A SEA CHANGE IN THE TECHNOLOGY INDUSTRY

Arthur Chai, Equity Analyst

February 2013

eastspring investments
A member of Prudential plc (UK)

THOUGHT LEADERSHIP SERIES

Mobile Devices Power a Sea Change in the Technology Industry

- Arthur Chai is an Equity Analyst for the Asian Equities team.
- He joined Eastspring Investments (Singapore) Limited in 2011.
- Arthur has over 15 years of financial industry experience.

A new world order in the making

The wave of innovation currently raising the popularity of smart phones and tablets probably heralds the most sweeping change in 10 years for the technology industry. Demand for swift mobile computing and communication is establishing a new world order for top computing brand names and equipment suppliers.

Mobile systems are, for instance, helping encourage the development of Cloud computing. The Cloud approach means that applications for writing reports, playing music, etc., need no longer be installed on tablets and smart phones. Instead, the applications can be made available via the Internet by “server” computers located in remote data centers.

Data center stocks therefore offer interesting growth potential, but this is becoming obvious. We would demand value and a margin of safety before investing in data centers or anything else. Growth potential alone is not good enough.

What’s on the cards for the technology business?

For the next several years, consumers will likely buy smart phones, tablets and personal computers that work together in families that share one of three operating platforms – Apple iOS/MacOS, Google Android or Microsoft Windows. Each platform’s user interface, the system of on-screen icons that are touched or clicked on to make things happen, will be identical across these families of computing devices.

“Product” companies, such as Apple Corp. and Samsung Electronics Co. Ltd, and even Google Inc. and Microsoft Corp., will likely design and sell families of devices along with packages of Internet-based services. Each product company will claim all the intellectual property involved in designing and building every bit of every family of computing device – and every bit of every service, too.

Source : Eastspring Investments (Singapore) Limited.

Apple and Samsung are ahead at vertical integration

Apple is already designing all components, right down to the semiconductors, of its iPhones, iPads and laptop and desktop computers. The devices are made by outside contractors.

Samsung Electronics is moving in the same direction. Samsung, a world leader in semiconductors, screen displays, hand phones and digital appliances, can design and manufacture its own phones and computers. Google designs its Nexus hand phone, which is made by outside contractors. Microsoft recently released its own tablet, the *Surface.*

Back to the future

There can be little doubt that the quality of technology will improve vastly in the future, triggering a radical change in the structure of the tech industry. This change will surprise you, however, because it will mark a giant leap into the past.

We expect technology to return, over the next few years, to a modern version of the vertically-integrated industry structure that prevailed in the 1950s and 1960s, at the dawn of the computing age. In those days, leading tech companies such as IBM designed all their own equipment, or hardware, plus all related software and services.

Modern-day vertical integration involves owning intellectual property rather than owning the manufacturing assets

The concept of vertical integration has had a colorful history. During the industrial revolution, which began 250 years ago and ran through the mid-1800s, vertical integration raised eyebrows because of its association with the practice of monopoly. Modern-day vertical integration is a different practice – it involves owning the intellectual property behind the goods and services that you sell, even if these items are made by independent contractors.

Vertical integration reduces a company's dependence on others. This can enable rapid market share gains for well-run companies that foster change in the industry, or that react quickly to change. Vertical integration speeds the adoption of new technologies and components and moves new products to market rapidly.

For example, Apple's success has come from more than strong product innovation. The company has linked its diverse products with a single software and provides Internet-based services for the entire family of devices. Apple controls what we call an "ecosystem," a self-contained world of Apple goods and services that are available on a subscription basis.

What does this mean for Asia's existing technology industry?

Asia's technology leadership is not threatened by vertical integration

- First, we see no risk to Asia's global competitive edge in semiconductors and business process outsourcing.

Asia will likely remain the world's low-cost electronics-making centre for the foreseeable future, given its expertise at innovating to control costs. Vertical integration will still require independent contractors that can make semiconductors and computing devices quickly and efficiently. Although some streamlining is likely, Asia's established contractors should be able to adapt.

- Next, new investment opportunities can result from vertical integration as well as the streaming and Cloud computing that mobile technology is bringing into vogue.

