

# **The Cape Online E-government Programme**

***E-government Strategy***



**August 2001**

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## 1 Introduction

In a recently published White Paper the Provincial Government has committed itself to preparing the Western Cape for the knowledge economy of the 21<sup>st</sup> Century<sup>1</sup>. It realises, and concurs with the Department of Arts, Culture, Science and Technology, that “the ability to maximise the use of knowledge is now considered to be the single most important factor in deciding the competitiveness of countries [regions] as well as their ability to empower their citizens through enhanced access to information”<sup>2</sup>.

In today’s world no country or region is untouched by the forces of globalisation and the advance of technology. Such forces present obvious opportunities for wealth creation and the betterment of the human condition in those countries and regions that are well equipped to take advantage of them. But for those who are less well equipped, particularly in the developing world, globalisation can just as easily lead to growing poverty, inequality and marginalisation. The challenge facing regions such as the Western Cape, is therefore how to channel the forces of globalisation for the elimination of poverty and the empowerment of people to lead fulfilling lives

In the new millennium, economic opportunities will also increasingly lie in people and the knowledge they have, rather than in capital or natural resources. Well-educated societies, skilled labour forces and economic systems that facilitate the acquisition of knowledge will achieve sustainable economic growth and development. This development has profound consequences for societies everywhere. A region such as the Western Cape now has the potential to be home to knowledge workers that serve the world. But those regions that are ill prepared for the knowledge economy will fall behind and find it increasingly difficult to catch up.

The challenges outlined above are embedded in the transition from Industrial society to Knowledge Society. The knowledge Society is not merely an event occurring within certain high-tech companies. It has important broader effects at the society level, at the company level and for the individual employee.

To speed the transition from an Industrial society to a society based on the availability and leverage of knowledge, it is necessary to change and adjust to the imperatives of the Knowledge Society. The following table (Table 1) is extracted from the White Paper in order to highlight the key changes and impacts on Government that this change will drive. It represents the ‘change drivers’, which the PGWC must undergo in order for the Programme to be successful.

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<sup>1</sup> Provincial Government of the Western Cape (2001): White Paper on “Preparing the Western Cape for the Knowledge Economy of the 21<sup>st</sup> Century”.

<sup>2</sup> Department of Arts, Culture, Science and Technology (1996): White Paper on “Science and Technology”, p.8.

Table 1: The Transition from the Industrial Society to the Knowledge Society

	Industrial Society	The Knowledge Society
Effects on the Market	National competition Competition on price Standardised products Mass consumption Separation of service & manufacturing industries Separated technologies	Global competition Competition on quality Customised products Market segmentation Integration of service & manufacturing industries Integrated technologies
Effects on production and organisation	Mass production Focus on costs Job differentiation and departmentalism Seniority gives job security Centralised and hierarchical management structures Well established routines	Flexible production Focus on innovation Project and team work, and multi-skilling Competence gives job security Flatter and decentralised management structures Constant evolution of new routines
Effects on the means of production	Fixed capital as most important asset Manual work IT as a supportive tool Individual knowledge Separated technologies	Human capital as most important asset Knowledge work IT as a production system Sharing of knowledge Integrated technologies

The knowledge economy therefore involves fundamentally new ways of working, new management practices, new competencies amongst employees and a new role for government and its regulatory agencies.

Using the emerging principles of E-Government, activities and service delivery methods must be reviewed and reshaped to take advantage of both the opportunities presented by the information and communication revolution, and to respond to the changing demands on the Western Cape as it seeks to compete in the Knowledge Economy of the 21<sup>st</sup> Century.

## 2 Knowledge society and E-Government

In many European and other developed countries as well as increasingly in the developing world as well, leaders have placed strong emphasis on the potential of E-Commerce to act as an engine of growth. However, it is only relatively recently that Government policy makers have begun to look at the potential of applying the tools and techniques of e-Commerce to the tasks of Government. It is realised that Government has to act with speed to convert the opportunities of e-Commerce into real benefits for Government, business and citizens alike: “The key challenge for senior Government executives is to move from awareness to action. They need to translate their understanding and enthusiasm for e-Commerce into projects which make a real and tangible difference to the lives of ordinary citizens and deliver a real improvement in the level of service for businesses “<sup>3</sup>

E-Government is generally described as the online delivery of government information and services. The E-Commerce Green Paper, published by the national Department of Communication, defines E-Government in more specific terms as “... government use of information communication technologies to offer citizens and businesses the opportunity to interact and

<sup>3</sup> Andersen Consulting (2000): “e-Government: Connecting the Dots”, p.2.

conduct business with government ... It is about how government organises itself; its administration, rules, regulations and frameworks set out to carry out service delivery and to co-ordinate, communicate and integrate processes within itself ...”<sup>4</sup>. However, E-Government is much more than just another vehicle for government-citizen interaction and much broader than just e-commerce or e-business for government. The real power of E-Government lies in its transforming character, i.e. to harness information and communication technology in order to optimise government performance in a knowledge-based society/economy.

In Diagram 1 the benefits of E-Government are outlined, indicating the greater impact of harnessing the knowledge and information revolution<sup>5</sup>. It illustrates that e-governance does not only hold economic potential, but social potential as well.

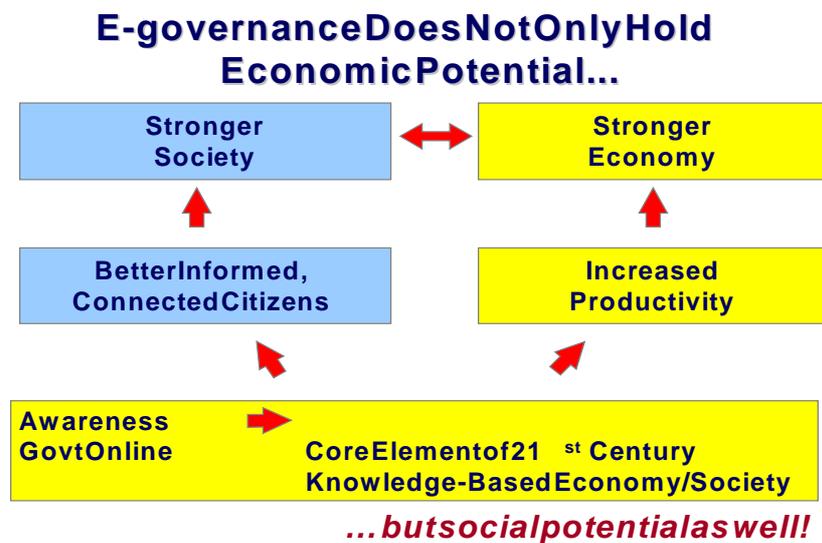


Diagram 1: The benefits of E-Government

The main drivers for Governments to explore the use of e-Commerce technologies are categorised by IBM<sup>6</sup> into five areas:

*Service to citizen and Business:* It has already been established that cost reductions can be achieved by moving government services online.

