Future Horizons Newsletter

November 2013

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Industry News By Company

Israel's Big Tech Sector Looks to Produce Bigger Companies

TEL AVIV—Try as you might, it is extremely hard not to be a bit star-struck by the Israeli technology scene. Just when you think you have seen everything, along comes something even more impressive, such as a startup with a nanotechnology that has the potential to disrupt everything from batteries to display screens to semiconductors.

But can the country continue to deliver in the way it has, and what is next for the startup nation?

It is the scale of Israeli ambition that other startup ecosystems outside the U.S. seem incapable of matching. "It is Silicon Valley for the rest of the world," said Saul Klein, a London-based venture capitalist and recently appointed a U.K. tech envoy to Israel.

Automotive Market Sees Influx Of Mobile SoC Companies

The rise and fall of smartphone SoC companies in recent months is now intricately intertwined with the future of automotive chip suppliers. Many automotive IC companies, from incumbents like Renesas, STMicroelectronics, Infineon, and Freescale to newcomers Broadcom, Qualcomm, and Nvidia, are racing to dominate the fast-growing segment of in-vehicle infotainment SoCs.

Triggering the reshuffle of chip players in the automotive market is the rapidly changing consumer behaviour. Today's automobiles are increasingly defined by available in-vehicle connectivity with the outside world. Connectivity in this context doesn't just mean automakers' own telemetry systems. Drivers and passengers are bringing a growing number of personal mobile devices into cars.

Applied Materials To Acquire Tokyo Electron

A deal to combine two of the semiconductor industry's biggest suppliers is the latest sign of technical and financial pressures confronting the electronics industry.

Applied Materials Inc. AMAT +0.56% and Tokyo Electron Ltd., 8035.TO +0.93% which supply costly machines that help turn silicon wafers into computer chips, on Tuesday described their all-stock deal as a merger of equals that would create a new company with a market value of $29 billion.

.But the deal effectively represents a purchase by Applied of Tokyo Electron, one of the biggest-ever foreign takeovers of a Japanese company. The stock swap values Tokyo Electron at $9.3 billion, a modest premium to its market value of ¥872.3 billion ($8.8 billion.

ARM Expands Local Design Reach With Noida Centre

ARM opened a second design facility here where highly skilled electronics engineers based in North India will have the opportunity to join the company and support its Physical IP Division. The new design centre in Noida will focus on specialised areas such as planar and FinFET CMOS technologies IP.

This division will complement the capabilities of ARM's existing team at the Bangalore Design Centre in Mahadevapura, which also focuses on the creation of building blocks for translation of a circuit design into actual silicon.

ARM is a provider of physical IP components for the design and manufacture of integrated circuits, including systems-on-chip (SoCs). The company currently employs over 2,700 staff across its global design centres.

ARM And Nordic Semiconductor Partner To Accelerate Development Of Bluetooth Low Energy-Enabled Devices .

ARM(R), the world's leading semiconductor IP company and Nordic Semiconductor, an ultra-low power radio frequency (RF) specialist, today announced an agreement to incorporate Bluetooth(R) Low Energy (BLE) solutions with the ARM mbed(TM) IoT device development platform. This collaboration will enable developers to quickly and easily create new Bluetooth-connected devices and applications that leverage Nordic's system on chips (SoCs) which are based on the ARM Cortex(R)-M processor series.

As ARM mbed helps the Internet of Things to become a reality, there is a significant opportunity for ultra-low power Bluetooth chips that connect intelligent products with their owners' smartphones and tablets, and can run for years on small batteries at cost-sensitive price points. This agreement will help to drive the innovation and deployment of BLE-enabled devices in key growth markets including wearables, mobile accessories, fitness, toys, healthcare and consumer electronics.

Cadence Offers Industry's First IP Core Solution Supporting DTS Neural Surround

Cadence Design Systems, Inc. /quotes/zigman/69452/quotes/nls/cdns CDNS +0.42% , a leader in global electronic design innovation, today announced that it is the first IP core supplier to offer DTS(R) Neural Surround(R) Support. Partnered with the Cadence Tensilica HiFi Audio/Voice DSPs, DTS Neural Surround brings a home theater-like experience to automobiles and A/V receivers, significantly enhancing the sound quality of upmixing from compressed media types like MP3.

"Cadence continues to expand its leadership position with the Tensilica HiFi Audio/Voice DSP by bringing new, highly optimized and innovative audio solutions like DTS Neural Surround for next generation car audio processors and investing in extensive testing to ensure product robustness and quality," stated Geir Skaaden, senior vice president of products and platforms, DTS. "We've had a long history of working with the HiFi architecture, which offers a range of products spanning from ultra-low power to high-end performance applications."

