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Response to the Public Consultation Paper on 2004 Digital 21 Strategy

A joint submission by the:

- Hong Kong Computer Society
- Hong Kong ASP Industry Consortium
- Hong Kong Chapter of the Pearl River Software Industry Alliance

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1. Background

This document is responding to the "Public Consultation on 2004 Digital 21 Strategy" issued by the Communications and Technology Branch (CTB) of the Commerce, Industry and Technology Bureau (CITB). It contains the joint responses from the Hong Kong Computer Society, the Hong Kong ASP Industry Consortium and the Hong Kong Chapter of the Pearl River Software Industry Alliance.

The public consultation paper touches on a full array of topics and it solicits input on many issues stemming from these topics. In our responses, we have grouped these issues into following four major areas:

- IT in the Government
- IT Industry Development
- Human Capital Development
- A Digital Inclusive Society

2. IT in the Government

The SAR Government is the largest "single" user of IT products and services of Hong Kong. In the past three years, its IT expenditures accounted for, on the average, HK\$4.6 billion per annum. This figure while not all of it was used in the procurement of products and external services, nevertheless when compare with the total local IT market size ¹ of the same period, can easily demonstrate the significance of this public expenditure on the overall local IT market.

Our government IT spending is not only a powerful force that can contribute to the shaping of our local IT industry, it also represents a major investment needed for reforming our public administration and service delivery capabilities in order to effectively meet the challenges of a fast-changing community.

¹ Total IT market size of Hong Kong from 2000-2002 are 17.1, 22.8 and 19.7 billion Hong Kong dollars respectively. (Source: IDC Report and TDC published figures)





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2.1. IT Management in the Government

We strongly support the Government's consideration to create a Chief Information Officer function, with the objective of effectively providing *cross-departmental leadership* and taking an "enterprise" and holistic approach in driving our e-government initiatives.

The current distribution of IT management responsibilities, capabilities and delivery skills between the ITSD and the departmental IT management units (ITMU) is not conducive in addressing the needs of departments engaging in business processes that should be and could be better coordinated through timely and accurate information exchanges. As a stopgap measure, the e-Government Coordination Office was created in CTB to fulfill this important mission. A more permanent solution must be found to replace this temporary arrangement. Without adequate considerations and institutionalized mandates for inter-departmental, collaborative integration of information resources, the continued expansion and creation of larger "departmental IT islands" could become a costly mistake that Hong Kong cannot afford.

We support the establishment of a CIO function in the SAR government, but not the creation of a single CIO post. For a metropolis as large as and as complex as Hong Kong, we believe that the creation of several CIOs supporting clusters of bureaux/departments (B/D) with closely related business functions is a more viable approach in the management of our government IT needs.

CIOs are not just technical experts, they must be well-versed with the domain knowledge of the clusters of agencies that they are serving. They must be able to critically review and fundamentally re-design business processes by making responsible and innovative use of technologies. The lack of domain specific knowledge for the clusters of agencies that they are serving will prevent them from recognizing business process re-engineering and information integration opportunities of these organizations.

These cluster-based CIOs are also required to possess in-depth understanding of the current trends in IT. They must be able to harness the power of information





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resources to reap their full benefits for improvement of operational efficiency and effectiveness of not just one single department but the broader interest of multiple departments and the public. In addition to the recognition of the *commonalities of their technological needs*, these CIOs must also be fully aware of the importance in identifying the *common business needs* of the agencies that they are serving, defining inter-organizational information resources and requirements, taking advantage of the business improvement opportunities made possible through tighter integration of these information resources.

For illustrative purpose, one of the possible ways for aligning the CIO positions in Hong Kong serving functional clusters of B/Ds is as follows:

- 1. Health and Welfare related functions
- 2. Education and Manpower related functions
- 3. Law enforcement and justice related functions
- 4. Public works, transportation and lands related functions
- 5. Financial planning, management and revenue collection related functions.

Experience from cities and governments with sizes comparable to Hong Kong has demonstrated that the creation of a single CIO or a "super-CIO" overseeing a group of departmental CIOs or IT managers is not effective in dealing with the complexities of today's IT management needs in these governments. We must avoid making the mistake that some governments have previously made by the creation one "super-CIO" who can only scratch the surface of many problems but unable to commit time, overcome resistance, remove oppositions and provide strong leadership in solving any of them.

