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Government E-Procurement: Electronic Tendering System in the Hong Kong SAR

The Electronic Tendering System (ETS) was the first Government to Business (G2B) initiative to operate under a legal framework to promote electronic commerce in Hong Kong. Launched in April 2000, ETS was an online tender box that directly linked suppliers with the Government Supplies Department of the Hong Kong Special Administrative Region (HKSAR), enabling tender issue, submission and notification of award over the Internet. ETS was part of the Hong Kong Government's strategy to develop Hong Kong into an "Information Hub". It was also one of the world's first web-based electronic tendering systems for e-government applications.

By 2002, ETS had gained significant recognition in the e-business arena, including a number of industry awards[1]. After 2 years of implementation, subscription rate exceeded 30% with a total of 1,800 online subscribers out of the existing 5,000 registered suppliers. With this initial success, the HKSAR Government planned to extend the electronic system to all other Government procurements (except Works tenders), with a goal of issuing 80% of all procurement tenders online by the end of 2003. The Government also planned an Electronic Marketplace System (EMS) for the small value purchases, eventually expected to link the two systems in a "Total Procurement Solution". This would be a formidable task given the diversity of the existing processes across the procuring departments. How should a common infrastructure be built for these procurements across the Government organisations? How should the implementation be sequenced among the procuring departments? How should organisational change management issues be dealt with? In light of the current economic downturn and fiscal constraints, how should the Government position itself in further IT investments?

[1] *The project won the Hong Kong e-Award for Design and Innovation in the category of E-Public Services in 2000, and the UUNET/Economic Times Business Web Site of the Year Awards 2000 for the Best Public Sector Site.*

Phoebe Ho prepared this case under the supervision of Dr. M. Lynne Markus and Dr. Ali F. Farhoomand for class discussion. *This case is not intended to show effective or ineffective handling of decision or business processes.*

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Digital 21 and E-Procurement Strategies

In his 1997 Policy Address, HKSAR Chief Executive Tung Chee Wah announced his vision for Hong Kong to be *"a leader and not a follower in the information world of tomorrow"*, to use Information Technology (IT) to retain Hong Kong's competitive edge, and to drive overall economic expansion. To this end, the Digital 21 Strategy was formulated under the auspices of the Information Technology and Broadcasting Bureau (ITBB) in 1998. The primary focus of the Digital 21 Strategy was to build capabilities and infrastructure to support a thriving information economy, and to create a strong foundation for growth in the use of IT in the HKSAR. The objective was to develop Hong Kong into a leading digital city in the globally connected world.

In 2001, a comprehensive E-Government Strategy was promulgated including set targets for the provision of public services online. Flagship projects fell under the following four categories:

- Government-to-Business (G2B): government departments would transact with suppliers online to improve efficiency and reduce compliance costs of the business sector, thus enhancing competitiveness.
- Government-to-Citizen (G2C): government departments would provide online public services to individual citizens to improve service level, and to enhance public confidence in conducting electronic transactions, thus promoting a wider adoption of IT in the community.
- Government-to-Employee (G2E): government departments would use electronic means in communication and transactions with employees to enhance internal management efficiency and reduce administrative costs, thus fostering an E-Government culture within the civil service.
- Government-to-Government (G2G): government departments would adopt electronic transactions to communicate internally and with other departments, thereby promoting the use of IT in the Government.

The E-Procurement strategy was the key initiative under the G2B scheme. Its goal was to provide an electronic medium for the entire procurement process, from integrated supplier database, invitation to tender, receipt and negotiation of tenders, to contract signing and payment. The Electronic Tendering System (ETS) was the first implementation under the E-Procurement Strategy to enhance and transform the existing Government procurement process.

The Government Procurement Process

The procurement policy of the Government of the HKSAR was to obtain goods and services at the best value for money in support of the Government's programmes and activities. Procurement policy mandated providing equal opportunities to domestic and foreign suppliers and service providers through open, fair, competitive and transparent procedures. The process was governed by the Stores and Procurement Regulations (SPR) issued by the Financial Secretary and the regulations were supplemented by Financial Circulars issued by the Secretary for the Treasury. The procedures laid down in these regulations and circulars are consistent with the provisions in the World Trade Organisation Agreement on Government Procurement (WTO GPA).

In general, the Government procurement services were classified and administered as follows (see **Exhibit 1** for the detailed procurement practices of the HKSAR):

1. Small purchases under HK$1.3 million were handled by individual Government departments with their own processes (Request For Proposals, Request For Quotations, formal tender, etc);

2. Procurements between HK$1.3 and 10 million were co-ordinated by the Government Supplies Department (GSD), the central purchasing, storage and supply organization for the HR SAR Government (described below);

3. Procurements over HK$10 million were governed by the Central Tender Board (CTB), an oversight body reporting to the Secretary of the Treasury;

4. Works or construction-related procurements were administered by the Works Bureau.

Government Supplies Department

GSD was the central purchasing, storage and supplies organization for the HKSAR Government, serving over 80 Government departments, subvented organizations and a number of non-Government organisations. The objective of GSD's procurement service was to obtain, at best value for money and in a timely manner, the goods and services required by the procuring departments. This was achieved through open competitive tendering procedures following the SPR guidelines. The Department was currently responsible for procuring around HK$5,000 million worth of goods and services each year.

GSD was responsible for the provisioning, storage and distribution of a wide range of common user items, such as stationery, pharmaceutical products, hospital sundries, furniture and household goods, that were used across the service by Government departments and other public bodies. In addition, GSD acted as the purchasing agent for stores and equipment required by specific procuring departments. These departments relied on GSD for expertise in sourcing, tendering, negotiations and contract administration. The goods purchased by GSD on behalf of these departments were diverse, including aircraft for the Government Flying Service, electronic parking devices for the Transport Department, arms and ammunition for the Police, chlorine for water treatment plants, gases for medical and industrial purposes, and food and beverage for public hospitals.

Electronic Tendering System

Under the Government's E-Procurement Strategy, the objectives of the ETS project were:

- Improved Customer Services
- Less paper-work and re-keying for GSD and suppliers
- Increased visibility of the tender process
- Foundation for full electronic commerce
- Testing ground for other E-Government applications
- More competitive trade environment
- Improve value for money in purchases

(See **Exhibit 2** for fuller descriptions of these objectives.)

