

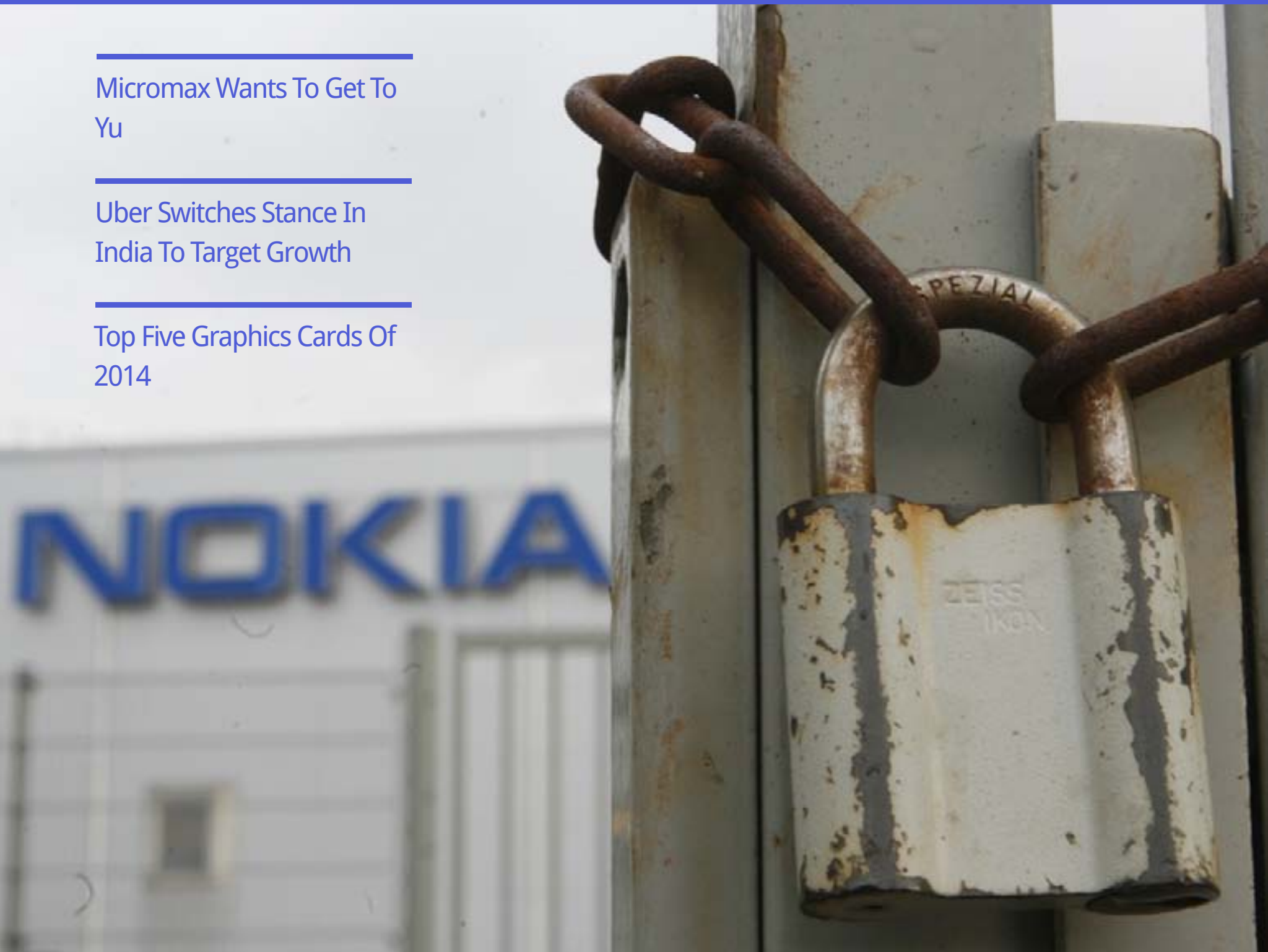
India needs a Shenzhen

Nokia pulling out of India is a big setback.

Micromax Wants To Get To Yu

Uber Switches Stance In India To Target Growth

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LEADER

India can do better

India's Prime Minister needs to create an Indian Shenzhen

photo by Lyle Vincent

For a rapidly developing economy, with a population of over a billion, India lacks a manufacturing sector of any considerable size or scale. Unlike some of the other Asian growth stories, like China, Taiwan, Japan and Korea, India's heavy, light and technology industries are simply non-remarkable only making up approximately 15% of GDP.

India doesn't have a Shenzhen, nor a Samsung nor Mitsubishi.

And that's a problem.

As *VR World's* Harish Jonnalagadda explains in this issue, Nokia's recent closure of its Chennai manufacturing facility in India is a big setback for the country. Without this facility in Chennai, there's no

notable electronics manufacturing going on in-country. In this sector, India continues to live in the shadows of giants.

It's not for lack of trying by India's political class. In September Prime Minister Narendra Modi announced that his new government would make encouraging growth in the manufacturing sector a priority. After all, India needs to create jobs for its booming economy.

But there isn't one simple handicap that's preventing this sector from flourishing in India. It's partially due to lack of reliable infrastructure in most areas; and equally due to government red-tape as well as corruption. If Modi can bring the political will, he must also follow through and respond to these other

important aspects of a competitive economy.