Without the benefit of very thorough research and analysis, we tend to believe 5-6 CIO managed IT clusters can be set up in Hong Kong. These clusters comprise B/Ds bearing some degree of commonalities of their IT needs and having the pressing needs to improve information exchange capabilities in their business processes. Similar to the national or provincial CIO associations established in other governments, these 5-6 CIOs can coordinate their work crossing the cluster boundaries through a committee chaired by a senior official of CITB.





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We agree with the need to perform a comprehensive institutional review of our IT related functions in the government. The identification of a more effective structure for the coordination and management of our e-Government initiatives is only one of the elements required in such an important review. We need a reformed institutional structure that can provide a central focus, develop coordinated programme, make effective use of our limited resources and apply concerted efforts in addressing a broad range of issues including some of those outlined below.

2.2. Outsourcing Policy and Management

The Hong Kong SAR government has effectively adopted an outsourcing policy in the last few years to meet the increasing workload of its e-Government initiative and leverage such opportunities to stimulate the growth of the local IT industry. It is time for us to perform a self-assessment of this policy with an aim of further improving it in order to meet the challenges of a fast-changing society.

In addition to the comparison of total overall costs, one of the commonly used benchmarks in the private sector for measuring the effectiveness of outsourcing is the cost of expending time of internal staff in managing the outsourced work as a percentage of the overall outsourcing costs. In the private sector, the outsourcing management cost is typically ranging from 5% to 18% of the overall outsourcing costs depending on the nature of the outsourced work. When this ratio is too high, it potentially indicates a situation of wasteful *over-management* that could also result in the suffocation of innovations from the outsourcing partners.

Some of the following observations from the industry may be of value to CITB in the review of its IT project outsourcing strategies and practices:

• The length of time required from the start of feasibility study, approval of funding, tendering, bid evaluation and selection leading to eventual contract award can take years for a complex IT project. It is not uncommon to have projects with feasibility studies done and funding approved for business problems that may have already evolved or changed. Moreover, solutions may have to be substantially re-designed to replace the old technologies recommended in the original feasibility study before an implementation contract can be awarded. We must be prudent in expending public resources. But there are subtle differences





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between prudence and zero-risk-taking conservatism. IT is a fast-moving industry and we are facing a moment in the Hong Kong history requiring fast responses to the changes in our community. Prudence must be properly balanced with the right amount of risk-taking attitude and the corresponding risk management abilities to create new successes.

- Many IT firms including large, multi-national organizations find the government standard contractual terms for the procurement of IT products and services overly harsh. One can always argue that there are companies willing to accept these terms and therefore, they must be appropriate and fair. One must be reminded, there is always a cost associated with the transference of essentially all risks to the supplier in any type of contractual negotiation. The more responsible a supplier is, the more conservatively priced strategies it will take in order to balance the risk and the harsh conditions that it is exposed to. In addition to the loss of time, there is also a real financial cost associated with a zero-risk-taking attitude in our procurements.
- The insistency by the government to own the intellectual property (IP) of the software developed for government contracts is not consistent with the policy designed to cultivate and grow an indigenous IT industry. Confidentiality of information provided to suppliers for the design and development of the IT solutions and software should be protected through non-disclosure agreements and not to confuse it with IP ownership. Many governments with matured IT industries allow their contractors to own the IP of the software developed from the government projects. To ensure that government has the right to re-use the software in other projects, they often sign contracts with the suppliers to obtain the perpetual rights of using the software to support more than just their immediate needs. As further protection, they sometimes obtain access to the source code of the software and put it under escrow for maintenance purposes. However, software IP remains in the hands of the commercial sector so that it can be more effectively exploited and turned into incomes. These incomes to the commercial sector indirectly increase the tax contributions to the government. With this argument, we urge the SAR government to seriously and critically review the purpose of insisting on the ownership of the software IP. Additionally, the industrial trend of using pre-built components owned by the contractors in







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software development projects will further complicate the IP ownership issues. Fail to recognize this problem and find effective solution quickly will prevent us from taking full advantage of using pre-built components with IP owned by the contractors to support our government projects.