In April 1999, after a competitive bidding process, the ETS contract was awarded to Computer and Technologies Ltd. (C&T), a rapidly expanding IT services provider in Hong Kong. C&T had subsequently spun off its application services unit to its subsidiary, GO-Business, which then took over the operations of the ETS project (see **Exhibits 3A and 3B**). The HK$3.8 million contract involved the building of the online tender system, operating and maintaining the system for two years at a annual service fee of HK$600,000, and an option for the Government to extend the contract for another three years.

The project was implemented in three phases. Phase 1 was launched in April 2000 and involved the building of an online platform for the existing tender process for GSD procurements between HK$1.3 and 10 million. Phase 2 was launched in December 2001 and extended the online capabilities to GSD-originated tenders over HK$10 million, currently administered through the Central Tender Board (CTB). Phase 3 was planned to be launched by the end of 2003 to deliver an end-to-end online tendering system, providing connectivity between the ETS platform and the individual purchasing departments, and enabling the staff of the departments to be more involved in the operations of their own tendering processes. Concurrently, GSD was pursuing an Electronic Marketplace System (EMS) for the small tenders under HK$1.3 million, currently procured internally by the procuring departments.

Phase 1: Pilot Implementation

For the initial project implementation, procurements between HK$1.3 million and 10 million were selected for electronic tendering. This class of procurements was chosen because it was a stand-alone process centrally co-ordinated by GSD. It also represented the majority of all Government procurements, making it the most cost-effective category of procurements to automate in an electronic platform.

Phase 1 involved building an Internet platform to enhance the existing paper-based tender process for GSD procurements. The existing tender issuing process was labour-intensive and time-consuming, involving the physical transfer of documents between GSD and the suppliers. The process also had numerous variations depending on the type of procurement (Purchase of Products, Purchase of Services, Sales of Products, etc), the dollar value of the procurement, and the policies of procuring departments (See **Exhibits 4 and 5** for details of the tendering process.)

ETS made significant improvements in various aspects of the tendering process, including:

- Tender document storage and transmission
- Supplier notification of tender opportunities
- Supplier access to, and submission of, tender documents
- Receiving and responding to suppliers' enquiries
- Contract award notices

Systems Architecture

The ETS consisted of three sub-systems:

- ETS Front-End: web-based application enabling general public viewing, supplier registration, document downloads and uploads

- ETS Data Centre: electronic tender box for storing the submitted tender offers in encrypted format, until they are decrypted and opened in the ETS back-end system
- ETS Back-End: platform for monitoring and interfacing with GSD's legacy system, the Procurement Management System Upgrade (PMSU).

The PMSU ran on Hewlett-Packard servers with Microsoft's Windows NT 4.0. The system handled the entire procurement process, maintained the master copy of the tender information, and the temporary/registered/nominated suppliers information. While the ETS platform provided a means for the transportation of information between GSD and its suppliers, the PMSU acted as the single source of the most up-to-date tender and supplier information. The principle of maintaining one master copy of tender information was to prevent inconsistency in the information used by both PMSU and ETS, and to guarantee the data ownership in one single source within the Government organization (See **Exhibit 6** for the ETS process flow, and **Exhibits 7A and 7B** for the physical and logical components of the system).

Legal and Regulatory Concerns

During project implementation, a number of concerns were raised by the various legal and regulatory agencies, posting unique challenges to the project. Since this was the first Government project involving the electronic submission of documents in a legal process, the Department of Justice was concerned about the enforceability of the online submission. This led to such questions as whether the process was secure enough to prevent information leak to competing suppliers, and how to ensure that tender offers submitted online were the actual offers for consideration. The Independent Commission Against Corruption (ICAC) was concerned about the integrity of the entire online process and the potential for abuse by Government staff.

The Information Technology Services Department (ITSD) was responsible for providing technical advice and quality assurance services to GSD and other key stakeholders. Since the ETS was among the first Government projects to use a service outsourcing approach in its delivery, ITSD's role was to ensure the appropriate execution of this delivery from a technical implementation perspective. Both GSD and ITSD were tasked with ensuring the efficiency and effectiveness of the project and that it would deliver its benefits in a quantifiable fashion. This was particularly challenging due to the lack of precedence in such service delivery, even on a worldwide basis.

To address these concerns, GO-Business, the ETS service provider, worked with GSD to implement changes in perspectives, the legal framework governing procurement, procurement policy and procedures, and technology. The Electronic Transactions Ordinance (ETO) was established to give electronic records and digital signatures used in electronic transactions the same legal status as that of their paper-based counterparts. To instil public confidence in electronic transactions, the Government set up a local Public Key Infrastructure (PKI) through the Hongkong Post Certification Authority. The objective was to ensure the security and integrity of transactions conducted over the Internet through the use of digital certificates. A stringent audit process for the ETS project was also conducted by the Hong Kong Productivity Council to address concerns of accountability and best practices. Lastly, the project was justified on the basis of the Government's vision of promoting an information-based economy in Hong Kong, rather than on projected project revenue and cost savings.

Security Concerns

Because tender documents were considered highly confidential, it became apparent at an early stage that the security of ETS was a major concern. With documents available online, they

became vulnerable to unauthorized access. To counter these concerns, the network configuration included two levels of firewalls and intrusion detection software at each operating site and at GSD. For document transfers between the ETS platform and outside suppliers, the system utilized the Public Key Infrastructure (PKI) to enable authentication, non-repudiation, integrity and confidentiality of the tender documents.

Interfacing between the ETS Back-End and GSD's PMSU system required more elaborate considerations. A direct electronic transfer between the two systems might be subject to potential hacking on either end. After a detailed review among all parties, a simple and secure approach was selected in which a CDROM would be generated from the PMSU, which would then be input into the ETS Back-End nightly. The interface process thus involved NO direct physical network connection between the two systems. This method could guarantee PMSU to have a foolproof protection from Internet hacker through ETS. As PMSU rode on GSD's backbone network, which in turn connected to the whole Government backbone network, this prevention of backdoor attack was of vital importance.

