



Tricor Consulting Limited

REPORT ON THE IT MAN WORKSHOP

Prepared for

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TABLE OF CONTENT

| | |
|-------------------------------------------------|----|
| EXECUTIVE SUMMARY | 4 |
| I. INTRODUCTION | 7 |
| II. THE WORKSHOP | 8 |
| PREPARATION FOR THE WORKSHOP | 8 |
| WORKSHOP RUNDOWN | 9 |
| III. SUMMARY OF DISCUSSION RESULTS | 10 |
| IT MANPOWER GAP AND ISSUES | 10 |
| OPTIONS | 16 |
| PLENARY DISCUSSION | 21 |
| ANNEX – LIST OF PARTICIPANTS | 22 |

EXECUTIVE SUMMARY

With an aim to strengthen the Information Technology (IT) workforce for sustainable IT development of Hong Kong, the Office of the Government Chief Information Officer (OGCIO) organised an “IT Man Workshop” on 12th December 2012. 55 participants, including representatives from the academia, employers, IT employees, Human Resources or IT recruitment firms, members of the Digital 21 Strategy Advisory Committee and the Task Force on Industry Facilitation, and IT organisations and associations, joined the Workshop. The Workshop started with three guest speakers sharing research findings on IT manpower in Hong Kong, challenges and practices for managing IT talents and resources, and young IT professionals’ view on career in IT. The participants were then divided into four groups to identify the demand-supply gap of IT manpower in Hong Kong, the underlying issues, improvement options and their implementation implications. After the group discussion, the Group Leaders presented the key issues and major options for a plenary discussion.

IT MANPOWER GAP AND ISSUES

Although the participants came from different stakeholder groups, their views on the IT manpower demand-supply gap and the issues were similar. The manpower supply in terms of quantity was largely in line with the steady growth in the demand of the industry. However, the quality of supply fell short of the expectations of employers, indicating a competency gap. The key issues were -

1. **Changing landscape for the IT profession** – With extensive outsourcing and off-shoring, the IT profession has been transforming from mainly supporting business operations to leading the growth of the economy and the development of businesses, resulting in changing competency requirements, and at the same time, making the IT profession challenging and rewarding.
2. **Challenges for IT practitioners to keep abreast of the rapidly expanding and changing competency requirements** – In addition to up-keeping their technical know-how on new and evolving technologies, the IT professionals need to meet the employers’ demands for competencies in other areas, such as business acumen, project management, communication, in order to remain competitive. The competency requirements of 21st century IT professionals are diverse, all round and versatile.
3. **Lacking recognised professional qualifications and investment in training and development** – In the absence of recognised competency standards and sufficient investment of employers and employees in continuous professional development, it is hard to raise the status of IT professionals.
4. **Perceptions of lacking prospects and job security in IT career** – With more IT off-shoring and contract staff employment resulting in less training and career opportunities, the perception of IT as a highly volatile industry and the pressure for up-keeping knowledge and skills with rapidly changing technologies, job security and career prospects for IT professionals may not appear attractive.

5. **Inadequate rewards and public recognition for the demanding jobs of IT professionals** – The perceptions of working long hours under pressure and the demand for adapting swiftly to the changing technology world with low public recognition and unattractive rewards make it difficult to attract talents to join the IT profession.
6. **Gap between IT education and industry demand** – Curriculum of education institutions cannot match the changing need of the IT industry with expanding competency requirements and evolving technologies. Additionally, employers often expect graduates to have some practical experience and exposure.

OPTIONS

The participants had proposed various options for nourishing a sustainable IT workforce in Hong Kong. The major ones were as follows -

1. **Formulating a policy to develop Hong Kong IT industry as a sustainable and rewarding business** – A medium to long-term option that can increase innovative activities to nurture the IT industry, making it more attractive to the workforce and students.
2. **Formulating a policy to nurture local IT companies** – A short to long-term option that can facilitate the growth of local companies and create job and learning opportunities for IT professionals which in turn promote the development of the IT profession.
3. **Promoting the contributions and status of the local IT companies** – A short-term option that can enhance public recognition of the contribution of the IT industry and professionals and raise their social status.
4. **Encouraging local companies to adopt IT and foster knowledge-based companies** – A short-term option that can improve the demand for IT application and create more IT jobs.
5. **Encouraging life-long learning** – A short to medium-term option that can facilitate continuous development of the IT workforce and the career development of practitioners, ensure quality of training, help strengthen professional recognition and meet the changing needs of the IT industry.
6. **Promoting professional recognition and qualification** – A short to medium-term option that can help accelerate the acceptance and recognition of IT certifications and improve professional recognition.
7. **Encouraging employers to adopt good human resources and talent management practices** – A short to medium-term option that can help attract and retain talent through better working conditions, reward, better career and professional development.
8. **Expanding the IT manpower pool, e.g., bringing in overseas IT professionals with specific skills and non-IT degree holders** – A medium-term option that can fill the gap between employer requirements and local workforce's skill set, increase manpower supply flexibility and bring in new skills and ideas.
9. **Improving planning for IT education** – A medium to long-term option that can help increase the interest of primary and secondary students in IT and facilitate the supply of quality new blood into the IT profession.

