

Seagate Technology International (B) – enhancing supply chain collaboration

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**SEAGATE TECHNOLOGY INTERNATIONAL :
ENHANCING SUPPLY CHAIN COLLABORATION (B)**Publication No: ABCC-2001-007B
Print copy version: 23 Nov 2001*Tang Hung Kei and Tom Gleave*

In late August 2001, Y.C. Goh, and C.P. Teh gathered once again to assess the progress at e2open.com (e2open), the industry sponsored marketplace (ISM) co-founded by their employer, Seagate Technologies International (Seagate). As the respective Executive Director - Materials Asia and Senior Director - e-Business at Seagate's regional base in Singapore, Goh and Teh wished to ensure that Seagate maintain competitive advantage in supply chain management (SCM), and were therefore interested in helping e2open succeed. However, ever since the ISM was founded one year previously, it had encountered a strong degree of resistance from the various electronics and high technology industry players it had targeted. This was largely because the "Internet revolution" of the late 1990's had turned into the "Internet bubble" by 2000, leaving many investors and potential customers skeptical about the feasibility of many new online business models. Yet, despite this skepticism, several important developments had occurred at the ISM over the past four months that gave both Seagate and e2open reason for optimism. This meant that Goh and Teh needed to come up with recommendations about ways in which e2open could build on its positive momentum and ensure its long-term viability in the market.

Ivey-Nanyang Case Writer Tom Gleave prepared this case under the supervision of Associate Professor Tang Hung Kei. The case is based on public sources and interviews with key personnel from Seagate Technology International. As the case is not intended to illustrate either effective or ineffective practices or policies, the information presented reflects the authors' interpretation of events and serves merely to provide opportunities for class discussion.

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A NEW VISION

At the end of May 2001, after several months of discussions, brainstorming sessions and pilot test projects had been conducted amongst various founders and technology partners, e2open signalled the next stage in its evolution by announcing several important developments in rapid succession. On May 29, the company announced that it had joined RosettaNet, a non-profit organization (NPO) that promoted the development of industry standards for many-to-many online business collaborations among electronics companies. The NPO was created in 1998 and had since attracted over 400 member companies whose combined sales exceeded \$1 trillion. The business standards espoused by RosettaNet were intended to encourage the development of a common language and set of e-business processes for the electronics and high-technology industry. In becoming a "Solution Provider" member with the NPO, e2open joined all of its founders (save for Matsushita), who had previously joined the standards-setting body.

One day after announcing its membership in RosettaNet, e2open unveiled its so-called "global collaboration network solution." This suite of services was comprised of enhanced versions of the company's three existing service offerings. After bolstering its services, e2open decided to place greater emphasis on the collaborative elements of its offerings. This led the company to rename its service lines as follows: Design Collaboration became Product Collaboration; Supply Chain Services became Supply Chain Collaboration; and Open Markets became Collaborative Commerce. Correspondingly, the decision was made to slightly revise e2open's revenue model. Management still believed that a subscription-based model was most appropriate, one that would see customers charged for licensing "seats" to the company's various software services. Membership fees would also continue to be charged to account for the associated customization and start-up costs. However, unlike the originally conceived model, management had decided against charging a 3 to 5 percent transaction fee for the use of the Open Markets (now Collaborative Commerce) service. This was because it had been difficult establishing a workable pricing schedule that took account all of the various factors surrounding any given transaction. Therefore, management decided to implement an activity-based pricing regime where all users of the

Collaborative Commerce service would be charged by the number of data packets sent, although no specifics were provided.

As part of its repositioning efforts, e2open outlined its commitment to the fulfilment of what were considered by RosettaNet to be the five requirements necessary for developing a platform that would allow private collaboration on a shared-services network. These requirements were:

- Security management - referred to all of the elements needed to ensure secure collaboration over the Internet.
- Any-to-any interoperability - involved the provision of data translation and transformation capabilities to enable information integration across disparate enterprises.
- Enterprise-ready reliability - pertained to the development of scalable data and IT operations centres that provided redundancy, storage and backup, disaster recovery and replication features in order to remove single points of failure, as well as ensure high-volume throughput.
- Global, scalable networking - concerned the establishment of partnerships with various service providers to develop and support the company's global network infrastructure.
- Support for electronics industry standards - related to the company's commitment to the development and promotion of electronic industry standards for many-to-many business collaborations.

Commenting on the company's newly enhanced and repositioned portfolio of services, President and CEO Mark Holman stated:

Our model (offering private collaboration on a shared-services network) is more pragmatic for the electronics industry. Our customers can now securely share highly confidential design drawings, approved vendor lists and planning information with the confidence that e2open will ensure that only the right individuals at the right companies will be given access to the right information at the right time.¹

¹ Company press release, May 30, 2001.

