

The Semico Spin

Weekly commentary and analysis direct from Semico's expert analyst team. Understand the impact of new product releases, technical developments and other weekly events on the semiconductor business. The Spin is delivered electronically each week to your inbox! To register to start receiving your copy, please email Michell Prunty at michellp@semico.com.

To find out more about Semico, a marketing and consulting research company located in Phoenix, Arizona, please visit www.semico.com. Semico was founded in 1994 by a group of semiconductor industry experts. We have improved the validity of semiconductor product forecasts via technology roadmaps in end-use markets. Semico offers custom consulting, portfolio packages, individual market research studies and premier industry conferences.

Semico Spin Courtesy Sample: Published May 23, 2005

◆ Data
◆ Analysis
◆ Knowledge



SEMICO
Research Corporation

June 9, 2005 Register Today! San Jose, CA

Semico Says Intellectual Property Next Killer Catalyst for Semiconductor Growth!

Must attend event if you create, acquire and reuse IP!
Panel Topics: Embedded Memory / Power Management / Analog IP / CPU



Gold Sponsor



Silver Sponsor



Breakfast Sponsors



Break Sponsor



Break Sponsor



Lanyard Sponsor

1. 3G Ignorance?
2. E3: War of the Consoles.
3. ST.
4. Contactless Cards.

May 23rd, 2005

3G Ignorance?

According to the wireless e-newsletter "Unstrung Weekly," Britain's Office of Communications (Ofcom) issued a report stating that 85 percent of the U.K. population doesn't know what 3G is, with the term being understood by fewer people than any other technology on their survey, including broadband, digital radio, and digital TV. Although we tried to find the report on the [Ofcom website](#) it eluded us.

If the finding is true, then Britain's cellular carriers have a lot of work ahead of them if they want to cash in on the billions they have already spent on licenses for 3G.

Jim Handy, Director of Nonvolatile Memory Services
[Jim Handy](#)

E3: War of the Consoles

The Electronic Entertainment Expo, at the LA Convention Center during May 17th - May 20th, showcased three new consoles: Microsoft and Sony debuted the Xbox 360 and PlayStation 3, respectively, which are to be released late 2005, and Nintendo almost debuted the Revolution, which is to be released mid 2006.

The Xbox 360 dominated in the console war at E3. Microsoft made a bold move, showing a handful of consoles where everyone at E3 could stop and take notice. The graphics shown were superb, as was the wide range of games shown, foreshadowing a more impressive lineup of games than the original Xbox claimed. The controller was also smaller than the original Xbox's which should please many gamers.

The PlayStation 3 was disappointing as Sony decided to hide it behind an eight hour line of gamers waiting to play the new console for five minutes. Sony's decision to not display the PlayStation 3 is confusing in light of the Xbox debut.

Nintendo also decided to hide the Revolution; however, since its release date is not until mid 2006, it is understandable. Nintendo is causing a lot of interest with this new console, as it is rumored to be backwards compatible with all Nintendo consoles back to the NES.

While the handheld front did not boast as many new models, handheld video gaming certainly took over a large part of E3. Sony's PlayStation Portable had a great showing, where consumers could play a handful of different games that really gave a feel for how the PSP handles graphics and game play. Nintendo arguably had the best booth of the entire show, focusing on the DS (Dual Screen) and GameBoy AdvanceSP while introducing the Micro, which looks like a trinket one might put on a keychain.

Two other entrants into the handheld field include Nokia's N-Gage and Gizmondo's Gizmondo. Both of these entrants bring a new spin on the handheld market. N-Gage

combines a phone with the handheld while Gizmondo has tried to make their handheld as versatile as possible by adding GPS, text messaging, music, a camera, and movie-capability. It is debatable if consumers are interested in a gaming handheld that also provides all the attributes of a phone, without the phone.

Semico forecasts the gaming handheld market to hit over 12 million units by 2009.

Michell Prunty, Research Analyst
[Michell Prunty](#)

ST

ST Microelectronics announced that the company it would cut 3,000 jobs outside of Asia by mid-2006. The company is undergoing a restructuring and streamlining effort. ST expects to realize a \$90 million annual cost savings through this plan. Restructuring charges should range from \$100 - \$130 million.

Semico Spin

Tuesday's Wall Street Journal coverage of this story stated that ST is considering selling its memory business. Last year ST lost \$313 million on memory revenues of \$1,887 million. Intel has been taking flash share from them in set-top boxes, and the overall NOR market has been in decline for the past two quarters. This makes the memory group look like a reasonable target for a cut.

On the other hand, our first guess was that the company would kill off certain aging technologies like EPROM. Although ST once proudly owned that market, and although they originally planned to dominate the market for the rest of its life, they ceded the number one position in 2003 and have allowed Oki to take ownership. In 2004 ST's share was 26% compared to Oki's 66%.