As stated by Mr. Peter Yan, Chief Executive Officer, GO-Business, *"The reason for this rather low-tech approach is not that technology is not advanced enough, but the human factor that people are more comfortable using this approach to manage the security concern. This is also the most cost-effective solution that people can understand the best."*

User Acceptance

During initial project launch, resistance was encountered both internally within GSD and externally from suppliers. Both user groups had well-established procedures for the paper-based procurement process and did not welcome the change. They had to be educated about the purpose and benefits of the new system, before they could be trained in the new way of conducting business.

> *"This is typical of any large-scale project roll-outs when project benefits were not apparent in the beginning. There would even be the impression of duplicate efforts to run the two systems side by side.....Externally, we did not anticipate we needed to do so much to increase the supplier take-up rate. Internally, we had anticipated the resistance from our staff, but did not expect that it would last for so long."*
>
> Mr. C.T. Chan, Principal Supplies Officer, GSD

To overcome this inertia to change, a partnership approach was adopted between GO-Business and GSD for promoting the new system to both internal Government staff and external suppliers. Working groups and training sessions were held for Government staff members. A "Train the Trainer" approach was used to provide staff with hands-on experience using the new system. Externally, a series of workshops and seminars were organized to introduce the new system to the suppliers. Invitation letters were sent to the most active 3,000 suppliers and a total of 22 briefing sessions were held, with 40 to 50 suppliers per session. A Help Desk was established to answer questions from the front line and to assist smaller suppliers with limited experience in Internet technology.

Despite the initial resistance, user subscription reached 18% after the first year of implementation (higher than the projected 14% from the project feasibility study). Subscription increased to over 30% in the second year, with a total 1,800 online subscribers out of the 5,000 registered suppliers. In April 2001, GSD extended the contract with GO-Business for another three years to continue the ETS development.

Phase 2 - Service Extension to CTB

Phase 2 was launched in December 2001 and extended the online capabilities developed in Phase 1 to GSD-originated tenders over HK$10 million, administered through the Central Tender Board (CTB). This service extension called for changes in organisation structures, policy and procedures, human resources, and technical enhancements to the ETS system.

Organization and Process Changes

To facilitate online tender submissions, a major challenge lay in the timing and physical location of tender opening. CTB tenders were traditionally opened at 12 noon in the CTB building in the Central District, while GSD tenders were opened at 9 am in GSD's North Point office. With online submission enabled for both tender types, the timing and locations of tender openings had to be synchronized. The resulting procedure was a 12 noon tender opening at the GSD location. To accommodate this change, substantial amendments had to be made in the operating procedures of the two departments. Examples included:

- Changes in staff roster to ensure that the Tender Opening Room in GSD building was staffed with a senior officers (required for CTB tenders) during the tender opening schedules
- Changes in GSD's Tender Opening Procedures to enable the opening of the CTB tenders
- Changes in security procedures in the Tender Opening Room for the extended usage for CTB tenders
- An 8-week transition period to alert suppliers of the change in tender opening time and location

Technical Enhancements

A number of technical enhancements[2] were made in the system to support the Phase 2 service extensions.

Digital Certificate Verification

In Phase 1, suppliers using the ETS must obtain digital certificates, called i-Certs, issued over the web by Computer & Technologies, under the Public Key Infrastructure (PKI). i-Certs were, however, not recognized digital certificates under the ETO. An enhancement was therefore made in Phase 2 to support the use of e-Certs, the ETO-recognized digital certificates issued by the Hongkong Post, the first Government-designated Certification Authority in Hong Kong. e-Certs carried a HK$500,000 liability insurance for any damages to the users as a result of the electronic transaction. Hongkong Post required a face-to-face authentication for issuance of the e-Certs to Hong Kong residents holding valid identity cards and companies with business registration certificates. To avoid trade barriers to overseas suppliers, ETS was enhanced to accept both digital certificates: i-Certs for suppliers outside Hong Kong and e-Certs for suppliers in Hong Kong.

[2] Source: Computer & Technologies, *"The Government Supplies Department Electronic Tendering System (ETS) Application Scoping Document for ETS Enhancement Phase II,* June 2001.

Two-envelope Proposals

For procuring high dollar value products and services, the HKSAR Government usually employed the two-envelope proposal approach. In two-envelope tendering, suppliers submitted two separate proposals: a technical proposal and a cost proposal. The cost proposals were only opened after the technical proposals were deemed to respond adequately to the Government requirements. To accommodate this procedure, enhancements were made in the online system for a sequenced opening of the tender documents.

Document Transfers

High value procurements tended to involve much larger documents (both requests for tenders and tender submissions). The system was enhanced to allow document downloads and uploads by "sessions", where the system automatically broke documents into smaller chunks for transmission. This would prevent system failures associated with high Internet traffic and lengthy document transfers. In the case of transfer interruptions, the system was configured to allow the document transfer to resume at the last failed point. Maximum document size was also increased from 4 MB to 12 MB to accommodate the larger size of the CTB tenders.

Account Management

With the enhanced supplier database and online document delivery, GSD was able to maintain contacts directly with the individual departments of the supplier organisations. This was particularly useful for large corporations with multiple supplier departments and separate tender personnel and procedures in each department.

Supplier File Management

The user interface of the system was enhanced to allow suppliers to save their electronic forms on their local workstation for submission at a later time. This allowed the suppliers more convenience in preparing tender documents. It was also an incentive to secure supplier participation in the online system.

Phase 3 - Integration with Operating Departments

While Phases 1 and 2 had targeted GSD and GSD-originated CTB tenders, Phase 3 aimed to extend the ETS to include non-GSD-originated tenders such as cleansing service tenders and security service tenders, currently procured by other departments/bureaux. The objective was to issue 80% of all Government tenders (except Works tenders) electronically by 2003. The second objective of this phase was to build a consolidated supplier database for centralized supplier information. The project proposal was endorsed by CTB in August 2001. Initial consultation with individual departments/bureaux was completed in October 2001, and the project implementation proposal was scheduled for completion in mid-2002.

