

Singapore e-Government Journey

INTRODUCTION

1. Singapore has come a long way in its e-Government efforts. However, the government's adoption and usage of infocomm technology was never viewed as an end in itself, but a means to an end – to reinvent the government and to serve our customers and citizens in the best possible way. The overall vision for e-Government is to delight customers and connect citizens through infocomm.

SINGAPORE'S E-GOVERNMENT JOURNEY

2. To achieve this, a number of national plans were put in place in the last 29 years. The Government's infocomm journey started in the early 80's with the aim of transforming the Singapore Government into a world-class user of information technology. The Civil Service Computerisation Programme streamlined and automated business processes. This reduced paperwork and significantly improved internal operational efficiencies.

3. The late 90's saw the convergence of information technology and telecommunications, which transformed the concept of service delivery and paved the way for the e-Government Action Plan (2000 – 2003) and the e-Government Action Plan II (2003 – 2006). The key objective of the first plan was to roll out as many public services online as possible, while the emphasis of the second plan was to further enhance the service experience of customers.

Figure 1: Strategic Framework of e-Government Action Plan (2000 – 2003)

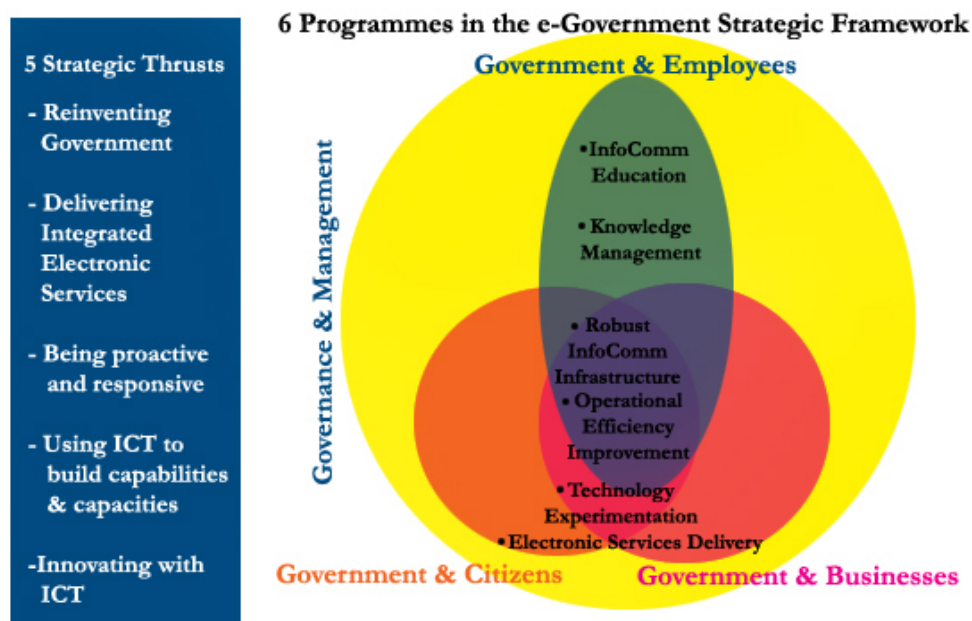
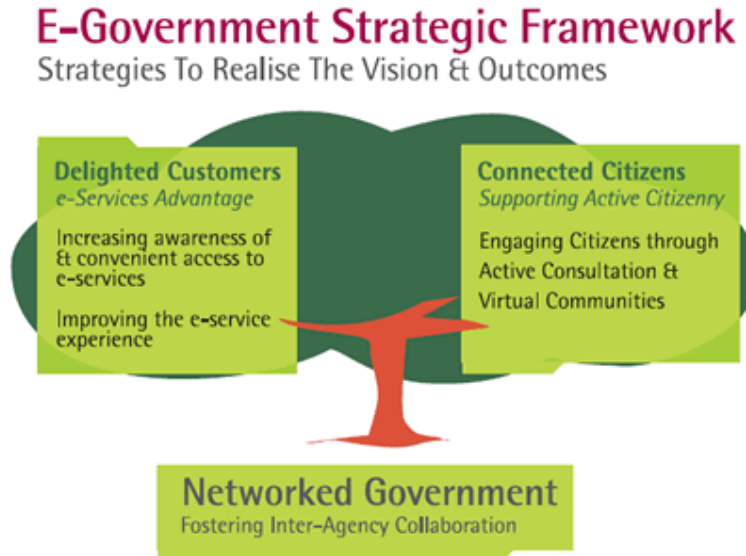


Figure 2: Strategic Framework of e-Government Action Plan II (2003 – 2006)



4. Building on the success of the earlier e-Government plans, iGov2010, a new five-year masterplan was launched in May 2006 to leverage infocomm to continue to delight our customers and citizens. With iGov2010, the Singapore Government aims to be an Integrated Government (iGov) that brings its service delivery and operations to a new level by 2010.