*Cost efficiencies:* The same infrastructure that delivers services can be used to enhance internal operations.

*Economic development:* It is an increasing priority for Government to create the environment for economic development, from enabling local businesses to participate in the online economy, to providing infrastructures that attract inward investments by companies and migration by knowledge workers.

*E-Communities:* Developing communities of interest and dialogue between individuals and groups can be done via E-Government infrastructures.

<sup>4</sup> Department of Communications (2001): Green Paper on “e-Commerce”, p.101.

<sup>5</sup> Department of Communications (2001): Green Paper on “e-Commerce”, p.101.

<sup>6</sup> IBM (2000): “E-government Portals: IBM Executive Briefing”, p.2.

*Digital democracy:* The exchange of democratic value through E-Government infrastructures is an increasingly important component.

### **3 The Western Cape and E -Government readiness**

We must take cognisance of the number of E-Government initiatives that are well established. Policies, IT infrastructure and websites have been developed at all levels, National, Provincial and Local.

#### **3.1 E-Government initiatives in other spheres of government and government institutions in the Province**

The President has outwardly and explicitly supported the development of E-Government as well as the wide adoption of information and communication technology (ICT) in the country. A number of national government departments have been addressing the issue. This includes the E-Commerce Green Paper published by the Department of Communications, Electronic Government, The Digital Future IT Policy Framework by the Department of Public Service and Administration<sup>7</sup> as well as the White Paper on Science & Technology by the Department of Arts, Culture, Science and Technology<sup>8</sup>. Furthermore, E-Government is an application of the principles of Batho Pele<sup>9</sup>.

SITA (State IT Agency) was established by the SITA act<sup>10</sup> to provide IT services to all Government departments. SITA has been incorporated as a private company with the State as sole shareholder to provide information technology-related services exclusively for the Public Service. Since it officially started to operate on 1 April 1999, the IT department of the PGWC has used SITA for the majority of outsourced services. It is planned that SITA will be expanded to include management of the IT department's facilities. All the national government departments have websites<sup>11</sup>.

The City of Cape Town (<http://www.capetown.gov.za>) has a well-formed and integrated E-Government/IT strategy, aptly labeled the 'Smart City'. The City of Cape Town has a mature and well developed website to support its strategy. It has embarked on various change management projects and performed appropriate usability research and development. The Mayor and CEO have publicly stated that they understand and recognise the urgency for establishing competitive advantage in the digital society for the economy of Cape Town and the Western Cape<sup>12</sup>.

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<sup>7</sup> Electronic Government - The Digital Future - A Public Service IT Policy Framework - February 2001  
<http://www.dpsa.gov.za>

<sup>8</sup> White paper on Science & Technology- Preparing for the 21st Century -Department of Arts, Culture, Science And Technology - 4 September 1996 <http://www.gov.za/whitepaper/1997/sc&tecwp.htm>

<sup>9</sup> White paper on the Transformation of the Public Service, 15 November 1995, Ch 2, Vision and Mission for the Public Service - <http://www.dpsa.gov.za/docs/policy/white-papers/transform95/wpstoc.htm>

<sup>10</sup> Government Gazette - Cape Town, 16 October 1998 - No. 19371

<sup>11</sup> With exception of National Intelligence and Secret Service (<http://www.gov.za/dept/index.html>)

<sup>12</sup> "Towards a Smart City Strategy for Cape Town" - Unicity - September 2000

### 3.2 IT strategy and infrastructure

The PGWC recognize the importance of IT and recently have demonstrated this with the appointment of a Minister responsible for Constitutional Affairs and Technology.

Currently there are 68 000 employees at PGWC. 7 480 desktop PCs in the Provincial Government are connected to a wide area network, in addition to which there are 620 free standing computers. 80% of these computers are situated in the Cape Peninsula. However, only 7% of provincial employees have access to email.

There is a stated IT policy that indicates an open ten-year pathway towards E-Government<sup>13</sup>. All concerned acknowledge that the IT infrastructure in place can be used more effectively. This will, however, require analysis and re-development of the PGWC workflows, processes and mindset.

The PGWC has approved the Cape Gateway business plan, which aims at creating an E-Government portal where all users (citizens and business) will be able to access all government information from a single point – a virtual and physical Gateway to the Cape.

The PGWC IT infrastructure includes services (skills and labour) as well as facilities (servers and networks) to host an appropriate Internet presence. This infrastructure includes a website that is accessible at <http://www.westerncape.gov.za>.

In addition all the associated government agencies have established a web presence as outlined in [section 6.2](#).

### 3.3 Internet population

There is no doubt that citizens and business are ready to interact with government online. According to research undertaken by BMI-Tech-Knowledge, 97% of large corporates in South Africa have Internet access, with 92% of medium corporates and 84% of smaller corporates having Internet access at their place of work.

According to research by Price Waterhouse Coopers, of the approximately 2.35 million South African Internet users in 2000, +/- 700 000 of them were using dial-up accounts. A recently revised study by BMI-TechKnowledge has put the number of Internet users in South Africa for 2001 at 2.6 million, with 1.6 million devices being used to access the Internet (PDAs, PCs, WAP mobile phones, etc).

The Western Cape region represents the second largest Internet user population on the continent (after Gauteng).

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<sup>13</sup> PGWC IT department – Enterprise Wide Architecture – June 1999

### 3.4 ICT sector with high potential for growth

South Africa is the 20<sup>th</sup> largest market for ICT products and services, accounting for 0.6% of worldwide ICT revenues. With 10% p.a. growth over the past five years, the sector is worth some R43 billion. The Western Cape's excellent (but limited) skills base opens opportunities for software development, Web services, outsourcing and training. The region's strong ICT-services sector includes both local and international firms. Most of these companies focus on broad regional and global markets since the local economy is relatively small. The Western Cape is a most favourable investment location and has a wide base of many ICT success stories.

### 3.5 Environment conducive for government facilitation and intervention

The Readiness Guide <sup>14</sup> describes four stages of development of E-Government within the networked economy. On this scale, the Provincial Government is in transit from Stage Two, which has been achieved through ad hoc initiatives, to Stage Three.

*Table 2: Readiness Guide stages of E-Government development*

Stage One	Stage Two	Stage Three	Stage Four
No government resources are online. There is no awareness of online government, and all dealings between government and citizens or businesses are in person or paper-based. There is limited information available by phone.	A few governmental websites exist, providing basic information, often directed at parties outside of the community. This information is static and infrequently updated. Some limited interaction with the government is possible by telephone or fax. The government distributes some information about services, procedures, rights and responsibilities in hard copy.	Some governmental agencies post key information on websites, including directories of services, hours of operation, and downloadable forms. Information is often not kept current and relevant. Transactions take place primarily in person, by fax or by telephone, though electronic mail may expedite the process. The government manages relationships with some contractors and suppliers online or with other electronic mediation.	All governmental agencies post key information on websites and some have incorporated the Web into their strategy for interaction with the public. Interactive government websites allow the public to conduct transactions (e.g. apply for permits, pay taxes) online. Much government procurement and many interactions with suppliers take place online or with other electronic mediation.