10. Promoting IT study and career to the public – A short-term option that can facilitate the public to understand the career prospects of the IT profession, and improve the quality of new intakes with enhanced skill sets.

The outcomes of the Workshop indicated that the understandings of the IT manpower issues and the views on the improvement options were quite aligned among the stakeholder groups. Such common views would be beneficial for the stakeholders to work collaboratively in making the desired changes.

I. INTRODUCTION

The past decade has been a time of tremendous change for the public sector. The Government of the Hong Kong Special Administrative Region (the Government) works closely with stakeholders in the industry, and to review the roles and responsibilities for policy formulation and implementation, to explore new ways of meeting the community's changing expectations. Additionally, other strategic challenges and key drivers for future economic growth are evolving.

In the Information Technology (IT) sector, the Government is committed to creating an environment for an agile IT workforce to flourish and meet the needs of the society. In recent years, there has been general perception from the local IT industry that there are difficulties in recruiting quality IT graduates to join the IT workforce.

To drive IT manpower development and strengthen the IT workforce for sustainable IT development of Hong Kong, the Office of the Government Chief Information Officer (OGCIO) invited representatives and members from various stakeholder groups to an "IT Man Workshop" on 12th December 2012.

The objectives of the Workshop are -

- To explore if there is any gap between the supply and demand of IT professionals in Hong Kong;
- To identify the underlying issues or problems that lead to the gap; and
- To recommend solutions for the identified issues and problems.

Tricor Consulting Limited (Tricor) was appointed by OGCIO to provide facilitation services for the IT Man Workshop. This Report summarises the particulars and outputs of the Workshop for follow up.

II. THE WORKSHOP

The IT Man Workshop was held on 12th December 2012 at 41/F Revenue Tower with 55 participants from the following stakeholder groups -

- Members of Digital 21 Strategy Advisory Committee (D21SAC) and the Task Force on Industry Facilitation (ITTF)
- Academia
- Employers
- IT Employees
- Human resources (HR) or IT professional recruitment firms
- IT Organisations and Associations

The participants were divided into four groups of similar size. Four participants were invited as the Group Leaders to facilitate the Breakout Focus Group Discussion, which was the core of the Workshop. Tricor assigned a Facilitator to oversee the entire Workshop, four Group Assistants to support the Group Leaders, and a team of staff to work with OGCIO to provide support for the Workshop. The Government Chief Information Officer (GCIO) and Deputy GCIO (Policy and Customer Service) served as Observers.

PREPARATION FOR THE WORKSHOP

Prior to the Workshop, Tricor prepared a Facilitation Kit and met with the Group Leaders to familiarise them with the workshop design and enable them to facilitate the group discussions. In order to better prepare the participants to contribute their views and ideas in the group discussions, OGCIO also sent an Information Kit to all participants about the facts and figures on IT manpower in Hong Kong.

WORKSHOP RUNDOWN

With a view to stimulate thinking, the Workshop started with three speakers sharing with the participants the latest research findings on IT manpower in Hong Kong, challenges and practices for IT talents and resources management in the perspective of employers, and the new generation IT professionals' views on pursuing their careers in IT.

Following the sharings, the Workshop moved on to breakout focus group discussion session. 90 minutes were scheduled for the session. During the group discussion, the four groups were required to -

- Identify the most critical IT manpower issues;
- Brainstorm options for "Nourishing a sustainable IT workforce in meeting the changing needs of Hong Kong";
- Evaluate the options in detail and prioritise them; and
- Suggest the responsible parties, next steps and implementation timeframe for those high priority options.

After the group discussion, the Group Leaders presented the most important issues and the best options identified by his/her group to all the participants. A plenary discussion session then followed to invite comments and feedback.

The results of the breakout focus group discussion and the plenary discussion are summarised in Section III below.

III. SUMMARY OF DISCUSSION RESULTS

The Workshop participants participated actively in the group discussion. With diversified backgrounds, dedication to further development of the local IT industry and participants' frankness in sharing their views, the groups were effective in generating views and ideas from different perspectives and stimulating exchange of ideas.

