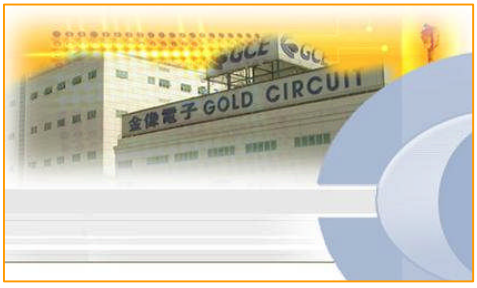
ELECTRONICS REPORT
October 2007

From Ken Gilleo - Ken@ET-Trends.com

ET TRENDS

BUSINESS & MARKET NEWS



PCB Demand for Notebooks Expanding - While telecom is still the #1 market and technology driver, notebooks continue to advance. Gold Circuit Electronics Co. and HannStar Board Corp (both of Taiwan) are seeing an increasingly strong demand for notebook printed circuit boards. The companies are the world's top-two notebook PCB manufacturers and are expected to continue set new monthly revenue records. Market drivers are the new Santa Rosa platform and the strong back-to-school demand peak. The total shipment volume of Taiwan-based contract notebook PC producers grew by 11% in August from previous month and the growth trend is expected to continue in September and beyond. The estimated volume is expected to hit a 25% quarterly increase in the Q3-07. According to both HannStar Board (No. 1) and Gold Circuit (No. 2), the customer demands are still very strong even if there is a supply shortage of key notebook PC parts. Both the two companies' revenues in July and August continuously hit record highs and both are optimistic about continuously hitting new records September. Gold Circuit claimed to be at 100% factory utilization in October. According to Gold Circuit, big orders for notebook PC and consumer electronic PCBs began flooding into the company from July, and the orders have occupied all October capacity as well as a big part of that in November. The company's plant in Changshu, Jiangsu Province of mainland China is scheduled to add additional monthly capacity of 600,000 square meters (to 1.2 million m2), while its facility in Suzhou of Jiangsu Province about 300,000 square meters (to 1.5 m2). Gold Circuit said that its Suzhou facility is expected to turn profitable in the second half and the newly added capacity would be utilized to produce mainly thin film transistor-liquid crystal display (TFT-LCD) module-use PCBs. The plant in Changshu has been profitable since mass production in late 2006. Source: CENS

TECHNOLOGY FOREFRONT

CopCam - Bobbies have a new acquisition - head-cams. Approximately $6-million worth of the devices are to be given to police in England and Wales. Tested in Plymouth, the cams replace written statements omitting the need for paperwork and can be used as evidence. UK has led the world in video tech and boasts more cameras per capita in London than any large city. The US has lead the way in police cruiser cams, but not much has happened with personal gear. The UK personal cams can store an amazing 400-hours of video. To satisfy the privacy crowd, the officer must say, “You are on video”.

TELECOM (where the action is)

WiMAX is Getting Ready - ***I've been predicting that WiMAX, the long-range Wi-Fi, will become major, at least in the USA, and there are still mixed signals, but it's really ready to happen. The recent world standards approval is the final green light.***

WiMAX Get's Approval - WiMAX technology for broadband speeds to wireless devices, has been approved as a global third-generation communications standard by the U.N. telecoms agency. The decision means that companies holding so-called "3G" licenses for mobile telecommunications can choose to use their franchise to provide WiMAX services instead of slower technologies such as UMTS or EDGE. This can obviously boost the technology and the firms with a stake in the technology, like Intel and Samsung. The agreement was reached in a meeting of the International Telecommunication Union after the negotiators overcame the objections of a number of countries to the inclusion of WiMAX in the IMT-2000 standard for advanced mobile technologies. China was one of those opposing the move because it wants its own wireless broadband standard to be adopted globally [learning team play]. The US had argued in favor of adopting WiMAX as an official IMT-2000 standard alongside other high-speed mobile network technologies. WiMAX (Worldwide Interoperability for Microwave Access) is capable of delivering wireless broadband connections at speeds of 70-Mbps or more across an area of up to 40-miles (64-kilometers). This is higher than many fixed-line broadband connections today, which typically offer speeds of around 2 megabits per second. In the United States, Sprint Nextel Corp. has begun rolling out a nationwide WiMAX network, starting in Chicago, Baltimore and Washington, D.C. Other countries, including Britain and Sweden, will begin auctioning licenses for the 2500-2690 MHz radio frequency used by 3G in the coming months. Early promoters of WiMAX such as Intel and Samsung, but Motorola and Nokia, stand to gain from the decision. Once certain interference problems have been resolved, WiMAX could become as ubiquitous as mobile phones and conventional broadband.
Source: AP