Telecommunication sector is a likely beneficiary

The telecommunication sector is an early likely beneficiary as mobile technology raises demand for the services of Internet-related data centers. In Asia, data centers are in their infancy. Data centers are essentially parking lots that rent space to the servers and network equipment of companies with Internet businesses. Online connections, server maintenance and network services are provided so that clients can move data across the net, much like cars in a parking lot can be washed and maintained. Equipment is cooled to prevent breakdowns. Back-up power and security are provided.

At the moment, data centers represent a small portion of the business of Asia's telecom sector. Singapore Telecommunications Ltd., or SingTel, a leading telephone and broadband company, has a data center group.

Opportunities in data centers are worth tracking

The region has few pure plays, or companies for which data centers are a core business. We know of two. Bit-Isle Inc. is listed in Japan. And a Beijing-based company, 21Vianet Group Inc., is traded in the United States. Few other new companies are being formed at the moment, unlike in the United States. But this is a business to watch.

Asia should benefit from long-standing relations with the world's tech leaders

In addition, it is reasonable to expect the Asian suppliers of Apple Corp. and Samsung Electronics, and, possibly in the future, Google and Microsoft, to benefit as the big brands design and sell families of computing devices that are manufactured by outside contractors.

Competition involving CPUs is heating up

Among contractors, the outlook for companies that make central processing units, the brains of a computing device, is a potential wild card for competition. CPUs are perhaps the best-known parts of a device. For computers, the field has been dominated for a decade by Intel, which sells the currently-popular i-5 and i-7 processors. Smart phone CPUs rely on so-called ARM architecture and are manufactured by Qualcomm, Broadcomm and Nvidia.

It is highly likely that ARM-based processors will compete with Intel for use in personal computers and laptops from 2013 onward. Intel is already trying to compete with ARM-based processors for use in mobile devices, but has had little success so far.

How technology became a heavyweight industry

Consumer demand made technology one of the world's leading industries

The tech industry reorganized itself after the 1960s into horizontal layers of specialist companies that cooperated with each other. This picked up speed over the past 15 years as a cost-cutting drive emphasized making electronics in Asia, particularly China, and outsourcing design and production.

Declining costs were largely passed through to product prices. Falling prices and rising demand worked together to generate significant industry growth.

Here's how the system worked. One company, a Dell or a Hewlett-Packard, for instance, owned a computer brand name. Others worked as outside contractors to design, make parts for and assemble computers that were sold under the brand name.

Among contractors, perhaps the strongest came from Taiwan. There was Taiwan Semiconductor Manufacturing Co., the world's largest designer and maker of semiconductors. There were Quanta Computer and Compal Electronics, two of the world's biggest laptop makers. And there was Hon Hai Precision Industry, which designed and made components for everything. Other companies in other countries, notably Microsoft, designed and sold software. All the pieces came together into branded computers.

This served a demand that rose sharply as computers moved from business to mainstream consumer use. Consumer purchases of computers grew rapidly over the years, setting the stage for a vertical re-integration of the industry.

Wrapping up

A horizontal structure will likely prevail once the innovation phase calms

It is reasonable to expect the technology industry to shift itself back into a horizontal structure eventually. The vertical structure discussed earlier works best in times of "disruption," when new technologies and new ways of doing things throw the established order into disarray.

Disruption triggered by innovation always calms down as the industry adopts itself. A company's intellectual property over a product loses value as rivals develop alternate ways to make products that are similar to those of the intellectual property holder. An example is the general similarity between smart phones made by Apple and Samsung Electronics.

As a result, technology that had once been revolutionary becomes commonplace. This gives rise to cost cutting as the basis of competition. A horizontal industry structure works best in such an environment.

The Eastspring Investments approach to investing

At Eastspring Investments, we are long-term value investors. This means we search for stocks that are priced notably below levels that accurately reflect a company's ability to generate cash over time. We expect these stock prices to rise.

Investing in tech stock is especially challenging because of the risk that companies will become obsolete, sometimes quickly, if they fail to keep ahead of the game, or to capitalize on changing technology. The stock prices of such companies can decline sharply. The result is stocks that appear to offer value for money, but which, in reality, are cheap because the involved companies have no future. Research in Motion Ltd., maker of BlackBerry smart phones, is, for instance, fighting to prevent the continued loss of a once-dominant market share.

To avoid this pitfall, we monitor companies closely. This entails conducting our own research, making numerous company visits and discussing issues with experts in the field.

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