All the four groups had completed discussion on the IT manpower issues and improvement options. With time constraints, the discussion on the responsible parties, next steps and implementation timeframe were only partially completed. The following sections summarised the outcomes of discussion.

IT MANPOWER GAP AND ISSUES

The IT industry in Hong Kong contributes to the economy mainly through enabling, facilitating and promoting the development of other sectors with the application of IT, adding value to the strategy and operations of organisations, and fostering creativity and innovation in society. As expected, the growth of the IT industry has been very much in line with the consistent growth of the economy of Hong Kong in recent years, resulting in the moderate growth in the demand for IT professionals.

Recent manpower statistics indicated that the supply of the IT workforce has been stable and adequate. However, the quality has not been able to meet the needs of organisations, indicating a gap in the competencies of the IT workforce. The issues leading to the gap are multi-faceted and include lack of hands-on opportunities, lack of career prospects in IT, lack of public recognition, weakness in IT education planning, and fewer students studying IT related courses.

In the fast changing technological environment, technical skills can become obsolete in a short period of time. IT professionals have to continuously learn new technologies and competencies. Professionals at middle level with a few years of experience quite often find themselves in a disadvantageous position in competing for jobs as their salaries are at a higher level comparing to people with less experience, but their past experiences in technical products may no longer be valuable. Some of them may find it hard to stay competitive in the market. They might consider other career opportunities outside the IT industry, resulting in adverse impact on the supply of manpower.

The participants then moved on to identify issues that caused the gap. Although the participants came from different stakeholder groups, it appeared that they had similar views on the most critical IT manpower issues. The top issues identified by the four groups were very much in common, as follows -

1. Is IT a sustainable and rewarding profession? Extensive off-shoring and relatively inadequate local job opportunities (in particular in emerging and innovative technologies) are not conducive to industry development and growth.

It is always the first question one asks in considering joining the IT profession as a life-long career. Will the IT industry be prosperous and rewarding in the coming years? Some might say that the IT industry is shrinking due to the significant degree and extent of IT outsourcing and offshoring to other places. We are losing IT jobs to the Mainland, Philippines, and India, etc.

Back in the 80's and 90's, many Hong Kong companies, especially large enterprises in the logistics and financial sectors, would develop their own IT systems (e.g. accounting and finance systems, transaction processing systems, and operation and manufacturing systems). Nowadays many Hong Kong companies have been outsourcing or offshoring development and operation of IT systems. Even local IT software houses might outsource the main bulk of IT development works to other places such as the Mainland, Philippines and India.

New technologies and IT systems are fostered and developed mostly outside Hong Kong. As a result, there is often a competency gap especially in new and emerging IT technologies as it takes time to introduce and deploy them into Hong Kong. The large extent and degree of outsourcing and offshoring of development work will unavoidably limit the opportunities and the pool for IT practitioners to acquire/create new technical skills and techniques which are crucial and essential for their future career advancement. There are less hands-on job opportunities for IT practitioners to upkeep their IT knowledge and competencies. Furthermore, skill transfer from the outsourced vendors back to the companies is often inadequate. They might have to resort to other learning channels such as through the Internet or training courses run by international IT vendors.

On the other hand, the IT industry has transformed progressively from mainly supporting business operations to re-engineering and leading the economy and business growth and development. IT professionals have been doing more value-added and creative work and increasingly playing the leading CIO role in ensuring long term competitiveness and success of the economy, industry and business. For example, IT professionals have increasingly contributed to making Hong Kong a knowledge economy in all industry sectors and all facets of the society. However, the transformation of the IT industry will continuously affect the supply and demand of IT manpower both in terms of competency requirements and the quantity in the respective IT functions and business domains.

In short, the IT profession will continue to be prosperous and rewarding if it can continue to evolve into an agile profession leveraging emerging IT technologies for the long-term and sustainable development and growth of the economy, industry and business. The issue is to foster sustainable industry development and provide more job opportunities. In this regard, the IT industry needs to do more IT research and development, carry out more local development of innovative products and services, consider reducing the extent of outsourcing and conduct more implementation of large scale infrastructural projects for our pillar industries. Moreover, all organisations (including SMEs) should fully leverage IT for business growth and development.

2. The challenges and difficulties for IT practitioners to keep abreast of the rapidly expanding and changing competency requirements

IT industry is an ever-changing and expanding industry. Everyday there are emerging new technologies and techniques which will either become more mature and popular gradually, or will become obsolete as time goes by. To cope with the changing momentum of the IT industry, IT professionals have to continuously upkeep their technical know-how, competencies and skills. Unlike other professional disciplines, such as accounting, engineering and medical, their core competencies and skills requirements are relatively stable and defined, the technical competencies of IT practitioners are more dynamic with an average life cycle of about two to three years (e.g. for the Windows OS platform, Microsoft introduces new OS version every 2 years on average).

