

## **Submission of Abstract**

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### **Expanding Market Reach – An Innovative Web-based Tendering System**

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**Author:** Mr. Peter Yan, C.E.O. of Global e-Business Services Ltd.

#### **Author's Affiliation and Technical Area(s):**

Mr. Yan King Shun, Peter, is the chief executive officer of Global e-Business Services Limited ("GO-Business"). He has over 17 years of experience in the IT Industry. Before joining the Group in 2000, Mr. Yan had been the chief operation officer of Tradelink, one of the largest EDI service providers in the region. He had also held senior management positions in large IT and electronic services companies including Andersen Consulting (Accenture). Mr. Yan graduated from the Chinese University of Hong Kong with a bachelor's degree in Business Administration in 1985 and received executive education for global leadership from the Harvard Business School in 1998. He speaks frequently at local, regional and international conferences sharing experience with fellow e-commerce practitioners on the implementation of e-commerce on a mass scale to large, medium and small business enterprises.

## ABSTRACT

*The Electronic Tendering Service (ETS) has been brought into operation since 7 April 2000. The system has successfully attracted more than 2,100 suppliers registered as subscribers in merely two years. The major reason contributes to its success is the general acceptability by its suppliers as a useful tool to increase their competitiveness in this dynamic economic environment.*

*Hong Kong has been selected as the fastest e-government deployment country in 2001, according to a research study released by Accenture Inc. in April this year. The HKSAR Government has taken the initiative to lead by examples to the business community through the identification of five key themes in the 2001 Digital 21 Strategy. ETS has been regarded as one of the highlights to act as a channel for business entities in doing business with the HKSAR Government. The system was firstly introduced to handle non-works tenders with contract below HK\$10 million. Through its enhancement in October 2001, ETS was enabled to support Government Supplies Department (GSD) originated Central Tender Board (CTB) tenders with value over HK\$10 million. There is also a government target to conduct at least 80 per cent of public procurement tenders electronically by end 2003.*

*This paper describes how electronic tendering transforms the way suppliers do business with the Government as well as other public entities. It has been a challenging task for companies to transform the automated electronic tendering process from traditional practices during the implementation stage. However, the benefits gained from streamlining the tender preparation processes resulting in significant reduction in daily administration cost become the most attractive motivation from the suppliers' point of view.*

*A typical Small and Medium Enterprise (SME) in Hong Kong can also benefit from this transformation exercise through ETS: to save cost, broadening their business opportunities and gaining competitive advantages over their competitors. As the HKSAR Government has set a future plan on electronic procurement as well as China's accession to the World Trade Organization, it is estimated that ETS will spread widely in the near future.*

## INTRODUCTION – ETS AND DIGITAL 21 STRATEGY

The Hong Kong Digital 21 Strategy was formulated in 1997 in achieving the HKSAR Government's vision to lead by example in applying e-business internally through service delivery to the public. There are four categories for Government strategy formulation: Government-to-Citizen (G2C); Government-to-Business (G2B); Government-to-Employee (G2E) and Government-to-Government (G2G). Electronic Tendering System (ETS) was the first to be implemented in the transformation of existing government procurement system, forming as an important part of the strategy under the G2B category.

This paper describes the functions and benefits of ETS viewed by its subscribers. It will give specific highlights on the process transformation involved in adopting the system as compared with the traditional mean. The writer will also discuss the outstanding features and technical aspects of ETS. Findings from informal surveys will be presented about how suppliers view

and experience the system. The paper concludes by describing the government's direction of e-tendering in future.

## BACKGROUND OF ETS AND ONLINE TENDERING

ETS, which names Electronic Tendering System in full, is basically a secured means of transferring documents electronically. ETS is an internet-based electronic tendering system adopted by the Government Supplies Department (GSD) of the Hong Kong SAR Government. Developed and operated by Global e-Business Services Ltd. ("GO-Business")<sup>1</sup>, it is the first G2B electronic tendering service in the world that allows both-way tender document exchange whereas many similar systems only allow one-way traffic. ETS allows two-way not only on submission but also on clarification, query, addendum, postponement, etc.



**Fig 1 Electronic Tendering System**

The principal objective of ETS is to make the government procurement process, specifically in tendering, more open, fair and transparent. The aim is to promote the use of information technology by setting a model to the business community and to support environmental protection by advocating the use of less paper. It also sets an unprecedented example for the Government to outsource the tender / procurement services to a third party contractor.

