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High-tech rarity

Evan Lorenz writes:

Assume, as Wall Street assumes, that Apple, Inc., Microsoft Corp., Amazon.com, Inc., Facebook, Inc. and Alphabet, Inc. will generate compound sales growth of 18% per annum over the next five years. Assume further that the share prices of the five climb in lockstep with that projected revenue growth. With those conditions fulfilled, our friends at Horizon Kinetics point out, the market cap of the tech titans would reach \$15.6 trillion from \$6.8 trillion today. For reference, the market cap of the entire S&P 500 stands at \$30 trillion.

Now in progress is a bullish analysis of Intel Corp. (INTC on the Nasdaq), the world's largest semiconductor chip manufacturer and a valuation rarity. If you screen, as I recently did, for American-domiciled stocks with market capitalizations over \$10 billion, price-to-earnings ratios under 15 times and net debt less than 1.5 times trailing earnings before interest, taxes, depreciation and amortization, you come up with only 20 names. INTC is one of that select company.

While Intel has real problems (about which more later), Apple, Amazon, Facebook and Alphabet face their own potential difficulties. Last week, Democrats and Republicans on the antitrust subgroup of the House Judiciary Committee came together to demand antitrust enforcement against the giants of Silicon Valley. Attacking Big Tech is one of the few bipartisan projects in this fractious election year.

First called NM Electronics, after co-founders Robert Noyce and Gordon Moore, Intel came into the world in 1968 in Mountain View, Calif. (The

duo switched the name to Intel, a portmanteau of integrated and electronics, one month later.) Noyce was the co-inventor of the integrated circuit, Moore the author of the eponymous "law," or observation, that the number of transistors in a dense integrated circuit tends to double around every two years.

Intel developed the first commercially available CPU, the 4004, in 1971 and one of the world's first microcomputers in 1973. In the 1980s and '90s, Intel chips powered the rise of personal computers and client servers, which displaced IBM's PC line and dinged Big Blue's mainframe business.

Intel generated \$19.7 billion in sales in the second quarter, split between personal-computer-centric sales (\$9.5 billion) and data-centric sales (\$10.2 billion). The PC unit sells products such as the Intel Core CPU and the Pentium. The data-centric unit makes chips used in everything from servers to autonomous cars, including the CPUs for devices that stay connected to the internet and chipsets that customers themselves can program.

Not that you'd guess it from the share price, but Intel is a Covid-19 beneficiary. As offices and schools emptied out, the demand for PCs, laptops and server CPUs shot up. In the second quarter, earnings per share rose by 16%, paced by a 34% uptick in sales of data-centric products and a 7% boost in sales of PC-centric products.

Intel, however, has warned that its virus-related boom may give way to a second-half bust. For the third quarter, management guides for a 5.2% decline in year-over-year revenue, to \$18.2 billion. This isn't just an Intel phenom-

enon, according to the Oct. 4 edition of *The High-Tech Strategist* (the great Fred Hickey, editor). Ciena Corp., Broadcom, Inc. and Cisco Systems, Inc., among other tech notables, pointed to drops in their latest earnings calls, too.

"Specifically, we began to experience a meaningful slowdown in orders and a softening of our outlook," Ciena CEO Gary Smith told listeners-in on the Sept. 3 call. "I would stress that the decline is broad-based across our service providers customers globally, whose spend now appears to have been somewhat front-end-loaded in the calendar year, resulting in lower orders in our third quarter from a number of our large customers in this segment."

It's a measure of Intel's great size, as well as its exemplary credit quality, that the \$8.6 billion in net debt on its balance sheet represents just 0.23 times trailing Ebitda. In the second quarter, operating income covered interest expense by 31 times. Standard & Poor's rates the chip maker single-A-plus.