Twenty or thirty years ago, the pace of changes in the IT industry (mainly in the mainframe era) was relatively slow and predictable. Both universities and organisations had more understanding and capacities to match supply with demand. On one hand the IT industry could afford a longer period of time to nurture a new technology, and on the other hand the IT professionals enjoy more time to catch up with new technologies through continuous learning and hands-on experience. But under the current information age with new technologies emerging at light speed, it becomes very difficult, if not impossible, for IT professionals to keep abreast with all new technologies. It is relatively difficult nowadays to ascertain the skills/competencies that need to be developed, and which ones would add value to the marketability of IT professionals and the competitiveness of the employer organisations in the longer term.

Transforming from an industrial society to an information society, today the employers require the IT professionals to work not only on the technical aspects, but also drive the business by leveraging on emerging IT technologies to transform the organisations for better and more innovative services. Indeed, the IT profession has been expanding its core competencies from traditional IT competencies to business domains. Just maintaining a set of prevailing technical skills is not sufficient to advance in the IT career ladder. IT professionals need to acquire soft skills such as project management, change management and interpersonal communication, and have a strong understanding of the business processes and challenges. The competency requirements of the 21st century IT professionals are diverse, all round and versatile including IT expertise, business acumen and soft skills. Lacking any of these skills will inevitably impede their progress in the career ladder.

In short, employers have experienced difficulties in finding IT professionals with the necessary competencies, especially for new and evolving technologies, and soft skills.

3. Lacking recognised professional status and qualifications for IT professionals. Both employers and employees are unwilling to invest in continuing professional development

To keep abreast of the rapidly expanding and changing competencies, both employers and employees should invest time and resources for professional development. On one hand employers of IT practitioners should invest sufficiently in their human capital and provide training and development opportunities to their IT employees so that they can remain competent and fully contribute to the business. On the other hand, IT practitioners themselves should invest in learning new skills and competencies to stay competitive. Without effective and structured continuing professional development (CPD), IT practitioners can hardly survive in the ever dynamic IT market.

However, amid the heavy workload every day, resource priority is often given to the day to day operation over staff training and career development. Training is mostly to address essential skills for immediate operational needs, rather than longer term career development. Not many employers would support and recognise CPD for their employees, for example, in promoting and recognising relevant professional competencies and qualifications in recruiting and developing human capital, to ensure that IT employees can stay competitive in the dynamic IT landscape. The challenge is that some SMEs might not have the capacity and budget for CPD of their employees. Nevertheless, each and every IT practitioner should keep abreast of the field and to stay competitive in order to have a rewarding and lifelong career. They should network with other IT practitioners for mutual support and development.

Recently, there is a breakthrough which academia, professional bodies, industry and business representatives jointly developed the specification of competence standards for the Hong Kong IT industry under the Qualification Framework. It is a living document of the IT profession which clearly specifies the functions, roles and responsibilities of the IT practitioners and the competency standards for IT practitioners in performing various IT functions. It serves as a holistic framework and specification for the IT industry to communicate with the employers, IT practitioners and employees, academia, training organisations and students on what the IT profession can offer and do, and the associated competencies required to do the work. It can also serve as a framework for career development and planning.

4. Perceptions of lacking prospects and security in IT career

As more and more organisations might consider outsourcing/offshoring IT functions to other places, the number of IT jobs in certain areas/functions, especially in software development, has become limited. Some IT practitioners might worry that their jobs will eventually be offshored to places with relatively lower costs, salary and office rent. They might also worry that their past experience alone might not add value to their career as IT products and technologies can become obsolete quickly in time.

Furthermore, many organisations might prefer to engage contract staff instead of permanent staff. It provides the flexibility to draw expertises into the organisations as it would be relatively costly to develop/maintain the expertise in-house. However, the organisations seldom take care of the career and training development of contract staff. These contract IT practitioners may not have a sense of job security and loyalty to the organisations.

According to the 2012 ICT Manpower Survey conducted by the Vocational Training Council, the labour market in the IT sector increased considerably in May 2012 with total IT employment rose to 78 685 employees, representing an increase of 7% over May 2010 (73 378 IT employees), and about half of them were working in IT and communications services organisations. As compared with 2010, most of the new ICT jobs (4 702 out of 5 307 new jobs) came from IT and communications services organisations. However, there is a perception that jobs in the IT and communications services organisations are more volatile and fluctuating with the economical condition. Some IT practitioners might choose to work in IT users organisations for more job security in the long run.

