.6B up 16.3% y/y
 - Subs now at 535M up 135M y/y
- (+) Wearable, Home, Accessories (12.1% of rev):
- Rev. \$7.9B up 20.8% y/y
- Q121Guide: Not guiding revs but providing some metrics



Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 10/26/20

AMZN (Colin Sebastian)

- (+) Inflection on online commerce. AMZN saw a material increase in demand from mid-March to the present. Brick and Mortar retail getting hit hard
 - Prime demand at a very high level
- (+) Net sales \$96.14B up 37% y/y as reported and 36% y/y in CC. Street \$92.56B.
 - NA segment sales \$59.4B (61% revs) up 39% y/y in CC
 - International \$25.17B (26% revs) up 37% y/y as reported and 33% in CC
- Amazon Web Services \$11.6B (13% revs) up 29% y/y as reported and 29% CC
 - AWS Op margin 30.5% vs 31.1% q/q and 25.1% y/y (server useful life extended)
- **EPS \$12.37 vs street \$7.36**
- Op cash flow \$12B vs. \$7.9B
 - **Q320 capex \$25.8B vs \$11.9B y/y**
- (+) TTM FCF \$29.5B up 26% y/y

Q420 Guide

- (+) Rev. \$112B - \$121B vs Street \$112.4B
- **Op profit to between \$1B vs \$4.5B vs the Street \$5.69B**

FB (Colin Sebastian)

- (-) Election integrity an ongoing challenge
- (+) Pandemic accelerating Digital Transformation
- (+) Rev \$21.47B, Street \$19.8B, up 22% y/y
 - (+) Advertising \$21.22B up 22% y/y, Street \$19.41B (Ad loads up 35%)
- Op margin 37.4%, Street 32.4%
- **Tax rate 4% vs 17% y/y**
 - **One-time tax benefit related to tax election to capitalize R&D expenses for tax purposes**
- EPS \$2.71 vs \$2.12 y/y, Street \$1.90

2020 Commentary

- Total expenses to be in \$53B-\$54B range, Narrowed from prior ranged of \$52B-\$55B
- **Capex ~16B (Unchanged)**

FY21 Commentary

- Total expenses to be in \$68B-\$73B range
- **Capex \$21B-\$23B**
- **Expect more significant targeting and measurement headwinds (AAPL IOS 14)**



Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 10/26/20

GOOG (Colin Sebastian)

- Post Covid, seeing a customer shift to Digital infrastructure (shift in spend happening)
- Corporations moving to the cloud happening=>GCP up 43% (52% growth in Q120)
- (+) Ad activity increased y/y (all industries and geos) and accelerated from August
- (+) Consolidated Revenue \$46.2B up 14% y/y as reported and up 15 y/y in CC vs the street of \$42.8B
 - (+) GOOG Search \$26.34B was up 6.5% y/y
 - Broad based recovery in online advertising
 - (+) YouTube \$5.04B up 32.4% y/y
 - Usage up materially
 - Brand advertising improved q/q
 - GOOG Network \$5.72B was up 9% y/y
 - (+) GOOG Cloud of \$3.44B grew 44.7% y/y
 - GOOG Other \$5.48B was up 35.3% y/y
 - Other Bets (revs \$178M with an op loss of (\$1.103B))
 - (+) EPS \$16.40 vs the street of \$11.20

FIVN (Will Power)

- (+) Transition to cloud continues. Anticipating it to continue for many years. "The Front Door" to E-Commerce
 - Demand for AI automation increasing
 - 15% cloud penetration of the \$24B contact center software market
 - See opportunity to more than double current TAM

Financial: (non-GAAP)

- (+) Revenue \$112.1M up 12% sequentially and 34% y/y, Street \$101.1M
- (+) EPS \$.27, Street \$.18

Guide Q420

- (+) Rev guided \$114.5M-\$115.5M vs the Street of \$104.6M
- EPS \$.22-\$.24, Street \$.22

Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 10/26/20

TEAM (Rob Oliver)

- (-) FY21 will be a “challenging year” on migrating to the cloud (will discount to have them move)
 - TEAM will be expanding cloud offerings
 - Will require addition R&D and infrastructure (will continue to invest)
 - However, the company has significant exposure to customers that have server-based architectures. Discounts will be given to server customers to migrate to the cloud.
 - 75% of customers still on server-based products. Instituting a 3-year end of life program to migrate customers to the cloud. Offering free options to some customers to transition to the cloud
 - License revenue will trend to zero over the 18 months. If you include maintenance, the transition will be over the next 3 years
 - For larger customer large discounts will be offered
- (+) Revenue \$460M up 26% y/y vs the Street \$441M
 - Subscription \$278M up 38% y/y

Guide FQ221

- Revenue \$460M - \$475M, street \$482M.
- EPS .30-.32, street at .34

Recent Tech Prints: What was new**Key Tech reports** (what was new/where the street is focused)

Week of 11/2/20

CDW

(-) FY21 will be a “challenging year” on migrating to the cloud (will discount to have them move)

- TEAM will be expanding cloud offerings
- Revenue \$4.76B down 3.1% y/y as reported and down 3.3% y/y in CC, Street \$4.57B
- Average Daily Basis down 3.3% y/y inn CC (“stabilization”)
 - Corporate \$1.66B (43% revs) down 13.2% y/y
 - Small Business \$337M (9% revs) down 12.7% y/y
 - (+)Public \$2.294B (35% revs) up 9.2% y/y
 - Govt. at \$848M was up 6.8% y/y (US Census project=>does not repeat in 2021)
 - (++) Education of \$1.078B **up 33.6% y/y** (Learn from Home)
 - Healthcare revs of \$368M **down 26.5% y/y**
- Other (13% revs) \$465M down 8.2% y/y (deceleration)
 - UK (EU) impacted by Covid and Brexit
 - Canada down SMB and Energy

LITE

- (+) Strong demand across Telecom and Datacom
 - **(+) Datacom (Cloud drivers) strong**
 - Robust long-term trends – demand for data bandwidth evident
 - Chip sales accelerating to Cloud Titans
 - Contentless (next gen) ROADM growth up 30% q/q. Demand strong away from China
 - (-) China: 5G metrics declined (Huawei)
 - (-) Delays in Telco deployments (timing pushed out)

Financials (Non- Gaap):

- Net revs of \$452.4M up 23% q/q and up 1% y/y (ex of divestitures), Street \$441M

Segments:

- **Optical \$428.5M (95% revs)** up 30% q/q and up 3% y/y=>supply constrained
 - Telecom/Datacom \$261.3M vs \$248.1M y/y
- **Commercial Lasers \$23.9M (5% revs)** vs \$37.8 and \$33.8M y/y
 - Steep decline in fiber laser sales
 - GM at 43.5% vs 52.9% q/q and 42% y/y

Recent Tech Prints: What was new**Key Tech reports** (what was new/where the street is focused)

Week of 11/2/20

ON (Tristan Gerra)Financial Metrics (Non-GAAP)

- Rev \$1.32B down 5% y/y vs. street \$1.28B
 - **GM 33.5% and 35.8% y/y**
- End Market Split:
 - Auto \$419.2M (32% of revs) **down 6% y/y but seeing a strong recovery**
 - Seeing strong momentum for **silicon carbide** offerings
 - Industrial/Military/Aero \$327.6M (25% of revs) **declined 7% y/y**
 - **Strong adoption of Silicon Carbide** modules for solar power relation application
 - Communications (Wireless and Networking) \$255.4M (19% of revs) **declined 7% y/y**
 - **Smartphone business declined y/y due to geopolitical factors related to customer rev**
 - (+) Computing \$172.2M (13% of revs) up 12% y/y
 - Strength in both server and client businesses
 - Consumer Electronics \$142.9M (11% revs) **down 9% y/y**
 - **Broad based weakness in CE**