WiMAX Gains Momentum - The global telecommunications industry is on the cusp of major change, and operators are approaching critical decisions about their 4G strategies, as mobile WiMAX (802.16e) starts to move from trials and pilots to the first real-world WiMAX network deployments, according to research firm ABI Research. Mobile operators and other service providers are planning mobile WiMAX networks all over the world, mainly in the 2.5GHz and 3.5GHz bands. "The mobile wireless industry is in a state of major change as mobile operators decide which IP-OFDMA path they will take for their 4G networks according to ABI Research. The new and unproven (on a large commercial scale) mobile WiMAX has positioned itself against the potential Goliath that LTE (Long Term Evolution) is expected to become. The research forecasts substantial numbers of WiMAX subscribers worldwide: more than 95-million using CPE devices by 2012, and almost 200-million using mobile devices, with some overlap between the two groups. While WiMAX equipment interoperability certification time-lines have slipped somewhat, and LTE benefits from having evolved out of the widely-deployed GSM technology, WiMAX has at least a 2-year head start in reaching the market. The major semiconductor and equipment makers, with the exception of Qualcomm and Ericsson, are staking out their positions for this emerging sector, while operators' enthusiasm, led by Sprint's and Clearwire's firm commitments in the US, is rising sharply. Vodafone is looking to WiMAX for some of its newer markets such as the Middle East and Eastern

Europe; BT and Telecom Italia Mobile are also showing interest. And ABI Research understands that another as yet unnamed "major European mobile operator" is "seriously considering WiMAX. Meanwhile, amid this increasing momentum, chipset companies are positioning themselves to support a wide variety of device types beyond the traditional handsets and laptops, including UMPCs, mobile Internet devices, and consumer electronics products such as portable game devices, portable media players and imaging devices, noted the research firm. Source: DigiTimes.

Cisco WiMAX - Telecom giant Cisco Systems is getting into the WiMAX market. They will spend $330-million in cash and assumed options for Navini Networks, a Richardson, Texas-based start-up that makes mobile WiMAX equipment. Navini is a pioneer in "smart beamforming" technologies and also uses multiple-input multiple-output, or MIMO, antennas. The combination of the technologies improves the speed of the data transmission and the range of WiMAX radios. Overall, the technology lowers deployment and operational costs for network service providers because fewer radios are needed to transmit the wireless signals. Cisco, which has an extensive portfolio of Wi-Fi wireless technologies, acquired from companies, such as Linksys and Airespace. Cisco had been rumored for the past several weeks to be eyeing WiMAX start-ups and, before it chose Navini, was also supposedly looking at other potential WiMAX candidates including Airspan Networks, Alvarion and Redline Communications.

WiMAX has recently been touted as the fourth generation of wireless technology, or 4G wireless. Mobile WiMAX promises to offer data speeds faster than current 3G wireless networks and over much longer distances than comparably fast Wi-Fi technology, which today is used mostly indoors to provide wireless broadband hot spots. Major infrastructure players, including Motorola, Nokia Siemens and Samsung, also offer WiMAX products. WiMAX is seen as particularly useful in the developing world where fixed infrastructure is scarce or nonexistent. The acquisition will help in delivering broadband wireless in emerging markets, such as India, China and Eastern Europe. In these countries, cell phone penetration is high, but broadband penetration is not, and that's largely because of the lack of infrastructure. While Navini's technology could be viewed as complementing Cisco's existing Wi-Fi portfolio, it does signal a slight shift in strategy. For the past few years, Cisco's executives have publicly criticized WiMAX.