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While Intel's second-quarter sales and EPS beat Street estimates, "frankly, none of the numbers matter," a team of analysts led by Stacy Rasgon, who rates Intel a sell for Bernstein, contended on Friday, the day after the earnings release hit. "In fact, investors could have stopped reading the press release after the fourth line on the first page, which indicated Intel delaying their 7nm trajectory with yields running a year behind internal targets, and with the CPU roadmap (originally slated for mid-2022) pushed by 6 months to the end of 2022 or start of 2023." The news sent Intel's shares plunging 16.2%.



source: The Bloomberg

Putting that into layman's terms, Intel is behind schedule in adapting its manufacturing process to 7 nanometers (nm), thereby continuing a pattern of delays (the company's previous efforts on 10nm and 14nm also dragged). For a sense of scale, a single atom of silicon, the base substrate from which microchips are made, is only 0.2nm wide, i.e., we are talking about something that, in the case of 7nm, is merely 35 atoms thick. Intel is now lagging Taiwan Semiconductor Manufacturing Co. Ltd (TSMC to its friends) and Samsung Group, which are both producing chips on 7nm processes and sell their capacity to Advanced Micro Devices, Inc., Intel's biggest competitor, and other chip designers.

Even the best, most efficient foundries on the planet have trouble manufacturing chips with features this small. On Sept. 15, Bloomberg reported that Sony Corp. had cut to 11 million units, from 15 million units, its estimated PlayStation 5 videogame console production in the fiscal year ending March 31. The culprit: production yields on the chips, manufactured on TSMC's 7nm technology, are as low as 50%. Intel, by contrast, won't be able to make its own 7nm chips for another two-plus years.

To keep pace with Moore's law requires the ability to make tinier and tinier components. That Intel is falling behind its co-founder's dictum is thus more than a little ironic. "For 30 years they had an unequivocal moat on process technology," Rasgon tells me, "and now that is dying."

While Intel remains the dominant semiconductor manufacturer, AMD, with its innovative designs and TSMC manufacturing collaboration, is in hot pursuit. Thus, in the past two years, Intel's share of desktop CPUs has declined by 7 percentage points (to 81%), notebook CPUs by 11 percentage points (to 80%) and server CPUs by 4 percentage points (to 94%).

At the same time, Apple, which accounts for perhaps 2% to 4% of Intel's sales, says it expects to be producing its own chips for internal consumption by the end of the year. It's no idle concern, then, that the future of Intel might resemble the dwindling past of International Business Machines Corp. (*Grant's*, Feb. 21). As a reminder, Big

Blue's revenue dropped by 27.8% between 2011 and 2019.

Of the 44 analysts who cover Intel, 13 say buy, 11 sell and the rest rate the company a non-committal hold. Short interest foots to 2.8% of the float, a large number for a company with a \$228.9 billion market cap. Year-to-date, insiders have sold a net 134,448 shares for proceeds of \$7.9 million.

Barclays Capital perhaps best summed up the glum mood in a comment dated July 24, the day the bottom fell out of the share price: "We believe this story now lacks any catalysts with PCs likely down next year [after the Covid-19-related buying burst this year] and no viable roadmap to remain competitive."

...

It would be worse if Intel weren't priced for a narrative at least as bad as that one. The stock trades at 9.9 times trailing earnings, which, admittedly, received a boost from the virus, and 11.4 times 2019 earnings, which did not. For comparison, IBM is priced at 14.1 times trailing earnings. AMD, at 124 times trailing earnings, gives the upstart a \$100.1 billion market cap on 12-month trailing sales of only \$7.6 billion. For contrast, Intel, with a \$228.9 billion market cap, booked \$79 billion of sales in the past year.

It's Wall Street writ that no one rings a bell, either at the top or the bottom. "For instance," wrote Corry Wang in an Aug. 31 valedictory note for Bernstein, "Microsoft effectively quadrupled its EPS from \$0.71 in 1999 to \$2.59 in 2013. Yet the stock was down -30% over this 14-year-period, as it ultimate-

Intel at a glance

all figures in \$ millions except per share data

	<u>TTM</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>
sales	\$78,955	\$71,965	\$70,848	\$62,761	\$59,387
operating income	25,979	22,035	23,316	18,050	13,133
net income	23,661	21,048	21,053	9,601	10,316
earnings per share	5.41	4.71	4.48	1.99	2.12
cash	29,716	17,090	17,692	22,581	23,279
debt	38,347	29,551	26,359	26,813	25,283
total assets	152,539	136,524	127,963	123,249	113,327
cash flow from operations	37,914	33,145	29,432	22,110	21,808
capital expenditures	16,014	16,213	15,181	11,778	9,625

source: company reports, the Bloomberg

ly de-rated from 70x+ earnings (or 20x sales, for those more familiar with that parlance) to a trough of just 9x earnings in 2013."

