This paper is the joint response of the British Computer Society (Hong Kong Section), the Hong Kong Institution of Engineers (Information Technology Division), Information Systems Audit and Control Association - ISACA (Hong Kong Chapter), Institute of Electrical and Electronics Engineers - Hong Kong Computer Chapter[1] and Internet Professional Association on the Public Consultation on Digital 21 Strategy (October 2006).

1. General

1.1.1. A well-developed city requires supportive ICT policy and initiatives to promote its ICT development. With planned and dedicated support, the government shall work together with the IT industry to maintain Hong Kong's competitiveness and create value for its citizens.

1.1.2. The consultation paper should include a comparison on the local IT strategies with other countries and cities nearby in order to assess the competitiveness and positioning of HK's IT strategies in the global market

2. Outsourcing of Government Contracts

2.1.1. It is noted that in 2005-06, about 93% in value of new government IT projects were outsourced. We fully support this initiative to promote the local IT industry.

2.1.2. However, the failure rate of government IT projects is starting to be apparent, with some of the mega projects running into problems. Below are our suggestions to improve the situation.

2.2. Project Management

2.2.1. One of the key success factors of successful IT projects is to deploy suitable human resource to manage the projects. We understand that the OGCIO is strengthening the training to user managers. We also consider that the success of IT projects can be improved by employing qualified IT professionals to manage and deliver these projects.

2.2.2. Given the increase in complexity of IT projects and thus conflicts between users

[1] The IEEE-Hong Kong Computer Chapter supports Sections 1, 3 and 4 of this response.

and contractors, the government is advised to study the benefits of introducing an impartial role of management in managing the IT contracts, similar to "The Engineer" in engineering contracts.

2.2.3. Cost management, milestone tracking, quality management, communications, procurement and risk management are key factors to successful IT project management. The government should promote and recognize these skill sets as an integral part of project management training and requisites in IT project outsourcing.

2.3. Conditions of Contract and Assessment Practice

Contract Documents – risk sharing and continuous review

2.3.1. A successful IT project begins with a well-prepared contract. The IT industry has expressed concerns on the unfair contract terms. While we do not totally agree with their allegation, we believe that a well-prepared contract balancing the project risks of government and the industry will benefit both parties. This will also reduce the amount of contractual negotiation before award of tender.

2.3.2. A task force involving the contractors, professional bodies and government departments, to standardize and continuously review the conditions of contract is suggested. Experiences from other disciplines, e.g. engineering, and other countries, e.g. Australia, have demonstrated that this is a feasible and industry-accepted approach.

2.3.3. There lacks a standard measure in quantifying the value of IT projects and the value of work done. The government is suggested to work with academia and the IT industry in developing methods of measurement to gauge the size of IT project, its scope and resource requirement including the total cost. The methods of measurement will also facilitate the measurement of progress and payment.

2.3.4. There appears to be a lack of consistency in the level of details included in the government tender specifications. It is suggested that the scope of a functional specification for budgeting purposes should be better defined, taking industry's practice into account.

Change Procedures

2.3.5. In IT projects, changes are usually dealt with by administrative means, such as under the monitoring of a Project Steering Committee. The government should consider introducing change management mechanism in the conditions of contract for IT contracts, similar to those adopted in engineering works contracts.

Cost of Tendering

2.3.6. Contractors have commented that the cost of tendering varies from 2-5% of the contract estimate. With multiple tenders, this would represent significant resource drain from the community as a whole in the tendering process. Demonstration during tendering process constitutes a significant portion of the tendering cost. It is therefore proposed that the process and content of the demonstration be more streamlined and better defined to minimize the social cost. Overseas practice in providing appropriate fee to short-listed firms for the demonstration should also be considered.

Flexible Assessment

2.3.7. With the rapid advancement in technology, counter-proposals are sometimes unavoidable. A suitable mechanism should be devised to handle the alternatives submitted by contractors.

2.3.8. Given the importance of the quality of IT projects, in the procurement exercises, emphasis should be placed on service and product quality to minimize the disadvantages of "Lowest Bid Wins" situation.

2.4. Public Private Partnership

2.4.1. The government should foster more Public Private Partnership (PPP) collaboration opportunities in delivering more value-added e-government services. This will serve to aligning the objectives and ownership of a project, which in turn will enhance the quality and efficiency of the project.

3. Digital City

3.1. IT Infrastructure and Investment

3.1.1. In addition to financing R&D work of advanced technology, the government should also finance the establishment of territory wide and large-scale hardware

infrastructure for some advanced technologies, especially those that involved land resources, like city wide wi-fi network or a supplementary positioning network to GPS in densely populated urban area. According to the winner of the Hong Kong ICT Awards 2006: Award of the Year[2], the cost of base stations for a territory-wide wi-fi is around HK$15 million. The government is strongly recommended to promptly install this infrastructure for the benefit of the society as a whole. This will be one of the bases of a digital city in a few years to come.

