MESSE MÜNCHEN INTERNATIONAL

How China, India and Eastern Europe are changing the global electronics market

- electronica trade show (Nov 11-14, 2008, Munich) will provide additional information about the effect of these countries on the electronics market

Introduction

The global electronics market once dominated by Japan, North America and Western Europe is being eclipsed by the Asian Rim, China, Eastern Europe and India. According to U.K.-based Future Horizons, emerging economies like China and India could offset the growing economic slump in the rest of the world. The forecaster noted that China accounts for one quarter of global economic growth while the Indian chip market continues to grow. [i]

"Economies which are leveraged off China have continued to perform very well," said Glenn Maguire, Asia Pacific chief economist at Societe Generale. "Hong Kong is linked to the mainland via a services dynamic. We are confident growth will come in at around 6% this year."[ii]

While the US electronic industry languishes and declines, Pacific Rim countries are picking up steam. India is presently growing at a 7% - 8% rate. Other Asian countries are also actively building an electronics infrastructure.

Vietnam, India and other Asian nations are mounting aggressive campaigns for foreign investment. Consequently, a third of the manufacturers in Guangdong province -- which produces 30 percent of China's exports -- will be closed in three years, according to a report by Tao Dong, chief Asia economist at Credit Suisse in Hong Kong.[iii]

The CEO Roundtable discussion held at Productronica 2007 provided an electronics-industry business insight into China, India and Eastern Europe from the first-hand perspectives of major international company leaders. The lessons from this conference are directly applicable to US firms that want to lift US manufacturing back to world prominence.

Messe München International
Tel. +49 (0)89 949-11458
E-Mail: info@electronica.de
www.electronica.de/en

A similar CEO Roundtable presentation is scheduled for electronica 2008 on Tuesday, November 11, 2008 from 11 am to 12 pm at the electronica Forum in hall A2. Speakers are the CEOs of Freescale Semiconductor, Infineon Technologies, National Semiconductor, Osram Opto Semiconductor and STMicroelectronics. The discussion topic is "What action is the semiconductor industry taking in terms of climate protection?" More details.

In addition, visitors can learn about the (O)LED, embedded, microelectronics and nanoelectronics, automotive, wireless and wearable technology markets at electronica 2008. The show is a very rich source of electronics industry information.

At Productronica 2007 distinguished representatives from the electronics production industry participated, including speakers from Atotech, Panasonic, Orbotech, Siemens and Tyco Electronics:

Dr. Martin Kurpjoweit
Vice President
Europe Atotech Deutschland GmbH
(Chemistry and equipment for the pcb and electroplating industry)

Günter Lauber
President
Electronic Assembly Systems
Siemens AG A&D

Dr. Jürgen W. Gromer
Vice Chairman and President
Tyco Electronics

Yoav Harel
President
Orbotech Europe

Eddie Kawase
President
Panasonic Factory Solutions Europe
Panasonic Industrial Europe GmbH

Dr. Jochen Eickholt
CEO
Siemens Home and Office Communication Devices GmbH & Co.

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Klaus Dittrich, Managing Director of Messe München GmbH

Klaus Dittrich, Managing Director of Messe München GmbH, gave the opening remarks.

"There is hardly [an electronics company] that has NOT had to deal intensely with how these markets are developing. For example, more than 50% of all sales generated by contract manufacturing shops in electronics go to companies that are located in China. In India, volume and the overall sector of electronics production is expected to increase by 18% a year to $32 billion by the year 2011. Last, but not least, Eastern Europe is expected to account for approximately 50% of the electronics production for all of Europe. The wave of founding subsidiary [companies] in these countries, which started years ago, is still continuing…"

"But tendencies going in the opposite direction are also becoming apparent. Some companies have withdrawn from new markets and shifted to other regions. The challenges are enormous. In a truly global and a extremely dynamic market, securing one's ability to compete and assuming the role of technology leader are essential.

"What are the most important criteria [for] working successfully with markets in China, India, and Eastern Europe? Where is added value taking place? How is quality assurance insured? How are environmental requirements fulfilled? What challenges are associated with intercultural communication? What can be done so that everybody in the company pulls together?"

Electronic market growth areas

Not surprisingly, participants identified China as the dominant electronics business country, with the largest growth rate of any country in the Far East. India has yet to reach China's level of business maturity, but nevertheless attracts customers and investors to take advantage of its potential. The speakers also mentioned Vietnam and Eastern Europe as potential business investment and development centers.

Mr. Harel: "China is the dominant country. It is not only growing quickly, but the market is very big. There are also surrounding areas: Vietnam is starting to grow. Eastern Europe, and to some degree North Africa, are taking some production from European countries to gain the cheaper labor and lower costs. India is gaining importance, but definitely not as big as China. Many companies have gone there and we are following the companies that go in that direction. But India is not as big as what we see in China and others."