In general, some people do not consider the longer-term prospects of IT professionals promising. With reference to the ecosystem of the Hong Kong IT industry, i.e., heavy outsourcing and lack of practical experience on new technologies, lack of investments for research and development, changing nature of IT works and core competencies, the career prospects in IT industry are perceived relatively not as attractive / competitive as other industries such as financial services and investment, medical and legal.

5. Hard to attract talents into the IT profession due to a lack of public recognition and the demanding working conditions

There is generally a lack of public awareness and understanding of the various roles, functions and contributions of the IT profession especially when the IT industry is evolving rapidly. There is a perception that the standing of the IT profession is not as well recognised as other leading professions, for example, medical, legal and civil engineering. The IT profession has yet to establish an elite professional image in the society. While there are examples of local successful persons in other professions such as medical, civil engineering, financial and logistics, the Hong Kong IT industry lacks renowned success cases such as Bill Gates, Steve Jobs, etc. Furthermore, IT professionals seldom talk about their works and contributions to businesses and the society.

It is often perceived that IT practitioners need to work long hours in demanding working environments, with tight deadlines and heavy workload especially in IT and communications service organisations. They need to handle a wide range of tasks and have to work under high pressure for most of the time. IT practitioners need to adapt to the rapidly changing environment of the IT industry, learn fast and upkeep their competencies and capabilities. On the other hand, even employers might find it too technical and difficult to fully apprehend and appreciate the functions and contributions of the IT professionals.

Although recent salary survey data have indicated that the compensation of IT practitioners at various levels was in line with other professions, there are perceptions that IT practitioners are not adequately rewarded and recognised when compared with other professions, such as the legal, accounting and finance industry. With the general perceptions of low public recognition, inadequate rewards and undesirable working conditions, it appears that the general public in Hong Kong, in particular, students and parents, no longer consider a career in IT as promising as before. Millennials may consider that IT jobs are too demanding and cannot align with their life style. As a result, it is difficult to recruit talents to study IT or enter the IT industry.

As the IT profession is relatively new and with the fast changing nature of the industry, we should continuously promote to the public the functions, responsibilities and contributions of the IT profession in making a better world and society, and to build up its professional image and public recognition which is conducive to attracting more people to pursue IT as their life-long career.

6. Gap in bridging IT education and industry demand

According to the 2012 ICT Manpower Survey conducted by the Vocational Training Council, 87% out of 707 responding fresh IT first-degree graduates were in full-time employment. The successful participation in IT related jobs was 77%. According to another survey conducted by the Vocational Training Council, 760 out of 1219 (or 62%) Higher Diploma graduates of IT Discipline in year 2011 were in employment as at January 2012 (i.e. 6 months after their graduation). In the 2012 IT Industry Employment and Salary Trend Survey conducted by the Hong Kong Computer Society, a total of 58 companies returned the questionnaires, of which 47% reported that they had hired fresh IT graduates in 2012. The 2010 ICT Manpower Survey revealed that 26% of employers had difficulties in attracting suitable candidates with the relevant experience during their recruitment exercises in 2009/10.

These reflected that there has been a gap between IT education and industry demand. On one hand, for a dynamic and changing IT industry with expanding competency requirements and evolving technologies, education institutions might find it difficult to upkeep its curriculum to meet with the demand of the industry. On the other hand, employers often expect practical working experience and exposure from fresh IT graduates.

To narrow the gap, it is envisaged that major employers of IT graduates should take the lead to bridge the interim gap between the education institutions (the supply) and the industry's expectations and demands, such as offering industrial attachment and internship to students and graduates to facilitate them to start their professional career. And IT professional support organisations should play an active role in helping the education institutions and students to establish networks with one another and the industry.

With the introduction of New Senior Secondary Curriculum since 2009, secondary students can only take a lesser number of elective subjects in public examination than the Hong Kong Certificate of Education Examination (HKCEE). They tend to choose "promising" subjects that can increase their chances of admission by universities. According to the 2012 Hong Kong Diploma of Secondary Education (HKDSE) Examination Results released by the Hong Kong Examinations and Assessment Authority (HKEAA), only around 8,000 students had taken the examination for the "ICT Curriculum", which was only around 11% of the total number of students eligible for the HKDSE Examination. More effort should be put to promote and inspire students of Secondary 3 to 6 to pursue ICT subjects and programmes for secondary and tertiary education, and choose ICT as their career.