3.1.2. The government has invested a significant amount of capital on IT infrastructure such as Cyber Port and Hong Kong Science Park projects. Apart from being financially self-sufficient, these infrastructure projects should strive to achieve revenue income to finance the continual development of technology in Hong Kong. The keys to long term IT development, apart from the IT infrastructure, are the IT talents. We suggest that besides self attainment, the revenue made by the organizations running Cyber Port and Hong Kong Science Park projects should be act as recurrent investment in IT education projects, such as continual IT education for professionals and IT youth projects.

3.1.3. ITF fund has run for a number of years, but the success rate of commercialization is still relatively low. The government should increase support on the funded R&D projects to realize into the commercialization stage. Monitoring of project milestones, progress tracking and control of expenditure are also key ingredients for projects to succeed.

3.2. Measurement of a Digital City[3]

3.2.1. The government should study and establish the definition and measurement criteria for digital city.

3.2.2. The definition of a digital city can be considered by both quantitative and qualitative parameters. Since a digital city is driven by the digital economy, more emphasis should be put on the ICT readiness of the business sector.

3.2.3. The existing surveys carried out by the government including the penetration of PC or Internet access (residential / business), number of PC and all types of mobile devices can help evaluate the infrastructure supporting the ICT development of a city. In addition, measurements aligning the objectives of

[2] Source: ALTAI Technologies Ltd., which was spun off from the Hong Kong Applied Science and Technology Research Institute Company Limited (ASTRI) in May 2006.

[3] References: The Economist Intelligence Unit 2006, The UNICT Task Force 2004

value creation of a digital city including the adoption rate of e-business, digital transactions, wireless LAN, corporate web sites, investment on IT systems like enterprise resources planning system, customer relationship management system, point-of-sales system, etc. of firms, especially for the small and medium enterprises, should also be considered. Such data can provide a better picture on the applications of ICT in SME. Large firms would tend to have already implemented sophisticated IT systems but not the SME.

3.2.4. In addition to the studying of 'penetration of digital resources' as mentioned above, the government should also layout methods to measure the 'utilization of digital resources'. For example, reports can be made on the number of government services being transacted online, through the counter and IVRS for each department etc. This will provide useful information of the resource utilization and assist the planning of future strategies and directions.

3.2.5. The role of the government should not be overlooked. Thus, we should also measure the development of eGovernment services using penetration rate of the Smart-ID cards, other smart cards (e.g. Octopus), linked electronic patient records system, digital mapping of a city etc. On the other hand, we should evaluate the barriers to Internet, PC and e-commerce in order to eliminate these barriers and foster better communications. Information security is a key criteria in the development of eGovernment services, from both the developer and user perspective.

3.2.6. The government should work closely in alliance with the IT sector for a more transparent and comprehensive definition of a 'Digital City' also taking into consideration of its implications and implementation strategy.

3.3. eHealth

3.3.1. There is no timeframe for the eHealth related initiatives mentioned in Chapter 8. Without a schedule, there is a risk that the discussion will drift.

3.3.2. Public service delivery can be achieved via partnership with private sector but there is little mentioning of the role of private sector. There exists a large gap of deploying eHealth in the territory, such as the inertia exists in the medical professionals and the difficulty of promoting private sector to adopt eHealth. It is suggested that more positive initiatives should be taken to narrow the gap of territory-wide adoption of eHealth, especially the facilitation of private sectors to use various eHealth tools and technology.

3.4. eTransportation

3.4.1. When the basic framework of TIS completes in 2008, the two key services: IRN and PTIS, can undoubtedly benefit both the public and the industry. However, it is unclear from the consultation paper on the charging model of the services offered to the public and industry. The government should carefully study the affordability and feasibility of the public and industry in using the services.

3.4.2. Once the TIS for Hong Kong is completed, the issue of interfacing our TIS with the TISs of other mainland China cities and provinces with close relationship with Hong Kong in terms of transportation should be considered to enhance the significant cross-border logistics flow.

3.5. Information Security

3.5.1. Emphasis should be put on data protection in the review of the recent cases on leakage of privacy data among several government or semi-government departments, such as Independent Police Complaints Council (IPCC).

3.5.2. However, such events indicate not only a security issue on privacy data, but also other sensitive information inside the government and different industries. The government should improve the IT governance, standards and framework as well as the best practices for IT security auditing and compliance.

3.5.3. Prevention or security control measures over sensitive information should be considered to strengthen Hong Kong as a major financial centre. In view of a number of major corporate and accounting scandals, such as Enron, WorldCom, HealthSouth, which involved prominent companies and millions of dollars of investors in the United State, the general industry trend is therefore pushing more disclosure and formality on corporate governance, and hence IT governance being part of it, with information security being a key element of IT governance. As a result, new legislation such as Sarbanes-Oxley (SOX) [4] has emerged to improve overall governance of enterprises in relation to their internal controls.

