FutureHorizons
The Global Semiconductor Industry Analysts

Future Horizons Newsletter

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Industry News By Company

Edinburgh Bids For Tech Glory — Again

Thirty years ago, Scotland had a burgeoning tech industry. It made three in 10 of Europe's personal computers, and electronics accounted for 28 per cent of the nation's exports. But "Silicon Glen" failed to expand much beyond manufacturing, and growth fizzled out in the 2000s.

Now hopes are rising that Edinburgh is finally on the road to becoming a world-class self-sustaining global tech hub. This time, much of the action is focused on applications of artificial intelligence, particularly in healthcare and financial services.

This specialism builds on the University of Edinburgh's expertise. It is home to Europe's largest concentration of academic AI researchers and is preparing to open the UK's biggest supercomputer and a huge data centre. The hopes for the Scottish capital also reflect the maturing fintech and biotech sectors and the ability to access the Scottish National Health Service's unusually detailed health data.

India Woos Global Chipmakers Again, This Time With $10bn Package

TOKYO -- India has rolled out the red carpet for global chipmakers with 760 billion rupees ($10.2 billion) in incentives as Prime Minister Narendra Modi makes a push to establish the country as a high-tech production hub.

The program was approved by Modi's cabinet Dec. 15 and began accepting applicants on Jan. 1 as India, like many other countries, intensifies efforts to bolster domestic supplies of the critical industrial component.

The new package covers up to half the initial costs of setting up chipmaking hubs in the country, including those for front-end processes involving wafer fabrication. The Indian government will cooperate with state authorities to build high-tech industrial parks equipped with clean water, abundant power and logistics infrastructure.

In addition, India will provide assistance for back-end chip facilities, which handle assembly and testing. It also will support chip-design startups and nurture more talent to build a comprehensive semiconductor industry in the country.

UK Chip Firm Arm Sale By Softbank Collapses Amid Competition Fears

Japanese conglomerate SoftBank has called off its planned sale of UK microchip designer Arm to US technology group Nvidia.

When the deal was first announced in September 2020 it was valued at around $40bn (£29.6bn).

SoftBank now aims to float Arm's shares on the stock market by the end of March next year.

The planned sale had faced major regulatory hurdles in the UK, United States and European Union.

SoftBank and Nvidia agreed to end their sale agreement "because of significant regulatory challenges preventing the consummation of the transaction, despite good faith efforts by the parties," the companies said in a joint statement to investors.

Intel Building $20bn Factory In Ohio To Support US Semiconductor Supplies

Chip maker Intel has said it will invest $20 billion to build a new factory in Ohio, in an attempt to help alleviate a global shortage of semiconductors that power everything from phones to cars to home appliances while also signalling the giant company's commitment to manufacturing crucial technology products in the US.

Ohio governor Mike DeWine said the move is a message to China "because this is about national security is so vitally important that we make these chips right here in the United States of America".

The move could also create a new technology hub in central Ohio as related businesses that support chip manufacturing open new facilities and bring expertise to the region.

Intel said two planned factories, or fabs, will support its own line of processors as well as its new "foundry" business, which will build chips designed by other firms.

Graphene Start-Up Wins Backing From UK Treasury And CIA-Linked Firm

The UK government and a venture capital fund with links to the CIA have taken stakes in a Cambridge-based start-up aiming to commercialise the use of graphene in electrical devices.

Paragraf, which was spun out of Cambridge university, has developed graphene materials with the thickness of a single atom that can be applied to a range of medical, electronic and energy devices.

Graphene has been hailed by scientists and engineers for its extraordinary properties, from superb conductivity to great strength and flexibility. Paragraf's devices using the material, which allows items to work much more quickly and efficiently, are already being used by researchers at European particle physics research laboratory CERN in Switzerland and by companies such as Rolls-Royce.

Redpine Founder Launches AI Processor Startup

Ceremorphic, an AI chip startup emerging from stealth mode this week, is readying a heterogeneous AI processor aimed at model training in data centers, automotive, high-performance computing, robotics and other emerging applications.

Venkat Mattela, founding CEO of Redpine Signals, launched the AI processor startup in April 2020 after selling Redpine Signals' wireless business to Silicon Labs for $308 million. Ceremorphic's heterogeneous AI processor is based on Taiwan Semiconductor Manufacturing Co.'s (TSMC) 5-nm process technology.

The sale of Redpine's wireless business to Silicon Labs included 30 patents, a team of 225 and the company's wireless technology and product portfolio. Redpine had been nurturing a small but strategic AI processor project in the roughly four years preceding the sale of its wireless business.