"We've seen a growing demand from our customers and OEMs to support DTS decoders and audio solutions including the latest DTS Neural Surround for an enhanced surround sound experience in home and automotive entertainment," stated Jack Guedj, Cadence's corporate vice president, IP Group. "Many recent sports and music broadcasts, including Rolling Stones concerts and the 2013 Super Bowl, were broadcast in DTS Neural Surround to ensure that fans received the highest level quality audio."

[Dialog Semiconductor Plc.: Dialog Semiconductor Multi-Touch Display Sensor ICs Enable Windows 8.1 Touch Certification](#)

KIRCHHEIM/TECK, Germany, Oct 17, 2013 (BUSINESS WIRE) -- Dialog Semiconductor plc (fwb:DLG), a provider of highly integrated power management, audio, AC/DC and short-range wireless technologies, today announced its Multi-Touch Integrated Circuit (MTICTM) - part number DA8901 - has successfully passed the requirements for Windows 8.1 Certification. Dialog's MTIC is the world's first chip to support touch technology from FlatFrog targeting high volume consumer devices.

Dialog's MTICs are suitable for use in a full range of products from notebooks, tablets, 2-in-1 PCs and UltrabookTM to stationary and portable all-in-one PCs and monitors. In addition to being optimised for Microsoft Windows 8.1, MTIC is also able to support Google Android-based touch-enabled operating systems.

[Freescale Debuts ARM®-Based QorIQ LS Series Communications Processors](#)

Freescale Semiconductor (NYSE: FSL) is bringing 20 years of networking IP and expertise to ARM® processing with its new QorIQ LS1 family of communications processors based on the core-agnostic, software-aware Layerscape system architecture.

The new QorIQ LS1 family of products reinforces Freescale's market leadership in communications processors. The devices are engineered to support a broad range of power-sensitive networking applications, as well as additional fast-growing product categories including Internet of Things gateways and industrial automation and control equipment.

Each of the three new QorIQ LS1 family processors features two reliability-optimized ARM Cortex™-A7 cores. These high-efficiency cores – typically used in battery-powered applications such as smartphones – have been enhanced with error detection and correction technology. Pre-silicon analysis by Freescale indicates the dual Cortex-A7 cores should achieve over 6,000 CoreMarks® of performance at 1 GHz, with typical power at less than 3 W for the entire SoC.

[Freescale Collaborates With ARM And Oracle To Add New Vertical Segment Support For 'One Box' Iot Gateway Platform](#)

[As](#) demand grows for a common, open and secure Internet of Things (IoT) service delivery infrastructure from the cloud to the network's edge, Freescale Semiconductor (NYSE: FSL), ARM(R) and Oracle are answering the call with a growing portfolio of segment solutions for next-generation IoT service providers and edge node developers.

Working with ARM and Oracle, Freescale has established a secured service platform that will help standardize and consolidate the delivery and management of IoT services for a range of vertical markets. Freescale's "one box" platform combines end-to-end software with converged hierarchical smart gateways to establish a common, open framework for secured IoT service delivery and management. The platform was unveiled and demonstrated last month at JavaOne San Francisco 2013, and featured support for home automation and smart energy applications.

Today at ARM TechCon 2013, Freescale announces that the one box platform will additionally support the smart grid and telehealth IoT service markets. The one box telehealth service is suitable for both clinical and home-based deployments, and, among other benefits, is designed to help IoT service providers meet the certification requirements of the Continua(R) Health Alliance.

IBM, STMcro Consortia To Set Up Chip Fabs In India

The Government has approved setting up of two semiconductor wafer fabrication manufacturing facilities in the country. The first 'Made-in-India' chip is expected to be rolled out in the next two-three years.

The first fab facility has been proposed by Jaiprakash Associates along with IBM and Israel-based TowerJazz at Greater Noida.

The outlay of the proposed fab is about Rs.26,300 crore for establishing the facility of 40,000 wafer starts per month of 300 mm size, using CMOS technology. Technology nodes proposed are 90, 65 and 45 nm nodes in Phase I, 28 nm node in Phase II with the option of establishing a 22 nm node in Phase III.