2.3. Effective Use of Local Innovations

There is currently a big disjoint of the innovations created by the local universities and research bodies with funding made available through the various ITF schemes from the application needs of government B/Ds and publicly funded organizations. This undesirable outcome can be attributed to several factors:

- Innovations created at local universities and research bodies are generally not "product-ready" for commercial deployment;
- The lack of visible commercial opportunities discourages the large number of small IT firms in Hong Kong to cooperate with the universities and research bodies to further invest on the productization of these innovations; and
- The lack of an open and fair mechanism for the Government B/Ds, as users of IT to collaborate with the private sector and universities to jointly innovate solutions to meet their business needs. Difficulties in and long lead-time required for obtaining funding for IT projects can only afford these organizations to make use of the institutionalized, air-tight procurement procedures in obtaining product and services. Innovation and risk-taking are luxuries generally not rewarded in the current culture.

We must find ways to break this deadly embracing triangle to make our ITF investments work. In addition to the normal procurement process of using matured technologies to solve well-defined problems, government organizations can be encouraged to assume the roles of "sponsoring users" and take advantage of the research capabilities of the local universities to create innovative solutions for less-well-defined problems which are relevant to their business needs. When presented with more apparent business opportunities, the local IT industry will automatically find their ways to participate more actively and meaningfully in such collaborations.





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This type of arrangement is not new in other governments. United States of America, through many of its special programme, grants and research funds; Mainland China through its national 863 funding scheme and various local government funds are encouraging government organizations, as sponsoring users to challenge research bodies and commercial sectors with less well-defined problems requiring innovative solutions and the expansion of existing envelops to new limits.

Innovative society starts from an innovative government with innovative public policies. Innovative industry requires the nourishment and support of innovative users.

Our continued funding of the ITF schemes may require a closer re-examination of the eco-system needed to sustain such commitment. In addition to providing funding, there is a more important role that the government must play in creating and using local innovations.

3. IT Industry Development

The IT industry is never a city-centric industry that can propel itself to success based purely on local demands. There is no example in the world that one can quote as an exception to this cold rule. The R&D investment required of the IT industry is generally too big to be absorbed by revenues derived from a small, localized market.

The most pronounced problem that the Hong Kong IT industry facing now is the lack of market growth. The bursting of the dotcom bubble, the fierce and arguably unhealthy competition created by the temporary in-balance of supply and demand, the lack of new investments, the shortage of new jobs and consequently stopping the flow of new talents entering into the industry are some of the short-term but painful problems that the industry as a whole must boldly face today. We do not see needs for the government to rush into applying quick-fixes to these problems or to hand-out "candies" as pacifiers. The industry must heal itself through self-correction to become stronger.





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Instead of providing quick-fixes to cover-up symptoms, the government has its more important responsibilities in developing and implementing longer-term industry policies to support the growth of the IT industry. *Policies aiming at the development of new markets are the most important ones that must be tackled with high degree of urgency.* Without market growth, technological innovations, new investments, new jobs, education and training, talents infusion are all peripheral issues which may even be considered as irrelevant by the trained eyes.

During the time Hong Kong created tremendous economic prosperity through its manufacturing industry, the Trade Development Council played a pivotal role in the development of the international markets for the consumer products that we have produced. Such success was created against a backdrop of a very different historical and world economic settings. Developed nations have voluntarily given up the manufacturing of many consumer products through gradual outsourcing to lower-cost regions. Hong Kong, together with other Asian nations, benefited from such an opportunity.

In the development of our local IT industry, we must maintain an international perspective without the benefits of "buyers" coming to Hong Kong "telling" us what they want from us as in the era when our manufacturing industry was developed. Selling IT products and services is fundamentally different from the promotion consuming goods. Our old glory provides very little insight to us for creating new successes; instead, it could become a hindrance if we are not critical of ourselves and blindly apply old formula to new problems.

One cannot over-emphasize the importance of associating the right level of attention and the allocation of needed resources by the government to the development of new markets for the Hong Kong IT industry. Very thorough analysis of the various target markets, their diversified demands, our potential competitors, our strength and weakness against a global and regional setting will be required before we can find the right positioning for Hong Kong. A shotgun approach to this very competitive and diversified international IT market can only mean automatic failure.

Many nations in the regions, including Singapore, Thailand and Vietnam have set up dedicated functions within their governments to provide focused resources and





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strong leadership in the development of their IT industries. Aggressive and balanced development of the domestic, regional and international markets is clearly an important topic in their industry development agenda. Closer to home, Mainland China has for many years putting the development of the IT industry as one of the top priorities in its industrial policy. The success it has achieved owing to hard work of the past twenty some years is a strong statement for the needs of such level of government leadership and foresight in cultivating an industry from close to non-existence to account for one quarter of its export trade value of today. We cannot leave the development our industries entirely to chances under the tired cliché of "positive non-intervention". Fair, open and responsible leadership will not be confused as intervention.