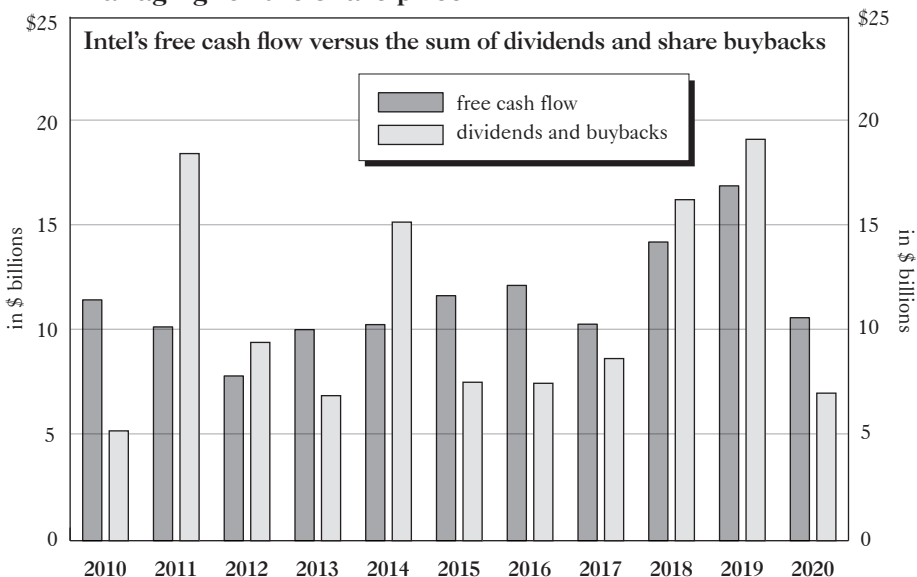
At the time, the Street had plenty of reasons to be bearish. Analysts rightly jeered when, in September 2013, Microsoft announced the acquisition of Nokia Corp.'s mobile-phone division for \$7 billion, only to abandon that error three years later. So, it's hardly surprising that by year-end 2013, only 14 analysts rated the Redmond, Wash. software giant a buy, while 23 said hold (and a corporal's guard, sell). Yet, from the end of 2013 to today, Microsoft has generated a 587% return versus 118% for the S&P 500 (both include reinvested dividends).

As already mentioned, Intel's Job 1 is to solve its manufacturing problems, lest its chips become obsolete, though that evil day has not yet come. "Intel has some advantages over AMD still, and AMD has some advantages over Intel," Ryan Smith, editor-in-chief of the online tech magazine AnandTech, tells me. AMD's chips excel in certain situations (programs that use many threads), while Intel's are better in others (single-threaded programs). Intel has some special tech that appeals especially to large datacenter clients. These are products that AMD lacks.

Then, too, Intel retains impressive capabilities in chip design. Its 10nm manufacturing process packs in a transistor density almost identical to TSMC's 7nm process. While Intel is at least two years away from producing its own 7nm products, a new tech advancement on its 10nm node, named SuperFin, improves performance by 17.5%. The first SuperFin notebook Intel Core CPU (codenamed Tiger Lake), unveiled Sept. 2, is one management candidate to regain Intel's market share from AMD.