Dr. Kurpjoweit: "Atotech is at the beginning of the supply chain. Our experience is that China is the dominant country today, in terms of activities and chemistries. We have also moved production of equipment to China. India is in the early stages of development and has also become an important hub for manufacturing. The Eastern European countries are now starting up with modern…technologies going into these countries."

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Is the Chinese market overheated?

Of the 10 wealthiest companies, five are located in China. Many stockbrokers believe the Chinese market is overheated. What happens if the market collapses? What happens if expectations break down? The participants agreed that China's market may be overheated, but that will not cause investment or manufacturing to cease.

Dr. Gromer: "China is a big global market. The market will continue to increase due to the sheer number of people in China – their standard of living is constantly increasing. You can see a big market increase in a time span of 3-4 months. I don't see a stop – China has a good potential to continue this growth over the next couple of years."

Dr. Jürgen W. Gromer, Vice Chairman and President, Tyco Electronics

Dr. Kurpjoweit: "The stock exchange market is definitely overheated. That bubble will burst sooner or later. China is still the factory of the world – it is continuing and is sustainable. There isn't a big threat – maybe a slow down in investments, but it will continue for the next few years."

Mr. Kawase: "Surely China will be an important manufacturing location for the electronics industry as a whole. From the point of view of management, if you're only manufacturing in one location, you cannot diversify the risk of problems occurring. India and other areas are options to help diversify this risk. That is another important point about India: the population is a potentially big market, even though currently only 20% of population is a targetable market"

Dr. Eicholt: (in answer to the question, "[Do] you still see an increasing Chinese market?") "Yes. We will see an increase of the Chinese market; however, we also see "geo-redundancy" – other emerging markets drawing investors such as Vietnam and Malaysia. This increasing element will not reduce China's growth. It will be complementarily to its development. The entire region, overall, will be benefiting from the economic development. In the future China won't be the only growing country."

Drive for low cost manufacturing

Strictly speaking, low direct manufacturing cost is no longer the correct metric to evaluate the desirability of an electronics facility location. Now that China, India and Eastern Europe consume a significant portion of their manufactured goods, local consumption needs to be taking into account. Further, low labor cost doesn't take into account all the factors in the entire supply chain, including qualified workers, design adaptation to local consumption needs and conformance with evolving safety and environmental regulations.

Mr. Lauber: "Low cost production is not a matter of going to a local's country - it's a matter of managing the supply chain in the right way, all the way through. Then you can really produce low cost goods because you can take advantage of the benefits available in just one country. We do a lot of

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sourcing out of China for cost reduction but don't necessarily do our production there because there may be a better place to do it. You have to look at the entire supply chain: where you get your components, where you build it and how you serve the market."

The effect of steadily-rising energy costs

Energy costs are a growing global problem, shared by all countries. There was agreement that the energy cost of manufacturing will ultimately be passed along to the consumer. The availability and reliability of energy is a larger issue than the cost of it.

Dr. Gromer: "In the energy-cost side, it is more-or-less the same around the world. That is a global market that we all face. It is different with raw materials, such as copper, gold, sliver, where we see big pressure everywhere. The question is "can you pass this on into the market?" that is the big issue. On the energy side, it's a different situation."

Other practical problems that drag down the electronics market

Practical issues such as electricity availability and reliability, increasing environmental regulations, employee retention and flexibility are becoming major problems for electronics companies in these countries. International electronics corporations are increasingly looking at the total production costs (direct manufacturing plus logistics costs) to evaluate the suitability of any facility location.

Dr. Gromer: "I would not see problems, I would see opportunities. You have to look at the total cost of a product. You have to see the production costs and the logistics costs in total. And for each product, the logistics costs are very different. You can't just move any product to China, Vietnam or the Ukraine, you also have to add in the logistics costs which are very different. So we only move products to China or India when the total production cost is attractive."

Dr. Jochen Eickholt, CEO, Siemens

Dr. Eickholt: "In many cases we understand the limitation of flexibility is quite an obstacle particularly in the Far East. Due to their way of doing business they sometimes require lead times and response times which are quite unusual for us. In addition to production and logistics costs, we also look at flexibility and the response time of the entire supply chain. In volatile markets the ability to meet unforecasted demand is really of essence. So the cost of the competing supply chain isn't enough; they also factor in the response time of the supply chain. The ability to meet forecasted demand is really of the essence. Patents also pose another obstacle to doing business in China."