ANET**(+) Demand for Q3 improved across Cloud Titans and Enterprise (Campus).**Sector Mix:

- #1 Cloud Titan => 37% of revs down from 40% of revs in Q2
 - Recovered in Q3. Seeing better visibility in spending plans for 2021
- #2 and #3: Enterprise and Financial Verticals => 37% revs up from 35% in Q2
 - Achieved the \$100M in Campus revs by Q220. Targeting \$200M in the next 4-6 quarters
 - Implied taking share from **CSCO** older legacy products (CAT 4000, 6500 and 9400) as the result of WFH /upgrade dynamics
- (-) #4 and #5: Vertical: Service Provider and Tier 2 provider => 26% revs up from 25% in Q2

Financial Metrics (Non GAAP):

- **(+) Revenue \$605.4M up 12% q/q but down 7.5% y/y.** Guide had been \$570M - \$590M vs Street \$582M
- (+) EPS \$2.42 down 10% y/y, Street \$2.22

Q420 Guide:

- Rev \$615M - \$635M vs the Street \$608M

FY21 Guide:

- **(++) Rev growth of 13-14% y/y** (Cloud Titans (FB, MSFT) and Campus)

Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 11/2/20

SWKS (Tristan Gerra)

- **(+) Q320 saw a major inflection across all business segments**
 - Designs kicking in at Chinese OEM's and AAPL in FQ121
 - Saw request for expedites in Asia Pac. SWKS indicated demand, Street concerned on trade related pull ins before the election. Sky5 launches included Samsung, Oppo, Vivo, Xiaomi=>taking share from Huawei
- **Revenue \$957M (originally guide was for 830M-\$850M)**. Street \$840M
 - Largest customer (AAPL) ~35-40% of revs
 - Upside came from 5G releases in China (Samsung, Oppo, Vivo, Xiaomi and WiFi 6 designs)
- **GM 50.4% up only 30 bps y/y (Target goal 53%)**
 - Street looking more GM leverage on a material revenue beat
- EPS \$1.85 vs street \$1.52
- CFO \$267M
- **Inventory: \$806M vs. \$698M q/q and 609.7M y/y**

Guide Q121 (December)

- Rev guided \$1.04B-\$1.07B up 10% q/q and 18% y/y, Street of \$932M

PYPL (David Koning)

- **(+) See multiple tailwinds from the permanent shift towards a digital economy (28M merchants on platform)**
 - **(+) Total Payment Volume (TPV) grew by record 38% (\$246.7B)**
- Revenue \$5.46B, up 25% y/y, Street \$5.42B
 - Transaction \$5.08B, up 29% y/y, Street \$5.06B
 - Strength across core PayPal business including strong cross-border growth
 - Rev excluding EBAY grew 31%
- TPV \$246.69B, up 38% y/y, Street \$232.26B
- **Take rate**
 - **Total 2.21%, 2.37% in Q2, Street 2.3%**
 - **Transaction 2.06%, 2.23% in Q2, Street 2.18%**
 - 15 bps decline driven by impact of 47% growth in P2P volumes
- EPS \$1.07, Street \$0.94

Q420 Guidance

- **EPS growth in the range of 17%-18% y/y, Street 23.9%**
- Revenue growth 20%-25% y/y, Street 23%
 - Expect greater impact on 4Q from eBay's payments intermediation
- TPV growth on a % basis to be in the range of low-to-mid 30%

Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 11/2/20

W (Colin Sebastian)

- (+) Continue to benefit from both increased online penetration and heightened spend in home category
 - Broad based demand in home category expecting to continue near to intermediate term
 - 29M customers. LTM active customer count was up 51% y/y
 - New customer order growth up 48.7% (Down from 109% in Q2)
- (-) Witnessed moderating growth in 2H of 3Q. Expect strong growth for entire Q4 but visibility is reduced
- (+) Revenue \$3.84B, up 66.5% y/y, Street \$3.66B
- (+) EPS \$2.30, Street \$.80
- Q420 Guide: Gross rev growth ~50% y/y down from 66.% y/y growth in Q3. Expect strong growth in Q4 above remaining above pre-pandemic levels
 - Reduced visibility on Covid, Stimulus, Fulfillment

QCOM

- 5G inflecting: (see the 5G bundle in the derivatives section below)
 - Complexity up materially with 5G designs accelerating
 - (+) In FQ420, saw a material uptick in APAC volumes (price points lower in APAC which is driving adoption and QCOM volumes, specifically in China. Trend will continue into FY21)
- For FY20, QCOM projecting 225M of 5G devices to be shipped in 2020.
 - (+) For FY21, QCOM is targeting 450M-550M 5G devices, up 150% y/y (content up 3x)
- (+) Revenue \$6.5B (guided \$5.5B - \$6.3B) was up 35% y/y Street \$5.94B
- (+) QCT: Revenue \$4.97B up 38% y/y vs guide of \$4.3B-\$4.9B
 - Handset \$3B
 - CY 22 SAM \$35B with 3 year CAGR of growth of 10%
 - (++) RF Front End \$852M
 - CY 22 SAM \$18B with 3 year CAGR of growth of 12%
 - Auto \$186M up 36% q/q due to OEM recovery
 - CY 22 SAM \$4B with 3 year CAGR of growth of 12%
 - (++) IoT \$926M up 21% q/q
 - CY 22 SAM \$21B with 3 year CAGR of growth of 7%
 - Moving into Cloud and 5G infrastructure
 - EBT Margin 20% vs guided 17%-19% (reached 20% goal 1 quarter early)
- QTL: Revenue \$1.5B up 30% y/y vs guided \$1.2B-\$1.4B
 - EBT Margin 73% vs 68% y/y vs guided 67%-71%
 - Material legal expense leverage going forward
- (+) FQ121 Guide: Revenue \$7.8B - \$8.6B up 62% y/y vs the street of \$7.16B



Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 11/2/20

QRVO

- **The inflection in 5G some putting pressure on the supply chains.**
- Macros represent multiple year builds in RF and antennas (discrete solution moving to integrated modules in 5G due to multi band requirements)
- (+) Upside in the quarter due to 5G SOC leverage, WiFi6 adoption (advanced filtering), IOT macro and move to new substrates. (GAN)
- **For 2021, QCOM looking at 500M units=>QRVO looking for 500M units**
- **Huawei:** attained a license for certain products but not shipping post 9/14/20
- Revenue \$1.06B up 35% q/q, Street \$1.01B
 - (+) Mobile Products \$754M (71% revs)
 - (+) IDP achieved \$306M (29 % revs)
 - GM 51.7% vs. 48.6% q/q and 46.5% y/y

Guide Q321 (December)

- Rev. \$1.06B +/- %15B, Street \$928M
- EPS \$2.65 at the midpoint vs. Street \$1.71

PAYC (Mark Marcon)

- Less than 5% of TAM captured
 - (-) Still being affected by unemployment and lower interest rates
- Spend on advertising in Q3 still elevated
- Rev. \$196.5M, up 12.3% y/y, Street \$192.3M
- **(+) EPS \$0.70 vs street \$0.56**

Q420 Guide

- **Rev \$212M-\$214M, growth rate ~10% y/y at midpoint , vs. street \$212.6**

Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 11/2/20

WK (Rob Oliver)

- (+) Online collaboration and WFH continue to be a tailwind
- >20% growth in subscription rev. Record bookings
 - New logos and new solutions driving strong rev growth
- Seeing increased strength across board
 - Global statutory reporting, management reporting and capital markets
- (+) Europe remains a massive TAM opportunity
- Revenue \$88.1M up 18.8% y/y, Street \$84.5M
 - Subscription and Support Rev \$75.9M, up 20.4% y/y, Street \$72.5M
- Billings \$104.9M, Street \$85.2M=>RECORD

4Q20 Guidance

- Revenue \$90.2M-\$90.7M, Street \$88M
 - Expect subscription rev to grow at a fast rate than services
- EPS \$0.00-\$0.01, Street (\$0.09)