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<sup>1</sup> GO-Business is a subsidiary of Computer and Technologies Holdings Limited (SEHK: 0046), a leading provider of information technology ("IT") services in Asia. The major shareholders of C&T include Hutchison Whompoa Limited (SEHK: 0013) and other institutional investors.

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ETS is working as a channel for GSD to communicate with its suppliers throughout the procurement process. GSD is the central purchasing, storage and supplies organization for the HKSAR Government serving over 80 government departments, subverted organizations and certain non-government public bodies. Its purchasing value can reach HK\$5-6 billion with approximately 2,300 contracts awarded each year. The government procurement procedures are in line with the World Trade Organization Agreement on Government Procurement (WTO GPA) and are subject to the governance of the Stores and Procurement Regulations (SPR) issued by the Financial Secretary.

## **PROCESS TRANSFORMATION IN ADOPTING WEB-BASED TENDERING SYSTEM**

### ***Tendering in Traditional Approach***

Before ETS is implemented, only manual processes are available. There are various stages involved in the traditional tendering system. A tender will be initiated once procurement amount exceeds HK\$3 million. GSD is acting as the purchasing agent to collect inputs from end-user departments and any specialist authority. The inputs will be used for the preparation of tender documents and specifications.

After a tender is issued, GSD will publish the tender notice in the Government Gazette and four local newspapers. Tender notice includes information such as product to be purchased, the address where tender documents could be obtained, and the time and place for tender submission. To encourage competition, overseas suppliers can also receive copies from their trade consults in Hong Kong. The registered suppliers will then receive tender document by post. They can also arrange tender collection during government office hour.

Upon tender receipt, suppliers will base on the tender information to consider whether to participate in that bidding or not. If they have made a go-ahead decision, suppliers need to prepare tender proposals and fee calculation for tender submission. Tender documents are usually lengthy in size consisting of a few hundred pages. It incurs tedious administrative work like photocopying and binding during the preparation. All tender offers must be deposited in GSD's tender box before the specified tender closing time. Upon closing, the tender box will cease from receiving bids and it will be opened by a designated tender

opening team which comprises of members who are not involved in the procurement process. All received bids will be recorded under strictly controlled conditions.

Tender evaluation will be conducted to check whether the products and services offered are complying with the tender specifications. Every specified feature will be verified according to the prepared marking scheme. Awarded contractor will receive letter of acceptance and the award will be published in the Government Gazette. GSD will inform all unsuccessful contractors separately with specified reasons.

The whole tendering procedure is administrated by either the Government Supplies Department Tender Board or the Central Tender Board appointed by the Financial Secretary.

### ***Transformation of Tendering Practice in Suppliers' Perspective***

Registered suppliers will receive personalized e-mail notification of the latest tenders issued. They require no more searching through government Gazette, newspapers or cold calling. During ETS registration, suppliers can customize their e-mail notification by selecting the criteria to receive the kind of tender notices they need so as to minimize the receipt of unrelated notices.

ETS subscribers require no physical collection of tender document. They can simply download it through the Internet browser and start the preparation work immediately. ETS also supports tender document downloading at one time or in multiple parts at supplier's choice.

Through its state-of-the-art technology, ETS reduces the burden of repetitive re-keying work during tender preparation. Fee proposals/Bill of Quantity (BQ) are prepared in Excel format with automatic calculation. During this stage, suppliers only require to "fill in the blank" and the calculation will be performed with pre-set formulas. Tender proposals are submitted online that minimizes the non value-added activities like photocopying or binding. When suppliers have any question on the tender contents, they can raise their queries through the system for GSD's reply.

Submission of tender offers requires no traveling anymore. It can be done 24 hours during the day. Tender proposal can be submitted on the web anytime anywhere. Suppliers will use their applied e-Cert before transmission for identity authentication. Tender offers are encrypted with hash total generated to ensure the tender offer's integrity throughout the whole transmission process. To avoid any unforeseeable conflict, an encrypted copy will be automatically saved in the suppliers' hard disk for filing.

After evaluation, suppliers can search for award immediately through ETS for all disclosed details published by GSD. Both awarded and unsuccessful contractors will also receive individual notice as in traditional process.

### ***Suppliers' Benefits through Transformation***

ETS widens suppliers' business opportunity in tender bidding. No business opportunity would be missed with the "Tender Opportunity Matching Service". Tender barriers are removed in which local and overseas suppliers can register as subscribers and can download or submit tender through the Internet. There is no additional hardware or software incurred for using ETS which means that a typical Small and Medium Enterprise (SME) in Hong Kong can afford to utilize the system for daily tendering activities.

