

## Advancing the Globalization of eMP: TWX-21

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*OVERVIEW: A large number of Japanese companies are engaged in business activities in China and other countries in the Asian region. These Japanese companies often face problems of disorder in production and various problems related to distribution and settlement that arise from the inability to effectively control over order management and delivery management. Hitachi provides private electronic marketplace (eMP) systems for Japanese companies by backgrounding the TWX-21 intercorporate electronic commerce system, the largest class of eMP in Japan, and promotes collaboration with local partners. Also, by supplying an interface to existing eMP systems and utilizing partners' transaction search engines, etc., Hitachi provides Japanese companies with services ranging from procurement to manufacturing and sales. In the future, we shall extend our service from the physical distribution of goods up to their settlement as TWX-21/global services. Hitachi provides total support services for intercorporate commercial transaction management that includes supply chain management (SCM) and customer relationship management (CRM).*

### INTRODUCTION

IN recent years, there has been a rapid shift of production by manufacturers from Japan mainly to China and Asian regions.

These regions have competitive strengths based on low costs. In particular, the Japanese manufacturing

sector, which has fallen into a prolonged depression and deflationary period, can no longer avoid taking the path toward transferring production to China. In the past offshore production has been mainly mass production of popular items and general-purpose items supplementing domestic production. Recently, the

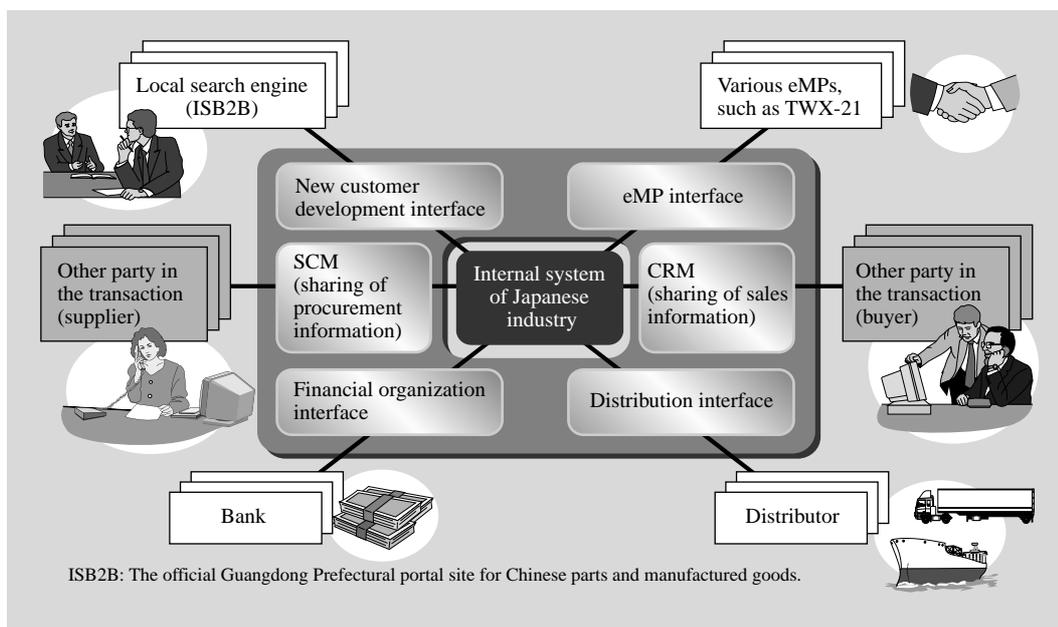
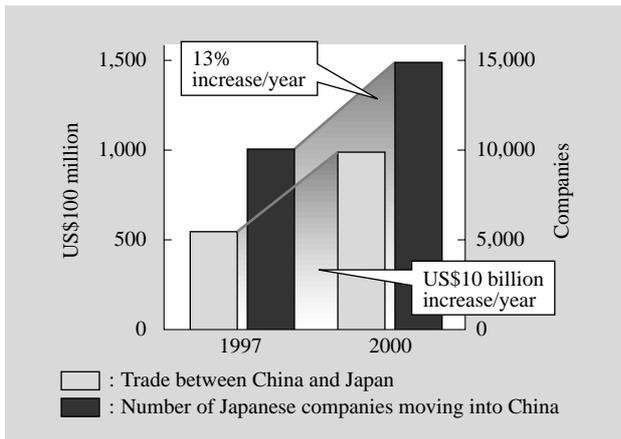
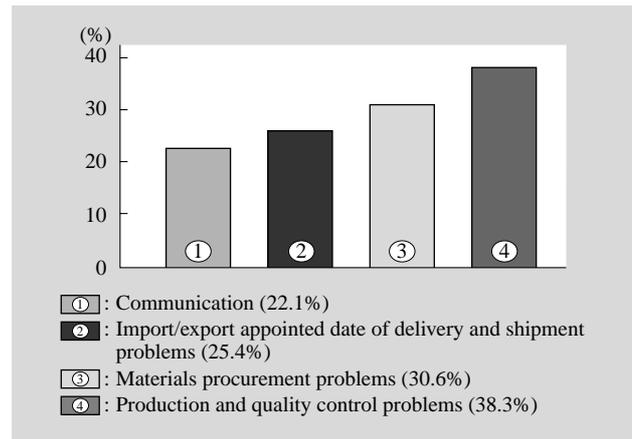