Figure 3: Strategic Framework of iGov2010 (2006 – 2010)

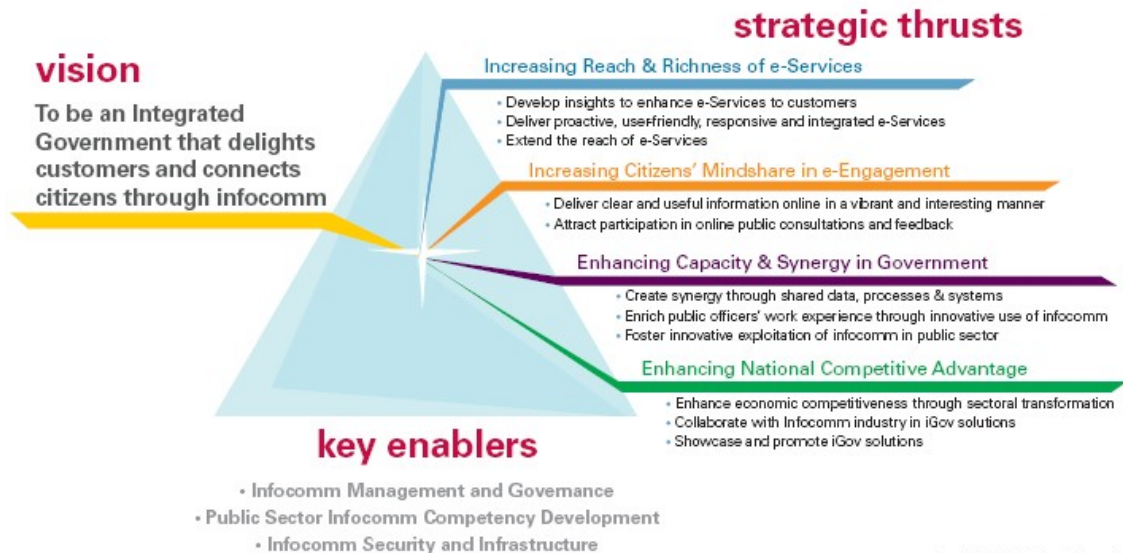


Figure: iGov2010 Strategic Framework

5. Singapore's 29 years of government infocomm journey has evolved in tandem with the larger national infocomm journey of Singapore. While the Government infocomm plans

such as the Civil Service Computerisation Programme, e-Government Action Plan I and II and iGov2010 set the key thrusts and strategies for transforming the government sector, the National Infocomm Plans are directed at transforming the industry and society. The development of the iGov2010 masterplan thus plays an integral component of Singapore's national infocomm masterplan, iN2015. Singapore will be building on the current success to propel the nation to the next phase of infocomm development. The vision is a Singapore where infocomm will help to create an environment conducive for flourishing businesses, competitive workforce and a well-connected society.

Figure 4: The synergistic relationship between the development of national infocomm and government infocomm in Singapore