OPTIONS

Various options were generated by the four discussion groups for nourishing a sustainable IT workforce in meeting the changing needs of Hong Kong. Taking into consideration the benefits which the options can generate, the implications for turning the options into initiatives, and the most significant IT manpower issues they can address, each group had identified five top options. They are summarised in the table below -

| Options | Benefits | Implications | Top Issues Addressed | Time-frame |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|
| 1. To develop Hong Kong IT industry as a sustainable and rewarding business, for instance - <ul style="list-style-type: none"> ▪ launching initiatives to shape an innovative environment and promote research and development ▪ implementing measures to attract foreign hi-tech companies to Hong Kong | <ul style="list-style-type: none"> ▪ Increase innovative activities to nurture the IT industry, making it more attractive to the workforce and students ▪ Inject new investment in IT, and introduce new technologies, business models, and ideas that can stimulate the growth of the IT industry and attract talents to the profession | <ul style="list-style-type: none"> ▪ Cost of the initiatives ▪ Stakeholder participation ▪ Competition for local companies | 1 2 4 | Medium-to Long-term |

| Options | Benefits | Implications | Top Issues Addressed | Time-frame |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|----------------------|----------------------------|
| <p>2. To nurture local IT companies, for instance -</p> <ul style="list-style-type: none"> ▪ encouraging more project work to be done locally ▪ encouraging local IT companies to keep up with technology advancement ▪ considering higher emphasis on local knowledge for tenders to reflect local needs and enhance the competitiveness of local IT companies | <ul style="list-style-type: none"> ▪ Facilitate local IT companies to grow ▪ Create more job and learning opportunities for IT professionals which in turn promote the development of the IT profession | <p>Cost of the IT projects</p> | <p>1 2 4</p> | <p>Short- to Long-term</p> |
| <p>3. To promote the contributions and status of the local IT companies, such as strengthening programmes for recognising technological innovation and value creation by local IT companies, as well as commercialisation of their ICT products</p> | <p>Improve recognition of the contribution of the IT industry and professionals and raise their social status</p> | <ul style="list-style-type: none"> ▪ Stakeholder participation ▪ Cost of the programmes | <p>3 5</p> | <p>Short-term</p> |
| <p>4. To encourage local companies, in particular, SMEs, to adopt IT and foster knowledge-based business operations</p> | <ul style="list-style-type: none"> ▪ Enhance SMEs' business operations ▪ Improve the demand for IT application ▪ Create job opportunities for IT professionals | <p>Limited resources of SMEs hindering their IT investment</p> | <p>2 4</p> | <p>Short-term</p> |

| Options | Benefits | Implications | Top Issues Addressed | Time-frame |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------------------|
| 5. To encourage life-long learning, for instance - <ul style="list-style-type: none"> ▪ with reference to the Qualification Framework, setting up accreditation, and certification programmes to formalise IT training ▪ promoting continuous training and structured CPD development through promotion, sponsorship and other programmes | <ul style="list-style-type: none"> ▪ Facilitate the continuous development of the IT workforce and the career development of individuals ▪ Quality assurance of IT training ▪ Pave the way to strengthen professional recognition ▪ Meet the changing needs of the IT industry | <ul style="list-style-type: none"> ▪ Cost for developing the framework and running the programmes ▪ Support of IT professionals and employer ▪ Stakeholder participation | 2 3 4 | Short- to Medium-term |
| 6. To promote professional recognition and qualification | <ul style="list-style-type: none"> ▪ Accelerate the acceptance and recognition of the IT certifications ▪ Improve the recognition of the IT profession | Support of IT practitioners and companies | 3 5 | Short- to Medium-term |

| Options | Benefits | Implications | Top Issues Addressed | Time-frame |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-----------------------------|
| <p>7. To encourage employers to adopt good human resources (HR) and talent management practices for IT professionals, such as, work-life balance (e.g. flexi-hours, work-at-home), competitive reward (short- and long-term), training and career development (e.g. career path and development programme, job rotation) and succession planning</p> | <ul style="list-style-type: none"> ▪ Attract talents to join the IT profession ▪ Retain IT professionals, provide them a promising career, nurture and enable them to continuously develop and meet the changing needs of the companies and society | <p>Willingness of the employers to invest in human capital which would take time to realise the intended benefits</p> | <p>2 3 4 5</p> | <p>Short to Medium-term</p> |
| <p>8. To increase the supply of IT professionals, for instance -</p> <ul style="list-style-type: none"> ▪ bringing in overseas IT professionals with specific skills ▪ driving towards a multi-disciplinary approach and getting non-IT degree holders to join the IT profession | <ul style="list-style-type: none"> ▪ Fill the gaps between the requirements of employers and skill sets of the local IT workforce ▪ Increase flexibility of manpower supply ▪ Bring in new skills and ideas that can stimulate development of the IT industry and profession | <ul style="list-style-type: none"> ▪ Threaten the job opportunities of local IT professionals ▪ Change in mindset about IT as a highly specialised profession only and the concept of IT as a closed workforce | <p>2</p> | <p>Medium-term</p> |