Fig. 1— Overview of TWX-21/Global Services.

*TWX-21, Hitachi's eMP, will provide private eMPs that give total support for the intercorporate transactions of Japanese companies that have moved into China and other areas.*



*Fig. 2— Number of Japanese Companies Moving into China and Trend in Total Trade Volume with China. The amount of trade between China and Japan and the number of Japanese companies moving into China are both increasing sharply. This trend is expected to continue to increase steadily with China’s joining of the WTO (World Trade Organization).*



*Fig. 3— Results of “Management Problems” Survey of Japanese Companies that are in China. Many companies have experienced problems of production and quality control, problems of materials procurement and problems of distribution.*

situation has been changing; offshore production has been expanding to include main-force production, whereas domestic work is specializing in R&D and marketing.

This kind of rapid development may create much distortion in production activities. Examples include the production bottlenecks that can arise due to insufficient experience at local sites when the production plan is changed or when new equipment is brought on line. Also, differences in language, culture, and technological level between the production sites in Asia and the planning and design activities in Japan make it difficult to execute the fine production control that is needed to follow customers’ needs. Because conversations that have been conducted face to face at the same location may now have to be made over distances of thousands of kilometers, the question of how to eliminate the negative effects of distance in the performance of work has become an important problem.

Hitachi has accumulated information technology for intercorporate commercial transactions through the implementation and operation of the various services of TWX-21, which has over 12,000 members and is Japan’s largest class eMP.

Here, we describe global support for intercorporate transactions through application service providers (ASP), which has been enabled through the cooperation of local Chinese eMPs and Hitachi’s partners.

## CURRENT SITUATION IN ASIA CENTERING ON CHINA

### Background of Industry in Southeast Asia Centering on China

Production in a wide range of industries, from labor-intensive industries, such as the textile industry, to technology-intensive industries related to information devices, is rapidly being transferred to China, mainly because of the cost of labor. With China’s joining of the WTO, we can expect even greater growth of industry in the Asian region in the future.

About 14,300 Japanese companies, mainly industrial corporations, had already moved into China by 2000. Compared to the situation in 1997, that represents an increase of about 13% per year. In addition, the amount of trade between China and Japan also increased by 10 billion dollars per year to exceed 80 billion dollars in 2000 (see Fig. 2).

### Problems for Japanese Companies Moving into China

Many Japanese companies have been moving into China, but these companies have been facing many more problems than those staying in Japan. This is particularly true for relatively basic functions such as transaction and orders management. As shown in Fig. 3, there are many problems concerning production and quality control, materials procurement, and distribution, but those are for the most part caused by conducting business in an environment where there

are differences in language and culture. Furthermore, the accuracy of work in China and other regions of Asia generally differs from that in the EU, the US and Japan. That is largely due to differences in motivation and lifestyle.

As an example, consider a case in which the relation between the ordered quantity and delivered quantity does not match. In this case, problems arise in which a needed item is not available or an item that is not supposed to be available is present in large quantity, leading to disorderly production. To avoid that problem, a surplus stock has to be maintained. That is done not only by the final assembly plants, but also by the primary assembly partners, secondary assembly partners, and so on. The total inventories of affiliated companies thus swell, resulting in higher final product cost, interest cost, excessive inventory and bad assets.