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Dealing with rising wages

Experts forecast that wages in China will be rising soon. Will this predicted increase cause manufacturers to leave China? In general, participants said no – it wouldn't change their minds to locate and manufacture in that country.

Dr. Kurpjoweit: "China will stay our manufacturing location for quite a while. There has to be a next country to take its place, like India, Vietnam, or Thailand. They are attractive because of their similar mentality to China."

Dr. Gromer: "The key question is: 'Why are you in China?' If you are there for cost reasons, in the future you might diversify to places like Vietnam, Thailand, Indonesia, and Ukraine, which has labor rates 20% lower than China. On the other side, however, China is the big global market which is why you remain there."

Mr. Kawase: "First, China and India are the areas we focus on for manufacturing. In my opinion, we're not trying to find the cheapest labor cost because labor cost is not the only factor. Labor costs account for approximately 2% of all costs involved in manufacturing. There are many other areas where we can save, so we try to focus more on the bigger picture, like 'How can we use manufacturing systems at a reasonable price, even in higher cost areas'? This is our aim and target. Some electronics manufacturers based in Japan are moving their manufacturing locations back in Japan. The reasons for this return into Japan include company policy, labor cost not being the only factor, desire for higher quality, communication factors, and logistical factors."

Are foreign workers flexible enough to adapt quickly to market demands?

Foreign workers easily adapt to market demands, while foreign governments differ in their adaptability. Sometimes the local or national government introduces long lead and lag times.

Dr. Gromer: "Indian workers are very flexible. First of all, they are very well-educated and have a better understanding of the needs of the market, so they react very quickly. It's the same in China. China is a fast - very fast – country. Turnaround is fast, the understanding is fast, the education is very good. These are things we have to keep in mind when working in high-cost countries."

Dr. Eickholt: I think it also has to do with the difference in the political system which leads to difficulties at all levels there. In comparison, in China a decision is made and everyone follows, in contrast to India where there are still too many levels of decision-makers that have to analyze the original decision in question. On the positive side is this increasing openness, at least at the higher class of consumers, towards the Western approach toward manufacturing products. As the economy develops, there will be increasing investment trends over time. I believe there is a lot of potential now; there is an increasing number of companies investing heavily in India. The prospects are quite big."

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High quality

There is a general consensus that high quality is critically important regardless of the manufacturing location, the cost or the consumer.

Dr. Gromer: "It's a matter of continuous training and understanding how to manufacture our products. This works very well – also in China. We are comparing the quality levels of all our factories over the world. China and India have been ahead for along time due to their philosophy to do good work, which is very different from other saturated markets. We are very satisfied with what China and India have been doing since the beginning."

Dr. Eickholt: "I would agree in terms of manual manufacturing. There is a high ambition from the people to make high-quality products. Overall, comparing it to highly automated processes, the picture slightly changes. The return rates we look at are lowest where automated manufacturing creates our products. Our philosophy is to apply our quality management systems and work on continuous improvement processes. Overall, quality levels from China are very comparable."

Mr. Lauber: "Quality is very important. We can only accept 100% quality. Some people, when looking into the market, make the mistake of thinking that in a low-cost market quality is not important because they are making low cost products. This is not true –quality is important in every market. The quality must be 100% in every country that you're going to sell your products."

Günter Lauber, President
Electronic Assembly Systems

Does the Indian political system recognize the need to change and improve their infrastructure?

Yes, the Indian government recognizes and is improving their electronics industry infrastructure. The general consensus is not to underestimate India. It lags China's development but is quickly catching up, with a governmental system slightly more difficult and cumbersome to work with than China.

Dr. Kurpjoweit: "The Indian government recognizes [that] there needs to be a lot done for the infrastructure. As an example the highways and railroads that need to be modernized. The airlines are helping bring strong development into the country. Strong development is on the horizon for India within 5 to 10 years. It definitely is coming."

Dr. Lauber: "We should not underestimate India. It may take a little longer, perhaps not 20 years. The question is: is India becoming a production country? Or is it a country emphasizing engineering of software development? I think it's going to be both production and engineering. Will it be a 'production hop' for the rest of Asia? I don't think so because they have their strengths in software engineering."

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Where is the value-added now taking place? Is it shifting?

Real, fundamental new designs still originate in the traditional innovation countries, e.g. US, Europe, and Japan. Innovation in the form of regional adaptation is now taking place in the manufacturing countries of China, India and Eastern Europe.

Dr. Eickholt: "If you look at the entire value chain, then yes indeed, it is shifting. The shift is happening most in areas where, from our perspective, not too much innovation is of importance. Innovation, meaning we do something new - we do something different that in the past. That typically happens in the old, originating countries. The focus on the other regions is then on local adaptation, local standards, and so forth. We have to make sure we reflect the taste of the end customer. You have to understand the end customer; you have to live in the environment of the end customer."