Coinciding with the unveiling of its revamped service lines, E2open also announced that LG Electronics Inc. (LGE), one of the world's largest manufacturers of displays and consumer electronics (and an e2open founder), had signed a general agreement to adopt the company's Product Collaboration service. This agreement was significant because it represented e2open's first revenue generating contract directly related to the provision of its services. Ho-Jin Hwang, Chief Procurement Officer of LGE, explained the reason for his company's move:

e2open will be an important tool for LG Electronics to globally collaborate and make decisions starting from the product design process to R&D, among strategic partners and foreign buyers. e2open's innovative approach to business process management will bring immediate improvements in virtual meetings and directly shared designs and drawings. In short, companies can reduce business trips by 80 percent through e2open's Product Collaboration (service).²

ADDRESSING SECURITY HEAD-ON

The roll-out of e2open's repositioned set of collaborative services was based in large part on the confidence that the company had in the security management systems that it had developed to date. Ever since the ISM was formed, one of the most frequently cited concerns expressed by the founders, strategic members and potential customers alike was the need for robust security management systems. Therefore, in the months leading up to the roll-out of the company's revamped service lines, e2open had dedicated considerable resources to designing and testing various security protocols. This culminated in the development of the company's so-called "Built for the Net" security management system. By working with Tivoli Systems, a leading security management software vendor owned by IBM, as well with various founders who piloted different security features, e2open believed that it had fulfilled the first and most important requirement among the five needed to develop an industry wide collaboration platform. The

key elements of its "Built for the Net" security management system included:

- Perimeter defense - provided protection against unauthorized users and hackers by deploying redundant firewalls, intrusion detection systems, a demilitarized zone and third-party certificate validation services.
- Roles-based authentication - ensured that users could access only the information that was designated for them.
- Data confidentiality and integrity - ensured that sensitive data was stored securely from alteration, destruction or dissemination by using the most advanced encryption technology.
- Business process integrity - provided audit trails that created records showing who had accessed the system and what operations were performed in order to ensure "one version of the truth" existed in the event of any dispute among participants.
- Security best practices - involved an adherence to sound business practices that were verified by internal and third-party audits.
- Thought leadership in security best practices - involved the company's commitment to furthering security education and best practices among its network of industry participants.

The development of e2open's security management systems had been led by Greg Clark, the company's Chief Technology Officer who was recruited from IBM, where he was a highly regarded software engineer. Clark recognized that there was considerable potential for abuse in complex supply chains that were insecure. For example, Clark envisioned a scenario in which a simple purchase order document could drive many tiers of vendors to ship products to a just-in-time (JIT) manufacturing hub, where all of the components were coordinated to arrive ready to be assembled. As he stated, "If some hacker figured out how to drop an XML document into that [order process], they could have a truckload of Intel CPUs [automatically] dropped somewhere."³ That would

² Company press release, May 30, 2001.

³ XML was an acronym for extensible markup language; Like its predecessor HTML [hypertext markup language], XML was a format used for displaying data and documents on the Internet.

be bad; unbelievably bad. If a hacker can get into those systems, they can mess up markets."⁴

GATHERING MOMENTUM

Although the *ISM* had been able to attract a significant amount of industry and press attention in late May and early June 2001 because of its repositioned set of collaborative services, little in the way of concrete developments occurred over the ensuing month. However, starting in early July 2001, e2open began to experience a marked increase in the development of formal relationships with some of the world's leading technology companies, beginning with Mitsubishi Electric Corporation. On July 3, 2001, the Japanese electrical and electronic equipment manufacturing giant became e2open's latest Strategic Member, in the process joining industry notables Omron, Ricoh, Sanyo and Sharp, which had all become Strategic Members three months previously. The inclusion of Mitsubishi Electric as a Strategic Member was symbolically important to the e2open because it allowed the company to boast that it now represented over half of Japan's electronics related companies. At the same time, e2open announced the opening of its Japan regional office, which was expected to provide localized support to its Japanese founders Hitachi, Matsushita Electric (Panasonic) and Toshiba, as well as its Strategic Members.

On July 31, 2001, the *ISM* formally opened an office in Seoul, while also announcing that it had secured a three-year agreement with LGE to provide the Korean electronics player with its *Supply Chain Collaboration* software solutions. Previously, LGE typically used fax, e-mail and telephones to manage its communications with its trading partners. However, the consumer electronics and display manufacturer was concerned that these forms of communication prevented timely access to information, as well as increased the opportunity for generating data errors. By adopting the e2open solution, LGE hoped to improve visibility and communication between itself and its trading partners, a Byung-Chul Jung (President & CFO of LGE), explained:

*We're choosing to use e2open's supply chain solution in large part because of the significant productivity improvements delivered by the Product Collaboration Suite. Over the past few months, the team at e2open has worked closely with us to create and implement a supply chain solution that co-exists with our internal IT infrastructure and will deliver tangible, measurable benefits. The e2open supply chain solution will help us be more competitive.*⁵

The agreement represented e2open's first customer for its Supply Chain Collaboration Suite, prompting President and CEO Mark Holman to declare:

*This is a big win for us. With any new product the first customer is always the toughest, and we delivered in a difficult economic environment. I'm particularly satisfied because supply chain is the second suite LGE has bought. LGE demonstrates a key element of our overall strategy: engaging customers with one product and extending the relationship to include multiple products from the e2open suite.*⁶

Holman's positive sentiments were echoed by industry analyst, Joanne Friedman, Vice President (International) Electronic Business Strategies, at META Group, who stated:⁷

The electronics industry is crying out for leadership in establishing a shared-services network that offers security, privacy and can ultimately create true end-to-end visibility for the extended value chain. Over the past year e2open has taken a number of positive steps toward achieving that goal by strategically creating functionality that mirrors the business operations of its constituency. The LGE deal continues to reflect the progress and value of e2open, and it will be interesting to follow its progress over the next few years.

