January 2017 issue

SEMICONDUCTOR BIZ INSIGHT

- ***Your 5 minutes monthly e-link digest brought to you by VLSI Consultancy***

Hi,

Hope you had a good year-end break and are all set for a cracking 2017. To get you back into the groove, here is a snippet from the last month in the semiconductor world – special focus on Asia-Pacific.

China is poised to dominate in new fab facilities. As per SEMI's latest World Fab Forecast, China will account for 42% of the worldwide total (62 new frontend facilities) between 2017 and 2020. Americas follows with 10 and Taiwan with 9.

Silicon vendors are making further inroads into the automotive space – a hot space that looks to be transitioning from the smartphones void. Intel, NVidia made news with major stake acquisitions as well as partnerships into this ecosystem. For details, also tune into CES 2017

Outcomes based pricing for silicon content – now that is one space that silicon vendors can strategize on for IoT monetization. Here are some thoughts on this.

Have a good read and wish you all a great year ahead.

Cheers
Meenu

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KEY TAKEAWAY

From the Asia-Pac arena

New fabs – YMTC's new NAND Flash fab (China), SK Hynix's new fab (Korea), TSMC's new fab for 3nm (Taiwan), China's National IC Investment Fund shifts focus to chip manufacturing

Mergers & Acquisitions

Intel (15% stake in Here), Huawei (Toga Networks, Hexatier), TDK (Invensense)

Ps: **If you see a need for**

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  (pl. visit http://asic-vlsi.com/training.html for a list of offerings)
- ***Strategic Planning: Detailed research and an in-depth analysis for your specific market & technology intelligence requirements,***
- ***Industry/Domain know-how for your financial/equity analysis,***

Do let me know; we can value-add. Visit www.asic-vlsi.com for details or simply drop me an email

Insights Capsule

Insights Capsule

Was too busy with the year-end time-off activities!! Will get back to you on this shortly. Stay tuned

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Local Asia Pacific News

Samsung NEXT announces $150M fund to expand global support of early stage startups in emerging tech

Source: Samsung – 4th January 2017

Samsung NEXT (formerly Samsung Global Innovation Center) today announced the creation of the Samsung NEXT Fund, a $150 million venture capital investment fund, to increase Samsung's global support of early stage startups pursuing advanced software and services innovation. "We see software and services becoming a core part of Samsung Electronics' DNA, and startups are key to achieving this vision," said David Eun, President and Founder of Samsung NEXT.

What's that surging down the Yangtze? It's a NAND flash flood

Source: Chris Mellor, The Register – 3rd January 2017

China's Yangtze River Storage Technology (YMTC) through its ownership of contract chip manufacturer XMC, has started building a memory semiconductor fab on a 13-hectare site at the Donghu New Technology Development Zone in Wuhan. This will be the largest memory plant in China and include three 3D NAND production lines. Volume production should start in 2018, with a run rate of 300,000 12-inch wafers a month by 2020.

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Local Asia Pacific News

SK Hynix to build wafer fab in South Korea
Source: Peter Clarke, EE Times – 29th December 2016

The wafer fab in Cheongju, Chungcheongbuk-do is expected to be completed in June 2019 and the spending is part of a 46 trillion won (about $38 billion) budget for mid- to long-term investment set by SK Hynix. As part of the spending plan SK Hynix is also expected to set up wafer fabs in Icheon and Cheongju.

Korea fines Qualcomm $1B over unfair patent licensing
Source: Rick Merritt, EET Asia – 28th December 2016

Qualcomm is charged with refusing the licensing of patents essential to standards for making chips “despite the request by rival modem chipmakers.”

Chinese fund to shift focus to chip manufacturing
Source: Lisa Wang, Taipei Times – 20th December 2016

China’s state-backed National IC Investment Fund is to shift its investment focus to the Chinese chip designing sector from the chip-manufacturing sector, as Beijing is trying to boost China’s role in the global semiconductor industry, as per TrendForce

Samsung Electronics likely to procure phone batteries from LG Chem: Chosun Ilbo
Source: Reuters – 18th December 2016

The world's top smartphone maker currently procures Note batteries from group firm Samsung SDI and China's Amperex Technology.

Samsung likely to spin off foundry business division
Source: Cho Jin-young, Business Korea – 12th December 2016

Samsung Electronics is considering a reorganization of the System LSI division in order to systematically grow the system semiconductor business. The company is planning to separate the design and manufacturing sectors in the business unit and divide or spin off it to fabless and foundry business divisions.

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Local Asia Pacific News

TSMC plans new fab for 3nm

Source: Alan Patterson, EE Times – 12th December 2016

TSMC said that it plans to build its next fab for chips made at the 5-nm to 3-nm technology node as early as 2022 as it aims for industry leadership. The company said that it is still undecided on whether it will adopt EUV lithography for 5 nm and 3 nm.