The above is supported by a recently published report<sup>15</sup> which suggests that three "waves" of E-Government programming and execution can be identified: The first wave was marked by individual governments establishing an online presence, with websites, downloadable forms and general information being provided over the web. Many developed and a number of developing countries E-Government initiatives have now entered a second phase, which is

<sup>14</sup> Information Technologies Group (ITG): Readiness for the Networked World - A Guide for Developing Countries, published in Jan 2001 by the at the Center for International Development at Harvard University p17-19 (Available at <http://www.readinessguide.org>)

<sup>15</sup> DevelopmentEx.com (2001): "Spotlight on E-Government", p.1-2.

predicated on transactions and active online government service delivery. The goal for many E-Government initiatives in future will be not only to provide increased access and reduced transaction costs, but also to more effectively administer public services across different spheres of government. This third “wave” of E-Government is expected to emphasise collaborative technologies and programmes that simultaneously link a multi-layered tier of government agencies, services and information that is substantially more flexible, efficient and citizen friendly.

In conclusion of the above it is clear that the Western Cape is well positioned against the measures of International studies and does not need to begin from scratch in order to move towards an E-Government situation. There is a most suitable strategic intent by means of numerous policies at different levels. Projects have been started all across the horizontal and vertical aspects of Government. The external environment is poised and placing pressure on structures for E-Government services delivery. All indicators point towards the need for a more structured approach.

## **4 TheCapeOnlineStrategy**

### **4.1 NeedforaStrategy**

All of the existing online projects at the PGWC have a high impact on the human resource needs of the organisation – especially from a skills perspective - and concern is frequently expressed around the capacity of the organisation to effect the necessary change.

As identified above, there are a number of projects underway, as well as a number of stages involved in E-Government. The Cape Online spans the entire PGWC as well as all other parastatals and related persons and organizations.

This initiative is multi-dimensional and in such a system, a coherent and structured approach is needed to ensure that appropriate actions are taken and managed.

### **4.2 Strategydevelopmentprocess**

The Strategy has been developed first through a detailed discovery process, during which all available materials and information were sought and analysed. This was then followed by an exploratory phase, which involved engaging representatives from all key stakeholders to assess the overall current state of activities, and to understand their various perspectives and priorities.

The following decision phase has involved identification of key projects and tasks, as well as the initial specification of the resources that will be required for the implementation of an E-Government strategy for the Provincial Government of the Western Cape (PGWC).

Various projects and tasks were identified and combined to make up the Cape Online programme. These were prioritised and combined, as part of the

final process needed to create the strategy embodied by this document. The categorisation of projects followed in order to define a necessary organisational framework structure for their implementation. Proposals regarding the necessary resource requirements needed to enable the various projects are found in the business case document that accompanies this strategy, which together form the business plan.

This strategy has been presented to various stakeholders at the Cape Online Symposium ([section 8](#)) as well as E-Government II conference<sup>16</sup> for comments. The outcomes of these presentations were most positive and support has been by consensus.

### **4.3 Developmentstrategy –thebusinessmodel**

E-business is not just about technology. Having strongly emphasised the technology, Aletha Ling states “The key is to build strategy based on a deep understanding of business itself. The business leader requires a **clear vision** and needs to apply technologies and the possibilities of the new economy as a catalyst to create and exploit the emerging business opportunities”<sup>17</sup>. The change in strategic thinking is really about context.

The Cape Online strategy takes the current business focus of the PGWC into account and considers the application of this environment as expressed in various government policies. This strategy is developed through the process of analysing the provincial White Papers (e.g. Tourism, Knowledge Economy) and the policy objectives of Cabinet ([Diagram 2](#)). Alignment with the current and future infrastructure and the appropriate use of technology was determined.

Therefore this strategy is driven by the PGWC business where Internet technologies are merely a tool that must be applied and leveraged to enhance the PGWC business.

### **4.4 TheVision**

The Vision of the Cape Online Programme is:

To develop an innovative environment that facilitates a competitive knowledge-based economy that promotes economic growth and enhances the quality of life for our people.

Cape Online project initiatives in pursuit of effective E-Government will both support this vision, as well as be synergistically supported and enabled by it.

### **4.5 TheMission**

In support of this Vision, the Mission of the Cape Online Programme is therefore:

Enabling government to harness the capabilities of the Internet, to grow the appropriate use of ICT, increase internal efficiencies

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<sup>16</sup> E-Government II conference organised by Marcus Evans and held at the Lord Charles Hotel, Somerset West, 27,28 August 2001

<sup>17</sup> Aletha Ling (CEO of CCH Group), the E-Commerce Handbook – published 2000 - p8.