Modi is not the first prime minister of India to attempt to jump start the country's manufacturing sector. These efforts began with India's first prime minister, Jawaharlal Nehru, in the early 1950s. But thus far the efforts to develop a robust manufacturing sector have been unsuccessful. If Modi is able to put things in motion to bring back the likes of Nokia to India, manufacturing in the country might have a vibrant future.

India doesn't have a Shenzhen, nor a Samsung nor Mitsubishi.

And that's a problem.



Story

Micromax Wants To Get To Yu

With its upcoming Yu line of devices, Micromax is aiming to differentiate itself with services and features over hardware prowess.

Harish Jonnalagadda

I ndia's largest handset manufacturer Micromax has announced a new series of devices under the Yu moniker that will run CyanogenMod out of the box. With the competition in the hardware segment getting fiercer, Micromax is hoping to set itself apart with unique services.

Targeting a younger audience

After establishing a firm foothold in the Indian market, Micromax sought to differentiate itself from other local vendors like Karbonn and Xolo. The brand was said to be in talks with Microsoft over the manufacture of a Windows Phone

device, but that did not materialize. Karbonn and Xolo have since beaten Micromax in launching Windows Phone handsets. The vendor then started focusing on distinguishing itself from the smorgasbord of mid-tier devices

by offering an aluminium design and high battery life, as seen in the Canvas Turbo and Canvas Knight. Both devices, however, failed to attract a lot of attention, even after aggressive marketing:



Micromax is now looking to emulate Xiaomi with its Yu series of handsets. Targeted at a younger audience, Micromax's Yu handsets will run CyanogenMod out of the box. Like Xiaomi, the devices will be sold exclusively online, and there are plans of selling the handsets outside of India as well. "This will be a game changer not just in India but globally too. Yu has been envisioned for building an ecosystem of connected devices

and offer customized experience to users."

Micromax founder Rahul Sharma says that the devices will be targeting "tech enthusiasts who will be able to bootstrap the device and play with it." Details of the hardware the initial batch of handsets would run were not provided, but considering the affordability that Micromax is targeting, it is unlikely they will

offer anything extraordinary when it comes to hardware. With Yu, Micromax is going instead for software and services, where the brand sees a lot of potential. The similarities with Xiaomi do not end at online-only sales, as Micromax will also be looking to pay close attention to user feedback via forums, and will incorporate suggestions into software builds every fortnight.



Sharma also said that Yu Televentures, which will operate as a wholly owned subsidiary of Micromax, will also be heading into the wearable market, with smart bands and “smart shirts” set to launch within a year.

Mi, Myself and Yu

At this stage, it seems unlikely that Micromax will be able to successfully challenge Xiaomi with its Yu handsets. Although the CyanogenMod angle will get users interested, lack of powerful hardware would just as easily deter potential customers. And Micromax cannot iterate like Xiaomi does when it comes to hardware manufacturing, which means that it cannot match the Chinese vendor when it comes to value for money.

“ tech enthusiasts who will be able to bootstrap the device and play with it. ”

And while Sharma has stated that the brand will “engage directly with customers,” it will not be at the same level as what Xiaomi does with its user forums. The Mi India community is hard at work localizing Xiaomi’s MIUI for Indian customers, and has already started offering translated builds of the UI in several Indian languages. If that weren’t enough, Xiaomi is also establishing an office in India that is tasked with building an Internet platform centered around services that Indian users can leverage.

The question remains as to where Micromax’s Yu devices will slot in. At the entry-level segment, Google – in collaboration with Micromax, Spice and Karbonn – is offering the Android One handsets. The first generation devices all feature the same hardware, but the second-generation is said to bring more variety. The mid-tier segment seems like the ideal bet, but enthusiast users looking to get CyanogenMod on their devices would be looking to international vendors like OnePlus, which will be making its debut in India next month. If Micromax can match OnePlus’ quality and offer a device with similar specs at the \$350 mark, it stands to carve out a niche for itself in the Indian market. But from what we’ve seen of the vendor thus far, that seems unlikely.



Story

TOP FIVE Graphics Cards of 2014

We take a look at the best graphics cards of 2014 and give you an idea of which are the five best of the year in terms of value, performance and price.

Anshel Sag

There have been some fantastic graphics cards released this year, many with varying price points and performance levels. We are going to take a look at the best of all the GPUs available in 2014 and give you our explanation why. Do keep in mind, that some of these cards may have been released in late 2013, but remained relevant for most of 2014

and still are to this day. And without further ado, we give you the five best graphics cards of 2014. They are going to be listed in descending order from most expensive to least expensive and hopefully they will help you pick the right card for your budget. You can click on the image of the card below to find the card at the posted price on Amazon.