Lantiq 'Turbocharges' Home Networking Performance With New Processors For Home Gateways

Flagship GRX330 Processor Uses Dedicated Offload Engines to Accelerate Data, Frees System CPU to Handle Digital Home Applications

Munich/Neubiberg, Germany and Amsterdam, Netherlands – October 22, 2013 – Lantiq, a leading supplier of broadband access and home networking technologies, today introduced at the Broadband World Forum Show new members of its high performance AnyWAN™ VDSL2 and Ethernet Home Gateway chipset family. The all new highly integrated SoCs include the flagship GRX330 communications processor, which uses a dedicated acceleration engine to maximize 802.11ac Wi-Fi throughput while keeping the CPU available for other tasks.

Nokia Unveils New Devices

Nokia Corp. handset business, soon to become part of Microsoft Corp. introduced six new devices Tuesday, including its first-ever tablet computer and bigger handsets designed to better compete in a portion of the market dominated by Samsung Electronics Co

The Finnish company, hosting an event for telecom operators and media in Abu Dhabi, is launching most of the new products in time for the holiday shopping season. In addition to a tablet and two so-called phablets—smartphone-tablet hybrids—Nokia is pulling the wraps off three handsets under $100 for its more basic Asha mobile-phone lineup.

New products come after Microsoft's $7 billion purchase of Nokia's handset business in September—a move intended to boost the U.S. software giant's attempt to expand into hardware. Nokia was once the dominant player in the global mobile-device industry, but has lost market share to Apple Inc.

Report: Panasonic To Cut 7,000 Jobs In Chip Business

Panasonic Corp. plans to slash up to 50 per cent of its chip division workforce. The company is expected to cut 7,000 employees by fiscal 2014 through March 2015, a news report said.

Most of the job losses will be overseas, while workers in Japan will be shifted to other businesses, claims the report.

The struggling Japanese giant has its chip manufacturing facilities in Japan's Toyama and Niigata prefectures, as well as in China, Indonesia, Malaysia and Singapore.

The company is also in talks with Israeli chip manufacturer Tower Jazz to sell some plants.

Memory Chipmakers: This Time It's Different

Another chipmaker and more strong numbers. SK Hynix is the latest to support a belief that this time, it really is different. That phrase is typically a recipe for disaster prognostication but there are reasons to think that memory chip producers, long a case study in value-destroying market share battles, have changed.

SK Hynix is world number two in D-Ram chips, used in computers and increasingly in mobile phones and tablets, and one of the four that dominate Nand, the memory form that benefited most from the smartphone boom. Its operating margins jumped from 11 per cent at the start of this year to 29 per cent in the latest quarter – helped by a fire at its Wuxi plant early last month that depleted supply and hence fuelled global Nand prices. Last week, Samsung Electronics reported a near-doubling of its chip operating margins in a year

STMicroelectronics Brings Smart-Grid Benefits To Life With Industry's First Smart-Meter System-on-Chip

Unprecedented integration and programmable flexibility cut smart-grid deployment and ownership costs for utilities

Geneva, October 15, 2013 - STMicroelectronics STM -1.46% , a global semiconductor leader serving customers across the spectrum of electronics applications, has revealed the industry's first complete smart-meter System-on-Chip (SoC) that combines precision metering with flexible, programmable processing and PLC (Power-Line Communication) subsystems along with advanced security in a single device.

The STCOMET10 SoC delivers unprecedented integration, leveraging ST's expertise in PLC and smart-meter ICs gained over 20 years and via more than 90 million devices delivered. OEMs can use this unique future-proof platform to simplify smart-meter design, reduce time-to-market, and significantly reduce component count and bill-of-materials costs.

XMOS Launches startKIT: Multicore Development For $14.99

XMOS today announced an ultra-low-cost development platform called startKIT. Priced at just $14.99 from XMOS distribution partners, startKIT makes it quick and easy to start developing with the configurable xCORE multicore microcontroller technology. xCORE multicore microcontrollers can be software-configured with a wide variety of peripherals and interface blocks and programmed in C / C++, all in a single programming environment.

startKIT is equipped with header connections that allow it to interface to Raspberry Pi products, making it an ideal real-time I/O solution for Raspberry Pi projects. Measuring just 94 x 50mm in size, it is based around the 500MIPS, eight-core XS1-A8-64-DEV, an xCORE-Analog multicore microcontroller. The board includes: LEDs; a push-button switch; two capacitive sense sliders; a sliceCARD connector that is compatible with the wide range of I/O slices available from XMOS; and headers that allow connection to a breadboard system.

Industry News & Trends

New Alloy Could Lead To Faster Memory Chips

A new electronic alloy consisting of 50 aluminium atoms bound to 50 atoms of antimony may be promising for building next-generation "phase-change" memory devices, which may be the data-storage technology of the future, according to a new paper published in the journal Applied Physics Letters.