and provide a better service to it's citizens as a pathway to e-Government

## **5 TheCapeOnlineProgramme**

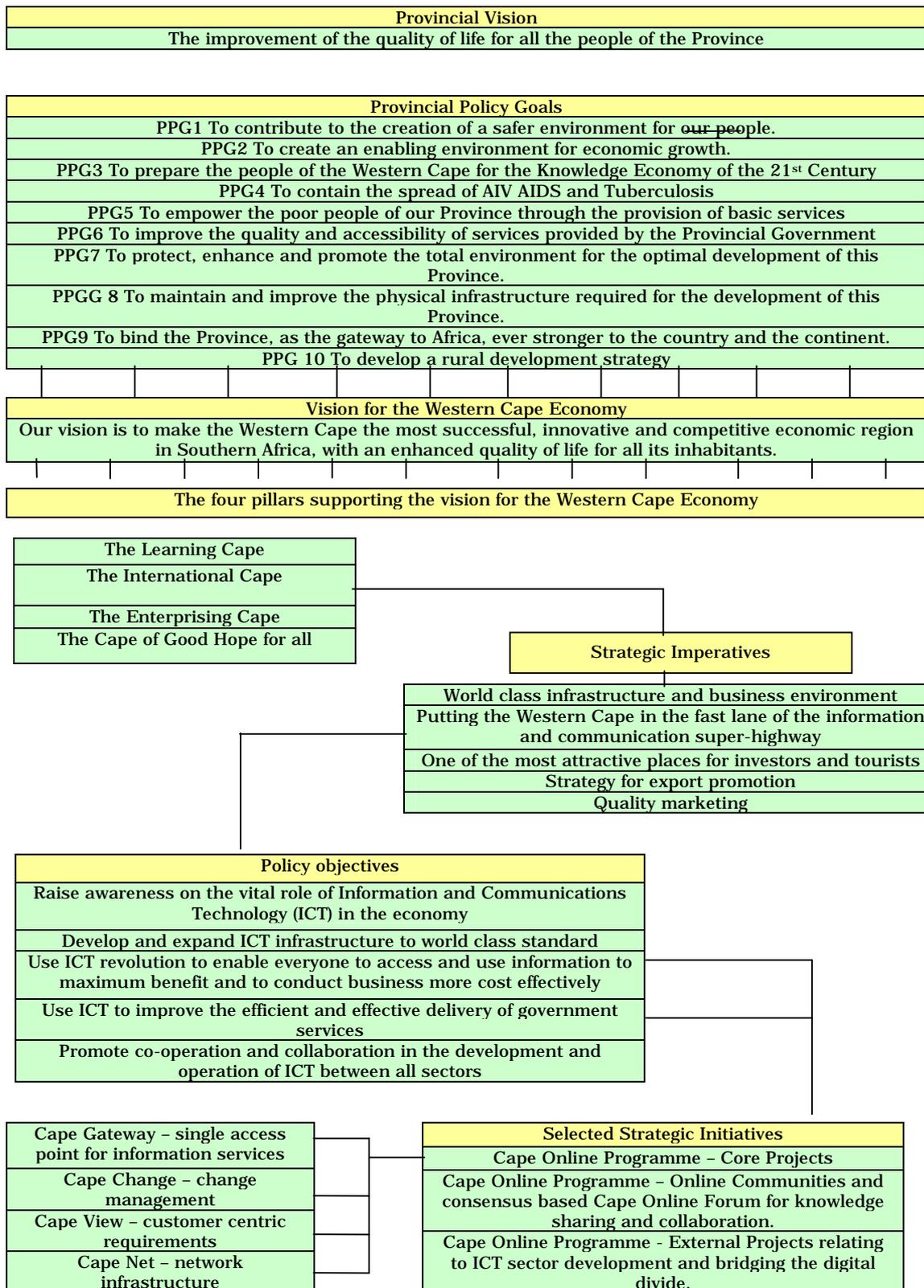
The successful execution of this Strategy will have many positive spin-offs, but will specifically and directly address the wider Provincial policy goals. The following diagram has been previously developed to show how Cape Gateway fits into broader policy and is now enhanced to show an improved view of the Cape Online programme.

The **Cape Online Programme** comprises a number of projects that together will enable the people (citizens and businesses) of the Province to access services and information that would normally require a visit to a PGWC office or facility, from anywhere (including the comfort of their own home or office) via telephone or the Internet. The programme has both direct impacts (illustrated on the next page in Diagram 2) as well as indirect positive impacts on the majority of the Provincial Policy goals and vision.

The Cape Online Programme will act to stimulate growth in the ICT sector and the entire economy. Cape Online drives PGWC towards the E-Government model (Diagram 1 - above) of provincial management and service delivery. This will greatly contribute towards enabling local businesses to operate more efficiently and effectively, and thus contributing towards the growth of the economy. The investment community increasingly values global access to information for business, which develops a growth cycle.

This is a programme formed of the initial actions that begin to implement the knowledge economy white paper. Every project of the Cape Online programme is achievable and will impact the various citizens and businesses of the Cape in some way or another. Every impact will necessarily expose a wide range of communities to some aspect of the knowledge economy.

Diagram 2: Direct Relationship of Cape Online to Provincial Vision and Policy



## 5.1 Facets of the programme

Cape Online has several mutually supportive facets. The programme is divided into three areas, each related to the various roles of Government. These areas have been categorized as:

- **Core Projects** – being those that impact the core role of Government and those services that are intended to reach out to and potentially impact every citizen and business in the Province. This includes a project called Cape View that looks at the needs of users of Provincial Government services; Cape Change which is a change management programme; Cape Net which focuses on basic network infrastructure and the beginnings of an ICT precinct; and lastly the Cape Gateway itself.
- **Online Community Projects** – being those which impact various communities of interest, involving specific groups of citizens and organisations;
- **External Projects** - being those projects, which are non-government in nature, and yet impact the online environment for the betterment of businesses, organisations and individuals.

The relationship between these various categories of project is represented in the following diagram:

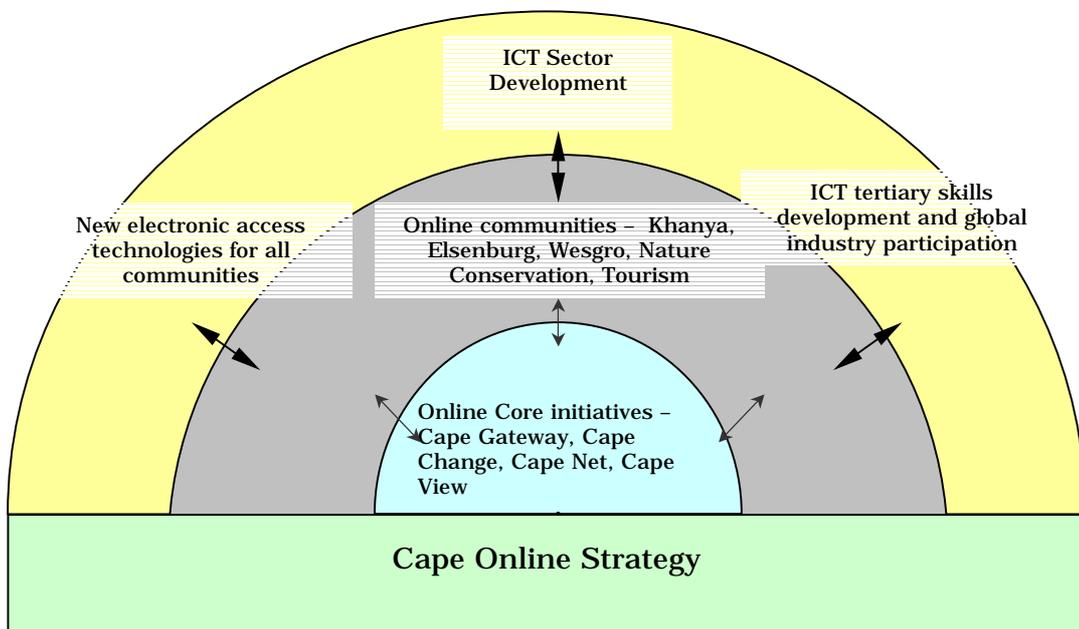


Diagram 3: Facets of the Cape Online Programme

## 6 ProjectDefinitions

### 6.1 Coreprojects

Core projects are both *inwardly focused* – that is, on the way in which the Provincial Government operates, and *outwardly focused* - in that they will impact the way in which business and citizens interact with and deal with the Provincial Government.