TOP FIVE Graphics Cards of 2014



AMD Radeon R9 295X2 \$799

The AMD Radeon R9 295X2 was specifically designed for 4K gaming and to this day remains the best card for 4K gaming for a lot of reasons. In our review of the R9 295X2 graphics card, we found it to be one of the best cards for 4K with a single graphics card. One of the other things that made the R9 295X2 so fantastic and worthy of this list is that the liquid system that cooled this card is probably the most effective cooling solution

that has ever cooled a graphics card, ever. The AMD R9 295X2 is also a great card because instead of bringing down the level of the 290X in order to be thermally manageable they actually clocked it even higher and gave you a card that was faster than two R9 290Xs. Currently, you can find the R9 295X2 selling at retailers for around \$799 which is a great deal when you consider it launched earlier this year for \$1,500 and the price

has dropped all the way down to \$799. There are some places selling a VisionTek R9 295X2 for \$779, but that's just one card at one store and \$799 is a much more realistic price because the Visiontek card is likely to sell out. But why, you may ask, is AMD's card that launched back in April at \$1,500 now selling at \$799 in November, only 7 months later? That would be because of the competition from the next card on our list.



Nvidia GeForce GTX 980

\$549

What you see above is Zotac's GeForce GTX 980, a custom non-reference version of the GeForce GTX 980. There are some other GeForce GTX 980's out there and for the most part they sell for \$549.99 and up, but this card is an especially good deal because it is a Zotac AMP edition which should make it at least run cooler and quieter and hopefully overclock as well as the reference design did in our benchmarks. In our review of the GTX 980 graphics card, we found that it was simply the best graphics card

for the money and it outperformed all of the single GPU competition while doing so at a significantly lower power envelope and a cheaper price. As a result of the GeForce GTX 980's success, Nvidia has been doing very well in terms of profitability and AMD has been forced to cut the prices of their GPUs across the board. These price cuts will ultimately help consumers get a better card with more performance for less money. That includes the next card in our lineup, the AMD Radeon R9 290X.



AMD Radeon R9 290X

\$329

The AMD Radeon R9 290X is the odd one on this list because it actually came out in 2013 as part of the Hawaii family of graphics cards (290X and 290). These cards, at their time of release, were the latest and greatest things that our industry had seen to date and continued to maintain dominance in sales for quite some time. They eventually forced Nvidia to drop their prices of their GPUs that had already been out and once again gave consumers better performance and value. And the best value was the R9 290 at that

time, and it was such a good deal at that time that in our review of the R9 290, we said that it blew the doors off the competition. And that was true, but now that the faster R9 290X is selling for \$329, the R9 290 is not as relevant anymore. The great thing about the R9 290X is that because it has a 512-bit bus it is naturally going to perform better at higher resolution tasks and if you intend to run games at a high resolution like 4K, two of these are without a doubt a great deal.



Nvidia GeForce GTX 970

\$549 (out of stock, \$349 in stock)

The GeForce GTX 970 is the cheaper and far better value brother of the GTX 980, at \$329 MSRP it provides the best value in gaming graphics cards right now and continues to sell so well that virtually no retailers can keep all models in stock. And if the retailers can keep them in stock, it's only because the cards are vastly overpriced. There are GTX 970 cards selling for over \$400 simply because demand has been so high and if you look for the cards that are \$329 they are either not in stock yet or in such short quantities that they will be soon. The reason for this is because the GTX 970 delivers a majority of the GTX 980's performance at almost half the price (\$329 vs \$549). The

GTX 970 is only about 10-15% slower than the GTX 980 but costs around 40% less, which makes the GTX 970 a complete and utter steal in most cases. If you want to play at higher resolutions, however, you may be better off with a 290X because the 290X is actually selling for around \$329 while many GTX 970's are selling for more. If you are looking to get a GTX 970 though, you should be conscious of the brand and clock speeds as they vary wildly, but realistically almost all of the vendors currently selling GTX 970's are pretty solid graphics card manufacturers. EVGA's GTX 970 is \$349 while if you wait a few days you can get Zotac's for \$329.



AMD Radeon R9 285

\$229

The AMD Radeon R9 285 is AMD's most recent entry to the market and is designed to be more of a mid-range card and is supposed to help consumers get a great bang for their buck. We reviewed the Sapphire R9 285, but the cheapest one available is XFX's which costs \$229 a fairly competitive price. We've heard of some R9 285's getting rebates that take them under \$199, but those are rebates and limited time offers and we want to guide you towards the best sure deals, not

rebates which are a maybe or a possibly deal. At \$229, the R9 285 delivers a level of performance and efficiency that many would expect from a much more expensive card. But thanks to AMD's price cuts and Nvidia's new cards the R9 285 is a pretty affordable card. Yes, you can spend an extra \$100 to get an R9 290X, but that's very likely going to be a \$100 that people looking to buy an R9 285 can't afford since it's a 50% price jump. So, for the money and the price slot the R9 285 is a great value.

Story

What McAfee Has To Say About Japan's Mobile Security Problem



Japan incurred huge financial losses due to phone security issues this year. What does McAfee has to say about this?

Christian Crisostomo

A total of 45 billion yen — equivalent to about \$380 million — were the total financial losses incurred from January to October this year due to spam and scam phone calls in Japan. The prevalence of smartphones in the country may have made communication more accessible than ever, but with it comes the increased risk in security.

McAfee Japan, planning to turn over the situation, has decided to actively improve mobile security with the development of a new Android app, the McAfee Safe Call. Co-developed by local IT firm Tobila Systems, the new app provides a

security check to phone calls, much in the same way as how anti-virus software checks files and data for malicious content. The app automatically identifies any caller, and by matching it to a constantly updating cloud database, determines if that caller's number is safe or not.