Although the company had aspiration to become an important NAND vendor through a joint venture with Hynix, those efforts unraveled after SanDisk hit them with a lawsuit. We suspect that the original agreement with partner Hynix may have split the world into territories. If Hynix gets Asia and ST gets Europe and the US, then ST gets all the lawsuits while Hynix can ship freely - and that appears to be what's happening. Hynix shipped ten times as much NAND than ST in 2004, even though their agreement was to split Hynix' output 50/50. Hynix is particularly strong in China, and IP law enforcement is especially weak there.

Semico will watch ST's developments closely and will share the company's progress with our clients as it evolves.

Jim Handy, Director of Nonvolatile Memory Services

[Jim Handy](#)

Contactless Cards

J.P. Morgan Chase, the US's second-largest bank and largest credit-card issuer in the US with about 94 million credit cards in circulation, will issue new contactless credit cards to its customers starting this summer. It will be the first US bank to offer contactless MasterCard and Visa cards. American Express will start issuing a similar card next month.

According to Chase, the cards will offer increased speed and convenience at the point-of-sale. An embedded RFID chip is read by a merchant's terminal when the consumer passes the card in front of it. The reader beeps once the transaction has been authorized. The bank explained that customers are less likely to lose a card if they don't have to hand it to a store employee.

The current approach doesn't require a customer signature, "making it more convenient and time-saving for consumers." Internal encryption software helps prevent duplication and data theft.

Since the new cards require updated readers, Chase cardholders will be able to use the new cards initially only at movie theaters, certain retailers such as 7-Eleven, quick service restaurants, and drug stores. Chase will upgrade the terminals at additional merchants as the cards are rolled out.

Semico Spin

Perhaps the biggest question here is why it has taken so long for contactless technology to penetrate the US when it has done so well in many other countries? Many other countries already use contactless cards in large volumes. They came into use in Hong Kong's subway system in the 1990s, and they have been used in the Tokyo subway system for over a year.

Even in the US the technology is anything but new. Years ago Mobil Oil gasoline pumps took contactless payments using their Speed Pass, although the system seems to have been abandoned when Mobile merged with Shell. What distinguishes Chase is that it will be the first bank in the US to offer contactless MasterCard and Visa cards. Other entities either have not been banks, have not been in the US, or have not offered those two cards.

Why is the US so slow to adopt this technology? It has to do with the installed base of readers. There are millions of magnetic credit card readers in the US that will have to be upgraded (at a significant cost) in order for contactless technology to gain appeal. Furthermore, these devices have no natural obsolescence cycle - they could be in use for ten years or more. Where is the merchant's motivation to buy a replacement unit? In the case of the service stations the installed base of terminals was less of an issue. The oil

company can dictate how and when the stations upgraded their pumps to support contactless cards. This is true of other captive systems like the subways of Hong Kong and Tokyo.

If you don't have to replace a lot of readers then there's a stronger reason to use a newer technology. Semico expects to see contactless cards do very well in China, where there is not a huge installed base of magnetic stripe card readers, but where new wealth is creating a growing market for credit cards. From the merchant's standpoint the question is not whether their trusty old reader should be replaced, but whether they should buy a reader at all, something that will be motivated more and more as they lose customers who prefer to pay with credit cards.

It appears that Chase is targeting younger customers who want to zip into McDonalds with the kids. Although Chase claims that the security of the RF-based cards is higher (based solely on the fact that the card does not have to leave the possession of the card owner) they appear to be ignoring the security validation opportunity provided by a signature and/or a picture of the card owner on the actual card at the time of the transaction. Instead they are quietly shifting the focus of their announcement away from dining out; when the card is actually away from your physical control the longest, by emphasizing fast food meals. Middle-aged customers who are more likely to go to a full-service restaurant will still have to give up the card unless the waiter is going to bring to the table a card reader with either storage capabilities or very reliable encryption.

The conversion worldwide from standard cards to contactless cards further supports Semico's high growth forecast for MCUs used in IC Cards (Smart Cards). Most of today's business is in Europe. If Chase converts all of its 94 million customers to contactless cards it will still be only a fraction of the total IC card market. Assuming that this technology is being rapidly adopted in Europe and elsewhere, especially China, then IC Card growth will be tremendous.

One security concern remains that none of the encryption in the world will solve. If a bystander is in a store when a purchase is being made, and if that bystander's wallet gets too close to the reader, it will cause them to pay for someone else's purchase. We believe that the banks really need some sort of verification from the cardholder to substitute for a signature. Perhaps this is why Chase is targeting small purchases - a movie, something from a drug store or 7-Eleven, and fast food. The risks from errant charges are lower with small-ticket items. We would expect to see major retailers continue to support some form of verification like today's signature requirement.

Tony Massimini, Chief of Technology
[Tony Massimini](#)

Jim Handy, Director of Nonvolatile Memory Services
[Jim Handy](#)

Bob Merritt, VP of Emerging Markets



- ◆ Data
- ◆ Analysis
- ◆ Knowledge

[Bob Merritt](#)

Semico Spin Copyright 2005
Please send all Spin related queries to [Michell Prunty](#)

Semico Research Corp. Headquarters
P.O. Box 9850, Phoenix, AZ 85068-9850
Ph: 602-997-0337
Fax: 602-997-0302
www.semico.com