A team of J.P. Morgan analysts, headed by Harlan Sur, last month wrote to validate that optimism: "Intel's new 11th gen Core exhibits strong leading single-threaded performance and much-improved integrated graphics, where Intel's new Xe graphics processor delivers significant performance advantages compared to Intel's prior GPU technologies. The 11th gen Core also delivers 'real-life' performance benefits across content creation, video, as well as productivity benefits such as long battery life, fast

Managing for the share price



source: company reports

charging, best-in-class wired and wireless connectivity, helping Intel deliver what we believe to be a superior overall user experience."

Robert Swan became the permanent CEO of Intel on Jan. 31, 2019, following the resignation of prior chief Brian Krzanich, who had had an affair with an employee. Swan, a former CFO who had stepped into the interim CEO post, has made it a priority to get the 110,800 employees to compete with the likes of AMD, rather than brawl with each other.

"Managers, complacent about competition, battled internally over budgets," *The New York Times* reported in March, paraphrasing the new CEO. "Some of them hoarded information.... And leaders of chip manufacturing gave top management little data about problems, slowing the search for a solution." Among instigating other changes, Swan has broken design teams into smaller groups to foster collaboration.

During the July 23 earnings call, Swan told analysts that Intel has "invested in contingency plans to hedge against further schedule uncertainty" and, in response to a question, elaborated: "So to the extent that we need to use somebody else's process technology and we call those contingency plans, we will be prepared to do that."

Such remarks suggest that Intel has made more progress on outsourcing than many suspect. "We are starting to

see the first signs of Intel 5nm CPU activity at TSMC, which could result in mass production from 1H22 onwards, 6–12 months earlier than previous expectations," according to a team of J.P. Morgan Securities analysts led by Gokul Hariharan. If this is, indeed, the case, much of the concern about Intel getting its own 7nm production up and running may be obviated.

"I think it'll be a good move for them to go to get out of the race in the lithography area, because they weren't winning," Hickey tells me. "It takes a lot of capital to continue to be in that race against the likes of Taiwan Semiconductor, Samsung and others. A lot of the semiconductor companies in the U.S. do very well by farming out their foundry work to those other players."

A shift in Intel's strategy to use more third-party fabrication would not necessarily be a bad thing from a financial perspective. TSMC is spending \$19.6 billion to build a 3nm fab in Arizona that is expected to go online in 2023. Intel spent \$6.7 billion in capex in the first half of 2020, \$16.2 billion in full-year 2019 and \$15.2 billion in 2018. More outsourcing would translate into lower capital requirements, though the impact on the profit-and-loss statement would be mixed: Gross profit would shrink, as Intel would have to pay TSMC or Samsung to manufacture its chips, but operating expenses—especially fab-related R&D costs—would fall.

The decline in capital intensity

might be a good thing for shareholders. In the decade ended 2019, Intel generated \$115.3 billion in free cash flow after paying \$107.9 billion in capex. Over the same period, dividends (\$46.5 billion) and buybacks (\$67.9 billion) have footed to \$114.5 billion, or almost 100% of free cash flow. Since the end of 2009 the share count has decreased by 24%.

Intel is not without risk, of course. Prior management in effect swapped manufacturing prowess for a higher share price. Will the new regime, headed by the former CFO, prove more farsighted? Continued retrogression

in manufacturing, uncompensated by cost-effective outsourcing, would cast a retrospective verdict of "value trap" on today's optically low valuation. Then there's the existential semiconductor risk that the People's Republic of China makes a violent, unsolicited bid for the whole of Taiwan, semiconductor fabs included.

It can't be said that insiders, on the evidence of their own capital spending, are as bullish as we are. However, Swan did purchase 8,021 shares on Intel's own Black Friday, July 24, for \$401,050. On Aug. 19 the company announced an

accelerated share-repurchase program worth \$10 billion (having suspended buybacks in March on account of the pandemic).

"I view Intel as a cheap stock in a market that is currently only interested in high revenue growth (doesn't matter if they have any earnings), high momentum, tech 'story' stocks," Hickey advised via email. "INTC trades at a significant discount (under 10 P/E). Additionally, Intel has a 2.5% dividend yield. Not bad in this yield-less environment."

A rarity in a very strange year.

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