As explained by McAfee during an introduction seminar held last week, the McAfee Safe Call uses four basic notification modes, all of which help the user determine the level of risk a phone call may have. The safest green level determines that the number calling is properly listed in Tobila Systems' safe database, as well as being

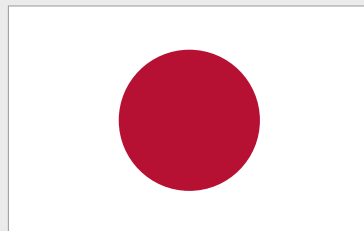
listed on the user's phonebook. A yellow alert notification checks that the number calling is listed in the database as a spam call number, and appropriately warns the user with it. Red notifications show blacklisted scam/fraudulent numbers, while a gray notification indicates an unknown/undetermined number which is either not yet in the database, on a public line, or is an international call.

McAfee touts that the complex yet convenient integration of the system is the key to make the app work as advertised. Tobila Systems explains that data won't just be collected, but it will also be



rechecked and cross-referenced to make sure that the numbers are actually spam and scam numbers. More importantly, McAfee promises that the app would not only provide security from spam and scam numbers, but also provide security in the form of privacy. Any additional personal data on the mobile device that the app would use will require the user's permission before it is sent to the cloud database.

Though McAfee and Tobila Systems are confident in the implementation of the new security app, both companies admit that there are still a few gaping hurdles that prevent it from becoming a universal



“ Nevertheless, McAfee is keen on using its McAfee Safe Call app to further bolster Japan’s mobile security, as its successful implementation could really help significantly mitigate financial losses. ”

solution. Developing the same system for Apple devices might prove quite difficult for instance, because no API for developing apps for (carrier) phone calls is currently available for iOS at the moment. Also, the app is only optimized for carrier calls, and is not designed for VoIP systems, the apps of which are gaining steady popularity in smartphones today.

Nevertheless, McAfee is keen on using its McAfee Safe Call app to further bolster Japan’s mobile security, as its successful implementation could really help significantly mitigate financial losses.



Harish Jonnalagadda

Story

Uber Switches Stance In India To Target Growth

Uber has changed its policies to conform with the rules set by the Reserve Bank of India.

After a continued tussle with Indian authorities over lack of two-factor authentication support for its payments, Uber has announced that all future payments will be carried out exclusively through a digital wallet powered by Paytm. Customers interested in riding with Uber have to set up their debit cards on Paytm and add money to their digital wallets.

To incentivize the move to Paytm's service, Uber has been offering five free rides last week to all users who have linked their cards to Paytm's digital wallet. Uber

has been vocal with regards to the Reserve Bank Of India's mandate that requires all businesses to provide two-factor authentication for all transactions online, calling the move "a major challenge for businesses trying to offer Indian consumers a better purchasing experience."

Two-factor authentication woes

Back when Uber launched in the country earlier this year, it

allowed customers to pay using a credit card without two-factor authentication, which drew the ire of the RBI. Uber was able to circumnavigate Indian business rules by processing transactions through its Netherlands subsidiary, leading to a formal inquiry by the RBI to curtail such measures. The Indian regulator dictated that any service operating out of India has to offer payment services within the country.

Uber was given until Nov. 30 to comply with RBI's regulations, which led to the service collaborating with Paytm. Uber's reticence to do so was evident in a

blog post on its official blog, which labels the mandatory two-factor authentication as “an antiquated solution that is cumbersome for consumers and stifling for businesses.”

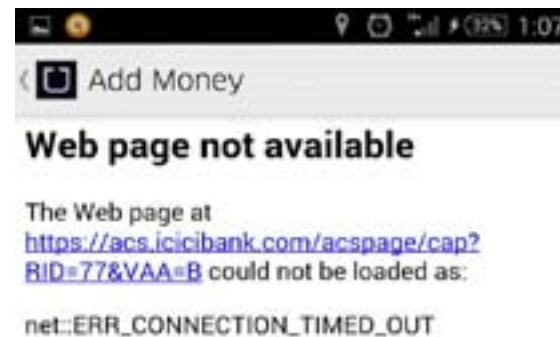
“India’s current regulations require every transaction made with an Indian credit card, no matter how small the amount, to include two-factor authentication (2FA). As you are aware, we recently expanded the available payment options on Uber to include a Paytm Wallet, which allows you to pay for your rides through Debit Card, Credit Card and Net Banking. Paytm is the leading e-wallet provider in India, and this solution is 100% compliant with all applicable regulations including 2FA.”

With the new system in place, customers will be able to add money to their wallets using a debit card using the Verified by Visa or MasterCard Securecode two-factor authentication systems. The points Uber mentions in its blog post are all valid. While the two-factor authentication is a vital security measure, the RBI should be willing to allow certain service providers to make it convenient for users to pay without having to undergo an additional step.

Tough for the customer

As a long-time Uber customer in India, I can say that the two-factor authentication is more

cumbersome to use in this particular instance. Adding money to a digital wallet before availing the service is often frustrating, and the redirection to Visa or Mastercard’s authorization services is not always seamless.



Furthermore, while the collaboration with Uber may seem like a profitable move for India’s Paytm, the service’s CEO revealed that it is not as lucrative as it seems:

Our RBI licence doesn’t allow any interest earning or other use of this money in ur wallet. Kept in a nationalised bank escrow on ur behalf.