ANSS (Joe Vruwink)

- (+) Signed a \$72M, 5-year deal in the quarter.
 - This follows the largest deal in the company's history at \$100M with Auto/Ground transportation company in Q2
- (+) Projecting that Simulation will "triple" in the next 7-10 years
 - New Adjacencies, a \$4.1B TAM growing at 34% (8-year CAGR)
 - Emerging (5G, Auto, EV, Industrial IOT) high growth solutions, a \$4.6B TAM growing at 18% (8-year CAGR)
 - Foundation, a \$9.5B TAM growing at 8% (8-year CAGR)
- (+) Partnerships (ADSK, MSFT (Azure), PTC, Rockwell Automation, SAP, SNPS) gaining traction.
 - Talked up deals with PTC (Creo)
 - Cloud=>MSFT Azure
- Revenue \$369M (guided \$347M-\$377M) up 5% y/y in CC. Street \$366M

Q420 Guide:

- Rev. guided to \$542M-\$582M, Street \$532M
- Op margin of 47.5%-49.5%
- Tax rate 19.5%
- EPS \$2.36-\$2.67 street at \$2.50

Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 11/2/20

IVI

- (+) Talked up leverage across Indium Phosphide and Silicon Carbide (4% revs) up materially=>Auto EV and 5G
- (+) Global growth inflected for optical
 - (+) 5G a major driver (Global and long term=CHINA)
 - (+) 5G very strong in the quarter due to base station Massive MIMO builds
 - ROADM subsystems up strong.
 - (+) Data Center (hyperscale) strong (DCI and inter-datacenter)
 - Move to 200G and 400G solutions at Cloud Titans
 - (+) 3D VCEL strong
 - 3D sensing up 200% y/y (160% y/y organic)
- (+/-) China manufacturing footprint material=>benefiting from China recovery and potential pull in across 5G and Industrial lasers.
- Proforma Rev \$728.1M vs the Street \$728M
 - **China 22% of total revs “very strong”**
 - **Huawei:** not shipping to them since 9/14/20. Was close to a 10% customer, now less than 3% customer
- **Adjusted EPS \$.84 vs Street \$.55**

Guide Q221

- Rev \$750 - \$780M, street \$741M
- EPS \$.86 to \$.95 vs street \$.63

EVBG (Will Power)

- (+) Continue to see CEM momentum. Now over 100 CEM customers
 - 12 new customers, up 33% y/y
 - Still in early days in penetrating opportunity
 - Strong market demand for new applications that leverage CEM capabilities (Ex. Return-to-Work/Campus, Contact Tracing, and COVID-19 Shield) momentum
- (+) Record ASP (up 8% sequentially)
 - Signed 43 six figure deals, 48% increase y/y, second highest number in history
- Revenue \$71.3M up 36% y/y, Street \$68.4M
- EPS \$0.05, Street (\$0.11)

Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 11/2/20

HUBS

Macro/ comments:

- (+) 95K customers up 39% y/y. 120 countries, 10 worldwide office locations
- Now has two engines Marketing Hub and Sales (CRM) Hub
- Revenue \$228.4M up 32% y/y as reported and 30% y/y in CC, Street \$210M
 - US (56% revs) grew 24% y/y
 - International 44% revs were up 39% in CC
 - Subscription rev (~ 95% rev.) \$221.1M up 32% y/y in CC
- EPS \$.28, Street at .13

AYX

- New CEO in place for 30 days (previously on the Board). Experience from FFIV and PANW
 - Change coming in Sales and Partners (talked up PWC)
 - Need to pivot from on-premises enterprise. (pivot to Cloud Titans=>AMZN, MSFT, SNOW mentioned)
- (-/+) Q320
 - Environment improved slightly q/q
 - See Digital transformation Projects being adapted into smaller areas of focus
 - Still seeing larger deals are under more scrutiny, longer approval process, small deal sizes
- Rev \$130M up 25% y/y vs. street \$119M
- EPS \$.39 vs. street \$.14

Q420 Guide

- Uncertainty in the market (tough compare)
- Revenue \$146M-\$150M down 4%-7% y/y, street \$150M
 - 50% of revs coming from backlog
 - 20% from renewals
 - 30% must come from new account signings
 - Q4 a major renewal quarter. Duration will be a head wind
- EPS \$.27 to \$.31 vs the street of \$.40

Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 11/2/20

MCHP

- (+) CEO now calling the bottom of the cycle (June/September).
 - (+) With both GM and Op margin being at record levels at the bottom of the cycle, there is material profit and FCF leverage as underutilization charges decrease
 - MCHP will be increasing capex to bring more assembly and test capacity in house after constraints surfaced in the September quarter
 - (+) 2021 projected to see “significant growth” (meaning 7% consensus growth for 2021 too low) .
 - (+) MCHP (125K customers across all industry segments) is better backlog into December with revs up 5% q/q vs a historical decline of 2-3%
 - (+) Customers are now moving away from “just in time” orders to “very large” longer term orders across multiple quarters.
 - Huawei was ~1% revs, going to zero in the December quarter
- Rev. \$1.3B flat q/q and down 2.1% y/y. Street \$1.26B
 - This contrasted with MCHP’s initial guide of down 4% q/q
- Op margin 39.2% vs 36.7% y/y (long term target 40.5%)
- Tax rate was 5%
- EPS \$1.56 vs. street \$1.43

Q321 Non-GAAP Guide (June)

- Rev projected to be flat to up 5% q/q (above seasonal of a decline of down 2-3% q/q)
 - Implies a rev level of \$1.31B-\$1.375B vs the street of \$1.28B
 - GM projected 62.4%-62.8% (target 63% combined model)=>GM impressive at the bottom of the cycle were demand in muted by Covid
 - Opex guided 23.1% - 23.7% (cost rationalization aggressive)
 - Op Margin 38.7%-39.7% (target at 40%)
- EPS \$1.51-\$1.63 vs street at \$1.44

Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 11/9/20

RNG (Will Power)

Macro:

- RNG solution of Voice, Video, Messaging and Video (RCV)=>\$50B TAM
 - In Contact Center RNG partnering with In Contact (FIVN the other premier CCaaS provider). Talked up strength in new customers (up 60% y/y)
- **Partner: very early (3M seat of a 120M opportunity. New logo in UCaaS up 60% in Q3)**
 - **(+) Avaya (ACO):** master agents for ACO in place
 - **(+) ATOS:** (Unity Offering=>"UO")
 - **(+) AT&T** using RNG for its preferred UCaaS vendor
 - Saw strong bookings in the quarter
 - **(+) BT:** a new strategic deal
 - **Telus** also strong with expanded relationships targeted at the up market penetration
 - **ALU:** additive in 2021
- Total ARR at \$1.2B up 34% y/y.
 - RNG Central Office ARR was \$1.1B up 36% y/y
 - **(+) Mid-Market (\$25K ARR):** ARR of \$633M, grew 49% y/y
 - **(+) Enterprise (\$100K ARR)** ARR of \$401M, grew 55% y/y (seeing larger deal sizes due to Covid and partner leverage)
 - **(+) Channel:** \$419M was up 59% y/y
- **Rev. \$304M up 30% y/y. Street \$273.3M.**
- EPS .26 vs the street at \$.24
- The Unified Communication bundle: **CSCO (BSFT-missed the market), EGHT, FIVN, GOOG, MSFT, RNG, ZM**

DIOD (Tristan Gerra)

Macro:

- **(+) Strong recovery in Asia, followed by N.A.**
- **(+) Record revenue in Auto, Consumer, and Computing end markets**
- **(+) Channel inventory at lowest levels since end of 2018**
- **Rev \$309.5M, up 7.2% sequentially, Street \$305.6M**
 - Asia 79% of rev
- **EPS \$0.62, Street \$0.59**

Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 11/9/20

DDOG (Jonathon Ruykhaver)

- Customer growth strong: 13.1k vs 9.5k y/y
- 1,107 has AAR of greater than 100K, up 52% from 727 y/y
- Partnerships (not exclusive)
 - Announced a partnership with **MSFT** (availability on the Azure console=>in “preview” for the next couple of quarters **so revs minimal**)
 - Extended the partnership with **GOOG** GPC from EMEA to include NA=>**no near-term revs expected.**
 - Also has a **AMZN** AWS partnership
- (+) Q3 usage rates returned to pre-Covid levels vs more moderate levels in Q2 (reminder=>large Cloud customers “rationalized spend” and companies with exposures to affected industries moderated in Q2)

Financial results:

- **Rev \$155M up 61% y/y vs the street \$144.3M**
- **EPS \$.05 vs the street at \$.01**
- **Billings \$155.9M vs \$106.6M up 39% y/y**
 - Pro forma billings \$166.9M (apples to apples) or up 57% y/y. This figure considers a \$11M delta in duration=>**based upon the Q&A, the street may not buy this adjustment**
 - **Billings a big focus on the call**

FQ420 Guide

- **Rev guided to \$162M-\$164M of 43% growth y/y. Street \$155.2M**
 - **DDOG is being conservative and is considering macro uncertainty and a conservative outlook of new business growth due to Covid trends in Q4**
 - **Usage growth also hard to model**
- Op income for \$3M to \$5M
- **EPS \$.01-\$.02 vs the street of \$.01**

Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 11/9/20

CSCO (Jonathon Ruykhaer)

Macros:

- (-/+) Reminder:
 - Taking \$1B out of opex in FQ121 and into FQ221=>layoffs and scaling down legacy divisions
- (+) CEO tone very good on the call
 - From a long-term perspective, CSCO claimed they are well positioned for growth due to 1) 5G (backhaul in 2021 timeframe), 2) WiFi 6, 3) 400G and 4) shift to the cloud and 5) corporations upgrading infrastructure to cope with "remote/cloud infrastructure (Higher Ed and Healthcare mentioned)
- (+) In FQ121 demand improved
 - Quarter very linear
 - (++) Enterprise sale funnel increased. Seeing a robust pipeline with the return of some large deals that paused in calendar Q2.

FQ121 (October) Financial Metrics

- Revs \$11.93B down 9% y/y. Street \$11.85B
- **Infrastructure Platforms totaled \$6.34B (53.2% revs) was down 16% y/y**
- **Applications \$1.38B (11.6% revs) was down 8% y/y**
- **Security \$861M (7.2% revs) up 6% y/y**
- **Services \$3.34B (28% revs) was up 2% y/y**

Geo Metrics

- **Americas \$7.2B (60.4% rev) down 9.8% y/y**
- **EMEA \$3.11B (24.8% revs) was down 9.7% y/y**
- **Asia Pacific, Japan \$1.76B (14.8% revs) down 7% y/y**

Customer Market (orders)

- **Total CSCO orders declined 5% y/y** (improved from down 10% y/y last quarter)
 - **Americas:** Product orders were 5% y/y (down 11% last quarter)
 - **EMEA:** Product orders down 1% y/y (down 6% last quarter)
 - **APJC:** Product orders declined 14% y/y (down 13% last quarter)
 - **Emerging markets** declined 15% y/y
 - **BRIC plus Mexico** down 19% y/y
- **(-) FQ121 (October) Enterprise product orders DECLINED by 15% y/y** (still seeing a deceleration against a compare of down 5% Q120. Comps do not really normalize until April of 2021 (Covid impact)
- **(-) Commercial (SMB) product orders declined for the fifth straight quarter at down 8% y/y** better than down 23% last quarter. Commercial being hit HARD by the macro
- **Public Sector product orders were up 5% y/y**
- **Service Provider** product orders declined 5% y/y



Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 11/9/20

AMAT

Macros:

- The industry moving away from an application centric to a data centric world. Moore's Law and 2D scaling is dead
- (+) Power, Performance, Area and Cost driving design roadmaps. More designs across new players (Cloud Titans)
- (+) Long term: new Emerging macros such as **Big Data, (AI, DL, ML), VR/AR, IOT, Cloud, Compute at the Edge** will drive an expanded addressable market
 - **A theme on the call=>AI the BIG driver** (God save us all=>no checks and balances). From a macro perspective the market moving away from being application centric and is now pivoting to machine/data centric architectures
 - AI will drive new innovations (architecture, new materials, new packaging)
- (+) Next gen node technologies (5nm and 3nm) now strategic
 - Claimed share gains across **Metal Deposition (revs up 42% y/y in FY20), Etch (revs up 30% y/y in FY20), Inspection (revs up 46% y/y in FY20),** and Advanced Packaging
 - Per management the Semi Cap Industry is at an inflection point as the result of 2D scaling/Moore's Law limitations at the next gen nodes of 7nm, 5nm and 3nm
- (+) Exited the quarter with a very strong backlog of \$6.7B
- **(-) China=>34% revs up 32% y/y**
 - Multiple questions on if China growth sustainable (~12% of WFE). Management indicated that growth in 2021 will be less than 2020

Q420 Financial Summary (NGAAP)

- **Revs \$4.69B up 25% y/y vs Street \$4.6B**
 - **Semiconductor System Sales: \$3.07B up 33% y/y**
 - Applied Global Services: \$1.11B up 13% y/y
 - Display: \$485M up 6% y/y
- **EPS \$1.25 up 56% vs Street \$1.17**

Guide Q120 Financial Summary (NGAAP)

- Optimistic in growth thru 2021
 - Backlog flat q/q
 - **Revs 4.95B +/- \$200M vs the street of \$4.53B**
 - Semi Systems at \$3.45B
 - AGS at \$1.07B up 10%
 - Display \$400M
 - GM 45.3%
 - Opex \$860M
 - **EPS \$1.26 +/- \$.06 vs the street of \$1.11**



Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 11/9/20

PLTR

Macro: Saw large deals in the quarter

- Two major product lines
 - Gotham (DOD/Intel Agencies)
 - Foundry (Commercial grew 35% y/y)

Financial results:

- **Rev \$289.4M (44% revs) up 52% y/y vs the street \$279.3M**
 - **Government revs (56% revs) of \$163M grew 68% y/y**
 - **Commercial Revs totaled \$127M up 35% y/y**
- **EPS \$.08 vs the street at \$.03**

2020 Guide

- **Revs now at \$1.071B up 44% y/y vs street of 1.06B**

Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 11/16/20

PANW (Jonathan Ruykhaver)

Macro Commentary:

- Long term, CEO sees a strong next generation Firewall story with added Cloud and Automation. Covid-19 pulling in platform dynamics
- (+) Key products:
 - Strata: secure Enterprise
 - Cortex: security via AI
 - Now has 65% of the Fortune 100
 - AI spanning the network, end points and containers
 - Cypsis Group acquisition consulting will help customer in incident response
 - Prisma: security of the cloud (the most comprehensive SASE solution)
 - Now has 70% of the Fortune 100 up from 43% in Q320

Financial results:

- Rev \$946M up 23% y/y (guide was for \$915M-\$925M) vs. street \$922M
 - Product rev (32% revs) \$237M up 3% y/y
 - Subscription and Support (75% revs) \$709M up 31% y/y
- EPS \$1.62 vs. Street \$1.33

Guide FQ221 (January)

- Revs \$1.17B-\$1.19B up 17%-19% y/y vs street of \$971M
- EPS \$1.42-\$1.44 vs the street of \$1.35

FY21 Guide

- Revs raised to \$4.09B-\$4.14B up 20% y/y
 - Product revs flat y/y
 - Cloud AI Revs \$605M up 90% y/y
 - Cloud ARR \$735M up 89% y/y
- Total billings raised to \$5.08-\$5.13B up 18-19% y/y
- EPS raised to \$5.70-\$5.80

Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 11/16/20

NVDA

Macro:

- Reminder: Acquiring ARM Holdings for \$40B
- (+) NVDA is a player in every relevant next gen macro poised to inflect in 2020 and beyond
- Ampere the biggest advance in NVDA's history, 20x the performance

Financial Metrics (Non-Gaap):

- Rev \$4.73B up 22% q/q and up 57% y/y, street \$4.42B
 - Mellanox was 13% revs or ~\$614M
 - Material pull in from Huawei that won't repeat in FQ4
 - Graphics was \$2.79B up 34% q/q and up 25% y/y
 - Compute and Networking (includes Mellanox) was \$1.94B up 9% q/q and 146% y/y
- Gaming (48% of revs) \$2.271B up 37% q/q but up 37% y/y
 - Nintendo Switch demand robust.
 - New Ampere based RTX 30 series (3070, 3080, 3090) has 2x the performance and 2x better power profile
 - Retail sold out: "may take a few more months" to get supply balanced
- Datacenter (includes Mellanox and was 40% of revs) \$1.9B up 8% q/q and up 162% y/y
 - Mellanox was just over 33% of the data center revs
 - Announced next gen 400G InfiniBand solution
 - The New A100 is based upon Ampere architecture (20x the performance=>scale
- EPS \$2.91 up 63% y/y street \$1.92

Guide FQ421 (a 14-week quarter/better than seasonal)

- Rev \$4.8B +/- 2% vs. street \$4.43B
 - Gaming projected to be up q/q above seasonal
 - Data Center expected to be down slightly q/q off a huge FQ2 and FQ3
 - In FQ4 Mellanox will experience a meaning decline q/q as the Huawei pull in will not repeat. Mellanox growth will still be up 30% y/y
 - Auto will be up q/q
 - Professional Visualization will be down q/q

Recent Tech Prints: What was new

Key Tech reports (what was new/where the street is focused)

Week of 11/16/20

WDAY (Mark Marcon)



Macro:

- WDAY seeing an acceleration in digital transformation initiatives.
 - Seeing large companies accelerating their moves away from legacy platform (**SAP implied on their guide down**)
 - Pipeline levels not at pre Covid levels yet but seeing gradual improvement
 - (-) Seeing headwinds on net new business and in affected industries (Hospitality, Travel and Retail verticals on the sidelines)
 - Pipeline levels not at pre Covid levels yet but seeing gradual improvement
- Strong quarter for HCM, several notable wins and had several go-lives
 - Highlighted **WMT** (the largest go-live at 1.7M employees) and **ACN** (500K employees)
 - WDAY seeing a need for Talent Management offerings (mental health, diversity)
 - Employee management important in a WFH environment
- In the Financial Management vertical reached 1,000 customers
 - Demand for planning tools strong with Covid dynamics
 - Seeing strength on products that enable the Office of the CFO
 - Spend management (Scout) strong with F500 wins (**COUP**) as well as Analytics

Financial Metrics (Non-GAAP):

- Revenue \$1.11B up 17.9% y/y, Street \$1.09B
 - Subscription \$969M up 21.3% y/y
 - EPS \$.86, Street \$.67

Guidance Q421:

- Tough compares y/y and a uncertain environment affecting guide metrics
- Subscription rev. \$991M-\$993M up 18% y/y
- Backlog projected up 14%-16% y/y (tough compare)=>an 800-bps deceleration at the mid-point

FY21 guided metrics

- Subscription revenue increased from \$3.73B - \$3.74B to \$3.773B - \$3.775B, now up 22% y/y
- Op margin raised to 19.6% from 18% (T&E leverage from FQ2/FQ3)
 - Op margins for FY22 will be down from FY21 levels (T&E normalization and investment in S&M and R&D)

SUMMARY: Q3 Positive Tech Trends/Earnings Reports

- **Digital Transformation** pull ins: mostly software=>ACN, INFY, MSFT, NOW, TWLO (6 year pull in)
- **Cloud:** Q3 saw acceleration post a Q2 “digestion” phase. **FB’s \$22B capex number for FY21** (\$16B in 2020) a major data point in Q3. Other companies seeing acceleration include **AMZN, ANET, CRM, GOOG** and **MSFT**
 - Cloud Titans metrics constructive: **AMZN**->AWS up 29% y/y, **GOOG**->GCP up 45% y/y, **MSFT** Azure up 47% y/y
 - **NVDA** is pioneering a new data center architecture that is software define across networking, storage and security. Most recent results showed Data Center at 40% revs up 162% y/y
- **5G: QCOM**=>225M 5G handsets will be produced in 2020 increasing to 500M by 2021 (3x the content)
- **SaaS:** one of the strongest sectors with exceeds from: **ADBE, ADSK, CDNS, MSFT, NOW, SNPS, TWLO**
- **Unified communications:** **EGHT, FIVN, RNG, TWLO**
- **Semiconductor** results were strong due to 5G, Data Center higher content and a recovering in Auto and Industrial. Beats includes **AMAT, AMD, LRCX, MCHP, NXPI, QCOM, QRVO, XLNX**
 - Worldwide, OEM’s ordering buffer inventory on Covid supply chain concerns)
 - Q3 saw a renewed focus in M&A: **AMD/XLNX, MRVL/IPHI** and **NVDA/ARM** (the 7nm, 5nm and 3nm manufacturing cycles).
- **E-Commerce**/related infrastructure plays were strong in Q3: **AMZN** (37% top line growth in Q3), **SHOP** (96% revenue growth in Q3)
- **The return of Digital Ad budgets:** **AMZN, FB** (ad revs up 22% y/y in Q3), **GOOG** (YouTube up 32% y/y), **PINS, SNAP, TTD**
- PE investments: **NTNX**=>\$750M investment buy Bain, **FEYE**=>\$400M investment by Blackstone

Q3 Negative Tech Trends/Reports

- **Legacy Tech/**Companies that have not executed on new growth cycles: **IBM, INTC, SAP**
- **High valuation software:** some locking in gains. The fallen angels **FSLY, TEAM** and **WORK** (see the following slide)
- **Small and Mid-size businesses are weak:** **CSCO** (commercial segment down 8% y/y, Enterprise down 15% y/y), **CDW** (small business down 13% y/y)
- **Exposures to NA and EMEA** (Germany, France and the UK Brexit/locked down). Most companies highlighted on Q3 earnings calls the lack of visibility into Q4
- **Exposures to China:** **Huawei** has been taken out of every Tech companies models post the Department of Commerce restrictions that became effective on 9/14/20. **SMIC** (the largest foundry in China) and Payment companies (Ant) are now the latest US targets
- **Remote Architecture** spend seems to have peaked (**CDW**)
- **PC cycle peaking** (multiple quarters of Covid pull ins): **AAPL, INTC CDW**
- **The global war against “Big Tech”:** China vs **BABA**, US/EU vs **AMZN, FB** and **GOOG**

THE BOTTOM LINE=>The positives exiting Q220

(+) Digital Transformation pull ins

- **ACN:** the :new: 70% of revs. Seeing large deals in the pipeline
- **CRM:** Seeing digital transformation pull in across its entire customer base Revenue \$5.15B, up, 29% in CC (street \$4.9B)
- **CTSH:** Digital 42% of revs up 13% y/y
- **IBM:** GTS Saw constructive trends in Digital Transformation large deals (11 deals @\$100M)
- **INFY:** Digital 47% revs and grew 25% y/y
- **NOW:** Digital Transformation solution being brought forward
- **TWLO:** Digital transformation being bought in 6 years
- **WDAY:** Seeing large companies accelerating their moves away from legacy platform (**SAP implied on their guide down**)