Phase-change memory is being actively pursued as an alternative to the ubiquitous flash memory for data storage applications, because flash memory is limited in its storage density and phase-change memory can operate much faster.

Phase-change memory relies on materials that change from a disordered, amorphous structure to a crystalline structure when an electrical pulse is applied. The material has high electrical resistance in its amorphous state and low resistance in its crystalline state—corresponding to the 1 and 0 states of binary data.

NXP, TTTech To Develop Automotive Ethernet Switch Chip

NXP Semiconductors is collaborating with TTTech to jointly develop automotive Ethernet switch solutions supporting OPEN Alliance BroadR-Reach Ethernet PHY technology.

Under the agreement, TTTech will provide its automotive Ethernet switch IP, while NXP implements the IP into Ethernet switch solutions with integrated PHY.

The switch chip will be specifically designed for the automotive market, but will also be suitable for various demanding industrial real-time applications, said NXP.

The jointly developed switch chip will enable applications with unshielded twisted pair cabling with BroadR-Reach PHY technology. It is the first Ethernet switch chip with three incorporated traffic classes including standard Ethernet traffic for diagnostics and ECU flashing, asynchronous rate-constrained traffic for audio/video streaming and sensor fusion, as well as synchronous traffic for hard real-time control and fail-operational systems. Hence, this new automotive switch chip will enable unified Ethernet networks and the convergence of critical and non-critical application data streams on one single network.

Graphene Could Allow Computer Chips To Run On Light

Scientists at the Vienna University of Technology have combined a graphene photodetector with a standard silicon chip that can transform light of all important frequencies used in telecommunications into electrical signals.

Two years ago, the team around Thomas Müller (Institute of Photonics, Vienna University of Technology) demonstrated that graphene is ideally suited to turn light into electrical current.

"There are many materials that can transform light into electrical signals, but graphene allows for a particularly fast conversion," said Thomas Müller. "So wherever large amounts of data are to be transmitted in a short period of time, graphene will in the future probably be the material of choice."

Microfluidic Water Sensor To Benefit Farmers, Engineers

Current sensors that can assist civil engineers and farmers in monitoring water levels are usually bulky, expensive and often difficult to utilise since it requires manual reading. A team of researchers from Cornell University has come up with an alternative through a microfluidic water sensor within a fingertip-sized silicon chip that is a hundred times more sensitive than contemporary devices.

Vinay Pagay, who helped develop the 'lab on a chip" as a doctoral student under horticulture professor Alan Lakso, hopes to mass produce the sensors for as little as $5 each. In soil or when inserted into a plant stem, the chip is fitted with wires that can be hooked up to a card for wireless data transmission or is compatible with existing data-loggers. Chips may be left in place for years, though they may break in freezing temperatures. Such inexpensive and accurate sensors can be strategically spaced in plants and soil for accurate measurements in agricultural fields.

Underwater Internet Developed!

Have you ever thought of underwater internet access? Sounds crazy? Believe it or not but a team of researchers at the University at Buffalo have successfully tested an "underwater network architecture" that could one day provide internet connections deep under the sea.

The researchers are developing a deep-sea Internet that could lead to improvements in tsunami detection, offshore oil and natural gas exploration, surveillance, pollution monitoring and other activities.

"A submerged wireless network will give us an unprecedented ability to collect and analyse data from our oceans in real time," said Tommaso Melodia, UB associate professor of electrical engineering and the project's lead researcher. "Making this information available to anyone with a smartphone or computer, especially when a tsunami or other type of disaster occurs, could help save lives."

Wearable Gadgets Transform How Companies Do Business

Big companies are putting wearables to work.

We've all seen gadgets that can measure our heart rates, how many calories we're burning or how many steps we take. Then there are devices that go even further, like Google Glass, which displays text messages and news feeds right up near our eyeballs.

How safe is your data online? Readers put questions to The Wall Street Journal's big data-reporter Elizabeth Dwoskin and a panel of experts in this interactive video interview.

Now companies are figuring out how to use those kinds of gadgets to improve their business. They're giving wearables to employees and customers to gather subtle data

about how they move and act—and then use that information to help them do their jobs better or improve their buying experience.

A Disc That Can Store Data For Million Years

Current hard disc drives have the ability to store vast amounts of data but last roughly ten years at room temperature, because their magnetic energy barrier is low so that the information is lost after a period of time. CDs, DVDs, paper, tape, clay and tablets and stone also have a limited life. Alternatives will have to be sought if information is to be retained longer.