User Consultation

A major challenge of Phase 3 was the diversity of tendering processes and procedures across the procuring departments. Service tenders had always been the responsibility of the procuring departments, and while each department conformed to Government SPR, each had its own internal systems, including manual and electronic processes. Exceptions and special

procedures were the norm. Based on the size of establishment and the size of tenders, the departments could be classified into four categories (see **Exhibit 8**):

1. Small departments with small tenders had no capability to handle tenders on their own, and online tendering was not a critical function;
2. Small departments with large tenders would benefit the most from a common procurement infrastructure to standardize current processes;
3. Large departments with small tenders recognized the importance of a common procurement infrastructure and online tendering platform;
4. Large departments with large tenders were most supportive of online tendering for efficiency gains and other value-added services.

The change management challenges are different for each type of department. Overall, system implementors must address the following questions in Phase 3:

- How much did the automated system have to mirror existing procedures? What approach would best address the needs of most departments?
- To what extent should a policy-driven (top-down) approach be used? To what extent should the approach be user-driven (bottom-up)? What would happen when non-compliance with Government policies became much easier to monitor?
- How should organisational change management issues be dealt with? Which operating departments were likely to be most supportive/resistant? How should these departments be sequenced for implementation? How could consensus be built? How should the concern of unenthusiastic departments be addressed?
- Should the departments get rid of their own legacy systems and outsource to GSD? (From a policy perspective, GSD was mandated to provide value-added services for the departments. It was not staffed to take over the supply logistics of the procuring departments.)

> *"It will not be practical, or economically viable, to assume all 90 Government departments can be integrated. There are the top departments who have the most needs for systems integration. This is not a technical issue, as technologies such as XML can bridge the gap between the different systems. The most difficult part is the process re-engineering, as it will interrupt the status-quo of the departments. In light of the current economic environment, this is particularly challenging..... From past experience, IT is an expenditure, rather than a cost saving vehicle. The challenge ahead is to change the mentality, and to increase the IT acceptance in the Government departments. A Joined-up Government approach will improve all department's individual operations in the long run."*
>
> Mr. Alan Wong, Director, Information Technology Services Department

Technical Challenges

From a technical perspective, this phase would deliver an end-to-end online tendering system, providing direct connectivity between the ETS platform and the individual procuring departments, and enabling the staff of the departments to be more involved in the operations of their own tendering processes. The current ETS system supported a single interface with the GSD PMSU legacy system. To connect to the procuring departments, multiple interfaces would be constructed to the legacy systems of the procuring departments.

Two connectivity options had been identified:

- Option 1: Internet
- Option 2: Government Network (GNET)

The proposed configuration was to use the existing Government Network (GNET) connection. The procuring departments would follow the hyperlinks from the Central Cyber Government Office (CCGO) Website to the system and the data traffic would go through the GNET to the GSD departmental network. This would ensure a secure, reliable and expandable system, while making use of existing resources and integrating with existing systems. Other considerations included the use of shared or stand-alone databases, time and data synchronization between the servers and databases, and resource utilization across the servers and databases.

Future Extension - The Electronic Marketplace System

The planned extension of the project involved building an Electronic Marketplace System (EMS) that would provide a trading exchange for minor purchases, each not exceeding HK$1.3 million (currently handled by procuring departments). With the electronic platform, buyers and sellers would be brought together without the need for quotations and tenders. Additional value-added services such as e-sourcing, relationship management, and reverse auctions would also be considered. The ultimate vision for the Government was to bring ETS and EMS together in a "Total Procurement Solution". The project was currently under scope definition for potential implementation in 2003.

While the EMS concept was sound from a strategic viewpoint, the implementation and maintenance of the system would be costly, involving the provision of graphics-rich supplier catalogues online. A bigger concern was whether the Hong Kong business community (comprised mainly of small to medium sized enterprises) was technologically savvy enough to accept this radical procurement approach.

> *"We have done a trial with our departments in online procurements of these small purchases. In general, 42% of the purchases are cheaper and can be procured faster, but the commodities that are available online are more limited in variety, and are usually smaller items..... for low value purchases where profit margins are small, it is questionable if the investment will be worthwhile."*
>
> Mr. C.T. Chan, Principal Supplies Officer, GSD

Major issues in the development of EMS included:

- What were the key business drivers? What would the best business model be?
- What was the current state of development and the competitive landscape among e-marketplaces?
- What were the development options (in-house development, outsourcing, partnerships, acquisitions, etc)?
- What additional value-added features should be provided on EMS, and what were their benefits (e.g. e-sourcing, online supplier catalogues, order placement, relationship management, reverse auctions, etc)?
- How should supplier participation be secured?

Technical Issues

In addition to the business and change management issues, EMS 4 raised a number of technical issues:

- What were the technical options for implementation?
- What were the major systems integration challenges within the Government (back-end integration)?
- How should the challenges of integrating with supplier networks be addressed?

EXHIBIT 1
EXISTING PROCUREMENT PRACTICES OF THE HKSAR

i) Minor Purchases
Bureaux/Departments are delegated with the authority to make direct purchases of stores of a value not exceeding $0.5M. This financial limit is raised to $0.75M for departments with Supplies Officers, $1M for departments with Senior Supplies Officers, and $1.3M for departments with Chief Supplies Officers or above.

ii) Purchases of Stores and Related Services Exceeding the Departmental Direct Purchases Limit
Purchases of stores and related services exceeding the departmental direct purchases limit are processed by GSD.

iii) Procurement of Goods by Other Departments
A few departments also conduct their own procurement of goods. These include the purchase of vehicles by the Government Land Transport Agency, boats by the Marine Department and printing machines and paper by the Government Printer.

iv) Construction Services
Construction services are procured by the individual works departments concerned, under the general supervision of the Works Bureaux.

v) Tender Boards
The Financial Secretary has appointed 5 tender boards for consideration of the acceptance of offer for procurement of stores and services under various financial limits.