Some suggestions on the strategy and programme for the development of new IT markets are given below to trigger further discussions between government and the industry:

- The Closer Economic Partnership Agreement (CEPA) can be leveraged to attract multi-national software firms to set up development facilities in Hong Kong to develop products for licensing in mainland China. Products developed here with the made-in-HongKong status can take advantage of differentials in the import duties when sold into the mainland. The re-adjustment of cost structure of Hong Kong for software development has turned this once impractical business proposition viable.
- The IT industry of Hong Kong has developed through the years very valuable experience and application expertise in a number of key industry sectors, including transportation, logistics, supply chain automation and management. These sectors are growing very rapidly in the mainland and with the right strategies of lobbying and promoting these solutions. They can become win-win opportunities for both Hong Kong and mainland IT firms.
- Some governments, including Germany and USA are using their government subsidies to bank interest on import-export loans to promote their products and to support their industries to sell more competitively in the international markets, including mainland China. The Hong Kong SAR government can explore this strategy further to create opportunities for both







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the financial services and IT sectors. Through the EXIM schemes, governments of these countries not only help their industry sectors in winning international business, but also control the risk of payment collections from the projects they have won.

Hong Kong can be positioned as the base for selected mainland IT firms to expand into the international market through partnership with local companies. Hong Kong must transform itself from the diminishing role of "stepping stones" for foreign firms to enter into the mainland. We must seize the opportunity of becoming the preferred partners for mainland firms entering into the international markets. Software development outsourcing services is one of the key industry strategies adopted in the mainland for the next ten years. Our Hong Kong software industry must not allow such opportunity passes us without our direct contribution and participation.

We strongly urge CITB to commit more focused attention and strong leadership to the development of an indigenous IT industry with maximum leveraging on the resources that can be available to us in the Pearl River region. Some sectors of the IT industry, such as software, intelligent electronics, digital content publishing and semi-conductor design can be cultivated into the new elements fueling our industrial growth of the coming decades.

4. Human Capital Development

Our "IT in Education" investments targeted at the secondary schools, vocational training institutes and employee-retraining programme have in the last few years produced noticeable results. It has produced a generation of workforce with sufficient IT skills to meet the demands in many employment situations. The high rate of broadband networks penetrating into schools and homes in Hong Kong is also a clear indication of the success of this investment. An IT literate generation has been created through a well-orchestrated programme that has aggressively brought IT into our schools in the last few years.





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Our current problem is not the lack of IT skills in the workforce but instead, lack of jobs requiring the skills that we have invested to develop. We must therefore, put proportionate attention and direct some of the public resources to jobs creation and job market development to make use of the human capital that we have invested to develop.

On the broader perspective of IT in Education, It is worth noting that IT can be and should be used to broaden our learning experience substantially. Learning is no longer confined within the perimeters of the schools and the libraries. networks, on-line education contents and services, teachers and students can engage in learning and educating activities outside of the traditional classroom environment. One can browse through on-line electronic libraries to complete their research work without leaving home. Students can interact with each other or with their teachers and tutors through networked computers. All these will bring very profound changes to the way by which our education contents can be structured and developed. Contents with a rigid adherence to established syllabus will not be able to satisfy the appetite for knowledge of the new generation of students and teachers. At the same time, students fed on this type of rigid and highly structured syllabus will become less equipped to deal with the demands of an information and knowledge intensive society. One of the most important benefits of the integration of IT into our education processes is to allow the students and teachers to venture out, to go beyond their familiar territories, to extend their experience, to form the habit of continuous learning, to step outside of the rigid syllabus of the subjects they are being examined on. As part of the deliberation on the strategic direction of IT in Education, one needs to re-think our current educational practices and gradually develop their replacements reflecting this characteristic and to encourage this type of behavior among our students, parents and teachers.

4.1. <u>Development of the Qualification Framework</u>

The attempt made by EMB on the development of a qualification framework (QF) and its associated assurance mechanism for IT will be a very difficult if not impossible task. The development of an overall QF with the general requirements and progression paths clearly defined between the levels of the framework has some values. However, the rigid definitions of the training specifications and their articulations are neither necessary nor desirable for a fast-changing discipline such





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as IT. Such rigidity, particularly for level 5 and above of the QF, is not practical in terms of maintenance of the QF documentations and more detrimentally it can suffocate ingenuities in creating new courses to reflect the ever-changing nature of the IT discipline. We urge CITB to discuss with EMB in re-evaluation the choice of using IT as a pilot in the QF design work.