Researcher Jeroen de Vries from the University of Twente MESA+ Institute for Nanotechnology demonstrates that it is possible to store data for extremely long periods.

He has developed an optical information carrier that can store information for extremely long periods of time, with each bit being written using etching techniques. The chosen information carrier is a wafer consisting of tungsten encapsulated by silicon nitride.

Unbreakable Phones Closer To Reality

A team of research at RMIT University has released the details of their research that seeks to bring to reality unbreakable devices and gadgets. The research is advancing transparent bendable electronics for science fiction-like gadgets, unbreakable rubber-like phones, rollable tablets and even functional clothing. They created a method to transfer electronics with versatile functionality, which are usually made on rigid silicon, onto a flexible surface.

The ability of micro and nano-electronic devices to sense, insulate or generate energy is controlled by thin, transparent nanolayers of oxide materials, often much thinner than 1/100th of a human hair.

These oxide materials are brittle and their high processing temperatures, often in excess of 300°C, have until now prevented their incorporation in flexible electronic devices

East European News & Trends

Tele2 Sale Lifts Russia Competition Hopes

VTB has sold 50 per cent of mobile operator Tele2 Russia to billionaire Yuri Kovalchuk and partners, paving the way for the creation of a much stronger fourth competitor in Russia's mobile market.

The deal comes six months after VTB, Russia's second-largest bank, acquired the Russian arm of Sweden's Tele 2 for $3.6bn and amid talk of a forthcoming merger between Tele2 Russia and Rostelecom, a state-owned rival.

Mr Kovalchuk, a shareholder of St Petersburg's Bank Rossiya and an ally of President Vladimir Putin since the 1990s, will become a shareholder alongside Alexei Mordashov, the billionaire owner of steelmaker Severstal, and other partners.

Russian-Led Search Engine Aims To Rival Google In Vietnam

CocCoc, the search engine in Vietnam launched in May this year, is not the typical startup.

The Russian-financed company was founded by three Vietnamese students who were developers at an experimental search engine in Moscow. Unlike the stereotype of a startup with an idea and a prototype, CocCoc (or 'Knock Knock' in English) is in a much stronger position. Already, it is an emerging competitor to Google in Vietnam.

In a study conducted by CocCoc, out of the results from real-life local searches, 33 to 37 percent generated accurate and relevant results, compared to no result from Google for those same searches.

Russian Developers Create Smart Bracelets For Couples

TapTap bracelets are a new Russian product that people are raising money for on KickStart. The team of developers from Izhevsk has already raised $17,000 and has another $113,000 to go.

TapTap bracelets transfer information from one bracelet to another, designed for couples who want to be reminded of the object of their affection even when that person is far away.

The bracelet consists of an impact-resistant plastic module and hypoallergenic silicone strap; it has one button that sends signals and turns the device on and off. It also features a micro USB for charging. Charging the device takes about an hour, and then the gadget can be used for a week.

TapTap will be sold with its app, which is used for configuring the bracelet and allows you see your partner "touch" the screen of your smartphone — a startling yet impressive experience.

World Economic Round Up

Five years after a global financial crisis erupted, the world's biggest economies still need to be propped up. They're growing and hiring a little faster and creating more jobs, but only with aid from central banks or government spending and economists say major countries may need help for years more. From the United States to Europe to Japan, central banks are injecting cash into economies and keeping loan rates near record lows. Even fast-growing China has rebounded from an uncharacteristic slump with the help of government money that's poured into projects and made loans easily available from state-owned banks. For now, thanks in part to the intervention, the world economy is improving. The International Monetary Fund (IMF) expects global growth to rise to 3.6 percent in 2014 from 2.9 percent this year.

Industry Events 2014

Future Horizons Events
- <u>Industry Forecast Briefing</u>, London – 21st January 2014
- <u>Silicon Chip Industry Training Seminar</u> – London – 17th March 2014
- <u>International Electronics Forum – 8 – 10th October 2014</u>

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

Telephone: +44 1732 740440
Email: <u>mail@futurehorizons.com</u>

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Industry Events

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MARK YOUR CALENDER FOR THE NEXT
INDUSTRY FORECAST BRIEFING
TUESDAY 21st January 2014
AND
SILICON CHIP INDUSTRY WORKSHOP
MONDAY 17th March 2014
BOTH BEING HELD AT
NH HARRINGTON HALL HOTEL, LONDON
AND
INTERNATIONAL ELECTRONICS FORUM
8-10th OCTOBER 2014
Venue TBA

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