Source: Guide to Procurement by the Government of the HKSAR, URL: http://www.info.gov.hk/fb/tender

EXHIBIT 2
OBJECTIVES OF ELECTRONIC TENDERING SYSTEM

Improved Customer Service
- Shorter times for receiving invitations and submitting bids
- Less paperwork for suppliers
- Round-the-clock downloading of invitations and submission of bids
- Reduced postage and packaging costs
- More convenient customers access through the Internet
- Electronic access to tenders by procuring departments

Less paperwork for GSD
- More time available for value-added procurement activities instead of routine tasks

Less rekeying
- More accurate transcriptions
- Less time needed for corrections

Increased visibility
- Increased visibility of GSD's procurement processes by suppliers and the public
- Improved perceptions of fairness in procurement

Foundation for full electronic commerce
- Significant benefits from utilizing the Internet in future for full electronic commerce
- Stepping stone towards the paperless office within GSD
- Expandability for contract monitoring and issuing payment functions

Testing ground
- Pilot project for other Internet applications in Government
- Increased technology usage in Hong Kong

More competitive trade environment
- More efficient and competitive trade environment in Hong Kong
- Hong Kong companies in a better position to trade effectively abroad

Improve value for money in purchases
- Larger supplier base for Government purchases, increasing price and quality competition
- Lower prices through lower transaction costs
- Better bids through increases time for suppliers to produce their bids (especically foreign suppliers)

Source: Computer & Technologies, *Application Scoping Document, Electronic Tendering System*, March 2000.

EXHIBIT 3A
GO-BUSINESS

Global e-Business Services Limited (GO-Business) is a wholly-owned subsidiary of the rapidly expanding Computer And Technologies Holdings Ltd (C&T). Formed as one of four business units after C&T's listing in the Hong Kong Stock Exchange in 1998, GO-Business provides application services for the e-business. Building on the strengths and networks of its parent company, GO-Business focuses on application services for Operations Resource Management Systems (ORMS), including back-office enterprise applications, Human Resources solutions, tendering solutions, workflow and document solutions. Its recent acquisition of IPL, an established local Human Resources management systems provider, reinforces its strategic focus in this area.

EXHIBIT 3B
FOUR BUSINESS UNITS AT C&T

Integration Services (C&T Integration Ltd)	Solution Services (C&T Solutions Ltd)	Application Services (GO-Business)	Distribution Business (Maxfair Technologies Ltd)
Provision of systems and network integration service and industry-specific IT application solutions, with a focus in China	Provision of IT services, solutions and custom-developed systems for large enterprises in public and private sectors	Provision of B2B and enterprise e-business application services	Distribution of multi-media digital processing products and networking products

Source: C&T Business Review for the 6 Months Ended June 2000, June 2000, p. 1.

EXHIBIT 4
THE GOVERNMENT TENDERING PROCESS

[Excerpt from document available at www.info.gov.hk]

Tender Documents and Specifications

Procuring departments are required to provide in the tender documents all the necessary information to assist the bidders to prepare their tenders. In drawing up tender specifications for goods or services to be procured, departments are required to ensure that the characteristics laid down for the products or services are based on functional and performance requirements. Where standards are referred to, these should, where practicable, be international standards. Tender specifications should not be drawn up to suit a particular brand or country of origin.

Tender documents normally include standard contract forms covering the general aspects of tender and contract requirements, special conditions of contract, detailed price schedules, additional information and instructions applicable to a particular contract. Tender documents are generally issued free of charge but procuring departments may levy a non-refundable sum from tenderers to cover the cost of the tender documents.

Tender Notice

Invitations to tender include:

- a broad description of the requirement;
- estimated quantities and timing;
- the closing date and time for tenders;
- the place for lodging tenders;
- whether the procurement is covered by the WTO GPA;
- where to obtain tender documents; and
- name of the office or officer and a telephone contact for enquiries.

Normally, at least three weeks are allowed for tenderers to submit their bids. Where the procurement is covered by the WTO GPA, the time allowed for submission of tenders is 40 days except in the case of extreme urgency.

Submission and Opening of Tenders

Tenderers must submit their tenders before the tender closing date and time stipulated in the tender notice. We will not open any tenders received after the tender closing time. Tenderers must also ensure that their tenders are deposited correctly in the tender box specified in the tender notice.

At the closing time of tenders, the designated tender opening team, comprising members who are not involved in the procurement process, will open the respective tender box. Only tenders which are due are opened and authenticated by the tender opening team. The tender opening team will make appropriate records on file of the tenders received and then send the originals of the authenticated tenders to the procuring department for evaluation.

Evaluation of Tenders

The procuring department is responsible for evaluating the tenders to determine whether they meet the conditions and specifications laid down in the tender document. To ensure the best value for money, these conditions and specifications may include the time of delivery/completion, quality of goods offered, designs proposed, maintenance and spare parts

provision, warranty and guarantees as appropriate. Usually, the department will recommend acceptance of a tender which fully complies with the tender conditions and specifications and is the lowest in tender sum. Where pre-determined factors other than price are included in the tender assessment, the recommended tender is the one which attains the highest combined technical and price score. The procuring departments will then submit their recommendations in the form of a tender report to the relevant tender boards for approval.

Tender Boards

The Financial Secretary has appointed the following tender boards, each consisting of not less than three persons, to consider and decide on the acceptance of tenders -

- **Central Tender Board** chaired by the Secretary for the Treasury to deal with high value tenders which exceed those values specified for the subsidiary tender boards. Currently tenders for supplies and general services exceeding $10 million and tenders for construction services exceeding $30 million are considered by the Central Tender Board.
- **Government Supplies Department Tender Board** chaired by the Director of Government Supplies to deal with tenders, except works contracts, of a value not exceeding $10 million.
- **Public Works Tender Board** chaired by the Deputy Director of Architectural Services to deal with tenders for works and related contracts of a value not exceeding $30 million.
- **Marine Department Tender Board** chaired by the Deputy Director of Marine to consider marine tenders of a value not exceeding $5 million.
- Printing Department Tender Board chaired by the Government Printer to consider Printing Department tenders of a value not exceeding $5 million.
  (The above financial limits of the tender boards reflect the position as at 3 May 1999. They are subject to regular review.)

On considering a department's tender report, the tender board takes into account the department's recommendation and justifications. The board may seek clarification from the department before accepting the department's recommendation. The decision not to accept any tender in a tender exercise must be made by the relevant tender board.