**— Vijay Shekhar (@vijayshekhar)
December 1, 2014**

Uber is now asking the RBI for a 45-day extension to allow existing customers to move to the digital wallet service. As for new user

acquisition, Uber is set to challenge the autorickshaw industry with its latest pricing tier, UberGo. The low price tier, which is now being rolled out in ten cities across India, allows customers to ride in a taxicab for far less than what it costs in an auto. Uber even made a chart to highlight the price difference:



Banjara Hills to Secunderabad



City to Airport



With several pricing tiers and affordable pricing across categories, it is clear that Uber is targeting growth in the country in lieu of profits. UberBlack, for instance, is priced at an aggressive Rs. 18 (\$0.3) per kilometer. As to whether any of this succeeds in getting the service a considerable amount of traction remains to be seen.



Cover Story

Nokia's Chennai Plant Closure Is A Setback For Manufacturing In India

Harish Jonnalagadda

With the largest electronics manufacturing facility in the country shutdown, the government needs to re-evaluate antiquated laws and start from scratch.

On November 1, Nokia's Chennai manufacturing facility, was finally shut down following the termination of the mobile purchasing agreement

from Microsoft (NASDAQ: MSFT). With no vendor to cater to and the Indian government freezing Nokia's assets following legal issues, Nokia decided to shutdown the plant and

lay off the 8,000 full-time staff at the facility.

In its heyday, the plant accounted for over 60% of Nokia's global

handset production, with the vendor exporting devices produced at the location to Middle East and Africa, Asia, Australia and New Zealand. While the facility itself was originally meant to be included in the \$7.2 billion sale to Microsoft, the legal issues from the Indian government prevented the transfer of the plant once the deal was finalized earlier this year. Nokia then entered into an agreement to manufacture phones

for Microsoft from the facility, but that agreement came to an end on October 31 and was not renewed.

Legal issues

The setbacks began when the Indian government discovered that Nokia was selling handsets produced at the Chennai facility in the domestic market. The factory was categorized solely for exports, which entitled a host of benefits from the state

government including a free 99-year lease, power, tax, and electricity cost reimbursements as well as other write-offs. The Tamil Nadu government facilitated these measures to grow local manufacturing and drive jobs in this segment, and it succeeded as the facility at full output had a workforce of 12,000 full-time workers and 25,000 contractors.

Handsets that were being exported



photo by Meena Kadri

to other countries were exempt from Indian tax laws, but if a device were to go on sale in India, it would incur additional taxes in line with the local tax rules. It was found that Nokia's Indian subsidiary was not conforming to the local tax laws when selling handsets in the country, which led to a fine of \$352 million from the Delhi High Court for the six-year period from 2006 to

2013. An asset freeze followed, but was soon revoked to allow the sale of the facility to Microsoft. That fell through as it meant that Microsoft had to pay the government Nokia's back taxes. The tax issue is still being debated by Nokia, which claims that it is far lesser than \$350 million. Over-complicated tax laws are said to be another factor in deciding the actual amount that is

owed by the Finnish giant.

Nokia is looking to renew its factory license so that it can sell the 200-acre facility as a fully functional electronics factory to future buyers. The manufacturer has until the end of the month to renew its license, and failing to do so would reduce the facility to nothing more than a warehouse.



photo by Are Sjøberg

A setback for India

Whatever the verdict comes out to, it is clear that the closure of the Chennai plant is a major setback to the manufacturing segment in India. Prime Minister Narendra Modi is actively promoting a “Made in India” campaign to bring hardware manufacturing to the country, but primitive custom laws and lack of skilled workers are major hurdles for prospective vendors looking to set up shop here.

IBM (NYSE: IBM) was in discussions with the Indian government to set up a fab in India, but the move fell through. The Indian government

is keen on foreign investments and is ready to provide lucrative deals, but the lack of infrastructure seems to be the biggest drawback. Local manufacturers like Micromax and Karbonn are beginning to understand the value of local manufacturing, but Xiaomi looks likely to create a facility in the country before the local vendors. According to a statement from last month, Xiaomi is currently estimating the viability of a manufacturing facility in India.

It may be a while before we see any real progress in this segment, but the longer-time prospects do seem encouraging considering the rising labor costs in China. With manufacturers like

Foxconn (TPE:2354) now looking to countries like Indonesia and beyond for production, India is a likely candidate. The country has manual labor in abundance, and the government is keen on offering lucrative deals for foreign entities. However, to avoid setbacks like the one brought about by Nokia, the government needs to be clear in establishing clear-cut laws and communicating these laws to vendors setting up a base here.

“Xiaomi is currently estimating the viability of a manufacturing facility in India.”

Chinese Smartphone Brands Test Taiwan's Waters

The tiny Taiwan market is proving tough for Chinese smartphone brands

Matthew Fulco



Chinese smartphone brands are vying for market share in neighboring Taiwan, where international brands and the island's own HTC (TPE: 2498) have historically been dominant.

While the Taiwan market is small, its cultural similarities with China makes it a logical choice for ambitious Chinese smartphone makers like Huawei Technologies (SHE: 002502), and Xiaomi Inc., who are in the midst of international expansion. Xiaomi has an 11% share of Taiwan's handset market

and Huawei 2%, according to IDC, a market-research firm. Chinese brands are searching for new growth opportunities overseas as their home market – the world's largest for mobile phones – becomes increasingly saturated, analysts say.