(+) E-commerce/Media transformation

- **AKAM:** Media up 16% y/y vs 22% y/y growth q/q
- **AMZN:** Net sales \$96.14B up 37% y/y as reported and 36% y/y in CC. Street \$92.56B.
- **FSLY:** (-) revised Q3 revs down (\$70.6M vs \$73.5-\$75.5M)
- **LLNW:** (-) saw some gross margin pressure (price or volume=>less content, download activity)
- **NFLX:** 1H20 sub adds were 26M vs 28M for the whole year of 2019. Added 2.2M vs guidance of 2.5M so essentially in line (some on the street much higher)
- **SHOP:** Revs up 96% y/y. GMV up 109%, Merchant solutions up 132% y/y

(+) Hyperscale/Cloud Strong , (Q2 digestion short lived)

- **AVGO:** networking up 9% q/q. Surge seen by the Cloud Titans
- **AMZN:** AWS up 29% y/y, op margin expanded from 25.1% to 30.5% y/y
- **ANET:** Talked up 2021 revenue growth to 13-14% y/y. #1 Segment Cloud Titan =>37% revs, better visibility in spending plans for 2021
- **DDOG:** Rev \$155M up 61% y/y vs the street \$144.3M
- **GOOG:** GCP up 45% y/y
- **IBM:** (+) Cloud and Data Platforms (~45% of segment) up 19% y/y
- **INTC:** (-)Datacenter Group Rev. (32% of revs) \$5.9B declined 7% y/y
- **MANH:** Rev \$574M-\$579M (Prior \$554M-\$570M) vs. Street \$565.9M. Cloud revs \$78M-\$79M (much greater and subscription based)
- **MRVL:** Networking \$406M (56% revs) up 8% q/q and up 23% y/y
- **MSFT:** Azure up 47% y/y
- **NVDA:** Data center (45% revs up 167% y/y). One of the few companies that has visibility into Hyperscale orders into Q3 (A100)
- **ORCL:** Cloud ERP inflecting, Applications strong=>Fusion Cloud apps were up 26% y/y
- **PANW:** Next generation Security billings were \$265M up 53% y/y (25% of total billings)
- **SAP:** Cloud rev €1.94B up 14% y/y in CC (deceleration). Cloud backlog up 16% CC to \$6.6B
- **SPLK:** Cloud rev \$1.94B up 14% y/y in CC (deceleration)
- **TSM:** (+) HPC (37% revs) was up 25% q/q
- **WDAY:** seeing acceleration post Covid as C levels move off on premise (talent management, health tracking, CFO suite upgraded tools)
- **XLNX:** (+) Data Center Group revs \$107.4M or 14% of revs was up 23% q/q and up 30% y/y

THE BOTTOM LINE=>The positives**(+) Cloud Titan Cloud results/capex=>top 4 spent \$21B in Q2**

- **AMZN:** Amazon Web Services \$11.6B (13% revs) up 29% y/y as reported and 29% CC Q320 capex \$25.8B vs \$11.9B y/y
 - **CRM**
 - Sales Cloud \$1.28B (27% rev) up 13% y/y
 - Service Cloud \$1.3B (27% rev) up 20% y/y .
 - Use of messaging channels grew more than 600% to address the consumer channel (other “front doors” of e-commerce=>**FIVN**, **RNG**, and **TWLO**)
 - Salesforce Platform/Other \$1.5B (31% rev) up 66% y/y
 - Marketing and Commerce Cloud \$746M (15% rev) up 21% y/y
 - **FB:** Net Capex of \$3.88B vs \$3.36B, Street \$4.16B
 - 2020 capex 16B range. **2021 capex \$22B**
 - **GOOG:** Capex \$5.4B vs \$5.4B q/q and \$6.7B y/y=>Technology Infrastructure a focus vs office expansion (down) going forward
 - **MSFT:** Azure Capex: cash paid for property and equipment was \$4.9B (Q2 capex will be flat q/q)
- (+) Telecom (5G=>a multi-year build) strong)**
- **AVGO:** seeing content gains of 30-40% in 5G
 - **CIEN:** major cut in Q3 orders across ISP, MSOs and Web scaler companies
 - **IIVI:** Photonics: \$498M vs \$517M q/q. Compound Semi: \$230M vs \$229M q/q
 - **Backlog \$899M vs \$957M q/q**
 - \$533M photonics vs \$587M q/q
 - \$356M compound semiconductors vs \$370M q/q
 - **IPHI:**
 - Cloud (44% revs) up 92% y/y (inside and outside (DCI) of the datacenter)
 - Telecom (38% revs) up 119% y/y (organic growth at 41% y/y)
 - **LITE:** Optical \$428.5M (95% revs) up 30% q/q and up 3% y/y=>supply (coherent optical/ROADMs)
 - **MRVL:** (+) 5G momentum with 4 of the 5 top base station vendors is evident. NOK and Samsung strong. Volume shipments start the 2H20 thru 2021 and beyond
 - **SWKS:** Revenue \$737M (originally guide was for \$670M-\$710M). Street \$691M. Upside China (Samsung, Oppo, Vivo, Xiaomi and WiFi 6 designs)
 - **TER:** (+) Q3 Rev \$819M up 41% y/y, street at \$787M
 - **TSM:** (+) Smartphone (46% revs) was up 12% q/q
- PC Dynamics: monitor the Covid pull in (PEAK)**
- **AAPL:** iPad (10% rev.): **LFH** , **WFH** , **PFH**. Revenue \$6.8B **up 46% y/y**. Macs (14% rev.): **LFH** , **WFH** , **PFH**. Revenue \$9B **was up 29% y/y**
 - **CDW:** Education of \$1.078B **up 33.6% y/y** (Learn from Home)
 - **INTC:** (+) Client Computing Group (53% of revs) \$9.8B was up 1% y/y. Overall units up 9% YTD

THE BOTTOM LINE=>The positives**(+) Auto and Industrial seeing a powerful 2nd derivative recoveries (BOTTOM Q220)**

- **MCHP**
- (+) Now calling the bottom of the cycle (June/September).
 - (+) 2021 projected to see “significant growth” (meaning 7% consensus growth for 2021 too low) .
 - MCHP is seeing recoveries across:
 - Auto (15% revs), material uptick after a very depressed Q2
 - Mix increasing due to EV
 - Industrial/Medical (28% revs)
- **NXPI:** Auto (47% revs) was down 35% y/y in CC
- **ON:** Auto \$419.2M (32% of revs) down 6% y/y
 - Seeing strong momentum for silicon carbide offerings
- **TER:** (+) Industrial Automation \$69M (8.4% revs) up 17% q/q and flat y/y
- **TXN:** (+) Auto 21% revs. In Q320 Auto was up 75% q/q and flat y/y (bottom in cycle was in Q2)
- **XLNX:** (+) Auto, Broadcast, Consumer and Auto \$122.7M or 16% of rev was up 36% q/q and down 8% y/y

Smartphone growth reaccelerated in Q3, specifically in the Apac region

- **QCOM:** In Q4, handset results came in better due to APAC (China) demand post Covid.
 - In FQ3 Calendar Q2), QCOM projected that Covid 19 would reduce 3G, 4G and 5G handsets by ~15% y/y. Results for Q4 came in only down only 5% y/y due to APAC recovery (they have managed COVID much better)
 - **(+) In FQ420, saw a material uptick in APAC volumes** (price points lower in APAC which is driving adoption and QCOM volumes, specifically in China. Trend will continue into FY21
 - **(+) For FY21, QCOM is targeting 450M-550M 5G devices, up 150% y/y**

THE BOTTOM LINE=>The positives**Software: Billings deceleration in Q2, reacceleration in Q3**