But now it looks like Cisco has shifted strategy. Mobile WiMAX technology recently received approval from the United Nation's International Telecommunication Union as a third-generation wireless technology. This distinction puts the technology on par with other major wireless standards, such as HSDPA and EV-DO. Ultimately, its acceptance should help pave the way for nations around the world to allocate the necessary spectrum and adopt the technology. Motorola and Intel have been among the most fervent backers of WiMAX. Each company says it will have products for mobile WiMAX in the market sometime in 2008. While many experts see WiMAX as a potentially important technology in the developing world, some say it's not well suited for developed countries, such as the United States, where operators have already spent billions of dollars on 3G wireless spectrum licenses. Sprint Nextel is the only major carrier in the U.S. to say it will use WiMAX. The company has committed spending $5 billion over the next few years to build the nationwide WiMAX network using its 2.5GHz spectrum. But justifying the expense of the network as the company loses regular cell phone subscribers hasn't been easy, and the company has joined forces with another provider called Clearwire that also plans on building a nationwide WiMAX network. Source: ZD Net

More WiMAX - D-Link has announced its strategy regarding WiMAX including product lineup and relationships with worldwide channel partners. From the view of D-Link's channel, WiMAX will become a major focus in its future telecommunications lineup, while in the retail market, WiMAX products will also play an important role, according to sources at D-Link. With end users growing demanding for Internet access and mobility, WiMAX is becoming increasingly popular in the telecommunication technologies sector, according to D-Link. Worldwide there are already over 300 makers and vendors working on the standard, added the sources. D-Link will use the current telecommunications market as the base from which it will expand its WiMAX product lines. The products will include network cards with different interfaces such as integrated wireless LAN, Bluetooth and WiMAX support. Later the company plans to also integrate 3G and VoIP technologies into its products. D-Link also plans to build an ecosystem to promote future cooperation with its telecommunications partners, ISPs, TV providers, Internet application service providers, Internet content providers and other communication equipment makers. Source: DigiTimes.

Nokia Launching WiMAX - Nokia told the press that consumers should expect to see WiMAX capable mobile devices from Nokia sometime in 2008. This news came as the company rolled out a WiMAX-enabled version of its lightweight base station, previously used just for transmitting HSDPA and W-CDMA third-generation cellular signals. Nokia's timing is on target, since mobile carrier Sprint Nextel announced last August it intends to roll out a 4-Mbps WiMAX network by Q4-08 as a complement to its existing W-CDMA and EV-DO services. Intel formally announcing the availability of a key WiMAX system-on-a-chip (SoC), previously known as "Rosedale 2," now as WiMAX Connection 2250. Installed in a mobile radio that includes a broadband modem, the SoC enables high-speed broadband handsets to connect to both fixed WiMAX networks, and mobile ones like those enabled by Nokia's new Flexi base station model. Intel pointed out that the number of carriers currently providing wireless broadband service worldwide now numbers 40, with the number performing trials has risen to 225. Intel will be partnering with Motorola and Clearwire to conduct a mobile WiMAX transmission test throughout the city of Portland, OR, throughout next year. While carriers tend to cast WiMAX as a kind of high-speed data carrier that can be paired with existing cellular service, they ignore the fact that a single WiMAX connection could conceivably take over the whole mobile circuit. Intel says its 2250 SoC is capable of handling a discrete WiMAX channel of up to 10-MHz bandwidth. Couple that figure with the WiMAX Forum's recent independent estimate of spectral efficiency at 1.9-bps per hertz, and you have a system with a theoretical maximum throughput approaching 19-Mbps. WiMAX Forum admits the perceived maximum throughput today is more like 14-Mbps. By comparison, 3x EV-DO has a perceived maximum of about 4.2-Mbps, with a spectral efficiency of less than half that of WiMAX. Intel and Nokia have had an agreement since June 2005 to collaborate on WiMAX, and Intel SoC chips will very likely be powering Nokia WiMAX handsets. Though while Nokia has stakes in HSDPA, EV-DO, and WiMAX for wireless broadband, Intel is mainly concerned with just the latter, as the champion of that technology and perhaps the most prominent advocate in favor of its IEEE standardization. Source: Beta News.