Award of Tenders

Upon notification of the tender board's approval, the Government Supplies Department or other procuring department will inform the successful tenderer in writing of the acceptance of his tender and invite the supplier/contractor to execute a contract with the department. The procuring department will also inform unsuccessful tenderers of the outcome of their bids and generally the reasons why their tenders are unsuccessful. Given our commitment to respect commercial confidence, we ensure that the details given will not disclose tender information provided by another tenderer in confidence.

The name of the tenderer awarded the contract is published, along with the contract sum of all contracts awarded in the preceding month in the Government of the Hong Kong Special Administrative Region Gazette and on the Internet in the following month.

Delivery Requirement

Delivery of goods is usually made on a consignment or on an as and when required basis. Tenderers are required to quote their prices at **FOB** (Free on Board), **CIF** (Cost, Insurance and Freight), or **DDP** (Delivered Duty Paid) or **FIS** (Free into Storehouse including stacking) terms as stipulated in the Tender Schedule.

Payment Terms

Detailed payment terms and methods are stated in the tender documents. Local suppliers are mostly paid by cheques and overseas suppliers by telegraphic transfer, bank draft or letter of credit. In supplies contracts, payment is normally made upon acceptance of goods though milestone payments related to performance targets may apply for contracts of high value and complexity. In service contracts, milestone payments related to performance targets or service provided is the norm.

EXHIBIT 5
LIFE-CYCLE OF A TENDER

A. TENDER ISSUE

Procuring Department

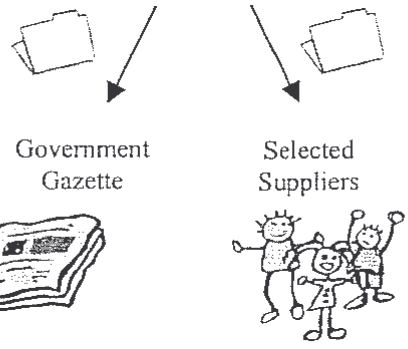
- Tender specifications are prepared as per SPR guidelines.
- Both hard and soft copies are submitted to GSD.

GSD

- Appropriate "Terms and Conditions" are added to tender document.
- Vetting is done on the draft documents.
- Final tender documents are approved according to the laid down authorities.

Tender Issuing

- Relevant suppliers are selected from the Supplier Database.
- Tender documents are printed and mailed to the Trade Commissioners and selected suppliers.
- Tender documents are typically 2-inch thick. Printing is done through Government printers and usually takes a week. There are storage problems associated with keeping extra copies in case they are needed during the 6-week tender period.
- Suppliers receive tender documents by postage usually 1 week after tender issue date.



ETS Improvements

- All documents transferred electronically
- "Standard Term and Conditions" added electronically
- Electronic interface with the Supp;ier Database for sourcing and supplier selection
- Savings in paper printing, storage and delivery among the parties
- Round-the-clock system availability

B. TENDER ENQUIRIES AND CLARIFICATIONS

Suppliers

- Questions and enquiries are faxed to GSD.

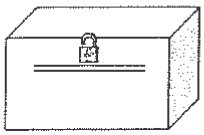
GSD

- Questions are addressed.
- "Addendum & Clarifications" are mailed to suppliers (need to manually keep track of supplier response and status).

ETS Improvements

- Supplier enquiries handled via email over the Internet
- Time and labour savings in faxing, paper preparation and delivery among the parties
- "Addendum and Clarifications" posted on website for supplier downloading
- Supplier activities logged and tracked electronically

C. TENDER OPENING



GSD Tender Box

Tender Opening Room

- Supplier tender offers are delivered to the GSD Tender Box at the building lobby by tender closing time (12 noon). Suppliers usually submit tenders before the tender closing date to allow for postal and courier delivery delays.
- Submitted documents are manually sorted and selected by due date.
- Documents due for closing are transported to the Tender Opening Room with a hand-cart.

- Tender offers are opened by the Tender Opening Committee.
- Tender offers are chopped, signed and time-stamped on every page of every copy.
- Verified tender documents are delivered to the procuring department for evaluation.
- Hard copies of document are kept in the Confidential Registry.