| Options | Benefits | Implications | Top Issues Addressed | Time-frame |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------|----------------------------|
| <p>9. To improve planning for IT education, such as -</p> <ul style="list-style-type: none"> ▪ starting IT education earlier ▪ enhancing curriculum of ICT-related programmes of education institutions to (a) ensure they can reflect the latest requirements of the industry; and (b) provide diversified and broad based knowledge, project management concepts, understanding of business processes, and business value of IT | <ul style="list-style-type: none"> ▪ Increase the interest of primary and secondary students in IT ▪ Facilitate the supply of quality new blood to the IT profession ▪ Supply of IT manpower meeting the needs of the industry and employers | <p>Change in education programmes will require buy-in of various stakeholder groups and investment</p> | <p>2 6</p> | <p>Medium to long-term</p> |

| Options | Benefits | Implications | Top Issues Addressed | Time-frame |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------|
| 10. To promote IT study and career to the public, for instance - <ul style="list-style-type: none"> ▪ through TV drama about IT profession, with more focus on students and parents, and female that might perceive IT as a male-dominated profession ▪ attracting high calibre students to study IT through offering student exchange opportunities, scholarships, internship, and other programmes | <ul style="list-style-type: none"> ▪ Facilitate the public to understand the career prospects of the IT profession, and the entry requirements to the profession ▪ Improve the quality of intake and supply of new blood with enhanced skill set | <ul style="list-style-type: none"> ▪ Cost of the promotion activities and the programmes ▪ Support of the universities and industry | 5 | Short-term |

PLENARY DISCUSSION

In the plenary discussion, participants generally emphasised the need to enhance the status of the IT profession and to improve the quality of the IT workforce.

It was a precious opportunity to gather over 50 industry leaders to exchange ideas for the betterment of the IT industry.

The outcomes of the Workshop indicated that the understandings of the IT manpower issues and the views on the improvement options were quite aligned among the stakeholder groups. Such common views would be beneficial for the stakeholders to continue to work collaboratively in effecting the desired changes.

ANNEX – LIST OF PARTICIPANTS

Group 1

| No | Name | Title |
|----------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Group Leaders | | |
| 1. | Mr. Sunny LEE | - Executive Director, Information Technology, The Hong Kong Jockey Club |
| Group Members | | |
| 2. | Mr. Andy BIEN | - Chief Information Officer, Hong Kong International Airport |
| 3. | Ms Clara CHEUNG | - Senior Systems Manager, Information Technology Services, Hospital Authority |
| 4. | Prof. David CHEUNG | - Professor of the Department of Computer Science, The University of Hong Kong - Member of Digital 21Strategy Advisory Committee (D21SAC) |
| 5. | Dr. William CHEUNG | - Associate Head, Department of Computer Science, Faculty of Science, Hong Kong Baptist University |
| 6. | Mr. Eddie CHU | - Product Manager, FlexSystem Limited |
| 7. | Mr. Jacky KAM | - Executive Director, Camcentre Limited |
| 8. | Mr. Richard LEUNG | - Senior Vice President, Co-Head – Information Technology Division, Hong Kong Exchanges and Clearing Limited |
| 9. | Dr. YK LEUNG | - Academic Director, IT Discipline/Institute of Vocational Education, Vocational Training Council |
| 10. | Ir. Dr. CM NG | - Chairman, IT Division of Hong Kong Institute of Engineers (HKIE) |
| 11. | Ir. CS NG | - Founder and Chairman, Computer And Technologies Holdings Limited (C&T) |
| 12. | Miss Sally NG | - Analyst/Programmer II, OGCIO |
| 13. | Mr. Jason PUN | - Chief Systems Manager (Digital Economy Facilitation), OGCIO |
| 14. | Mr Kelly SZE | - Creative Director, Edeas Limited - Member of D21SAC |
| 15. | Dr. Oliver YAU | - Managing Director, Objective Solutions Limited - Member of Task Force on Industry Facilitation (IFTF) |