Major WiMAX Network Contract - Motorola scores Taiwan's largest WiMAX network contract from Taiwan's Far EasTone Telecom (FET) as part of the operator's role in the national M-Taiwan project. FET controls about a third of the market share of the local wireless mobile market in Taiwan. The M-Taiwan project is an initiative created by the Taiwanese government to create a

standards-compliant environment supporting services, education, and entertainment on a national level. The rollout of FET's WiMAX network will be 2-phased. Phase 1 implementation will commence this month, and is expected to be completed by end December. The second phase is expected to be completed in early 2008. According to the company, the WiMAX network deployment announced Sunday is the largest rollout to date in Taiwan. Underlying the M-Taiwan project is a complete WiMAX ecosystem to create citywide broadband network in order to roll out integrated mobile services. Earlier this year, Motorola deployed Wateen Telecom's WiMAX network in 17 major cities across Pakistan. Source: Electronic News.

Successful Muni-WiMAX - ***Not everyone is abandoning Muni-Wi-Fi. But please note that the old familiar Wi-Fi is the short-range wireless while WiMAX is a much newer long-range system that has only recently been approved and certified***. Kentucky has deployed both mobile and fixed WiMAX. Visitors can stay in touch using the municipal wireless system from Nortel in Kentucky's 22 state resort parks. The fixed WiMAX delivers broadband wireless as a cost-effective means of doubling broadband network capacity for government-owned buildings including the historic Hoge House in Frankfort, the state's capital city. Kentucky hopes to attract more tourists by providing free Wi-Fi, VoIP and E911 emergency service in all of its resort park cabins and guest rooms, as well as remote point of sale at cafeterias, gift shops and golf courses. Even cabins across the lakes and in other remote areas of our resort parks have wireless data and voice capabilities, including E911 to enable rapid response in case of emergency. The mesh is simple and cost-effective and includes all 22 networks managed from one location here in Frankfort. This department needed substantially increased broadband capacity for high-resolution mapping of geological surveys, but alternatives like leased T1 lines, microwave and fiber extension were either inadequate or prohibitively expensive. WiMAX gives them at least twice the capacity of the alternatives at a fraction of the cost and the payback is only five months. Kentucky provides proof that municipal wireless can be successful according to Nortel. The key is to identify the right business model, the right applications and the right system up front. Nortel is the global market leader in wireless mesh nodes in 2007 with a 26% according to the Dell'Oro Group. Source: Monitor Today.

Smartphones have Won - ***It took awhile, but the telecon-centric smart phone has beat out PDAs and all the computer-centric products that have come along in the past few years. Not long ago, tiny Japanese phones were the rage, but tiny tech is not the big play today - its features.*** Smartphone growth is driven by new features and ease of use, and if it fits in your pocket, that's small enough - but slimmer is a selling point, too. The Smartphone segment of the handset market is forecast to experience strong growth, increasing from just over 10% of the market in 2007, to more than 25% of the market by 2012. Growth is being driven by a new breed of Smartphones, that are decidedly more user friendly. Historically, new technologies have been positioned as a unique selling point for the handset, as was the case with digital music players and cameras. These are attractive to customers, but have offered limited operator revenues returns to date. The next generation of Smartphones will see greater adoption from a wider range of consumers by utilizing the latest technologies to remove the key barriers to revenues generating services and applications, including enhanced appearance, usability, and functionality. Manufacturers and operators have learned from past missteps in this area, and are now targeting technologies not just for their unique selling points, but also for their ability to drive revenues. These technologies include GPS/ location-based services (LBS), capacitive touch