Dr. Martin Kurpjoweit, VP Europe Atotech

Dr. Kurpjoweit: Yes there is a big difference, but at the end of the day certain activities will stay here in Germany. High intellectual activities, demanding activities will stay here [in Germany] whereas high volumes are shifted to China. If you compare China and its employees today compared to India there is one big difference, and that is the language. The big advantage for India in the future is that they are well educated in the English language. This is the asset that India has today and for the next 5 or 10 years. What came together in China, what makes China so successful – let's take the example of mobile phone manufacturing; The global demand for these goods, which is very volatile, there is local demand and at the same time an availability of the workforce. This will come in India with the developing urban middle class demanding goods in India and then all of us putting up our supply chain and manufacturing base in this country. This is what is needed to satisfy one billion people in India.

Environmental regulations

Environmental regulations in China and India are being enacted which are very similar to European standards. This, in turn, can drive up the total manufacturing cost. At the same time, some international companies adhere to a code of conduct irrespective of their manufacturing location.

Mr. Lauber: "There are definitely some environmental regulations in terms of how production runs. Lead-free is obviously a requirement in China. If we didn't produce there, we wouldn't have to deal with the production regulations, however in terms of providing solutions to our customers, we have to provide for the end-customer's needs."

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Dr. Gromer: "We have good experience in environmental concerns. There are two things we consider. First, we are a global company with a clear code of conduct and we apply the same standards everywhere. Secondly, China and India have, roughly, the same environmental regulations as Europe. This may not be the case for all sides of manufacturing, however any new manufacturing plant being created is held to these new standards."

Are lax environmental regulations responsible for manufacturing growth in these countries?

The perceived advantage of lax environmental regulations is not real – for two reasons. First, one participant stated that the environmental regulations have been the same as their European based company standard for approximately 15 years. Secondly, consumers worldwide increasingly demand more environmentally-friendly products.

Dr. Gromer: "That's a dangerous question. That should never be a reason. Within the last 15 years, environmental standards the government uses are the same as the standards that Siemens has been using."

Dr. Kurpjoweit: "I don't feel this was the reason for the increase of business in China. The big threat for the increase in business in China is the "flip-side" of the increase of industrial manufacturing and environmental threats the country faces today.

Dr. Eickholt: "There is an increasing necessity, especially from the end-customer side, for being environmentally friendly. There is an increased demand for products which explicitly differentiate on green elements of products. We've launched a global campaign to be more global-friendly than others. The response, especially in China, is quite big."

Securing products from piracy

Although China has been a hotbed for illegal duplication of products, the government is more strictly pursuing piracy legal actions brought before them. As a result, more companies are entrusting their designs to China manufacturing.

Dr. Kurpjoweit: "In general, everything you transfer to China can and will be copied. So you have to be careful what you transfer over from your home country. The situation is improving, however. The Chinese government is starting to understand that you have to enforce patent laws. The more you deal with international companies, patents become valuable because people obey these international global patent laws and make it difficult to re-export copied products from China."

Dr. Eicholt: "We have most of our products protected by international law. There are not many violations on our products these days. In the cases where it is happening, we tend to handle the situation in a very strict manner, especially in China. When things leak to a low court we feel there is a good chance for it to be protected. In China, however, almost anything can be copied. For branded products the Chinese people want to pay the price for a genuine product rather than a copy."

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Cultural differences

Cultural differences have no effect on the electronics industry. Companies choose to locate facilities in these countries for purely financial reasons.

Eddie Kawase, President
Panasonic Factory Solutions

Mr. Kawase: "Japan has long been exporting outside the country to survive. The exportation difference between Japan and USA or Europe is greater than that between Japan and China. The issue is not the cultural differences. The issue is how you survive. Wherever you have to do business to sell your country's products is wherever the market is."

Mr. Lauber: "I think we are living in the global market and try to take advantage of all the different cultural differences and combine them with local people to do business in different regions. This helps us to better understand how the world does business."

Mr. Kurpjoweit: "The other important thing to anticipate is: Where to invest next? As a supply company, we go where the market is."

About the editor

Forrest Sass is Principal of Theorem, a public relations and marketing firm based in the San Francisco Bay Area.

[i] Chip forecast: China, India could offset losses elsewhere, EE Times, 05/12/2008
[ii] Asia: Indian Investors Shrug Off Inflation, TheStreet.com, 05/17/2008
[iii] Chinese Manufacturers Shun Low-Wage Inland for Vietnam, India, Bloomberg.com, May 26, 2008

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