Through ETS, time and cost involved in tender preparation and submission are much reduced. According to the information provided by GSD, sending a 42-page document from Ottawa to Hong Kong costs around US\$30 and US\$4 through courier and fax respectively. However, it takes only 2 minutes and US\$0.11 through Internet transmission which means a 2,160 times faster and over 270 times cheaper when using ETS to transmit document as compared with courier or fax.

ETS supports round-the-clock service at all time. Tenderers are no longer required to travel to the government office to deposit tender proposals, which bear the risk of late tender arising from frequent traffic jams in Hong Kong. They can even arrange the transmission after office hours before tender closing.

ETS employs the most secured infrastructure with strong encryption technology through PKI-based security framework. It ensures extremely high level of data security, integrity and

identity authentication. ETS offers various supporting services for suppliers such as Call Centre equipped with advanced call management system to handle incoming enquiries, operational or technical problems and fault reporting. Suppliers can also attend various levels of user training to gain hands-on experience on the system. Those trainings are organized regularly to suit for suppliers’ own schedules.

ETS subscribers can also make use of other value-added services like Bizchedule, which is a comprehensive online virtual office, to facilitate them in managing tender activities, keeping business appointments and finding out details of the latest industry events.

## OUTSTANDING FEATURES OF ETS

Regarded as an early project under the Government’s Digital 21 Strategy, ETS is the “first” G2B electronic tendering website in the world that supports two-way true transaction process and sets as an unprecedented example for the Government in tender / procurement services outsourcing.

ETS is the first application to be recognized by the Electronic Transactions Ordinance (ETO) with effective from April 2000. ETO requires all ETS subscribers to obtain a digital certificate issued by the Hong Kong Post. It contains information about the name of the owner and the entity of its issuing authority. This digital certificate is used for supplier’s identity authentication during tender submission.

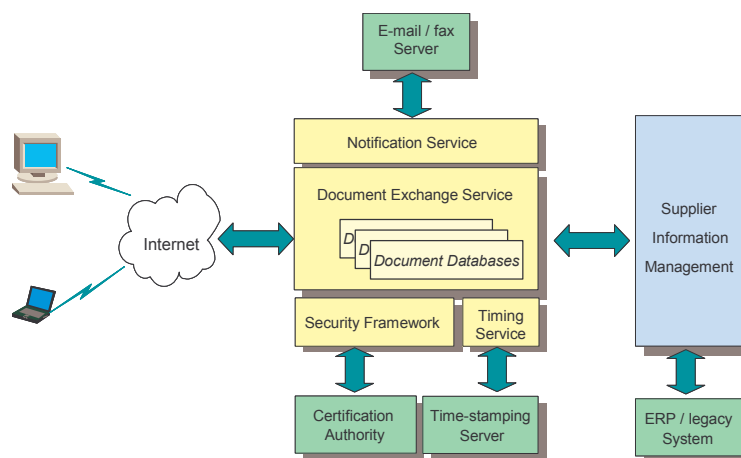


Fig 2 ETS Architecture Overview

ETS employs strong encryption technology through PKI-based security framework to ensure extremely high level of data confidentiality, integrity and identity authentication. A third party audit, the Hong Kong Productivity Council, is appointed as an independent consultant to endorse the full system design and technical infrastructure. ETS has passed through four rounds of audit tests before release and is also subject to system security tests each year.

Several outstanding features offered by ETS are as follows:

- supports bilingual language in Chinese and English versions to suit different subscribers;
- enables both open and restricted (invitation) tenders – restricted tenders only allow access of invited suppliers with valid access code;
- time-stamping from the Real Time Service offered by the Hong Kong Observatory, an independent third party, to reduce conflicts in tender submission or closing time;
- Pay-as-you-use model operated by an Application Service Provider (ASP) which means ready to market, proven solution and minimal setup cost, bringing significant cost savings for both GSD and its suppliers.

## **SUPPLIER SURVEY ON ETS**

ETS began operation in 7 April 2000 and has been enhanced in October 2001 to increase coverage of large amount tenders. Both GSD and GO-Business have devoted massive effort in service promotion and education to the supplier community. GO-Business has also been outsourced to perform supplier recruitment and registration for GSD. Through their joint effort during these two years, ETS has successfully attracted more than 2,100 registered suppliers in end-July 2002 with more than 2,800 tenders issued.

Informal surveys have been conducted targeting for randomly selected suppliers and potential subscribers who will consider to register for ETS in the coming 3 to 6 months. The surveys are carried out on an on-going basis with questionnaires in various areas. Findings of the recent surveys are summarized.