⁴ Machine to Machine. *Internetweek.com* June 6, 2001. XML

⁵ Company press release, July 31, 2001

⁶ Company press release, July 31, 2001

⁷ Company press release, July 31, 2001

About a week after the *Supply Collaboration* service deal was struck with LGE, e2open announced that had IBM had contracted to use the company's *Collaborative Commerce* solutions suite to conduct public and private auctions over the Internet. IBM's motivation for the deal came from the expectation that its expanded involvement with e2open would allow a wide range of IBM components to be sold to new sets of customers. By using the suite, selected customers would be able to purchase commercial lot sizes of new, discontinued and excess products directly from IBM in either private or public trading events.

DEVELOPMENTS AT CONVERGE

Similar to e2open, Converge had witnessed an increasing amount of activity and interest in its services over that previous several months. Some of the more notable developments were:

- On June 4, the company announced that the procurement division Japanese electronic giant, Fujitsu, would procure semiconductors and electronic products using Converge's open market trading service. As part of the deal, Converge customers would also be able to procure items through ProcureMART, an online service that Fujitsu had established one year previously in Japan and Asia. To date, Fujitsu had attracted over 3,000 corporate customers to the service, which had since expanded to Europe and was scheduled to expand to the US within the next several months.
- On June 25, Converge announced that it had revamped its service offerings. As part of its enhancement efforts, the company added to two new service lines, *Converge Plan* and *Converge Order*. *ConvergePlan* was an collaborative inventory planning service that enabled members to centrally aggregate, interpret and respond to supply and demand signals. *ConvergeOrder* enabled members to collaborate electronically on price, quantity and delivery date with all trading partners in their supply chain. At the same time that the two new services were launched, Converge also announced that founder Agilent Technologies had agreed to utilize *ConvergeMove*, the company's collaborative logistics solution. This announcement was consistent with the *ISM's* strategy of wishing to develop its supply chain and logistics services first before rolling out more comprehensive design collaboration services several months later.

- On July 26, Converge announced that it had struck an agreement with Bloomberg, one of the world's leading financial new service providers. The agreement called for Converge to supply Bloomberg with daily commodity pricing information, and supply and demand forecasts for the electronics industry. The figures would be sourced from the *ConvergeKnowledge* service line.
- On August 13, Converge "formally" announced the launch of its *ConvergeTrade* service, even though the company had been promoting the service on its Website since its inception. The move came on the strength of the more than 200 successful inventory auctions valued at over US\$16 million that had been conducted through the online auction service since May 2001, when the service was upgraded.

LOOKING FORWARD

As Y.C. Goh and C.P. Teh gathered once again to consider what could be done to improve e2open's development prospects, both Seagate managers were experiencing mix sentiments about the *ISM's* future. While it was clear that e2open had achieved some significant milestones in recent months, it was equally clear that a high degree of uncertainty about the future of the online B2B business model persisted. As C.P. Teh suggested:

Market sentiment for online B2B has gone from euphoric to eerily quiet. The death of high profile ISMs like Chemdex doesn't help matters - it makes people question the validity of e2open even more. And let's not forget the poor industry timing. In last quarter alone, several of e2open's founders, including Nortel, Lucent, Solectron and ourselves, have all announced significant job cuts. This means that even e2open's champions are becoming more inwardly focused. But we must arrest management's attention, and the attention of other industry stakeholders. The high technology industry is different from other industries. Most technology companies have been Internet savvy for years, long before there ever was a 'bubble'. We are the companies that have been leading the new economy all along, and we need to show leadership again.

Y.C. Goh added:

First you had open public exchanges, but these started to fade after suppliers became cautious and the financial markets dried up. Then came private exchanges, but many companies were quickly turned off after they realized that they needed to fork out tens or even hundreds of millions of dollars each time they wanted to establish a private link to a key supplier. Now, I think what we are finally seeing is a focus on somewhere in the middle - meaning the

establishment of platforms offering secure private collaboration among like groups of peers. And e2open is more prepared than ever to offer such a platform, particularly in terms of its Product Collaboration features. But people are always hesitant to embrace change, especially when something causes them to significantly rethink how they should do things. C.P. is right - this is going to require more than just pure reasoning - this is going to require strong and determined leadership from all major stakeholders involved.