4.2. e-Learning and Contents Publishing

The recent SARS crisis that struck Hong Kong and the region demonstrated the critical importance of e-Learning to students of all ages, in all subjects and in the communication between home and school. We urge the government to work with EMB to set aggressive and quantifiable targets of delivering a certain percentage of the curriculum in our schools and universities through e-Learning means by the end of this decade.

Again, Hong Kong is a relatively small market for the justification of large-scaled development of e-Learning material. For it to succeed, one may need to think outside of the boxes that we have previously imposed on ourselves. With policy support from both mainland and HKSAR governments, collaboration of the industries can then be forged for the joint development of e-Learning contents for subjects such as English, Chinese, mathematics, sciences, literatures and history for delivery in a larger market of both Hong Kong SAR and the mainland. This is potentially an opportunities allowing Hong Kong to expand into the e-contents publishing industry which includes online games and educational contents development.

4.3. Professional Development and Certification

The Hong Kong Computer Society is now working with government agencies and professional bodies in the Mainland for the cross certification of software professionals. Professional conduct, codes of ethics and the articulation of experience gained through professional practice are crucial elements of any professions including IT to become successful in the society that they serve. In addition to formal education and trainings, we must establish a clear and disciplined framework to allow our professionals to grow, to excel, to recognize, to discharge their responsibilities and to uphold the values of our profession.





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We welcome the opportunity to work closely with CITB and EMB in designing and developing such framework of professional certification in Hong Kong. This certification system must not degrade itself into a registration system of craftsman as we have seen in some previous proposals.

5. A Digital Inclusive Society

The Hong Kong government has notable progress in bridging the digital divide. We support the government's position for enhancing accessibility of web sites or electronic publications to enable all citizens, including the elderly and those with disabilities, to access government information and services. Thus, appropriate accessibility requirements should be taken into account during the design of information systems in the government. These requirements must be approached with an "enterprise" view instead of resorting to a system-by-system, ad-hoc undertaking. The cost of an ad-hoc approach will be prohibitively high that will potentially make this initiative financially not viable. Moreover, the effective use of local innovations mentioned in Section 2.3 should be considered very seriously for the development the technologies required.

We must not limit our effort in bridging the digital divide of "people" alone. There is another very important dimension to the problem of digital divide in the business sector. Hong Kong is indisputably world-class in the applications of IT in many of its industry sectors such as: financial and banking services, gaming, retailing, mass transit management, airport management, air and sea cargo logistics handling. Government is also enjoying some leadership positions in application areas such border control, public services delivery and ID card issuance. However, the application of IT among the large number of SME of Hong Kong is a shameful contrast to the success enjoyed by the large and resourceful organizations. This is a form of "digital divide" that will create inequalities of a different type. The loss of competitiveness of the SME will eventually deprive our economy the needed diversities and innovations characteristics of a healthy eco-system consisting of many SME.

Other governments have created programme to support the adoption of IT in their SME sectors. It is more than the provision of "cheap" hardware subsidized by the





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government or the private sector. More importantly, it is the software, the services, the know-how and the overall environment required to induce the SME to proactively use IT in improving their businesses.

We understand that the SME issues are beyond the scope of the current consultation. However, we still like to take this opportunity to urge CITB as a bureau to take concrete steps and CTB as a branch of CITB to create targeted programme including IT related ones to assist our SME to meet the challenges at this defining moment of our economic structural transformation. The small business administration agency of the USA is a good model for us to use as a reference. (http://www.sba.gov)

6. Coherent Approach to these Issues

Many of the issues that we have discussed in these four areas are inter-related. A coherent approach with meticulously synchronized efforts must be adopted in finding and implementation their solutions.

The institutional review and subsequent reform to create a central focus for the development of IT related policies and the implementation of these policies will be the most important steps that we must boldly tackle without hesitation in order to identify the needed solutions to these issues plus the ones that other organizations are echoing.

The Hong Kong Computer Society and organizations jointly submitting their input in this paper welcome the opportunities to further elaborate the points contained in the submission with CTB.