National Infocomm				
	1980 - 1999	2000 - 2002	2003 - 2005	2006 onwards
Masterplans	<ul style="list-style-type: none"> National Computerisation Plan National IT Plan IT2000 	Infocomm 21	Connected Singapore	iN2015
Objectives	<ul style="list-style-type: none"> - Propel Singapore into information age - Transfer infocomm expertise to private sector - Build a technology savvy nation and fully networked country by 2000 	<ul style="list-style-type: none"> - Develop a vibrant global infocomm capital with a thriving e-economy and an infocomm-savvy society 	<ul style="list-style-type: none"> - Leverage infocomm to create new value, realise possibilities and enrich lives 	<ul style="list-style-type: none"> - Transform Singapore into an intelligent nation, global city, powered by infocomm
Key Focus Areas	<ul style="list-style-type: none"> - Develop local IT industry to meet economy needs - Develop Singapore into a global IT hub - Harness IT to enable economic development and improve quality of life 	<ul style="list-style-type: none"> - Develop a world-class showcase and test-bed for innovative infocomm applications and services in public, private and people sectors - Develop Singapore as a Infocomm talent capital - Create a pro-business and pro-consumer environment 	<ul style="list-style-type: none"> - Develop a leading global digital distribution and trading center - Grow new economic activities and create infocomm jobs - Help businesses and government agencies use infocomm for higher efficiency, effectiveness and customer satisfaction 	<ul style="list-style-type: none"> - Transform key economic sectors, government and society through more sophisticated and innovative use of infocomm - Establish an ultra-high speed, pervasive, intelligent and trusted infrastructure - Develop globally competitive infocomm industry, an infocomm-savvy workforce and globally competitive infocomm manpower
Government Infocomm				
	1980 - 1999	2000 - 2003	2003 - 2006	2006 onwards
Masterplans	Civil Service Computerisation Programme	e-Government Action Plan	e-Government Action Plan II	iGov2010
Objectives	<ul style="list-style-type: none"> - Improve efficiency and productivity - Exploit IT for a world-class Singapore government 	<ul style="list-style-type: none"> - Create a common work platform for all public agencies, for efficient development of e-services 	<ul style="list-style-type: none"> - Transform the public service into a Networked Government that delivers integrated and value-added e-services to customers; and help bring citizens closer together 	<ul style="list-style-type: none"> - Achieve a higher level of public service by harnessing infocomm to further simplify, standardise and synergise government processes to realise an integrated government
Key Focus Areas	<ul style="list-style-type: none"> - Computerise civil service to improve efficiency via automation of work functions - Provide one-stop government services - Raise IT competency of public sector 	<ul style="list-style-type: none"> - Reinvent government - Deliver integrated electronic services - Be proactive and responsive - Use infocomm to build new capabilities and capacities - Innovate with infocomm technology 	<ul style="list-style-type: none"> - Increase awareness of and convenient access to e-services - Improve e-service experience - Engage citizens through active consultation and virtual communities - Build a Knowledge Enterprise 	<ul style="list-style-type: none"> - Increase reach and richness of e-services - Increase citizen's mindshare in e-engagement - Enhance capacity and synergy in government - Enhance national competitive advantage

E-GOVERNMENT LEADERSHIP AND GOVERNANCE

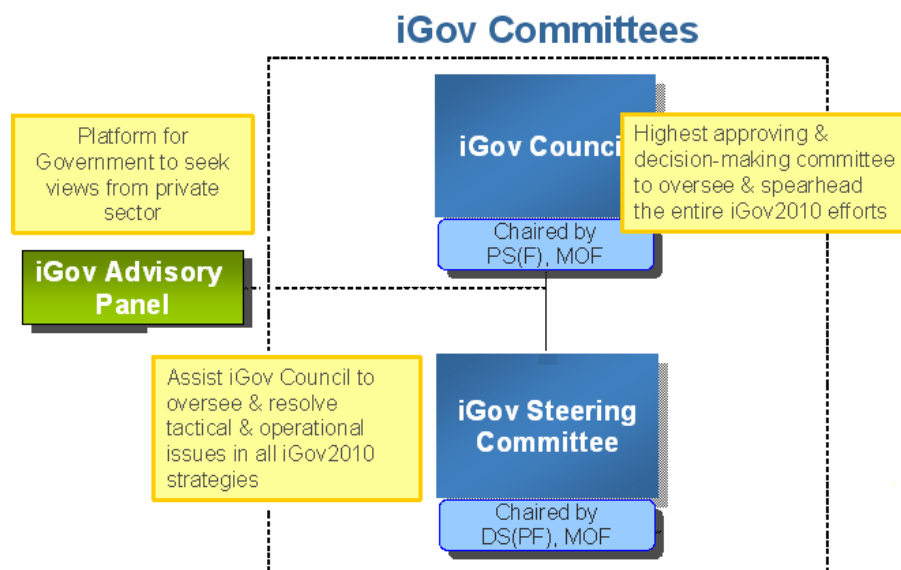
6. This concerted and systematic journey would not have been possible without a strong & collaborative leadership and management structure. Such a structure ensures a formula of efficient consultation in decision making, and a common purpose in the development of e-Government among all Ministries and Statutory Boards.