- **ADSK:** Total Billings \$787M down 12% y/y. Being affected by lower durations and a lack of recovery in the US and the UK
- **AYX:** Guide Q4: Revenue \$146M-\$150M down 4%-7% y/y, street \$150M
 - Now relying on "Adoption Licenses", Scaled down licenses to "test drive the AYX solution for 6 months. These free licenses up 100% q/q and up 60% y/y
- **DDOG:** Rev guided to \$162M-\$164M of 43% growth y/y. Street \$155.2M. DDOG is being conservative and is considering macro uncertainty and a conservative outlook of new business growth due to Covid trends in Q4
- **EVBG:** Billings \$81.6M, Street \$81.6M. Signed 43 six figure deals, 48% increase y/y, second highest number in history
- **OKTA:** Now seeing an impact of Covid-19. Macro challenging
 - OKTA did see a down tick in adoption in Q2 vs Q1 panic phase. A large portion of pull into enabling remote employees in Q1 adoption are now largely complete
 - Billings experienced some pressure on large deal close rates (a timing issue)
- **NEWRR:** missed Q3. Billing growth last four quarters: 33%, 22%, 16%, 15%
- **QYLS:** Current billings affected by shorter duration; ASP only grew 7%. Giving away free products
- **NOW:** Subscription Revs (95%) of \$1.091B grew 29% y/y in CC (had guided \$1.058B)
- **PANW:** Subscription and Support (75% revs) \$709M up 31% y/y
- **PING:** missed Q3
- **PTC:** ARR was \$1.27B up 11% y/y in CC (Midpoint of guidance), Street \$1.25B
- **RNG:** Total ARR at \$1.2B up 34% y/y.
- **SAP:**
 - Total revs reduced from €27.8M-€28.5B to €27.2M-€27.8B up now flat to up 2% vs 1-3% y/y
 - Demand environment recovery muted
- **SMAR:** Calculated billings \$89.9M up 30% y/y (material deceleration)
- **SPLK:** License \$176.8M down 37% y/y (transition to subscription/also affects duration)
 - Overall Duration declined from 33.5 months to 28.6 months y/y
- **TEAM:** Tough transition to the cloud. License revs down 11% y/y in Q3, Guided down Q4=>revs \$460M-\$475M vs street of \$482M)
- **TWLO:** dollar-based retention a strong 137%. Projecting growth of 30% over the next 4 years
- **VMW:** Bookings y/y growth rates: Core SDDC Product down ~3% y/y, vSAN down ~3% y/y, NSX down ~5% y/y. EUC down ~8%
- **WDAY:** Q4 Backlog projected up 14%-16% y/y (tough compare)=>an 800-bps deceleration at the mid-point
- **WK:** Billings \$104.9M, Street \$85.2M=>RECORD vs Q2 Billings \$84.5M up 3% y/y vs Street \$87.5M

THE BOTTOM LINE=>The negatives: Trade restrictions MONITOR: Biden moderation

China: the worry is pull ins. China Inc. moving away from US providers due to Dept. of Commerce actions.

- **AMAT:** China revs of \$1.58B (34% of revs) vs \$1.2B y/y (lots of questions here in Q&A) Targeted questions of the Department of Commerce ruling against SMIC
- **IIVI:** 22% revs from China (FNSR)=strong growth. Huawei was a 10% customer, now a 3% customer
- **LITE:** Huawei: down to less than 10% revs in Q121, Huawei is now projected to be less than 5% of revs in Q221
- **KEYS:** Huawei coming out of the model (3% revs)
- **LRCX:** China spend (37% revs)=>major area of investor focus (~10B of WFE)
 - LRCX has applied for a DOC license to supply SMIC with equipment (currently not shipping)
- **LSCC:** exposed too Huawei in the communication segment. No longer shipping to Huawei
- **MU:** Huawei just under a 10% customer in Q4. Stopped shipping to Huawei on September 14th
- **QRVO:** Apac 5G handsets up q/q. Not shipping to Huawei
- **SMTC:** Huawei 4% of rev, being taken out of the model due to BIS restrictions
- **SWKS:** All customers up q/q except Huawei (not shipping to Huawei now a small customer)
- **TER:** China 15% revs/Huawei). Previously, TER thought they would see limited impact as test capacity will migrate to other players and geos. Now seeing a boost from testing companies that are reprovisioning from Huawei
- **TSM:** China: 22% rev. Inventory above seasonal due to 5G/HPC launches and “supply chain security” (increase in buffer inventories), Huawei pull in of wafers before the US BIS supply ban also a factor

THE BOTTOM LINE=>The negatives**IT budgets down (5%) to (7%)=>Q4 renewal in Q\$ material**

- 1H20 have pulled in unexpected spend
- T&E savings being reallocated to Digital Transformation projects
- Q420=>Affected industries starting to re-lock
- Biggest Tech exposures to affected industries: **ACN: 20% revs** , **AYX: 31%**, **BL: 25%**, **IBM: 30%**, **ORCL: 20%**, **MDLA: 30%**, **NEWRR: 20%**, **PRO: 45%**

Small to mid-size business trends

- **CDW: Corporate \$1.66B (43% revs) down 13.2% y/y. Small Business \$337M (9% revs) down 12.7% y/y**
- **CSCO: (-) Commercial (SMB) product orders declined for the fifth straight quarter at down 8% y/y vs down 23% y/y last quarter**
- **SAP: large deals pushed out due to Covid**
- **SPLK: "CRM Very Pollyannaish" that Covid is not affecting IT budgets and close rates.**
 - **Not a "V" recovery. Seeing intense review of all contracts (C-Level). Cloud strong BUT still subject to review. In FQ321, Federal (FYE) has high variability and uncertainty due to budget and election dynamics.**
- **VMW: Large on-premise deals=>license (25% revs) was down 7% y/y.**

Enterprise weakness: on premise spend declining vs Cloud**CSCO:**

- **Total CSCO orders declined 5% y/y (improved from down 10% y/y last quarter)**
 - **Americas:** Product orders were 5% y/y (down 11% last quarter)
 - **EMEA:** Product orders down 1% y/y (down 6% last quarter)
 - **APJC:** Product orders declined 14% y/y (down 13% last quarter)
- **Emerging markets declined 15% y/y**
- **BRIC plus Mexico down 19% y/y**
- **(-) FQ121 (October) Enterprise product orders DECLINED by 15% y/y (still seeing a deceleration against a compare of down 5% Q120.**

Comps do not really normalize until April of 2021 (Covid impact)

- **(-) FQ420 (July) Enterprise product orders DECLINED by 7% y/y**
- **(-) FQ320 (April) Enterprise product orders DECLINED by 4% y/y**
- **(-) FQ220 (January) Enterprise product orders DECLINED 7% y/y (material deceleration from Q419)**
- **(-) FQ120 (October) Enterprise product orders DECLINED 5% y/y (major deceleration)**
- **(-) FQ419 (July): Enterprise product orders DECLINED 2% y/y**
- **(+) FQ319 (April): Enterprise product orders up 9% y/y**
- **(+) FQ219 (Jan): Enterprise product orders up 11% y/y**
- **(+) FQ119 (Oct): Enterprise product orders up 15% y/y (FQ120 compare difficult)**

Remote Infrastructure: 95% of employees now working from home

- Material pull in the 1H20
- **CDW starting to "moderation" in remote infrastructure**
- **AKAM, AMD (NB), AMZN, CHKP, CSCO, CTXS, CRWD, FFIV, FTNT, GDDY, INTC (NB), MSFT, NET, PANW, OKTA, SPLK, VMW, WIX, ZS**