"Chinese brands can use Taiwan as a stepping stone to other global markets," says Sophia Chen, a handset analyst with the Market Intelligence & Consulting Institute (MIC), a research firm affiliated with the Taiwanese government.

Upgrading 'Made in China'

In the Taiwan market, where they are newcomers, Chinese smartphone vendors must build brand awareness and counter the stigma that their products are of dubious quality. To that end, they are offering both inexpensive feature-packed mobile phones and flagship high-end handsets to Taiwanese consumers.

This year, Shenzhen-based Huawei,

the world's fifth-largest smartphone manufacturer by shipments, aims to double its 2013 Taiwan sales to 200,000 units. In July, it launched the Honor 3C, a 4G LTE-enabled handset in partnership with the Taiwan carrier Chunghwa Telecom (TPE: 2412). Priced starting at \$564 (NT\$16,900), the device competes in Taiwan's premium handset market.

The high-end market will be difficult for Huawei to penetrate, says Alan Chen, an analyst at TrendForce, a Taiwan-based market research firm. "Made in China means low and mid-priced products to Taiwanese consumers," Chen says. "Taiwanese consumers are very brand conscious. They are likely to choose a comparable Samsung phone instead."

But high-end handsets may help Huawei build brand awareness in Taiwan, says Carlos Peng, an analyst at Fubon Securities in Taipei. "Huawei wants to show Taiwanese consumers that as a Chinese brand it is capable of producing a high-end smartphone that in theory can compete with HTC, Samsung or LG," he says. For that reason, Huawei is content to sell premium handsets in small numbers for now, he adds.

Oppo, which was founded in 2004 as a manufacturer of Blu-ray video and MP3 players, is another Chinese brand targeting Taiwan's premium handset market. Oppo launched its flagship 4G Find 7 in the third quarter through Chunghwa Telecom at a cost of



\$566 (NT\$16,990). The Dongguan-based firm says it expects overseas revenue to comprise more than 50% of its total sales by 2017.

Oppo is touting the Find 7's camera, which features a Sony camera module designed for taking selfies. Oppo may have a niche market opportunity with selfie fans, as no comparable product exists on the Taiwan market now, says Joey Yen, a research manager with IDC in Taipei. But if an international or Taiwanese competitor launches a similar product, Taiwanese consumers will choose that device over Oppo's, she says, adding: "Taiwanese consumers still have reservations about the quality of Chinese brands."

Targeting bargain hunters

Beijing-based Xiaomi, the world's third-largest smartphone vendor by shipments, is also trying to gain a

foothold in Taiwan, but it is focusing on the lower end of the market, where international and Taiwanese brands do not yet dominate.

Founded in 2010, in just four years Xiaomi has become one of the world's most successful handset vendors on the back of its feature-packed, low-priced devices. Xiaomi accounted for 6% of the 320 million smartphones shipped globally in the third quarter, according to the research firm Strategy Analytics.

Xiaomi entered Taiwan in April 2013 and gained market share quickly with its Hongmi handset priced at \$135 (\$NT 3999). It was able to do that because it introduced a new handset product category to Taiwan, says Roger Sheng, research director at Gartner Semiconductors & Electronics Group in Shanghai. "Before Xiaomi, there were no vendors in the Taiwan market offering low-priced and decent-

quality smartphones with so many features," he says.

Taiwanese consumers also were familiar with Xiaomi from the extensive coverage the company received in the Taiwanese media. "Local media reports emphasized Xiaomi's high functionality and low price, which helped it build a positive brand image in Taiwan before it ever entered the market," says IDC's Yen.

Ryan Li, a 32-year-old process engineer with a technology company in Hsinchu, bought his Hongmi six months ago during a promotional event in Taipei. Li says he bought the phone because it was a good value and has a dual SIM card function, which he needs for work.

"I like the Xiaomi because it's disposable," he says. "I can change to a new model and it doesn't cost me a fortune. But it is not easy to find in Taiwan. Usually, you have to buy it online."

Xiaomi cannot rely on e-commerce to drive its Taiwan sales as it has in China, says IDC's Yen. "Taiwanese consumers like to buy mobile phones in physical stores, which are conveniently located everywhere in Taiwan – unlike in China – where they can try out products, negotiate price and receive after-sales services," she says.

Xiaomi needs to further localize for Taiwan, says MIC's Chen. That means developing stronger

relationships with the carriers Chunghwa Telecom, Taiwan Mobile (TPE:3045) and FarEasTone (TPE:4904), who account for 70% of handset sales in Taiwan, she adds.

But that will be difficult given the low margins Xiaomi typically offers carrier and retail partners, Yen says.

Security concerns

Cybersecurity concerns are also contributing to Xiaomi's woes in Taiwan. In September, the Taiwanese government issued a statement that said it was investigating whether Xiaomi was a cybersecurity threat. Some Xiaomi phones automatically send user data to the firm's Beijing servers, which could lead to security breaches, the statement said.

It is unclear whether the investigation could lead to a ban for Xiaomi's handsets smartphones in Taiwan. A decision would be made by the end of December, the Taiwan government said.