3.5.4. Apart from SOX, several other legislations have also emerged to improve the enterprise governance and security control measures in different industries such as Gramm-Leach-Bliley Act (GLBA), Health Insurance Portability and Accountability Act (HIPAA), and Federal Information Security Management Act (FISMA) in US which protect sensitive information involved in various industries

like financial institutions, hospitality and Federal organizations.

3.5.5. In addition to the abovementioned legislation to improve governance, COBIT (Control Objectives for Information and related Technology) is an IT governance framework and supporting toolset that allows managers to bridge the gap between control requirements, technical issues and business risks. It will be a useful reference which enables clear policy development and good practice for IT control throughout organizations, enabling organizations to meet today's business and IT challenges.

3.5.6. The government should take note of the above framework and legislation development worldwide, and should suitably apply to HK's environment, in order to improve the overall corporate and IT government of both the public and private sector, maintaining HK's competitiveness in terms of governance excellence in the global market.

3.6. Digital Divide

3.6.1. Refer to section 7.16, we support the task force initiated by the government.

3.6.2. There are not enough training venue and education programmes in the 18 districts. We suggest increasing the resources on such facilities and events.

3.6.3. Refer to section 7.16, youth and unemployed teenagers segments' needs should also be included.

4. IT Adoption and Resource Planning

4.1. Promote Understanding

4.1.1. The government should further promote her IT strategy and Hong Kong residents' understanding on the importance of IT to the growth and competitiveness of Hong Kong economy.

4.1.2. The government should provide education in IT adoption in SME such as IT matching fund for SME, in order to enhance their productivity.

4.2. Promote R&D

4.2.1. The government should provide more support on the technological research and

higher education in Hong Kong to enhance the competitiveness of the local industry.

4.2.2. In Chapter 4, the consultation paper focuses only on the infrastructure. It should also include how to promote talents in local research. It seems that fewer local graduates choose research as their further study or career. There may be two main reasons. First, they may not perceive research as a life-long career. Secondly, the current undergraduate curriculum has not been able to provide incentive to students in pursuing research. As a result, students are neither ready nor motivated to take up research upon graduation.

4.2.3. The government should provide more support such as tax incentive to the industry for encouraging their involvement in the IT technological research in Hong Kong. The current policy is too restrictive. A more flexible and direct-benefit approach such as tax reduction should be explored such that more companies are willing to actively invest in high-tech business.

4.3. Resource Planning

4.3.1. While the government plans to create Hong Kong as a digital city, it is important for the government to ensure there will be sufficient local supply of ICT professionals in various disciplines.

4.3.2. The government should provide effective policies to train Hong Kong IT practitioners to meet the manpower requirements of the industry on both quantity and quality.

4.3.3. In the joint projects between Hong Kong and the mainland, the Hong Kong IT professionals would in general take up the role as project manager, business analyst, system designer and implementation agency; and our mainland counterparts would be responsible for system development. Therefore, to equip the Hong Kong IT professionals to perform their above roles effectively, the Government should encourage more training to equip our Hong Kong IT professionals with the appropriate business knowledge, project management and communication skills. The training should also focus to equip our Hong Kong IT professionals the capability as intermediary to bridge the gap between business needs and technical requirements.

4.3.4. The government needs to review the digital city vision and define in some details what it should contain, then identify which projects and developments are essential in building and maintaining a digital city; hence identify the 'right' type

of skills and expertise to be needed in each area, and how much resources are required and for how long, etc. For example:

- In IT Education, how many ICT Professionals are needed to teach and support the development?
- In encouraging SMEs to adopt more ICT, how many more software developers, business analysts, infrastructure engineers, day-to-day support personnel, trainers, etc. are needed?
- In mega infrastructure projects, how many project managers, network engineers, etc. are needed?
- In ICT Innovation, how many ICT research engineers are needed?
- How to control cost and measure against the project's benefits?

4.3.5. Once the government acquires some reasonable estimates on the types and number and timing of ICT professionals needed to build and support a digital city, the next step is to find ways to facilitate the supply of such resources.

4.3.6. The government should ensure that the employment opportunities would be offered in priority to the Hong Kong citizens given the same level of competence.

4.3.7. As the ICT job opportunities increase, the government should prepare an appropriate education plan to train and professionalize the right number of ICT practitioners.

4.3.8. The government should be proactive in seeking out innovations and creative talents in the IT community. Access to financial and resource assistance should be provided efficiently to the IT community to foster innovative and commercially viable projects.

4.3.9. In Section 5.8 (page 31), although QF is on the way, the paper does not mention the role of the government in providing/facilitating/promoting training and education for IT practitioners to meet the different levels of qualifications under the QF. The government should propose an attractive policy to support, facilitate and promote training and professionalism among the industry/employers, training providers and IT practitioners. Otherwise, our ICT workforce will lack the readiness to new technological advancement hence become passive in meeting future challenges.

4.3.10. In summary, the resource planning to build and maintain a digital city, along with creating job opportunities for the Hong Kong's IT industry with benefits and value creation to the community and its citizens should be a key part of the Digital 21 Strategy.

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