screens, enhanced voice applications, and redesigned graphical user interfaces. ***[I learned to hate service providers who crippled good phone to force you into adding more services***]. Developers are pushing more manageable systems that allow end-users to easily access the desired applications. [Phones are actually starting to look like they were designed for humans and not by engineers. Did the iPhone help?]. Capacitive touch screens, sensors, advanced speech technologies, and significantly improved graphical user interfaces are all seeing growth in Smartphones, helping to drive consumer uptake. These technological advancements for input technologies not only flatten the menu to encourage the user to try applications and search out new features, but also provide innovative new input methods. The input technologies will eventually include speech (why hasn't that been an obvious need?) Touch screens (both resistive and capacitive) will account for 45% of the Smartphone market by 2012. The GPS/LBS section will combine speech, GPS and mobile search. These technologies will make mobile Internet search easily accessible and relevant. The experience will be different from the PC since information can be filtered by location and time. Leading Internet search companies, like Google and Microsoft, are spending a lot of money on acquisitions and research, relating to this concept. But beware that advertising has a potential is huge and you will be targeted. In 2012, more than one in four handsets will be a Smartphone with more than 1.5 billion being sold. Source: IMS Research

WiMAX for Healthcare - Hewlett-Packard and WiMAX service provider Global Mobile (Taiwan) demonstrated a mobile WiMAX station for use in hospitals, complete with a laptop PC, monitor and other gear. HP wrote software for the mobile hospital station and is working with Taipei's Tri-Services General Hospital to explore further uses for the device. The station is designed for use by nurses, doctors and other attendants as they admit new patients and does rounds, to gather information electronically and transmit records instantly to a central database over a WiMAX wireless broadband network. Hardware from any PC company can be used for the base station itself. HP created the software and has put together the hardware for the mobile WiMAX station at a cost of around $5,000 each. Once HP, Global Mobile and Tri-Services Hospital figure out more ways for the mobile WiMAX station to be used in medical care, it will be sold to other hospitals in Taiwan. There are no plans currently to export the device to the U.S. or other countries. The concept, design and software of the mobile station were all created in Taiwan. Source: Computerworld

NANOTECH ELECTRONIC EMPHASIS

CNTs for Chip Heat Transfer - Researchers at Purdue University (Birck Nanotechnology Center) have developed a way to use carbon nanotubes to remove heat generated by silicon chips more efficiently and less costly than other methods. They discovered a way to grow carbon nanotubes (CNTs) that affix themselves directly to a processor die, allowing for very efficient heat removal. The CNTs are grown vertically on the silicon die between the die and metal casing. The surface is so full of nanotubes that under a microscope it looks like a thick, dense carpet. When the metal casing is mounted, the tubes bend slightly as they come in contact with the metal and help insure good contact. This creates a great deal of contact interface with the metal. Since the CNTs are physically affixed to the silicon substrate material, the heat flow becomes significant toward the cooler metal. They physically create the CNTs using microwave plasma chemical vapor deposition that involves taking a silicon substrate (like the backside of a CPU die), and introducing

branching molecules (dendrimers) that anchor to the silicon. Metal catalyst particles are then applied in a solution that is removed by adding heat, leaving only the particles behind. The surface is then exposed to methane gas in a microwave field. The microwave signal breaks down the methane gas and deposits the carbon onto the dendrimer/catalyst combos in the form of self-growing nanotubes. The process is inexpensive and relatively easy to employ. Research was funded by NASA, through the Institute for Nanoelectronics and Computing in Purdue's Discovery Park; they also received support from Intel and Purdue. Source: Trendwatch