7. The iGov Council provides policy and strategic directions on all e-Government programmes. The iGov Council is the highest approving and decision-making committee, chaired by the Permanent Secretary of Finance, and comprising members who are Permanent Secretaries of Ministries who have been appointed as eTown Mayors. Each eTown Mayor is responsible for the development of a particular eTown (e.g. Education, Learning & Employment eTown) in either the eCitizen portal (www.ecitizen.gov.sg) or the Business portal (www.business.gov.sg).

8. The iGov Council is assisted by the iGov Steering Committee, chaired by the Deputy Secretary of Finance. Members comprised Deputy Secretaries who serve as Deputy eTown Mayors, as well as CEOs of key statutory boards, who operationalise and oversee issues pertinent to the successful implementation of iGov2010 programmes.

9. The Permanent Secretary of Finance also chairs the iGov Advisory Panel, a Panel that comprises representatives from both the public and private sectors. Besides advising on global trends in e-Government and their impact on Singapore, the Panel also provides feedback to the Government on areas where implementation efforts can be improved.

Figure 5: iGov Governance Structure in Singapore



E-GOVERNMENT MANAGEMENT AND IMPLEMENTATION – BOTH A CENTRALISED AND DECENTRALISED APPROACH

10. As the e-Government champion and owner, the Ministry of Finance (MOF) drives and funds most of the central infocomm technology infrastructure, services and policies within the public sector.

11. The Infocomm Development Authority of Singapore (IDA) is the Chief Technology Officer and Chief Information Officer to the Government of Singapore. As the CTO and CIO to the Government, IDA:

- Provides technical advice and recommendations
- Defines and recommends infocomm technology policies, standards and procedures
- Performs service-wide infocomm technology master planning
- Advises on and manages the central infocomm technology infrastructure
- Manages central infocomm technology projects

12. Permanent Secretaries of Ministries, Heads of Organs of State and Chief Executive Officers of Statutory Boards are responsible for agency-specific infocomm technology infrastructure and services within their own organisations. Assisted by their CIOs, they:

- Articulate the organisation's vision in the exploitation of infocomm technology
- Align infocomm technology policies, standards, projects, systems and infrastructure with those of the central authority, to meet business needs and priorities
- Provide leadership in the planning and prioritisation of IT initiatives, in alignment with the iGov2010 Masterplan
- Ensure appropriate management attention, manpower and monetary resources are given to implement infocomm technology initiatives

13. Regular channels of communication, initiated by IDA's Government Chief Information Office, keep CIOs posted on the latest developments in e-Government, and allow them to provide their feedback on government-wide initiatives, share their experiences and collaborate with each other.

iGov2010 MASTERPLAN

14. e-Government development in Singapore is currently led by the guiding principles, policies and standards of iGov2010. The vision of the iGov2010 Masterplan is to be an integrated government that delights customers and connect citizens through infocomm. The vision is bolstered by four Strategic Thrusts, which guide public agencies' e-Government efforts from FY2006 to FY2010, to achieve the integrated Government vision.

15. The four Strategic Thrusts under iGov2010 and the main challenges they aim to address are:

- **Increasing Reach and Richness of e-Services**
This Thrust affirms the Singapore Government's commitment to constantly be on the look-out for new ways to improve the quality and richness of our e-services that best suit the needs and convenience of our customers. In addition, we will continue our efforts to increase the reach of our e-services so that even more people can benefit from them.
- **Increasing Citizens' Mindshare in e-Engagement**
This Thrust aims to complement existing non-electronic service delivery initiatives and take the government-citizen relationship to the next level, one where citizens are actively engaged in the policy-making process.
- **Enhancing Capacity and Synergy in Government**
This Thrust aims to improve the capacity of public agencies and public officers through greater sharing of processes, data, and systems across the government. Infocomm will also be exploited to transform the way public officers work, and to create solutions that address the common challenges they face. We will also foster an environment that encourages innovative use of infocomm and continue to invest in innovative application of new technologies to reap the full benefits that infocomm has to offer.
- **Enhancing National Competitive Advantage**
This Thrust serves to facilitate the growth of the private sector through partnerships in innovative infocomm projects. Public agencies will collaborate with the infocomm industry in the co-creation, development and export of iGov solutions, and work with industry players in the use of infocomm to transform various economic sectors of Singapore. On the international arena, we will partner like-minded countries in the development of infocomm initiatives.