In the meantime, Xiaomi has yet to launch its new Xiaomi 4 and Xiaomi Redmi Note 4G in Taiwan, while competitors have already rolled out 4G devices, which has hurt sales, says Fubon Securities' Peng.

Huawei has faced similar problems in Taiwan. Taiwan technology giant Hon Hai Precision Co. (TPE:2317), the world's largest contract electronics manufacturer, withdrew from a \$178 million deal to buy

4G equipment from Huawei in July after the Taiwanese government warned that Huawei posed a national security threat.

Concerns about data security could impede the efforts of Chinese handset brands efforts to expand internationally, says Gartner's Sheng.

Xiaomi is responding. In October, the company's vice president Hugo Barra said Xiaomi had moved some data on non-Chinese customers away from its servers in Beijing because of privacy concerns and to improve phone speeds. Data belonging to those users would be moved to servers in the US and Singapore in three phases, Barra said.

Those efforts have not convinced Chen Changwu, a 55-year-old taxi driver in Taipei, who is worried about the safety of the information on his two Xiaomi handsets. "I am afraid Xiaomi will send it to the Chinese government," he says. Chen says he was attracted to Xiaomi by its low prices, but will never buy one of the company's devices again. "The screens go blank all the time for no reason," he says.

Xiaomi must resolve cyber espionage issues and increase transparency if it wants to compete globally, says MIC's Chen. "It's not just Taiwan who has raised the issue," she says. "Singapore and India are also worried and are conducting investigations."



Chang San-Cheng Wants To Reboot Taiwan's Competitiveness

A misaligned post-secondary sector, industry lagging in innovation, and China's unethical state capitalism all worry Taiwan's Minister of Science and Technology.

Sam Reynolds

Taiwan remains a powerhouse of innovation, but struggles to properly commercialize this innovation in the highly competitive technology sector was the topic of a speech made by Taiwan's Minister of

Science and Technology at an American Chamber of Commerce luncheon in Taipei Tuesday.

Comfortably navigating his speech in English, the Cornell-educated Chang San-cheng, who was

appointed to lead the Ministry of Science and Technology after it was renamed from the National Science Council earlier this year, contrasted during his speech Taiwan's sweep at global innovation exhibitions such as iENA and INPEX with its

failure to produce a homegrown commercially successful Microsoft (NASDAQ: MSFT) or Facebook (NASDAQ: FB).

“The United States has its Microsoft, Apple, and Google but none of those companies are from Taiwan,” he said. “Business models are one ingredient of innovation. Taiwan is good at coming up with new inventions, but very few of them are commercialized.”

The homegrown giants that Taiwan has grown to be world class, namely Acer (TPE: 2353) and Asus (TPE: 2357), have failed to adequately adapt to market changes making the two companies much less important players than they were in their prime.

He also gave the example of the inability PTT’s owners — a hyper-popular local web forum that’s roughly analogous to Reddit — to develop a business model for the forum. Instead the forum, a household word amongst the under-40 set in Taiwan, has continued to rely on support from National Taiwan University in order to survive.

“Over the years none of the students from National Taiwan University ever thought about commercializing PTT. One might say that if you commercialize PTT you will lose a forum to freely publish your ideas,” he said. “But if you look at Facebook, nobody at Facebook ever interferes with the way you publish your ideas.

“ But if you look at Facebook, nobody at Facebook ever interferes with the way you publish your ideas. Commercialization and free expression of ideas are not a contradiction. ”

Commercialization and free expression of ideas are not a contradiction.”

Reorganizing the academy

Chang cited the need to reform Taiwan’s post-secondary education system as one of the building blocks to reboot Taiwan’s competitiveness. There’s a big gap between the needs of industry and what academia produces, he said, explaining that this wasn’t something unique to Taiwan but rather a first world problem.

“Taiwan is not alone in facing this issue, but Taiwan has a much bigger problem as Taiwan’s industry does not have research capability that’s as good as competitors in Europe or the United States,” he said.

While many many universities have

effective research partnerships with industry, there is still work to do in better aligning the two. Too many professors have very niche impractical research fields, he said, giving an example of one political scientist at a university in Taipei whose sole research field was the election system of a certain state in the United States. The state in question has no major economic or cultural connection to Taiwan, but this professor would get funding to publish multiple papers per year on it.

Sought after exports

While Chang doesn’t expect Taiwan to give birth to the next Google, Microsoft or Facebook, Taiwan can remain competitive by focusing on niche services that play to its strengths. One novel export, Chang said, could be health care management services. Taiwan’s health care system, developed in the late 1990s as Taiwan was in the middle of an economic boom, is considered to be one of world’s most efficient (though as a state non grata to the UN Taiwan is not in the WHO) with very low administration costs.

Package this with two other fields that Taiwan industry has strength in, big data and the Internet of Things, and Taiwan has a competitive export to emerging economies looking to develop their own highly efficient technologically advanced healthcare system.

A competitive future as China looms in the distance

In Taiwan, no conversation about the economy and politics is complete without discussing the China question. While political parties around the world usually align themselves on questions of economics and social issues, Taiwan's two major political parties, the Kuomintang and Democratic Progressive Party, simply align themselves around the issue of China and under what terms Taiwan should engage it.

Chang, despite his party's traditional position of the more pro-China of the two, had harsh words for the country and its business practices.