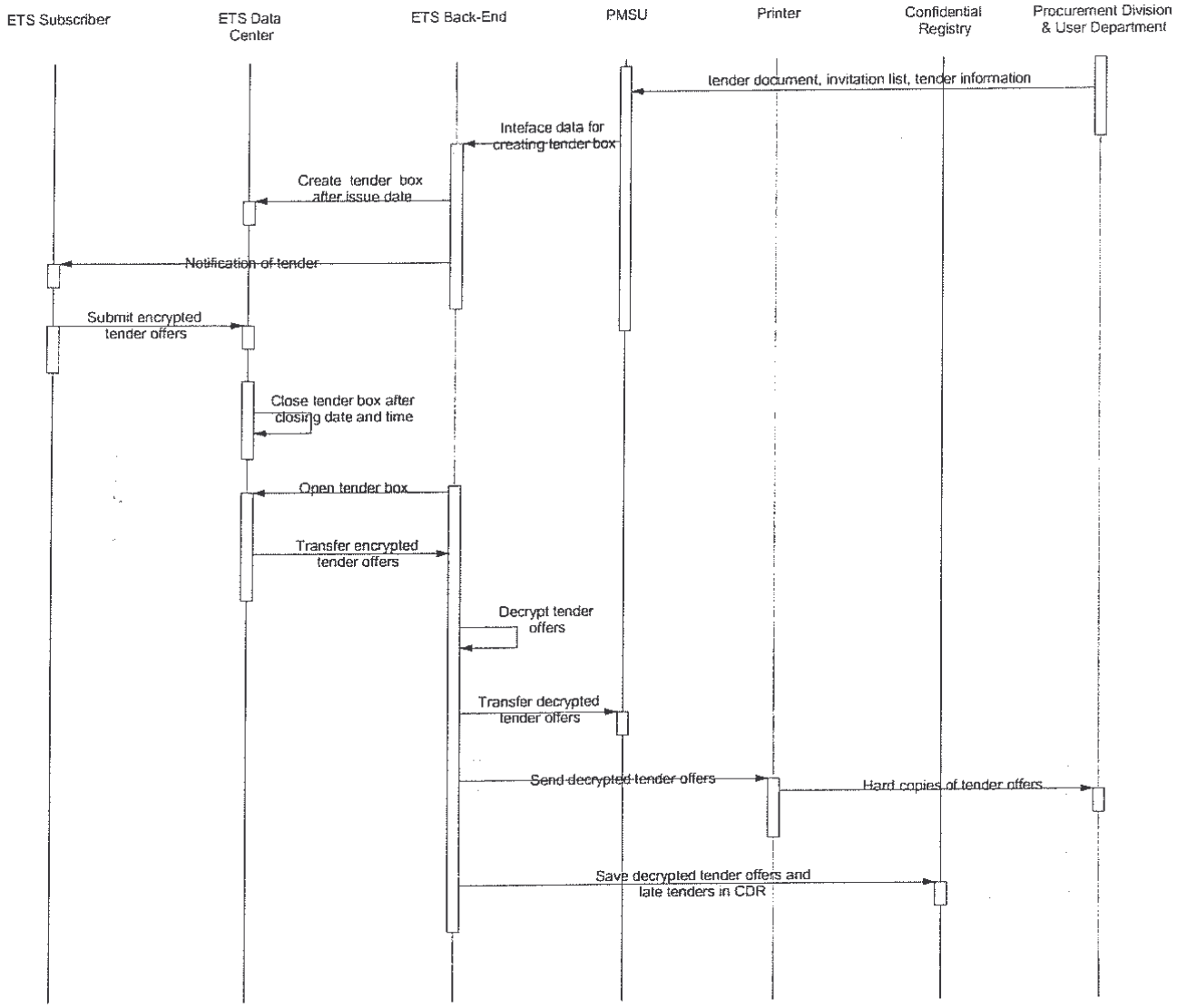
ETS Improvements

- No need for physical delivery of tender documents
- Auto printing, auto sorting and auto time-stamping of documents
- 2 hours manual work for tender opening with ETS, compared to 8 hours in paper process
- No need to keep hard copies in the Confidential Registry

- The diagrams above represents a typical tender lifecycle for the purchase of products between HK$1.3 and 10 million in value. The process varies according to the type of procurement (sales of products, purchase of services, etc), the value of the procurement, and the practices of procuring departments.
- Sales of products follow a flow similar to the purchase of products, in a reverse direction. The purchase of services flow is under development in Phase 3.
- Some smaller departments without senior officers seconded from GSD will refer their smaller purchases (under HK$1.3 million) to GSD for tendering.
- Certain large departments issue their own service tenders without going through GSD. Tender opening, however, has to be conducted by GSD's Supplies Tender Board or the Central Tender Board.

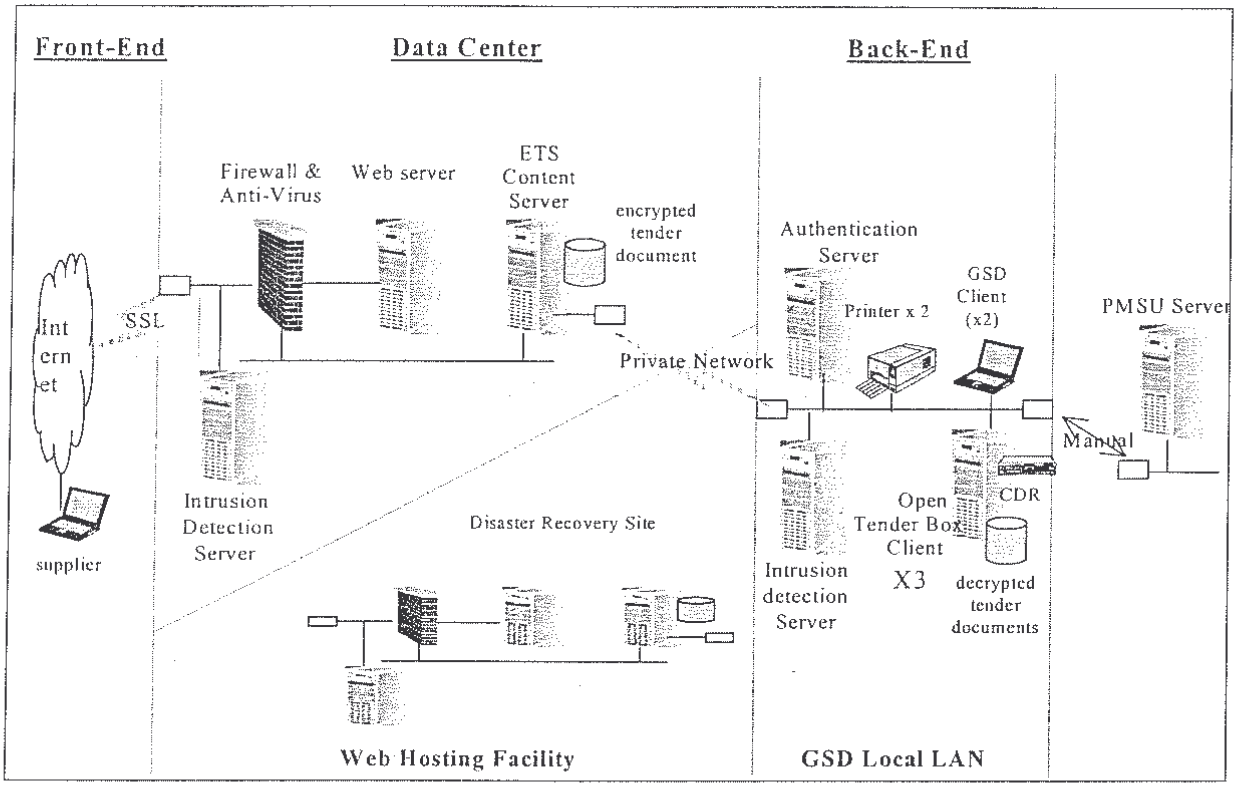
Source: Interview with Mr. Allen Lee, Chief Technical Officer, GO-Business, 1 March, 2002.