STRATEGIC THRUST 1: INCREASING REACH & RICHNESS OF E-SERVICES

Increasing Reach of e-Services through Mobile Channel

16. To enhance service delivery, the Singapore Government adopts a multi-channel strategy to increase the reach of its e-services. This focuses on providing multiple electronic channels, as well as multiple access points to these electronic channels, in line with its overall philosophy of promoting electronic channel as the preferred channel.

17. The Singapore Government has embarked on a strong investment in mobile applications and services, as these are gaining increasing prominence and popularity. Singapore also presents a unique opportunity to deliver government e-services without requiring customers to invest heavily in hardware, due to the prevalence and accessibility of mobile handsets. The current mobile phone penetration rate in Singapore stands at 136% (as of Jul 09), which puts Singapore amongst the top nations with one of the highest mobile penetration rates in the world. Singaporeans are also among the most extensive users of Short Message Service (SMS).

18. To date, the Singapore Government has some 300 mobile services, implemented by various agencies. These include:

- **Secondary 1 Posting Results:** The Ministry of Education used the SMS channel to “push” to more than 45,000 parents and students the results of their applications into secondary schools.
- **Common IHL SMS platform:** Five Institutes of Higher Learning (IHLs) have successfully implemented a common SMS platform to broadcast information (urgent messages, exam result notification, etc) to their student community.
- **SMS 70999:** This is a collaboration project between the Singapore Police Force and five voluntary welfare organisations to extend the reach of emergency services to the hearing- and speaking-impaired.

19. The Singapore mobile Government programme has gained international recognition for innovation in public service delivery. It was recognized as one of the world’s top 20 “Innovations in the Transforming Government” Award by Harvard University and IBM in 2007 and awarded a Certificate of Achievement by the Commonwealth Association of Public Administration and Management (CAPAM) for the 2008 CAPAM International Innovations Awards.

Increasing Richness of e-Services

20. As part of the ongoing efforts to increase the richness of e-services, the Government works closely with the public and private sectors to enhance the variety and quality of e-services to provide greater value and convenience to citizens. Some of these include:

- **Education and Career Guidance (ECG) Portal:** Launched in February 2009, the portal allows students to plan and explore career and education options online, so as to make informed career choices.
- **Electronic Integrated Public Transport Journey Planner:** Implemented in July 2008 to help commuters to plan their travel routes on public buses and trains, this integrated planner processes an average of about 30,000 queries per month.
- **Public Transport Portal:** Implemented in October 2008, this is a one-stop portal for transport-related information such as island-wide interactive map with integrated public transport information such as bus service routes, rail system maps, Park & Ride services and real-time bus arrival information. The portal attracts more than 100,000 page hits per month.

21. As Singapore citizens become more infocomm-savvy, the Singapore Government recognises that using infocomm to better serve citizens need not be just about providing more information, but also about leveraging non-traditional channels, such as social networking sites, to provide the essential information in an environment that they are familiar with.

22. The Singapore Police Force has created a Facebook group for users to receive the latest security issues and updates. Recently, the H1N1 situation in Singapore prompted the Ministry of Health to collaborate with developers to launch iHealth Sg, which provides a comprehensive guide to all healthcare facilities in Singapore, including the Pandemic Preparedness Clinics (PPCs) that are equipped to diagnose and treat H1N1. The application is essentially a mash-up of existing services to allow the public to search for, map and locate healthcare facilities nearby by using the Global Positioning System, and to view live webcam images of waiting areas in polyclinics.

STRATEGIC THRUST 2: INCREASING CITIZENS' MINDSHARE IN E-ENGAGEMENT

23. Government websites have proliferated and grown in complexity over time. At the same time, with the coming of age of the digital natives and Generation 'Y', websites have become important instruments to engage and interact with the public.

24. REACH (Reaching Everyone for Active Citizenry@Home) was launched in 2006 to lead in engaging and connecting with citizens to promote active citizenry. REACH aggregates the views and concerns of citizens across a wide variety of channels on a whole range of subjects, leveraging e-consultation and e-participation features such as blogs, forums, townhall web chats, Facebook and Twitter.