Samsung Fourth-Quarter Operating Profit Surges 53% On Record Sales

Samsung Electronics, the world's biggest mobile phone manufacturer, reported a 53 per cent surge in fourth-quarter operating profit as record sales helped the company rebound despite supply chain disruptions.

Operating profit in the three-month period to the end of December rose to 13.87 trillion won ($11.5bn) from the year-earlier period, the company said in a statement on Thursday. Quarterly revenue soared more than 24 per cent to a record 76.57tn won, from the same period in 2020 in line with expectations.

Growth in revenue was driven mainly by the finished product businesses, with a rise in sales of premium smart phones, including foldable phones, as well as TVs and home appliances, the company said.

Full year operating profit jumped 43.4 per cent to 51.63tn won, while revenue rose 18 per cent to a record 279.6tn won, driven by the strength of its semiconductor business.

sureCore Announces Technology For In-Memory Computing

sureCore, the ultra-low power, embedded memory specialists, has announced its new technology for in-memory computing, CompuRAM™. This will enable solutions for computing at the Edge to be more power efficient. At present, sensor data often has to be sent from an IoT device to a server for processing, which creates a connectivity requirement and an unavoidable latency. For time critical applications this is not acceptable and so there is a drive to do more computation within the device itself, i.e., AI processing at the Edge. Power is a significant design constraint in IoT devices, and so any extra AI-related computation must be done in a power-efficient way. sureCore's existing low-power memory solutions already provide a way to add the significant extra memory needed by AI applications without dramatically increasing power requirements. In-memory computing provides further power savings by reducing the need to move large amounts of data around within a chip, as the initial processing of data is carried out very close to the memory array itself.

Industry News & Trends

Infineon Exec Says Chip Shortage To Last Until 2023

Semiconductor manufacturer Infineon expects shortage of its core product to be over next year, with the situation improving in summer, a top executive said.

"I assume that we will be able to cover demand well in 2023," the head of Infineon's automotive unit, Peter Schiefer, told Automobile News Europe sister publication Automobilwoche. "The last issues will be resolved in 2023."

To meet the growing demand, Germany-based Infineon plans to expand its production capacities, including investment in its 1.6 billion-euro ($1.8 billion) semiconductor plant in Villach, Austria, which was inaugurated last year, he said.

The global chip shortage hit the auto industry hard last year and halted vehicle manufacturing across regions. Automakers including Volkswagen and Stellantis are hoping the supply-chain snarls will gradually ease this year but have warned chip supply will remain tight in the first half.

Slovak Flying Car Receives Official Certification

Slovakia's Transport Authority on Tuesday said it had issued a certificate of airworthiness for flying car model AirCar, a first step towards commercial production of the invention.

"AirCar certification opens the door for mass production of very efficient flying cars," said Stefan Klein, founder and chief executive of KleinVision, a company that designed and manufactured the prototype of the dual-mode car-aircraft vehicle.

"It is an official and final confirmation of our ability to change mid-distance travel forever," Klein said in a press release.

AirCar completed its first intercity flight in June 2021.

The Automotive Industry Is Abandoning The Term Self-Driving

The term self-driving is going away in favor of the term autonomous vehicles after the leading coalition for automated driving rebranded to Autonomous Vehicle Industry Association (AVIA).

The coalition consists of many of the heavyweights in the automated vehicle space including Ford, Lyft, Uber, General Motors, Volvo Cars and Waymo. Also, startups Argo AI, Aurora, Embark, Motional, Nuro and Zoox are part of the coalition. Also, autonomous truck vendors Kodiak, and TuSimple are part of the group.

Formerly known as the Self-Driving Coalition for Safer Streets, the trade association seeks to improve safety and enhance mobility in the autonomous vehicle industry.

The organization said the name change is due to the industry wanting to offer consistency and precision in how the industry, policymakers, journalists and the public talk about autonomous driving technology. The group wants to distinguish between autonomous vehicles and driver-assisted vehicles to help boost consumer trust.

Schneider Electric : How Semiconductor Fabs Can Design a Greener Future

Semiconductor manufacturers are under the pressure to meet booming demand while reducing their high environmental impact. The market has grown around 17 percent this year alone. But, as the semiconductor industry grows, so too does its carbon footprint and resource use.

In fact, some semiconductor manufacturers' carbon emissions have now surpassed those of top automakers. This is notable as a benchmark because the auto industry is well known for its large carbon footprint. For example, TSMC, the world's largest chipmaker, emitted around 15 million tons of CO_2 in 2020 - surpassing automaker General Motors' emissions - and its annual electricity consumption is estimated to be nearly 5 percent of Taiwan's entire electricity usage.