**GLOBALIZATION OF TWX-21**

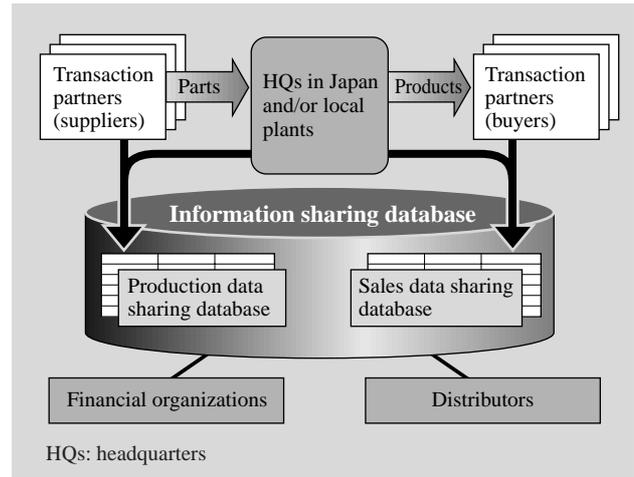
In the introduction of information technology (IT) to the production industry Business-to-Business (B-to-B) field, the format for file transfer has developed from EDI (Electronic Data Interchange) to standardization of industry-specific message formats such as EIAJ (Electronic Industries Association of Japan), EDIFACT (EDI for administration, commerce and transport), etc. However, because EDI assumes a one-to-one exchange of information, it is lacking in functions for responding to various user needs, such as providing transaction-related information and managing multiple transactions. For this reason, conventional EDI could not meet complex needs for enterprises that are expanding globally.

Furthermore, the various kinds of eMPs that developed from industry-specific needs are also limited to the standard services of those particular eMPs, and so dissatisfaction may remain with respect to the business needs of each individual company. Also, the cost of introduction is generally high.

In this age of the Internet, which has achieved dramatic growth in recent years, the Private eMP has come into the limelight because of the strong need for services with a greater focus on the user. The fact that Internet technology can provide the user with various degrees of freedom can reduce the need to adjust to strict industrial standards. Users are now able to communicate freely with partners in free formats through web technology.

**Examples of TWX-21 Service Menus**

TWX-21 supports intercorporate transactions



*Fig. 4— Overview of the International SCM Support Service. (application example for the manufacturing industry). Mainly for Japanese offshore factories, transaction partner and supply chain management can be implemented by means of an information-sharing database.*

among Japanese companies that have moved into China by providing a convenient private e-marketplace for offshore manufacturing sites and sales offices. As a specific example for the manufacturing industry, a shared production information database that can be used among the company and its suppliers is provided to each individual user over the web, thus not only providing order forms, but also enabling the sharing of various kinds of transaction data, such as order estimates, delivery date indications, order balances, and incoming shipment records, at low cost (see Fig. 4).

Business outside of Japan involves additional transaction elements, such as international distribution of goods, customs clearance, foreign exchange, invoice-based settlements, and so on, which do not exist in domestic transactions, so more items must be managed and more viewpoints must be considered. Furthermore, production, too, often takes place in an environment where the economic infrastructure, customer quality warranties, administrative rights and so on differ greatly from those in Japan. Therefore, the management systems that are effective in Japan are not necessarily effective in other countries.

For example, a system whose purpose is “reduction of labor costs” may be meaningless in a region where labor is inexpensive. Accordingly, systems that are to be useful locally should be based on the actual state of affairs in that locality. That is to say, there must be flexibility in the system to cope with various local needs.

TWX-21 provides a means of information sharing that is both general in purpose and flexible, considering the above points and assuming the ability to meet a variety of needs from long-term experience with offshore production sites. In that way, many of the problems experienced by Japanese companies, such as production disruptions, etc., can be improved through the sharing of procurement management information between companies, even in countries or areas in which EDI is not legally approved.

Furthermore, in response to the need for improvement in various kinds of business environments, the expediting and optimization of corporate activities can be achieved through clarification of bottlenecks by making information visible and by sharing information.

Concerning EDI, the preparation of various interfaces for the eMP allows electronic transactions between TWX-21 and other eMPs to which transaction partners have already subscribed. In addition, a shared sales information database accessed by buyers provides the implementation of product information, a product inventory, reference and product allocation function.

As an infrastructure for communication between China and Japan, a secured leased-line VPN (virtual private network) for voice and data communication and video conferencing is provided at low cost through cooperation with ChinaLink Corporation, a Chinese network company.

For support of procurement sourcing in China, an alliance has been formed for mutual coverage by TWX-21 and ISB2B, the only electronic exhibition that has been authorized by the Guangdong Prefectural Government. Plans for the future include reinforcement and expansion into other regions of China.

## CONCLUSIONS

We have described the applicability of eMP in Asia, primarily in China, as well as the trends and production strategies of Japanese companies with respect to this region. The movement of production by Japanese companies into China and other countries in the Asian region is expected to increase. It is likely that many such companies will experience problems similar to

those faced by companies that have already moved production.

Based on the expertise in corporate electronic transactions that was built up with TWX-21, Hitachi will provide practical support services utilizing IT and the Web to Japanese companies, through strong cooperation with local companies. Hitachi will continue to provide services that are both more efficient and useful.

## REFERENCES

- (1) Ministry of Economy, Trade and Industry, 2001 White Paper summary (May 2001) in Japanese.
- (2) Comprehensive Data on China, 2001 (Aug 2001) in Japanese.

## ABOUT THE AUTHORS



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