Inventec shuttering all-in-one PC unit

Source: Lault Li, Taipei Times – 10th December 2016

Contract electronics maker Inventec is laying off employees at its all-in-one (AIO) computer subsidiary TPV-Inventa Technology Co Ltd and plans to close the subsidiary next year at the earliest, following a drastic decline in orders

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Industry Headlines

Number of IC manufacturers using 300mm wafers less than half using 200mm wafers

Source: IC Insights – 16th December 2016

Looking at the ranking for 300mm wafers, it is not surprising that the list includes only DRAM and NAND flash memory suppliers like Samsung, Micron, SK Hynix, and Toshiba/Western Digital; the world's five largest pure-play foundries TSMC, GlobalFoundries, UMC, Powerchip, and SMIC; and Intel, the industry's biggest IC manufacturer (in terms of revenue). The leaders in the 200mm size category consist of pure-play foundries and manufacturers of analog/mixed-signal ICs and microcontrollers.

Amazon building custom chips to accelerate cloud networking

Source: Rich Miller, Data Center Frontier – 30th November 2016

Amazon Web Services says its new Annapurna ASIC will enable it move data faster across its huge data center network

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Financial Watch

TSMC bolsters semiconductor market
Source: Taipei Times – 2nd January 2017

The company is planning to invest about NT$550 billion in the Central Taiwan Science Park over the next two years to fill orders for its major clients

Honhai invests US$8Bn in China
Source: Taipei Times – 2nd January 2017

The firm is to spend the vast sum on an industrial complex in Guangzhou, China. The factory will make large-screen LCDs. It is expected to be operational by 2019.

Memory drives chip growth
Source: Rick Merritt, EE Times – 20th December 2016

Sales of memory chips will increase 10% next year to a new record high of $85.3 billion, according to the latest report from IC Insights. Increases are forecast to continue with sales reaching nearly $110.0 billion in 2021.

Broadcom posts fiscal Q4 loss
Source: Dylan McGrath, EE Times – 8th December 2016

It reported a net loss of $668 million on sales of $4.14 billion for the fiscal fourth quarter, which closed Dec. 1.

Five suppliers hold 41% of global semiconductor market share in 2016
Source: IC Insights – 6th December 2016

Not including foundries, IC Insights forecasts to top five semiconductor suppliers—Intel, Samsung, Qualcomm, Broadcom, and SK Hynix— will account for 41% market share in 2016

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Financial Watch

Global semiconductor sales increase 5 percent year-over-year in October; Industry forecast revised upwards
Source: SIA – 5th December 2016

The Semiconductor Industry Association (SIA) announced worldwide sales of semiconductors reached $30.5 billion for the month of October 2016, an increase of 3.4 percent from last month's total of $29.5 billion and 5.1 percent higher than the October 2015 total of $29.0 billion.

Synopsys posts financial results for fourth quarter and fiscal year 2016
Source: Synopsys – 30th November 2016

Revenue for the entire fiscal year was $2.42 billion, an increase of 8% from FY2015.

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Mergers & Acquisitions, Joint Ventures, Spin-offs

CES 2017: Nvidia and Audi working on “world’s most advanced AI car” for 2020
Source: Conner Forrest, TechRepublic – 5th January 2017

Long time partners Nvidia and Audi took the stage at the 2017 Consumer Electronics Show (CES) this week to announce that they would be working together on a Level 4 autonomous vehicle. Audi's vehicles will tap Nvidia's DRIVE PX platform, which uses artificial intelligence and neural networks to power self-driving cars.

Intel to acquire 15 percent ownership of Here
Source: Intel– 3rd January 2017

Companies plan to jointly develop a highly scalable proof-of-concept architecture that supports real-time updates of high-definition (HD) maps for highly and fully automated driving as well as explore opportunities in IoT and machine learning.

Huawei buys Toga Networks, an Israeli telecommunications company
Source: Startlr Tech – 31st December 2016

Huawei bought Toga Networks, a company based in Israel that provides “advanced technology research and high-level design for the IT and telecommunications markets”, in a deal worth about $ 150 million.

Huawei buys out Israel cyber security startup Hexatier for $42m
Source: Tomas S. Noda III, Deal Street Asia – 29th December 2016

Huawei intends to use Hexatier’s technology to set up a research and development centre in Israel for databases in the cloud.

Japan’s TDK to buy US Chipmaker Invensense for $1.3 billion
Source: Reuters – 21st December 2016

The deal would allow TDK, already a major smartphone components supplier, to boost its sensor technology offerings. InvenSense designs gyroscopes, which help smartphones, calculate motion, enabling augmented reality games such as Pokemon Go.

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Mergers & Acquisitions, Joint Ventures, Spin-offs

Samsung, Google, HTC, Sony and others forge GVRA alliance to advance virtual reality development
Source: Luis D, phone Arena.com – 7th December 2016

The six companies have forged an alliance to promote and develop virtual reality as a technological niche. Titled Global Virtual Reality Association (GVRA), the non-profit organization will research and share best practices for the industry, bring together stakeholders, and promote the global adoption of VR.