Core Cape Online projects have been defined to address each of these imperatives. This has largely been expressed already in the business plan for Cape Gateway, and as such that project and its success is a critical contribution to the achievement of the goals of the PGWC.

The five core projects are:

1. Cape Gateway
2. Cape View
3. Cape Change
4. Cape Net
5. Cape Procure

#### 6.1.1 CapeGateway:

The Cape Gateway business plan has already been developed and approved. It must now be seen – not as an isolated initiative - but rather as a critical element of the broader (and more far reaching) Cape Online programme.

The original project plan can be seen to be the first initiative to introduce the principles of E-Government. Whilst the narrow goals of Cape Gateway can be achieved in isolation, there has always been an expectation that the Cape Online Programme would be required in order for the broader potential impacts of Cape Gateway to succeed. Cape Online identifies the process gaps and supports the implementation of Cape Gateway by creating the environment that is required to legitimise the Cape Gateway. Process gaps extend throughout the entire administrative and service delivery structure of PGWC and these as well as broader infrastructural and environmental concerns are addressed in the broader programme.

#### 6.1.2 CapeView

The Cape View project will research, identify and acknowledge the **view** of e - citizens, businesses and Government employees with regards their **electronic information requirements and service needs**. This project will seek to identify and creatively explore the suitability and usability of the various components of electronic communications.

Government is different from the commercial sector in that it cannot select its customers. Its business is to govern and as such it is crucial that it devote resources towards understanding the needs of its “customers” (citizens and businesses). This is an E-Government equivalent of the business trend to become continuously more ‘customer centric’ and service oriented.

It is widely accepted that Government initiatives need to learn the lessons that private enterprise have needed to learn in becoming customer centric. As such they promote the concept of designing portals around life events, associated with specific needs that require an interaction with Government.

Great Britain and Australia as well as Singapore represent examples of the E-Government provision of a single point of access for services from multiple departments that address needs according to Life Events.

Categories of Life Events include:

- Becoming a Parent or Guardian;
- Becoming separated or divorced;
- Pursuing work or employment;
- Planning or currently studying or training;
- Being self employed or responsible for a business;
- Crisis situations needing help;
- Immigration to South Africa;
- Being ill, injured or disabled;
- Caring for the aged, frail, ill or disabled;
- Needing help after someone has died; and
- Planning or needing help in retirement.

These categories may be very different from those that one who is working in Government may expect. One can imagine an individual from one of the categories above may be currently confused – and frustrated - by the need to react to a wide number of different departments; for example, a new immigrant needs information and service from the National Departments of Labour/Home Affairs, the provincial Department of Economic Affairs, local authorities, etc.

The Readiness Guide points out that community members find the Internet medium more useful and relevant to their own lives when online content reflects their own interests and needs. Locally relevant content is a major driver of growth of Internet usage.

The tasks for the Cape View project will therefore include;

- Market research and analysis – to define and segment “the market” for Provincial Government services. Statistical research and analysis should be explored as a collaborative project (see Cape Online Forum).
- User profiling – definition of the various user categories for Provincial Government services. For example, it will be necessary to conduct market research to segment the pool of potential users for various services. User profiling will initially look at the current users of the provincial website, but as further iterations in Cape Gateway are achieved, it will become important to properly understand how actual users can be usefully segmented.

- Content mapping – this will define what content constitutes the basic minimum necessary and achievable for the first iteration of the information architecture of the various user interfaces. It will be important to identify depth, breadth and relevance of the content for the various categories of user.
- Information architecture – the necessary content must be mapped against the site map according to the needs determined by the findings of the user profiling exercise.
- User Interface (UI) Design – the graphic design and layout will be determined by the outputs of the previous tasks.
- User testing – once the User Interface is complete, then it must be integrated with the Cape Gateway systems in a development environment. This should be tested from both a systems functionality perspective (IT) as well as from (and more importantly) from a usability perspective. Usually this requires focus groups to be conducted by a skilled information architect. Where possible, some iteration of the site(s) should be done before making the system live. Where not possible, lessons should be documented and built into the next iteration of the overall Cape View project for consideration in future information architecture and UI design.

The above tasks are to be iterated on an annual basis. Each task is to take three months to complete, and in most instances can partially run concurrently. Each task is ideally handled in a contractual manner – against consideration for continuity that must also be ensured.

### **6.1.3 CapeChange**

As Government strives towards fulfilling its role in the building of the knowledge economy, internal and external changes in technology, structures, processes, and the nature of day-to-day work will have to change. In order to facilitate the success of this process it is essential to educate internal role players, promote the benefits of E-Government and adapt the organization as required.

Cape Change is a change management project that identifies aspects of PGWC processes, procedures, mechanisms and structures that will need to change both to bring into effect E-Government, and those that will become necessary as result of successful E-Government. The project aims to prepare the provincial administration for the challenges of the knowledge economy. This is an underpinning project that will determine the successes of the other projects defined in the Cape Online Programme.

Most of the workflow and work processes, as well as job descriptions within the provincial Government will require analysis and redesign. Aspects of this project will include workshops, business process analysis, development and delivery of training, restructuring and integration, organisational development, and one-on-one executive mentoring, etc.

An element of this project has already been initiated, in the form of a document providing guidelines for management on the use of Internet tools, completed at end May 2001.

The central importance of Cape Change is exemplified by an extract from an interview with John Kelly, CIO for the state of Arizona, USA.

**What are some of the challenges the state faces in the delivery of E-Government to citizens?**

Clearly, when people start putting up a Website that provides an e-mail address, somebody has got to be there to answer it. Nobody would stand for it if you put a phone number for an agency in the phone book and you called and nobody answered. Frankly, I've seen agencies put up e-mail addresses with no particular correspondence control.

Agencies have to adapt to the backend business process either technologically or non-technologically to be just as responsive, if not more responsive to inquiries that come over via the Internet. If you are going to invest in this technology and collect information electronically and have this interactive presence, you better not be printing it out and retyping it. That's going to require a different set of skills on the part of workers and agencies to be able to utilize systems to take advantage of the efficiencies of the Internet. Otherwise you are just putting an electronic computer in front of people and using it as a paperweight.

The following tasks have already been identified, in order of priority:

- Guidelines for managers on Managing an Internet Presence
- Guidelines for users on the Internet and appropriate usage
- Executive coaching programme (30 minutes per month per executive)
- Workflow analysis and process re-engineering. This project element will depend upon the output of two other necessary Cape Online projects, which are Cape Gateway (content management) and Cape View. These outputs will determine where there are potential gaps in the current administrative and service delivery system.
- Workshops and user trials assist in firstly preparing staff for new systems and work processes, as well as ensure that any required technology functionality and usability is communicated.
- Job Descriptions must be reassessed, renegotiated, changed and communicated to incorporate any new or changed function that impacts any member of staff in the organisation.