25. A Website Transformation Strategy was also conceptualised in February 2009 to provide a holistic framework to bring about a transformational leap in the quality of government websites across the Public Sector. The strategy aims to create a vibrant and engaging government web landscape, and includes initiatives to transform key government

online facades, reviewing existing and establishing new website development standards for the whole of government, and encouraging government agencies to improve the quality of their websites to match customer needs and perceptions.

26. One of the initiatives under the Website Transformation Strategy is the inaugural Website Excellence Awards to recognise the best-in-class of government websites, set progressive quality benchmark for government websites and cross-pollinate best practices. The aim of the Award is to instill a greater sense of customer-centricity among government agencies in managing their online presence. There are currently more than 60 government websites nominated for the Awards, which will undergo a judging process involving both citizen voting and a judging panel.

27. In addition, as part of the Singapore Government's efforts to improve its whole-of-government presence online, the national portal, www.gov.sg, and the eCitizen portal, www.ecitizen.gov.sg, will also be enhanced with new features to reach out to the Net Generation to provide them with information and services. Moving forward, the Singapore Government plans to adopt new technology, such as social media platforms, to develop stronger community bonding via special interests online communities.

STRATEGIC THRUST 3: ENHANCING CAPACITY AND SYNERGY IN GOVERNMENT

28. While providing effective e-services to citizens and enhancing e-participation efforts are essential components of e-Government, it is also important to transform the back-end for better synergy within the government, which in turn enhances service delivery. The Singapore Government has embarked on a number of programmes that contribute to this, such as:

- **The Singapore Government Enterprise Architecture (SGEA):** Identifies a set of common cross-government business functions and defines the standards for data, systems and technologies.
- **VITAL.org:** A centre for shared services that brings about greater economies of scale for the public sector through the consolidation of common Finance and Human Resource services.
- **The Government Web Services Exchange (GWS-X):** Supports and facilitates data and services sharing amongst agencies.

29. More recently, the Unique Entity Number (UEN) system was developed and fully deployed in January 2009. UEN serves as the common identification number for all entities, such as businesses and companies, registered societies, branches of foreign companies, embassies and healthcare institutions. It is the only identification number that all entities need to remember and use in all their interactions with the Singapore government. Apart from the convenience that it brings to entities, UEN also leads to greater efficiency in the Singapore Government, reducing the need to issue and maintain different identification numbers for the

same entity, and serves as a common means to identify entities between government agencies. Currently, all entities have their assigned UENs, and more than 50 government agencies are leveraging the system to increase their internal efficiency.

30. In addition, the Standard ICT Operating Environment (SOEasy) project for the public sector was initiated in 2006, which aims to bring greater agility, innovation and resilience to the public sector. SOEasy consolidates infocomm services within government agencies into a single environment to enable them to work seamlessly as One Government. When fully implemented by 2010, all desktop, messaging and network environments in the public sector will be standardised. The \$1.3 billion SOEasy tender was awarded to the EDS-led consortium oneMeridian in February 2008. Rollout of SOEasy is currently underway, and as of March 2008, the ICT infrastructure and systems at 50 government agencies, out of the targeted 75 agencies, are now managed by oneMeridian.

STRATEGIC THRUST 4: ENHANCING NATIONAL COMPETITIVE ADVANTAGE

31. To improve Singapore's strategic competitive advantage and ensure that it remains a world-class city where the quality of life is enriched by infocomm, deliberate effort has been made to work at the industry, national and international levels, to allow Singapore stay at the forefront of infocomm technology.

32. In June 2009, Singapore organised the inaugural iGov Global Exchange. The event brought together nearly 600 leading e-Government experts from around the world to discuss the opportunities and challenges in developing successful e-Government programmes in an increasingly connected world. The delegates also had a first-hand experience of the latest e-Government concepts and solutions. The iGov Global Exchange provided an open platform for governments and industry players around the world to demonstrate their achievements and innovations in e-Government, hence facilitating mutual learning and sharing among the participants.

33. In response to growing international interest in Singapore's experience and expertise in public service infocomm, IDA established a wholly-owned subsidiary – IDA International Pte Ltd – to serve as the execution arm for public service infocomm partnerships between Singapore and other countries.