"I'm really concerned about the future of our semiconductor industry," he said on the topic of the subsidies that China gives its businesses. While the solar panel industry in China is the most notorious for being heavily subsidized by the government, Chang pointed to a recent announcement out of China that it planned to invest \$32 billion (200 billion RMB) in domestic semiconductor companies as cause for concern.

"I guess they are really aiming at our TSMC," Chang said.



Chang also mentioned that he had a problem with the ethics that China's Huawei (SHE: 002502) employs when it conducts business in Taiwan. Huawei, not a state-owned enterprise but subsidized and protected in China by its government, scoops up Taiwanese engineers, according to Chang, by offering them a salary well above market rates — which Taiwanese firms simply are unable to pay.

"I heard that they will even provide you with a pretty girlfriend if you are willing to remain locked in a lab in Beijing," he mused on stage.

But this should not be counted as opposition to global companies setting up shop in Taiwan. ARM (LON: ARM), which recently opened a research facility in the Taipei exurb of Hsinchu, is more than welcome to do business in Taiwan.

"I'm not saying that we don't want our good talents to be recruited by international companies. Think ARM for instance," he said. "It's an ethical problem. ARM is a legitimate ethical company and we welcome them to Taiwan and we're very happy to supply our talents to companies like ARM."

Huawei, on the other hand, might not earn the same description.

The solution to the China problem is closer alignment with the United States and Japan.

"The US and Japan are much more ethical in terms of doing business compared to China," Chang said.

"I don't think China's state-capitalism is sustainable."

Photo credit: Chang San-cheng in his first interview with Reuters.



Review

EDITOR'S RATING

8.5

The Arctic P614 BT is a remarkable product: its capable of delivering high-quality sound for a low price.

ARCTIC P614 BT BLUETOOTH HEADPHONES DELIVERS RESPONSIVE SOUND FOR \$42.99

The Arctic P614 BT are solid mid range headphones that deliver high-quality, accurate audio for the right price.

Sam Reynolds

Review

ARCTIC P614 BT BLUETOOTH HEADPHONES



Bluetooth headsets aimed at casual users and music aficionados come in varying degrees of quality. For those with money to spend, there are a wide variety of options. But for those on a budget, and not looking for a gaming-focused headset, the options out there are widely hit and miss.

Arctic, better known for its line of CPU and GPU coolers, likely sensed the need for a high-feature low-price Bluetooth headset, with its new Arctic P614 BT bluetooth headset. The headset includes a built-in microphone, and is aimed as an accessory for mobile devices but it works just as well as a wireless headset with any computer that supports bluetooth connectivity.

All in all, the company has done something remarkable with the Arctic P614 BT: it has made a headset with crisp, responsive sound that's comfortable to wear (even for those with oversized heads). Granted, using Bluetooth presents its own sets of limitations when it comes to sound quality but nevertheless there's not much left to be desired with Arctic's headset. It doesn't disappoint.

Overview

Arctic has taken a minimalistic approach with the P614 BT's box. Inside are the headphones and a small blue box in the middle. The box contains the headphone's manual, USB connector, and carrying case.

The headphones themselves have a USB connector for charging, as well as a playback controls, volume, and a NFC receiver for one-touch pairing. For connectivity, the headphones support Bluetooth version 4.0. The headphones have an expandable headband allowing users will all head sizes to comfortably enjoy the headset. A built-in microphone is also included.

Review

ARCTIC P614 BT BLUETOOTH HEADPHONES

According to Arctic the headphones have a 40mm enhanced neodymium driver and have a frequency response of 20Hz to 20 KHz.

Comfort

Your reviewer — with his egg shaped head — often has trouble finding headphones that comfortably fit on his head and fit over his glasses. The P614 BT didn't have this issue; it proved to be comfortable for extended periods of time. Obviously this is not a high-end headset, and has the advantage of being lighter, but for someone looking for an entry level headset to wear while, say, listening to music during the workday the comfort level is more than acceptable.

Audio quality

Running through a test of movie scenes, music, and games the P614 BT proved itself to be very competitive against

other mid-range headsets and much better than many headsets at the same price point. Bass is thumpy and treble is crisp. During our audio test the haunting lead vocals of London Grammar's "Night Call" were matched with a pumpy, deep, but not overwhelming bass. There are headphones out there that deliver much more accurate audio, but they are not at the low price of Arctic's headset.

True audiophiles might say that the very nature of a Bluetooth headset means that sacrifices in audio quality will have to be made. At a high level, Koss proved with its BT 540i headset that this is not the case. And Arctic, with the P614 BT, has proven there's no reason a low-price midrange headset cannot exist.

If one were to find a fault with the headset it would be that its range is very limited. If one were to move across the room from the paired device, the reception begins to get quite poor and the audio breaks up. Arctic advertises a 10 foot range, but the maximum before interference makes things inaudible is less than half of that. This proved true when pairing the headset with a Lenovo Yoga laptop as well as a Samsung Galaxy Note 4.



EDITOR'S RATING

8.5

Conclusion

Arctic has built a very competitive product with the P614 BT. It's comfortable to wear for extended periods of time and the audio quality is acceptable. Issues with range leave something to be desired, but the truth is the vast majority of users only need a few feet of connectivity between device and headset.

The P614 BT headset is available now from Amazon for a limited launch price of \$42.99 instead of \$82.99.