#### **6.1.4 CapeNet**

As the Readiness Guide points out, the minimum necessary condition for the development of E-Government is access to an adequate network infrastructure. Whilst it is important that citizens and business must have such access, it must start with government itself.

Cape Net is a project with the goal to create a regional parastatal peering network or exchange point (also referred to as a network precinct). This network would enable inter-government organisational data exchange to bypass the commercial Internet networks.

The concept of a network precinct has been introduced in the White Paper. This project hopes to seed a capability within Government to develop and grow a viable precinct, which will begin with parastatal organisations.

There are a number of benefits that this will achieve, and at relatively low cost. Initially this was discussed at introductory meetings with PGWC and the Tertiary Education Network (Tenet), and between PGWC and the Cape Town Unicity, who have all tentatively agreed that this opportunity should be evaluated on a pilot basis.

The following diagram represents the proposed logical architecture:

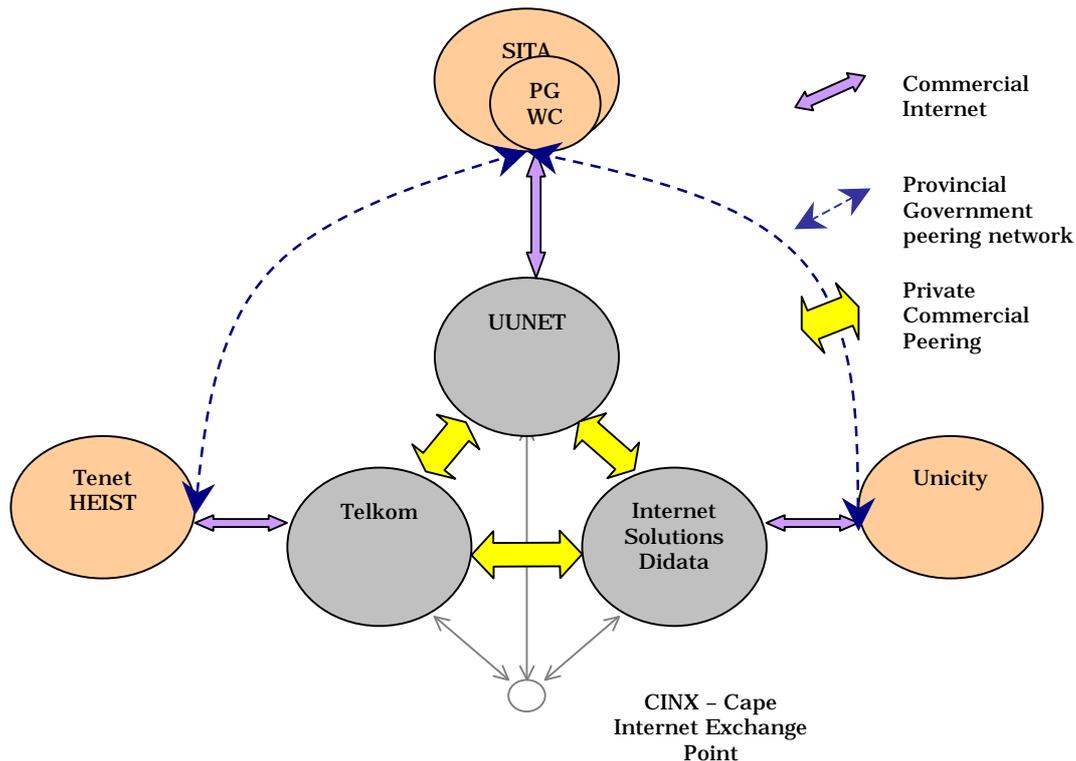


Diagram 4: Logical peering network diagram for the Cape Online Precinct

Certain assumptions can be made regarding a proposed peering network:

- That the network only connects data flowing outside of any high security perimeters; and
- only allows for data exchange flows - i.e. does NOT allow for Internet traffic flows.

Subject to further exploration and evaluation, the peering network will:

- reduce the cost premium of 400% charged by commercial Internet Networks for the exchange of data flows;
- reduce the dependency on private peering agreements made independently by the commercial networks; and
- increase efficiency of the networking through providing additional redundancy, scalability and robustness (within the peering network).

Assuming the collaboratively identified risks, SITA have volunteered their services to perform a pilot evaluation of this concept. They have proposed the following stages and tasks:

- Phase 1: Measure traffic flows
- Phase 2: Pilot test
- Phase 3: Prepare a business justification

### **6.1.5 CapeProcure**

Global best practice shows that a future project to develop electronic procurement systems and processes must be established. Because of the lack of standards and the immaturity of B2B marketplaces/exchanges, this is deemed as a concept that should only be initiated at later stages of the Cape Online programme.

Aspects of Cape Procure do need to be incorporated into the Cape Change project. For example the Procurement department could be using email for communications with suppliers. The Cape Change project focuses on process and workflow regarding the use of technology, as opposed to Cape Procure, which includes new technology systems.

## **6.2 OnlineCommunities**

The various online communities that currently operate under the auspices of the PGWC, include:

- Education
- Agriculture
- Trade and Investment
- Tourism
- Nature Conservation

These communities have already taken large leaps within their vertical industry sector, towards online delivery of information and services. They can be considered as already servicing their respective communities and as such form the PGWC communities component of the Cape Online Programme.

The organisations and communities themselves manage the respective community projects. It is proposed they can benefit from – and be supported by – Cape Online infrastructure through the Cape Online Forum (see [section 6.4](#)), using consensus based, transparent and accountable mechanisms. As such, tasks relating to each project are decentralised and the responsibility of each community.

### **6.2.1 Khanya(education)**

The Khanya Project aims to equip all Western Cape Schools with a full educational and administrative IT system, as well as an educational audio-visual media system. The use of technology will be integrated into current

curricula. The project is focused on curriculum delivery and aims to develop AVT (audio-visual technology based) resource material as well as ICT based resource material.

The productive use of this new resource material will require new teaching and learning strategies. The Khanya project therefore includes a training and support programme for schools to ensure that these new strategies are properly implemented.

The essential elements of the project are already being introduced in historically advantaged schools, through their own initiative. Many of these schools (which include private and former Model-C schools) have established the necessary technological infrastructure and are now spontaneously moving towards integrating the use of technology into their learning programmes. In particular, they benefit from their access to learning resource materials through the Internet. The WCED estimates that by May 2000, approximately 20% of the province's schools have achieved this level of development.

The Khanya project will encourage the use and stature of ICT and develop such skills in previously disadvantaged communities. The Readiness Guide makes clear the linkages between access in schools to ICTs, learning delivery using ICTs, and ICT skills development in the workforce.