As most suppliers perceived that the system was useful, the reasons for their subscription are ranked as follows:

- increasing business opportunities during this tough economic environment;
- reducing the risk of late tender due to traffic jam or any sudden incidents in transportation;
- maximizing tender preparation time with round-the-clock downloading and submission;
- significantly shortening the administrative time and lowering cost in repetitive non value-added work such as re-keying, printing or binding;
- supporting the e-Government Strategy to use IT in daily operations.

When suppliers were facing questions during the use of the system, most respondents would make use of the Call Centre service to look for answers. Others would make use of the on-line help assistance. Suppliers also preferred to attend user trainings held regularly for a quick start up.

During the transformation process, more than 50 per cent of the respondents thought that the transformation was beneficial with satisfactory experience in the system use. A small portion of the respondents indicated that they need time to overcome the personal resistance in adapting to the technology change. They agreed that the increasing trend of computer and Internet adoption in daily working environment minimized their fear of using similar system. Respondents also consented that they became more confident in ETS after learning the system benefits and security through different promotion and training.

## **SYSTEM DEVELOPMENT AND GOVERNMENT'S FUTURE PLAN**

ETS was firstly introduced to handle non-works tenders with contract value below HK\$10 million. System enhancement in October 2001 further enriched ETS to support GSD originated Central Tender Board tenders with value over HK\$10 million. After the enhancement, additional features are provided such as the ability to store the data input in tender offer submission screen for users' later retrieval, function to allow tender proposals upload to resume automatically after disruption caused by Internet disconnection, etc. There are government plan to further extend ETS's coverage to include small amount tenders posted by individual departments in the near future.

Works Tenders, which are handled separately by the Works Department under the auspices of the Works Bureau, are also adopting e-tendering in a phase by phase progress. The Electronic Services Delivery for Works Projects (ESD) Strategy was introduced in January 2002 aiming at improving productivity and cost-effectiveness in public works projects delivery, enhancing Works project quality, facilitating participants' collaboration thus resulting in higher competitiveness of the construction industry.

ESD includes e-Tendering as one of the core IT and communication infrastructures in enabling services to meet users' requirements. E-Tendering of Works Contracts can achieve electronic collaboration between the Works Bureau and its business partners. Together with other recommendations given by the Construction Industry Review Committee (CIRC) in the construction industry study, it concludes that the use of IT can improve the construction efficiency through better information flow among project participants. As a result, a task force on e-Tendering was formed in September 1999 for strategy formulation and implementation in public works projects. E-Tendering was then carried out in stages with tender issue and offer receipt through CD-ROM in the first stage. In late 2001, tender documents have also been disseminated through the Internet via authorized service providers. It is scheduled that in mid-2003, a complete use of e-Tendering for works projects will be adopted.

The Hong Kong Government has set a target to carry out 80 per cent of public procurement tenders through electronic means by end-2003. This will bring even higher impact to the community in doing business with the Government.

## **CONCLUSION**

ETS transformed the suppliers' way of doing business especially in tender bidding. Before the suppliers make use of the system, it involves some extent of re-engineering in their existing bidding process. Suppliers need no "door knocking" anymore as business opportunities will be automatically delivered for their attention through the use of e-commerce.

To overcome the personal resistance of change, the service provider of ETS has organized series of user training and education with the joint effort of GSD during these years. A secured technical infrastructure plus the use of digital certificate has increased suppliers' confidence in the system. Suppliers could also make use of the Call Centre for system enquiry or technical support.

ETS has also imposed strong impact on other government departments, quasi-government organizations and commercial sectors in procurement. The system has been replicated to support other public and private organizations in streamlining the internal procurement and tendering processes as well as offering a full range of business support services. Other tendering portals offered in the markets includes e-tendering.com targeting for other public sectors and commercial sectors in daily purchase like the Hong Kong Trade Development Council; SOCAM.com which is used by Shui On Construction and Materials Limited, etc.

Hong Kong has been rounding out to be the top 10 countries leading in the way of e-Government innovation. Projects under the e-Government strategies, like ETS, are benchmarked by other countries these days. In addition, the World Trade Organization (WTO) is actively advocating public tendering to pave for a competitive environment among member countries. The trend of ETS application is estimate to spread widely to other parts of the world. After its recent accession to the WTO, China has proactively motivating the use of e-Tendering and e-Procurement for achieving a "Fair, Open and Transparent" bidding environment. It is forecasted that in the coming future, Hong Kong suppliers are able to bid for tenders in the fostering Mainland market as well as those issued by overseas buyers easily and efficiently.