Raspberry Pi 64-Bit OS Comes Out Of Beta

Having trialled a beta version over the last year, Raspberry Pi has now opened up its 64-bit OS more widely. The company now offers the new OS to those who need the extra functionality that 64-bit provides but said it will continue to support 32-bit as long as it can, so that both beginners and advanced users can choose what option they want to use.

The Armv8-A architecture, which encompasses the 64-bit AArch64 architecture and associated A64 instruction set, was first introduced into the Raspberry Pi line with Raspberry Pi 3 in 2016. Gordon Hollingworth, Chief Product Officer of Raspberry Pi, said, "From that point on, it has been possible to run a full 64-bit operating system on our flagship products, and many third-party operating systems are available. However, we have continued to build our Raspberry Pi OS releases on the 32-bit Raspbian platform, aiming to maximize compatibility between devices and to avoid customer confusion."

East European News & Trends

Wax May Be Used For Next Gen 3D Printing

A research team at the Samara Polytechnic University (SamPU) in Russia's Lower Volga region has developed a brand new type of wax filaments for 3D printing.

Wax filaments are in extremely short supply in the market, compared to polymeric ones which are so easy now to come by, SamPU senior engineer Anton Barinov emphasized. "They [wax filaments] are very expensive, and only a handful of companies manufacture them," he added.

Russian Start-Up Offers New Easy-To-Use Virus Detector

A Russian start-up called Troitsk Engineering Center (part of TechnoSpark Group) has developed a special device, the Indicator-BIO, to diagnose viral infections.

Their partners in the project, biologists and physicians from the Federal Medical-Biological Agency (FMBA), have, in their turn, come up with advanced chips and reagents to go with the device, which are said to take within 15 minutes to pinpoint in biological fluids an array of dangerous viruses, including the COVID-19.

Russians Work On Affordable Quantum Communications For Home Use

A collaborative team of researchers from Qrate, a Russian technology company, and Moscow-based MISiS University is developing a compact and competitively priced quantum communications system which could reportedly be used in any PC for protected data transfer. The deadline is the end of this year.

At the core of the effort is a quantum key distribution mini-system to be available to everybody across the B2B and B2C segments. The system is basically an expansion card for ordinary PCs, enabling users to connect to a quantum network and exchange data with up to a hundred network clients.

AI Assists Doctors In Decision-Making

Researchers at Tomsk-based SibMed University (Siberian State Medical University) have developed new hybrid artificial intelligence (AI) technology to control multiple cyber-physical systems across medical disciplines.

At the core of the development are AI-driven systems to support physicians' decision-making process which are based on data and on knowledge.

As modern computing and communication devices are getting increasingly compact and affordable, the creation of an array of sensor- and actuator-enabled cyber-physical systems is no longer a future plan. Sensors and other slave gadgets help collect tons of data on processes that take place in physical and biological objects.

What the SibMed team focused on was the development of decision-making support systems for doctors which could operate where datasets available are very limited and where both data and empirical and theoretical knowledge are required to do the job.

World Economic Round Up

International Monetary Fund (IMF) chief Kristalina Georgieva has said that 2022 will be an even more difficult for the global economy than 2020, with conditions varying wildly between countries. Ms Georgieva told delegates attending the virtual World Economic Forum that countries must be flexible and data driven in their approach to the challenges ahead, as economies across the world grapple with high inflation, the continuing Covid-19 crisis and resulting supply chain disruption and high debt levels. Pandemic policy remains a top economic policy in 2022. Unless protections are built around the globe, we will continue to see disruption and the future will not be as bright as we want, so, we have to recognise that the world must spend the billions necessary to contain Covid in order to gain trillions in output as a result.

The latest economic news by country to include USA, Europe, UK, Japan, China, Asia Pacific and India can be found each month in our [Semiconductor Monthly Report.](#)

Industry Events 2022

Future Horizons Events
- Silicon Chip Industry Training Seminar – London – March 2022
- Industry Forecast Briefing, London – September 2022

To book your place on any of our events please contact us on:

Telephone: +44 1732 740440
Email: mail@futurehorizons.com

Download Future Horizons Full Events Calendar Here

Industry Events

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MARK YOUR CALENDER FOR THE NEXT

SILICON CHIP INDUSTRY WORKSHOP
MONDAY March 2022
AND
INDUSTRY FORECAST BRIEFING
TUESDAY September 2022

BOTH BEING HELD AT

HOLIDAY INN KENSINGTON FORUM, LONDON

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