### **6.2.2 *Elsenburg(agriculture)***

<http://www.elsenburg.com>

Elsenburg, is the oldest academic institution in the country and was one of the first Government departments to have Internet access and an Internet presence. The current website is meant to service the farming community and deliver current information. This is a good example of a closed community that is both widely dispersed and technology adept, where the Internet medium can ideally be harnessed to increase efficiency and effectiveness of communications and service.

### **6.2.3 *Wesgro(tradeandinvestment)***

<http://www.wesgro.co.za>

Wesgro operates a website to market global trade and investments into the Western Cape. The community of interest relates to global investors and traders, and the medium is well suited to deliver the required services to Wesgro's customers.

### **6.2.4 *WesternCapeTourism***

<http://www.capetourism.org>

The Western Cape Tourism online programme includes both their Website (<http://www.capetourism.org>) as well as the creation of a database of all stakeholders in the Tourism industry. This is a large information project that induces greater collaboration and heightened efficiencies in the industry.

### **6.2.5 CapeNatureConservation**

<http://www.capenature.org>

Cape Nature conservation operates a Website to market their products and services and to provide information about their activities, functions and services.

### **6.3 Externalprojects**

These are projects external to PGWC processes and services.

External projects cover a variety of specialised areas of activity, and as such are considered outside of the core competencies of the PGWC. However, these projects are important to the goals and objectives of the Cape Online programme and are required to ensure the legitimacy of E-Government. These projects must be supported – and where appropriate coordinated, financed and monitored - by PGWC, as well as appropriately implemented through Public Private Partnerships.

#### **6.3.1 CapeAccess**

There are significant benefits for everyone if the people in developing countries are able to take full advantage of the Internet and other information and communication technologies for improving their lives. Many countries lack sufficient technology infrastructure. However there are many initiatives to bring networks and access to people in these countries.

Even though the technology is increasingly available, people do not use it because they do not understand it, they are uncomfortable using it, they cannot afford it, or they cannot see its utility. For them the digital divide means a lost opportunity: no chance to use information tools to bring medical applications to rural villages, to offer better educational tools and courseware to schoolchildren, to give local businesses access to global markets, or to make governments more effective and transparent.

The long-term stability of international markets and national economies is also at risk, particularly if the current trends of the "brain drain" continue to draw good people out of developing countries toward areas with better promises of economic prosperity.

These are some of the issues at stake in the "digital divide" debate that are hidden behind the focus on teledensity, computer prices, and Internet access.

The international "digital divide," is clearly more than just a lack of computers and connections. Technology means nothing if it is not used. The people who could benefit the most are not using information technologies to address the problems they face, not only because they lack the training, but also because government policies often hinder affordable and accessible technology implementation.

Many current efforts are playing catch-up, bringing the previous generations of technology to developing countries. That helps, but technology must also be integrated into society and supported by policy reform. Electronic commerce is part of the equation, but in the Western Cape, technology use needs to mean more than just global market expansion: it can be part of the

solution for improving education, healthcare, environmental protection, government administration, and local economic development. Moreover, technology-based solutions can take advantage of the new models for business and human interaction that information technologies offer.

Cape Access is the externally facing counterpart to the Cape Net project. For participation in the knowledge economy to become a reality for the majority of the people of the province, skills must be matched by infrastructure.

The Readiness Guide identifies the following areas of focus for the development of network access:

- Information infrastructure;
- Internet availability;
- Internet affordability;
- Network speed and quality;
- Hardware and software availability; and
- Service and support.

This Project will aim to manage information and research on access technologies and drive Public Private Partnerships in order to expand and grow accessibility to ICT networks across all of these dimensions. The Cape is generally well advanced in this regard – the challenge is to drive the infrastructure and services to as many people as possible regardless of income or geographic location. Emerging wireless technologies may well allow communities that are currently falling behind to ‘leapfrog’ into the forefront of ICT utilisation.

Various Cape Online stakeholders as well as NGOs are already performing research and development into various means of alternative and low cost access technologies and projects. Set top boxes (TV based Internet access), cell phones, Internet phones, kiosks (Post Office Internet Terminals, PITs) and various other technologies have been identified to potentially provide access to low-income communities. Since adoption levels for these alternative access devices are low, research must be performed or accrued on their usability aspects.

It appears that most efforts in this regard are repetitive and do not show any significant progress. It is proposed that PGWC funds and develops a centre that will co-ordinate information and where necessary assist in planning Public Private Partnerships in this regard. This is to reduce duplication and increase efficiency and effectiveness for this type of research and product development.

Initial efforts have identified an opportunity for two-way paging networks to enable access to email at costs that are a fraction of the cost of current products on the market. There is already licensed bandwidth and networks available to deliver this technology. This is an opportunity that could be followed up as one of the areas that requires further investigation.

Tasks for this project are identified as:

- Detailed description of the role of the Cape ICT include: Identify stakeholders and initiate a communications programme; Identify all research performed in this area and collate; Identify areas that require

further research; Communicate these needs to stakeholders and co-ordinate collaborative research projects.

- Obtain required budget approvals;
- Development of the criterion used to evaluate candidate organisations to perform this role;
- Development of a Public Private Partnership or tender;
- Identification and selection of an appropriate candidate organisation;
- Contract and partner with the selected appropriate agency;
- Develop strategic direction followed by strategic intent;
- Participate in the high level decision making;
- Perform regular evaluation on the performance of the contracted agency.

From a PGWC perspective, therefore, this project will maintain a communications programme and continue to monitor performance of the agency.

### **6.3.2 *CapelICT***

The goal of this project is to develop the ICT sector in the Western Cape, through ICT research programmes, SME support, support for Venture Capital and new capital inflows, and involvement in strategic projects including business precincts, cluster developments and a virtual marketplace.

This project must also support:

- Investment Promotion and Marketing;
- Foreign Direct Investment;
- Indigenous investment, targeting investment at sectors that create employment for the lower skilled;
- Location marketing targeted at specific areas and sectors; and
- Marketing the Cape as a quality brand.

The tasks required to implement this project include:

- Detailed description of the role of a Cape ICT agency, and required budget approvals;
- Development of the criterion used to evaluate candidate organisations to perform this role;
- Development of a Public Private Partnership or tender;
- Identification and selection of an appropriate candidate organisation;
- Contract and partner with the selected appropriate agency;
- Develop strategic direction;
- Participate in the high level decision making;

- Perform regular evaluation on the performance of the contracted agency.

### **6.3.3 CapeSkills**

The Cape skills project is to address the sustainability of expert skills in the upper echelons of ICT academia and the ICT sector. Although the 'brain drain' is recognised by the media and current estimates identify over 400 ICT professionals leaving the country per month, this is an area that is grossly overlooked. The Cape skills project is a provincial skills retention project that not only retains skills but also develops the high-end skills through exposure to global best practice. This could, for example, involve sponsorship for international conferences and meetings for those experts working in commercial organisations that do not realise direct benefit from the proposed events.