34. Under IDA's Overseas Development Programme (ODP) and infocomm Local Industry Upgrading Programme (iLIUP), multinational corporations (MNCs) form partnerships with Singapore infocomm companies to develop solutions and quickly build up new capabilities in innovative emerging technologies. The MNCs also support marketing efforts by the Singapore companies by allowing the latter to access their global marketing and distribution networks. These partnerships have helped Singapore infocomm companies generate their own intellectual property, which they can then bring to the world market. Currently there are 16 MNCs participating in iLIUP and ODP. Since 2002, iLIUP has helped Singapore infocomm companies to develop more than 550 new or enhanced products and

solutions, and gain more than S\$196 million in revenue, while ODP has helped them generate more than S\$112 million in export revenue.

35. IDA works with SPRING Singapore on the S\$75 million Technology Enterprise Commercialisation Scheme (TECS), which was enhanced to support infocomm projects from October 2008. TECS provides start-ups with early-stage funding support to help convert research and development (R&D) concepts and proprietary intellectual property into promising businesses.

36. IDA and its wholly-owned subsidiary Infocomm Investments Pte Ltd encourage venture capitalist-backed enterprises to establish their R&D centres in Singapore. A new i-Centre programme aims to attract global venture capitalist-backed infocomm enterprises to use Singapore as a development and engineering centre for their business ventures. Among the companies which have set up their engineering centres in Singapore is Wikinvest.

ACHIEVEMENTS IN DELIGHTING CUSTOMERS

37. The measure of success for Singapore's e-Government efforts is intricately tied to citizens' usage of and their satisfaction with government e-services. As such, Singapore conducts e-Government Perception Surveys annually to determine the level of receptivity, adoption and satisfaction that businesses and the general public have with e-Government initiatives.

38. The e-Government Perception Surveys on Businesses and the Public, conducted for the year 2008, indicated that more than 90% of businesses and more than 80% of individuals who transacted with Government did so electronically. Of these, more than 80% of businesses and individuals are satisfied with the overall quality of government e-services.

CHALLENGES FACED & CRITICAL SUCCESS FACTORS

39. The success of Singapore e-Government did not come about without its fair share of challenges. The Singapore Government faces four key issues in e-service delivery:

- (a) **Rising customer expectations on government e-services** – Customers' expectations are constantly evolving in the infocomm landscape where technologies are moving at an ever-increasing pace. Beyond providing a 24x7 e-Government, we have to deliver government services that meet the needs and lifestyles of the changing populace.
- (b) **Online medium becoming the medium of choice among an infocomm-savvy population** – Although a small segment of population resists the use of online services, there are growing numbers of citizens who prefer the online medium to the traditional medium. The challenge is in meeting the diversity of needs.

- (c) **Competitive global environment** – In a changing global landscape, Singapore has to constantly leverage infocomm to keep up the country’s competitive advantage as well as to improve service delivery.
- (d) **Increasing need to do more with less** – In a vibrant society like Singapore, with its relatively fast-paced lifestyle, there is an increasing need to do more with less through the use of infocomm. Efficiency and productivity are key elements in such a context.

40. To continue its success, Singapore’s approach to e-Government centers on the following six vital ingredients:

- (a) **Clear vision** – Clearly identified vision and objectives in every e-Government masterplan to outline the desired end-state
- (b) **Committed leadership** – Involvement of all participants of e-Government, regardless of agencies, with key decision making and guidance from the highest level of management
- (c) **Closely involved stakeholders** – Adoption of a cohesive and integrated approach that involves and consults all stakeholders from the public, private and people sectors in the decision-making process
- (d) **Constant communication with customers** – Customers’ needs and wants are ascertained to ensure that the delivery of e-services meet their expectations
- (e) **Continuous improvement** – Since e-Government is a continuous process of improvement, it is important that the public sector is committed to keep pace with, and be nimble to changes in technology and social trends
- (f) **Countable outcomes** – A clearly defined measurement system to establish common goals, track progress and assess achievements

CONCLUSION

41. The progress of Singapore e-Government has been guided by a vision to delight customers and connect citizens through infocomm. This is manifested in the various e-government masterplans developed over the past 29 years. As citizens become more infocomm savvy and increasingly rely on the government to deliver high-quality and efficient e-services that match their needs, Singapore depends on sound leadership and management to steer its e-Government progress. This has resulted in the development of many e-services for citizens and programmes for the public sector, which exploit and push the boundaries of infocomm technology. The success of these efforts is evident in the international interest in our achievements, and high customer usage of Singapore’s government e-services.