Materion corporation enters into definitive agreement to acquire Heraeus' target materials business
Source: Materion – 5th December 2016

Heraeus manufactures precious and non-precious metal target materials for the architectural and automotive glass, electronic display, photovoltaic and semiconductor markets at facilities in Germany, Taiwan, the United States and Singapore. Once acquired, the businesses will operate within the Materion Advanced Materials business segment.

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Market Outlook

Gartner forecasts flat worldwide device shipments until 2018
Source: Gartner – 4th January 2017

Worldwide combined shipments of PCs, tablets, ultramobiles and mobile phones are projected to remain flat in 2017, according to Gartner, Inc. Worldwide shipments for these devices are projected to total 2.3 billion in 2017, the same as 2016 estimates.

Chipmaker Micron's forecast powered by improving PC market
Source: Reuters – 21st December 2016

Micron said it expected revenue of $4.35 billion-$4.70 billion, above the estimate of $3.91 billion

Chip market brightens in 2017
Source: Rick Merritt, EE Times – 14th December 2016

The chip sector could expand by 5% in 2017 after shrinking about 1% this year, wrote Ross Seymore of Deutsche Bank in a new report. The data center will be the fastest growth segment next year, rising 10%, followed by automotive at 9% and communications at 7%.

New fab facilities: China dominates, followed by Americas and Taiwan
Source: Semi – 13th December 2016

As per Semi, 62 new Front End facilities are expected to begin operation between 2017 and 2020. The 62 facilities and lines range from R&D to high-volume fabs. Most of the newly operating facilities will be volume fabs; only seven are R&Ds or Pilot facilities.

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Views & Opinions

China’s memory drama: Must see in 2017
Source: Junko Yoshida, EE Times – 19th December 2016

China’s growing presence in M&A negotiations for U.S. chip companies is this year’s one of the biggest untold business stories, and probably 2017, too.

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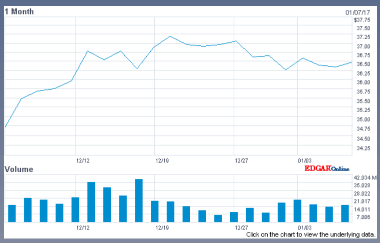
Stock Watch

Source: NASDAQ

For the year just gone: 2015 year chart for Intel, TSMC, TI, Broadcom, STM, Xilinx, KLA-Tencor, Qualcomm, UMC, Applied Materials, Teradyne, Lam Research



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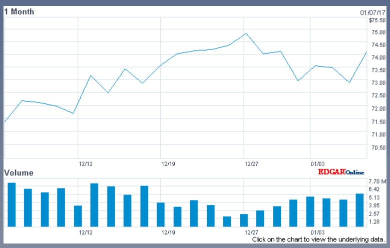
TSMC



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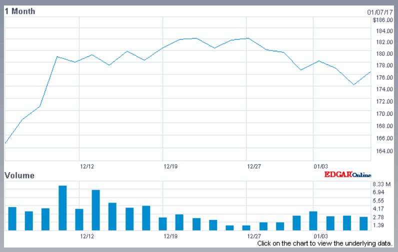

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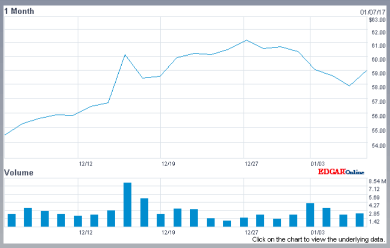

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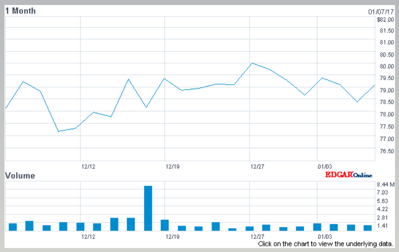

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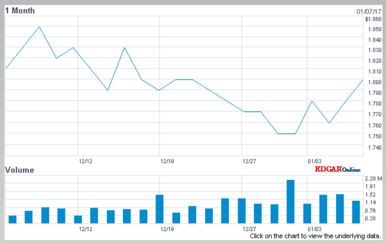

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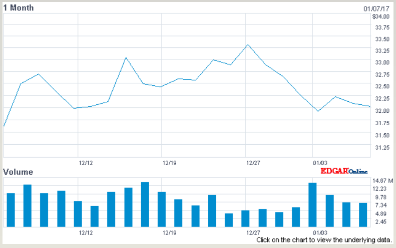

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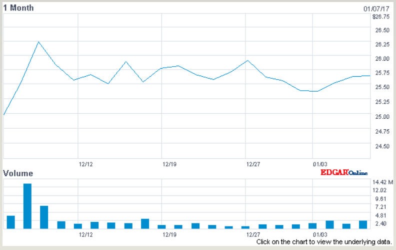

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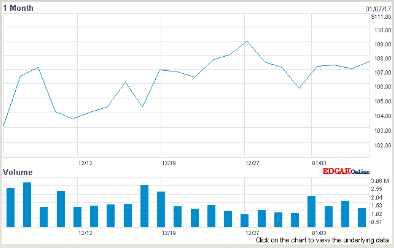

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