MATERIALS

Copper Keeps Rising - Codelco, the world's largest copper producer, said the metal's bull market would continue next year as rising Chinese demand more than offset weak US consumption and a "double-digit" surge in production costs. The copper market will remain tight and volatile next year and copper inventories are very small. Demand is growing fast in emerging markets; in particular in China. This process will continue in 2008. Forecast is for global copper consumption would rise by about 3.5% next year, similar to the 2007 increase. Non-residential construction is pulling strongly and is offsetting falls in home construction-related copper consumption. A decline in inventories in the third quarter to 2.6 weeks of consumption, down from 3.1 weeks at the year's start, has pushed prices higher. However, copper trades below its all-time high point of $8,800 a tonne attained in May 2006. Copper is seen as the bellwether of the base metals sector. It figures prominently in the most popular commodities indices, such as the S&P GSCI and the DJ-AIG, used by pension funds and by other institutional investors to gain exposure to the commodities asset class. It is difficult for the supply side to respond to the consumption increase and production costs have been rising at "double digit" rates since 2001. Time needed to get a new mine in production is much longer than in the past. Codelco faces an uphill battle to expand its capacity amid power shortages. Codelco last week signed a $500m agreement with Suez, the French utility company, to build a natural gas power plant in northern Chile. On top of higher global energy prices, Chile faces specific energy problems that increase copper mining costs. Source: The Financial Times.

INTELLECTUAL PROPERTY

Qualcomm vs. the World Courts - ***QUALCOMM has been battling in the US courts for a while, but the EU court is the big one.*** The future of the mobile industry hangs in the balance as a battle over intellectual property and royalties between technology titans Nokia and Qualcomm comes to a head. Billions of dollars in revenues and profits are at stake. The dispute has landed in the lap of the European Commission, known for its high-profile antitrust victory over Microsoft and more recent pursuit of U.S. chipmakers Intel and Rambus. Qualcomm has built its highly profitable business on developing and licensing intellectual property for mobile communications, especially the CDMA standard, which it invented. Though admired, or maybe envied in the industry, Qualcomm also brings resentment for the rich royalties it collects on its patents. Rivals say the extraordinary profits Qualcomm earns from royalties on third-generation mobile technology amount to a kind of "tax" on the entire mobile industry that trickles down to higher prices for consumers. Nokia, with more than 35% mobile phone market and plenty

of intellectual property of its own, is the main combatant. Nokia pays lots of royalties to Qualcomm and the fees could amount to nearly $1.1-billion in 2008 alone. But Nokia argues that the royalties are too high relative to the value of Qualcomm's patents, and has teamed up with a half-dozen other tech firms to try to force them down. Two years ago, Nokia and its allies asked the EU's antitrust division to investigate Qualcomm's licensing fees, and on Oct. 1, the Commission opened a formal case against Qualcomm. In their original complaint, Nokia, Broadcom, Ericsson, Texas Instruments, NEC, and Panasonic Mobile Communications alleged that Qualcomm overcharges for its intellectual property and has used potentially abusive techniques to prolong its position in mobile-phone technology. If antitrust officials find Qualcomm's behavior has breached European competition rules, the Commission could impose fines as high as 10% of Qualcomm's annual revenues. In a worst-case scenario, it could even break apart Qualcomm's chip making and licensing businesses. Qualcomm is so mired in these and other legal battles that it will spend an estimated $200-million in lawyers' fees in 2007 alone. Nokia and Qualcomm, meanwhile, are deadlocked in their own royalty negotiations after a previous contract between the companies expired on Apr. 9. A Los Angeles panel will decide who is right, and the result could add or subtract hundreds of millions of dollars in profits for either company. Qualcomm earned one-third of its $7.53 billion in 2006 revenues and 71% of profits from royalties. The company has spent billions of dollars in mobile technology R&D and argues that its fees are deserved compensation for its extensive innovation. The heart of the European Commission case is whether Qualcomm's licensing terms are "fair, reasonable, and non-discriminatory." This legal principle, often applied in intellectual-property cases, says that owners of essential patents should not be able to hold an industry hostage by charging exorbitant prices for access to the technology. This is especially important when companies have had their patents incorporated into an industry standard, as was the case with Qualcomm and W-CDMA. But, Qualcomm became dominant based on a promise not to overcharge and not to distort competition in downstream products. Some say that once the W-CDMA standard was fixed on that basis, QUALCOMM turned around and did exactly what they promised not to do. Qualcomm still charges around 5% of the wholesale price of each handset. The Commission has put the Qualcomm case on a fast track, but it will still be at least a year before a decision. In the meantime, the mobile industry awaits the Los Angeles arbitration ruling between Nokia and Qualcomm and the outcome of a score of other legal battles involving patents and intellectual property. Source: Business Week.