EXHIBIT 6
THE ELECTRONIC TENDERING PROCESS



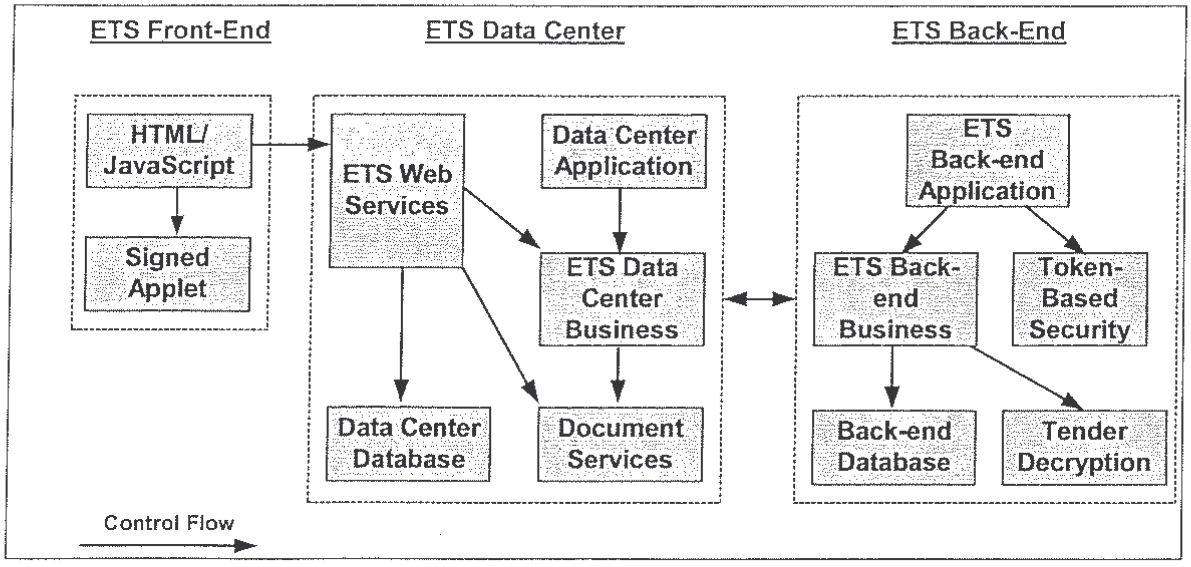
Source: Computer & Technologies, "The Government Supplies Department Electronic Tendering System (ETS) Application Scoping Document, March 2000.

EXHIBIT 7A
PHYSICAL COMPONENTS OF THE ELECTRONIC TENDERING SYSTEM



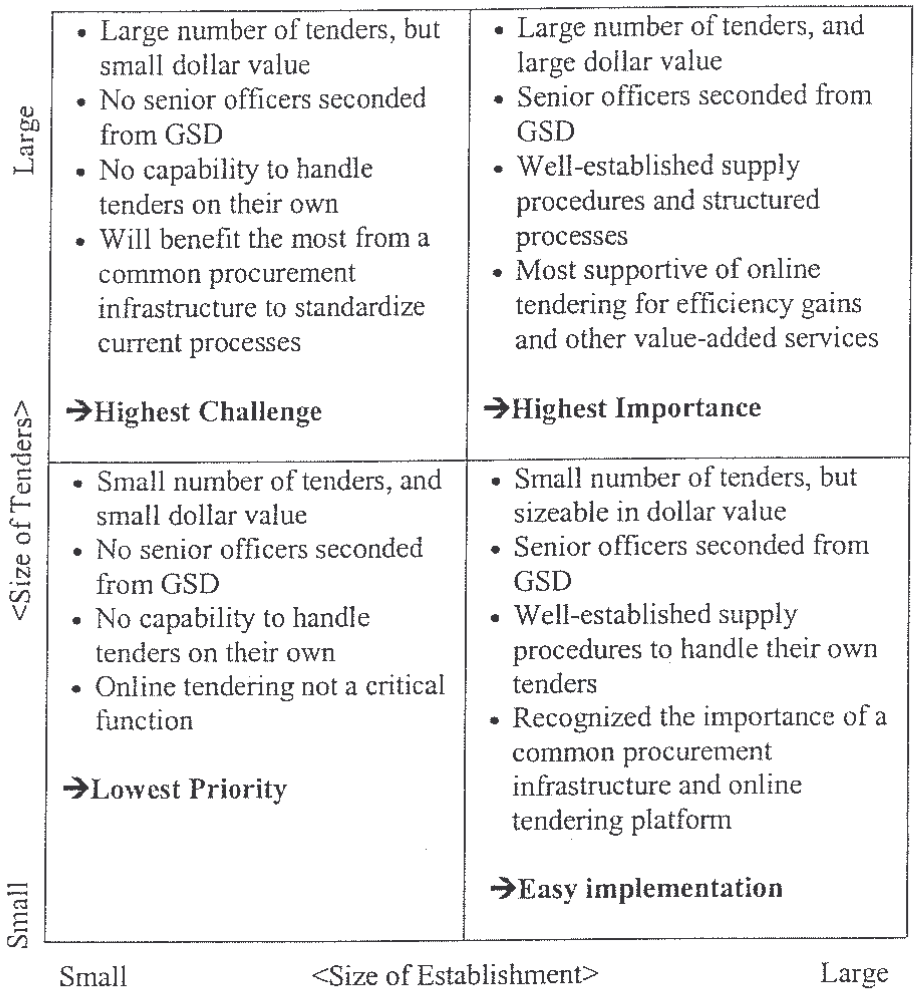
Source: Computer & Technologies, "The Government Supplies Department Electronic Tendering System (ETS) Application Scoping Document, March 2000.

EXHIBIT 7B
PHYSICAL COMPONENTS OF THE ELECTRONIC TENDERING SYSTEM



Source: Computer & Technologies, "The Government Supplies Department Electronic Tendering System (ETS) Application Scoping Document, March 2000.

EXHIBIT 8
CLASSIFICATION OF PROCURING DEPARTMENTS FOR PHASE 3



Source: Interview with Mr. Allen Lee, Chief Technical Officer, GO-Business, March 1, 2002.