Peak model discussions vs a global recession

- The PC cycle (INTC, MSFT), 1H21 down

Q320 Exceeds or Guide Ups		11/20/20								
<u>Storage</u>		<u>Networking/ Carrier</u>		<u>Semiconductors</u>		<u>Software</u>		<u>Internet</u>		<u>Hardware, Diversified , Services</u>
		ACIA		AMAT		ADBE		AMZN		ARW
		ANET		AMKR		ADSK		CHGG		COGX
		BAND		AMD		AKAM		DROP		DIS
		CALX		AMSC		AYX		EBAY		EQIX
		CSCO		ASML		AVLR		ETSY		FISV
		EXTR		DIOD		CDNS		FB		INFY
		FFIV		HIMX		FEYE		GOOG		HPE
		CMBM		IPHI		FIVN		GRUB		NTGR
		NPTN		KLAC		FTNT		MELI		SNX
				LFUS		HUBS		PINS		
				LRCX		INTU		PTON		
				MCHP		MANH		ROKU		
				MPWR		MIME		SHOP		
				MRVL		MODN		SNAP		
				MXIM		MSFT		SPT		
				NVDA		NET		TENB		
				NXPI		NOW		TTD		
				QCOM		OTEX		TWTR		
				QRVO		PANW		VRM		
				STM		PAYC		ZG		
				SWKS		PCTY				
				VLDR		PFPT				
				VICR		PLTR				
				XLNX		PTC				
						RNG				
						RPD				
						TWLO				
						VRNS				
						WDAY				
						WK				



Q320 Misses or Guide Downs		11/20/20		TO						
<u>Storage</u>		<u>Telco Networking</u>		<u>Semiconductors</u>		<u>Software</u>		<u>Internet</u>		<u>Hardware, Diversified , Services</u>
		MSI		INTC		AYX		BKNG		DLB
		NOK		STX		DASTY		PYPL		IBM
				WDC		EA		REAL		
						FSLY		UBER		
						GSKY				
						LLNW				
						MODN				
						NEWR				
						PS				
						SAP				
						TEAM				
						TTWO				

Updated	11/20/20	
High Valuation SaaS	EV/Revs	Short Interest
ZM	38.2x	5.2%
COUP	36.2x	11.2%
NCNO	32.5x	19.4%
BILL	34.7x	3.7%
NET	32.8x	5.5%
DDOG	31.6x	9.6%
SHOP	29.8x	1.1%
OKTA	28.4x	5.7%
CRWD	27.9x	7.0%
ZS	27.2x	10.3%
TEAM	23.6x	6.9%
VEEV	23.5x	1.5%
PAYC	23.3x	3.5%
FSLY	22.9x	15.8%
DOCU	22.8x	4.7%
AVLR	20x	5.5%
TWLO	19.2x	6.6%
RNG	18.6x	7.8%
FIVN	18.3x	5.4%
NOW	17.5x	1.3%
PLAN	16.8x	17.4%

PCTY	15.5x	3.3%
HUBS	15.1x	3.4%
ADBE	15x	1.0%
BL	14.7x	10.1%
ESTC	14.3x	11.8%
WORK	13.8x	14.5%
APPF	13.5x	6.1%
SPT	12.9x	16.6%
SMAR	12.9x	8.7%
SPLK	12.1x	5.4%
QTwo	12.1x	11.9%
EVBG	12x	12.3%
ZEN	11.2x	8.6%
WDAY	11x	4.0%
WIX	10.8x	2.7%
CRM	9.9x	1.3%
MDLA	8.7x	22.8%
PYPL	8.4x	1.2%
PD	8.4x	19.6%
WK	8x	7.2%
QLYS	7.5x	17.4%
High short Interest		
Low short interest		
Internet		
CVNA		28.6%
CHWY		18.4%
SFIX		36.9%
W		20.1%
VRM		20.9%

COVID	Affected Industry Exposures
ACN	20%
AKAM	20%
AYX	31%
BL	25%
CYBR	15%
EGHT	15%
EVBG	18%
FIVN	15%
FSLY	4%
IBM	30%
ORCL	20%
MANH	17%
MDLA	30%
NET	10%
NEWR	20%
PD	7%
PFPT	20%
PRO	45%
RPD	15%
SWI	15%
TWLO	10%
VG	20%
WORK	15%
>20% C19 industries	

<u>Semi</u>	<u>Auto %</u> <u>Revs</u>		<u>Semi</u>	<u>Industrial %</u> <u>Revs</u>		<u>Semi</u>	<u>Comm</u> <u>% Revs</u>		<u>Semi</u>	<u>Consumer</u> <u>% Revs</u>	<u>Handset %</u> <u>Revs</u>	<u>AAPL</u> <u>exposures</u>
ADI	11%		ADI	53%		ADI	25%		AAPL		50%	
						ANET	40%					
									AVGO			15%
			LSCC	39%		LSCC	38%					
MCHP	15%		MCHP	28%		MCHP	14%		MCHP	13%		
MPWR	15%		MPWR	17%		MPWR	11%		MPWR	26%		
			MTSI	42%								
MU	15%								MU		29%	
			MTSI	42%		MTSI	35%					
MXIM	26%		MXIM	30%		MXIM	24%		MXIM	20%		
NXPI	47%		NXPI	18%		NXPI	21%		NXPI		13%	
NVDA	5%											
ON	27%		ON	29%		ON	21%		ON		10%	
									QRVO			36%
									QCOM			7%
									SWKS		70%	39%
TER			TER	13%		TER	69%					
									TSM		47%	> 10%
TXN	21%		TXN	36%		TXN	11%		TXN	13%	10%	6%
XLNX	12%		XLNX	30%		XLNX	32%					

	Total Intl. Revs	EMEA % Revs	APac % Revs	China Revs	Huawei broke out of China Revs
AAPL	55%	24%	15%	16%	
ACN	52%	32%	20%		
ADI				22%	3%
ADSK	57%	39%	18%		
AMAT	63%	5%	58%	29%	
AMZN	26%	26%			
ANET	20%	20%			
ANSS	53%	25%	28%	4%	
ASML	78%		59%	19%	
AYX	26%	26%			
CDNS	56%	18%	26%	12%	
CDW	13%	13%			
CHKP	54%	42%	12%		
CIEN	27%	16%	11%		
CRM	30%	21%	9%		
CRWD	27%	14%	13%		
CSCO	41%	26%	15%		
CTSH	24%	18%	6%		
CYBR	39%	28%	11%		
FB	52%	24%	28%		
FFIV	43%	24%	19%		
FTNT	58%	37%	21%		
GOOG	47%	30%	18%		
HPE	60%	37%	10%	13%	
HPQ	66%	37%	29%		
HUBS	42%	42%			
IBM	47%	31%	16%	6%	

IIVI				27%	7%
INTC				22%	
INFY	38%	24%	14%		
IPHI				40%	0%
JNPR	44%	28%	16%		
KEYS	58%	16%	22%	20%	3%
KN				22%	
LITE				25%	0%
LRCX	85%		51%	34%	
LSCC					3%
MPWR					5%
MU				30%	
NPTN				49%	
NOW	34%	25%	9%		
NTNX	44%	24%	20%		
NVDA				~22%	
ON	86%	18%	58%	10%	
ORCL	45%	28%	17%		
PANW	31%	19%	12%		
PTC	57%	37%	20%		
QCOM				48%	7%
QRVO				30%	
RNG	38%	24%	14%		
SAP	58%	43%	15%		
SNPS	52%	10%	42%	20%	
SMTC				19%	3%
SPLK	34%	34%			
SWKS				20%	2%
TEAM	50%	39%	11%		
TER	69%	43%	13%	13%	
TSM	42%	6%	15%	21%	
TXN				55%	
VMW	50%				
XLNX	74%	13%	51%	10%	0%



Cloud	% revs	Growth	Q320 Capex
			Capex (B)
ANET	40%		
AMZN	13%	29%	\$6.0
BABA	11%		
CIEN	24%		
FB			\$3.9
GOOG	10%	43%	\$5.4
IBM	14%		
INTC	33%		
JNPR	23%		
MCHP	18%		
MPWR	31%		
MSFT	35%	47%	\$4.9
MTSI	20%		
NVDA	45%	167%	
ON	13%		
SAP	30%		
TSM	33%		
XLNX	12%		
		Total	\$20.2
		FY20	FY21
FB		\$16B	\$22B



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