Group 2

| No | Name | Title |
|----------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Group Leaders | | |
| 1. | Dr. Louis MA | <ul style="list-style-type: none"> - Acting Director, School of Continuing and Professional Education, City University of Hong Kong - Vice President (Professional Development), Hong Kong Computer Society (HKCS) |
| Group Members | | |
| 2. | Prof. CH CHENG | - Associate Professor, Department of Systems Engineering and Engineering Management, CUHK |
| 3. | Dr. Lawrence CHEUNG | - Vice-Chairman, Hong Kong Wireless Technology Industry Association |
| 4. | Dr. NT CHEUNG | - Deputy Chief Information Officer, Hospital Authority |
| 5. | Ms. Shirley HA | <ul style="list-style-type: none"> - Director, DigitalHongKong.com - Member of D21SAC |
| 6. | Prof. Ben KAO | - Deputy Department Head, Department of Computer Science, Faculty of Engineering, University of Hong Kong |
| 7. | Mr. Lawrence LAI | - Senior Systems Manager (Digital Economy), OGCIO |
| 8. | Ms. Judy LEUNG | - Chief Operating Officer, Arcotect Limited |
| 9. | Mr. Kit LI | - Analyst/Programmer II, OGCIO |
| 10. | Dr. Paul LIU | - Director, Chong Hing Information Technology Limited |
| 11. | Mr. Gordon LO | - General Manager, IT Industry Development Division, Hong Kong Productivity Council |
| 12. | Dr. Vincent NG | - Associate Head, Department of Computing, Faculty of Engineering, Hong Kong Polytechnic University |
| 13. | Mr. Ted SUEN | - Head of Information Technology, MTR Corporation Ltd |
| 14. | Mr. Allen WONG | - Business Development Director, FlexSystem Limited |

Group 3

| No | Name | Title |
|----------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Group Leaders | | |
| 1. | Prof. KY TAM | - Associate Provost, Dean of Students, Chair Professor of Information Systems, Business Statistics and Operations Management, Hong Kong University of Science and Technology |
| Group Members | | |
| 2. | Ms. Emily CHAN | - Director, Information Technology, Hong Kong Disneyland |
| 3. | Mr. Herman LAM | - Chief Executive Officer, Hong Kong Cyberport Management Company Ltd. |
| 4. | Mr. Victor LAM | - Deputy Government Chief Information Officer (Consulting and Operations), OGCIO |
| 5. | Mr. Michael LEUNG | - Senior Vice President & CIO, China Construction Bank (Asia) Corporation Limited |
| 6. | Hon Charles MOK | - Legislative Councilor, Information Technology Functional Constituency |
| 7. | Mr. Jimmy POON | - General Manager & Director, EDPS Systems Ltd |
| 8. | Dr. Raymond SO | - Lecturer, Computing Programme Team, Open University of Hong Kong |
| 9. | Mr. Tony TAI | - General Manager, IBM China/Hong Kong Ltd. |
| 10. | Ms. Anita TAM | - Assistant HR Manager, CLP Power Hong Kong Ltd. |
| 11. | Dr. Anthony TAM | - Academic Advisor, Department of Computer Science, Faculty of Engineering, University of Hong Kong |
| 12. | Mrs. Satti WONG | - Chief Executive Officer, International Transport Information Systems Ltd - Member of IFTF |
| 13. | Ms. Gloria WOO | - Analyst/Programmer II, OGCIO |
| 14. | Mr. Eric YEUNG | - Executive Committee member, Internet Professional Association |

Group 4

| No | Name | Title |
|----------------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Group Leaders | | |
| 1. | Mrs. Agnes MAK | - Executive Director, Hong Kong Productivity Council |
| Group Members | | |
| 2. | Mr. Andre BLUMBERG | - Director, Information Technology, CLP Power Hong Kong Ltd. |
| 3. | Mr. Hector CHAN | - Managing Consultant, Hewlett Packard HKSAR Limited |
| 4. | Mr. Horace CHOW | - General Manager, Microsoft Hong Kong Limited |
| 5. | Prof. Mounir HAMDJ | - Head, Department of Computer Science & Engineering, School of Engineering, Hong Kong University of Science and Technology |
| 6. | Mr. Alex HUNG | - Managing Director, Crossover International Co. Ltd. |
| 7. | Mr. Dominic KWONG | - Chief Systems Manager (Digital Economy Facilitation), OGCIO |
| 8. | Mr. Edwin TAM | - Managing Director, InfoTech Services (H.K.) Ltd. |
| 9. | Mr. Jefferson WAT | - Vice Chairman, Industry Development, Information and Software Industry Association (ISIA) |
| 10. | Miss Nicole WONG | - Analyst/Programmer II, OGCIO |
| 11. | Mr. Pindar WONG | - Chairman, VeriFi (Hong Kong) Limited - Member of D21SAC |