INTERNATIONAL NEWS

New China Packaging Plant - STATS ChipPAC is opening of a second 371,000 sq ft manufacturing facility in Shanghai, China. The Shanghai site cab now offer high-volume, low-cost services including wafer probe, assembly, final test and distribution to support markets such as PC chipsets, computing, consumer and broadband applications. The company has been rapidly building its technology portfolio in China with advanced die attach and wire bond processes, advanced mold processes, film die attach and wafer thinning. With high volume production experience in plastic ball grid array (PBGA) packages, 3D stacking and system-in-package (SiP) solutions, STATS ChipPAC Shanghai is one of the advanced integrated circuit subcontractors in China. They are also adding a flip-chip bumping service with, sort and assembly to final test. Source: TechOn.

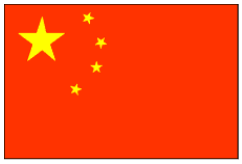
India R&D - Cookson Electronics just opened a state-of-the-art research center in Bangalore, India. The 32,000-ft2 facility is an integral part of Cookson's global research commitment that consists of scientific exploration

in the U.S., Japan, Singapore, and India. Cookson was the first electronic assembly materials company to establish an R&D facility in India. The new R&D center in will be part of India's broad-based growth in electronics and photovoltaics, while also providing technical support to the entire Asia-Pacific Region. Cookson has an ISO-certified manufacturing facility in Chennai and who will now benefit from the R&D center.
Source: CircuiTree.

Cisco 3X Indian Workforce - Cisco Systems plans to more than triple its workforce in India and

turn the country into a platform to tap and service markets worldwide. The company pledged $1.16-billion in investment for India two years ago and outlined future plans after opening a $50 million facility in Bangalore. Cisco will increase its workforce from 3,000 employees to 10,000 by 2010, and expects to generate 20% of its 'future leadership' from the country (whatever that means). India is a good partner and Cisco sees the country as intrinsic to its growth and much more than a low-cost location. Cisco will use the Bangalore facility to devise networking technology solutions for customers in emerging markets in Asia, including China, and the Middle East, Africa and Latin America. The Bangalore location, which will eventually also serve Cisco customers in developed markets like North America and Europe, will accommodate staff from its research and development, information technology and customer support teams.
Source: The Business Times.

Advanced Vehicle Research in China - General Motors will open a research



lab in Shanghai and work with its Chinese partner SAIC Motor Corp to develop cars powered by alternative fuels. The GM Center for Advanced Science & Research, part of a new $250-million GM campus in Shanghai, will look into developing alternative-fuel cars, including plug-in hybrids, bio-fuel and fuel-cell vehicles. The first phase of construction will be completed late next year and the center will employ 1,500 engineers and scientists when fully staffed. This plan will accelerate research in the areas of energy-efficient and environmentally friendly automotive technologies, as well as alternative fuel pathways that are socially responsible, economically viable, environmentally sustainable, and technologically feasible. GM sees China one of the first markets and production sites for alternative propulsion systems, including the new flexible fuel, plug-in type of electric vehicles currently under development. SAIC will produce electric-fuel hybrid vehicles under its own, and GM brands, to reach 10,000 units by 2010. Fuel prices in China are expected to increase sharply following hikes in world crude prices and a widely anticipated fuel tax next year, so timing is right on. Many Chinese brands, including Chery, Geely and Chang'an, are also developing alternative-fuel vehicles.
GM and SAIC will jointly offer a $5-million grant in the next five years to research clean energy with Tsinghua University, China's premier research institution based in Beijing. GM, one of the top two market leaders along with Germany's Volkswagen, said its China sales grew by 17.2% to 753,686 units in the first three quarters of this year. Meanwhile, sales of all China-made vehicles surged by almost a quarter to 6.46 million units. China will overtake the United States as the world's biggest vehicle market in the next decade. [***Electronics, including MEMS devices, is becoming increasingly important in energy efficiency and alternate energy utilization. Electronics R&D will be a part of this work.***] Source: China Daily