The tasks required to establish this function include:

- Research and analysis of the expert skills environment in the Western Cape;
- Prioritisation of expertise that has highest impact in stimulating relevant developments in the ICT environment;
- Identification of key areas of expert skills development that is not being fulfilled by the private sector; and
- Development of sponsorship contracts and value propositions.

For example – there are FreeBSD and Apache open source software developers that reside in the Western Cape and work collaboratively with individuals around the globe to grow this free internet resource. These resources are used by huge market share of the new economy technologies, and mostly to the benefit of all developing countries. These individuals frequently have day jobs in organisations that do not - for example - fund the annual trip to a conference for these developers. In exchange for funding such a trip, the developers could deliver value in return into the local community (for example present a paper or write a report for the African online community).

The tasks required to implement this project include:

- Detailed description of the role of a Cape skills agency, and required budget approvals;
- Development of the criterion used to evaluate candidate organisations to perform this role;
- Development of a Public Private Partnership or tender;
- Identification and selection of an appropriate candidate organisation;
- Contract and partner with the selected appropriate agency;
- Develop strategic direction;
- Participate in the high level decision making;

- Perform regular evaluation on the performance of the contracted agency.

#### **6.4 CapeOnlineForum**

The Cape Online Symposium was co-ordinated in order to consult all major stakeholders, for this proposed E-Government strategy the planning of the Cape Online programme. Broad consensus was achieved and the **Cape Online Forum** established. This Forum is a platform for collaboration between public sector online and E-Government initiatives.

The success of Cape Online depends on collaboration and an ability to develop good teamwork for the benefit of the citizens and visitors to the Province. The Forum presents a platform, which facilitates the co-operation and synergies required for any stakeholder to address each of the aspects (or layers) of the Cape Online strategy.

The Cape Online core projects drive knowledge to and from the Online communities using the Forum as the vehicle. For example Cape Change requires development of training and guidelines, which should be shared with others in the public sector so as to increase efficiencies and reduce duplication. External environmental projects require stakeholder participation through the Forum. For example the Cape Access project requires interaction with each stakeholder in order to collect all information on access projects, this will lead onto new access project opportunities to be realised through collaboration.

Stakeholder involvement is required to share the strategic direction and derived process flows. The knowledge economy requires networked organisations. For example the Cape Gateway portal cannot succeed without interaction with the stakeholders in the Forum. By creating this environment for transparency regarding current and future plans as well as any problems or lessons, individual strategies become aligned and will result in the most efficient solutions.

##### **6.4.1 Stakeholders**

The stakeholders represented in the Forum include: the PGWC, DOC, DTI, the City of Cape Town, Tenet, and the Departments of Education, Agriculture, Economic Affairs, Health, IT, Wesgro, Western Cape Tourism, Nature Conservation, CITI, BITF, and Bridges.

##### **6.4.2 ChangeManagement**

In support of the Cape Change project, it will be important to develop consensus as to the process changes, which are possible in both the short and longer term. For example the following questions are to be addressed;

- What job roles will change in moving toward E-Government and how?
- What materials have been developed to assist with the change in the way that work is done? What can be shared?
- What training must be delivered; for what roles and to what end?

- How will workflow processes impacted? How will they change? Who will change them and how?

### **6.4.3 Contentsharing**

Citizens are not all familiar with Government structures. As a result they may, for example, visit one parastatal web address and from there expect to find all the information and services they require. Cape Gateway has the aim of becoming the definitive E-Government portal for the province. As such Cape Gateway does not expect to carry all the information on all the stakeholders websites, but it does require knowledge and information about what is on all the various stakeholders websites.

### **6.4.4 ForumAdministrationandfunction**

The Cape Online Forum have agreed by consensus:

- to establish a group to facilitate partnerships, share knowledge and develop interoperability standards
- that PGWC will provide administration and co-ordination services for the group
- that an interim co-ordinating committee, comprised of representatives from Cape Town local government, Provincial government and other stakeholders, bear the responsibility for establishing a structure and addressing a list of identified opportunities

## **7 Timelines**

The overall timeline for the Cape Online development programmes are three years. This is an approximate timeline, as projects must be constantly evaluated for relevance and productivity. A number of Cape Online projects will evolve into operational entities. Once the first development cycle of these entities or products is complete one must consider adopting them as part of a Cape Online organisation.

The Cape Gateway timeline is a three-year window and as such drives the other core projects. It would not be appropriate to define more specific timelines for every project or task as this will conflict with appropriately selected decisions made well into a detailed project definition process.

### **7.1 Schedule**

The high-level resource requirements and timing of the various projects that will make up the Cape Online programme are:

*Table 3: Cape Online Programme schedule*

<b>Cape Online projects</b>	<b>Description</b>	<b>Start Date</b>	<b>Duration</b>	<b>End date</b>
Cape View	User research and analysis	August 2001	Cyclical	Should not end

Cape Change	Change management	May 2001	3 years	May 2004
Cape Net	Parastatal precinct	August 2001	6 month pilot study	If pilot is successful - to expand into further projects
Cape Gateway:	E-Government Web portal	Feb 2001	3 years	Feb 2004
Cape Online Forum	Consensus based forum	July 2001	Ongoing	Should not end
Cape ICT	Develop the ICT sector	March 2002	Annual cycle evaluated on various criteria.	March 2007
Cape Skills	Develop ICT skills in the Western Cape	March 2002	Annual cycle evaluated on various criteria.	March 2007
Cape Access	Centre for Research and development	March 2002	Annual cycle evaluated on various criteria.	March 2007

## 8 Conclusion

The Cape Online Programme of projects has been designed as a result of detailed investigation and research into the opportunities that exist for moving the PGWC forward into the Knowledge Economy. This requires the organisation to address both its own internal operations, as well as the way in which its services are delivered to its 'customers'. Furthermore, its particular potential role in the development of the ICT industry and the knowledge economy has been addressed.

The proposed projects contribute towards the fulfilment of the requirements of the policy objectives of the Province, both at the macro level and at the departmental level. The goals are realistic and the tasks manageable and affordable.

Consensus among stakeholders as to the appropriateness and completeness of the proposed projects has been obtained. The process of developing this plan has been open and participative in nature. Support has been obtained from all levels.

The working of the knowledge economy requires collaboration and competition in ways that have never before been experienced; as a region the Cape cannot afford a lack of participation by critical communities. Further, if the social-economic benefits are to be experienced by all, ways and means must be found for all of the peoples and communities of the Province to be impacted positively by the huge potential of the opportunities and challenges now facing us as a result of the ICT revolution.