CASE STUDY OVERVIEW

It includes a number of projects and in particular the Ukuntinga Project.

Location: Cape Town, Western Cape, South Africa,

Funding Institution: City of Cape Town and, in some cases Provincial and National Governments

Executing Institution: City of Cape Town

Project Manager: Ms. Mymoena Sharif (Manager e-governance, Smart City Project, City of Cape Town)

Total Budget: South African Rands (SAR) 355 million (it refers to the Ukuntinga Project).

Project Start Date: 2001

Project End Date: 2005

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8.1. CONTEXT AND POLICY

8.1.1. South African economic wave and the role of Public Sector and ICTs

While South Africa represents only 3% of the continent's surface area, it accounts for approximately 40% of all industrial output and 25% of gross domestic product (GDP) of all Africa. More than half of the electricity generated in the continent and 45% of mineral production is from South Africa.

The growth of the South African economy has averaged 3.2% a year over the past four years and there are expectations of it improving over the next three years to between 4% and 4.5% due to the sound macroeconomic performance and monetary management and improved competitiveness, among others. The inflation rate has generally declined over the past year and the Consumer Price Index (CPIX) inflation measure was expected to average 4.8% in 2004. The prime overdraft interest rate has declined from 17% at the beginning of 2003 to 13.5% at present, and the Reserve Bank expected to meet in 2005
its inflation target of consumer price inflation between 3% and 6%, after falling to 4.3% for the year 2004. Real income per person over the past decade has increased by 15% and, with an average growth projected at more than 4% a year over the period ahead, real per capita income is expected to rise by at least 30% in the second decade of freedom. Empowerment targets and transformation initiatives in education, employment and procurement are contributing to better racial and gender representation. Corporate restructuring and equity participation schemes have brought changes to the ownership, management and strategic direction of many companies.

However, the income distribution remains highly unequal and the unemployment rate is about 40% of the working population. There are many constraints due to the high rate of HIV/AIDS, infrastructure weaknesses, a deficit in industrial and trade policy, technological backlogs, skills shortages and poor flows of Foreign Direct Investments (FDI).

This complex situation must be looked at, also considering that South Africa became a democratic, non-racial state in 1994, after a protracted liberation struggle against the Apartheid regime, which had been characterised by colonialism, racialism and repressive laws.

Following the demise of apartheid and transition to democracy, the new constitution (The Constitution of the Republic of South Africa 1996, Act 108) provides for a common South African citizenship, with all citizens having equal access to the rights, privileges and benefits. South Africa is also one of the few countries on the continent with a constitution which entrenches democracy, eliminates all forms of discrimination, promotes and protects human rights but also strives to attain socio-economic rights for all.

The fact that the South African government has placed the need to address poverty and inequality firmly at the centre of its development strategy agenda is reflected in the various development policy documents and strategies that have been developed in the few years that the government has been in power.

The government development strategy was first articulated in 1994 in the original Reconstruction and Development Programme (RDP), 1994-1996, in which the African National Congress (ANC) sought "to mobilize all our people and our country's resources towards the final eradication of apartheid and the building of a democratic, non-racial and non-sexist future". The programme envisaged to attain socio-economic growth and basic needs delivery, while at the same time addressing the legacy of injustice. The RDP put emphasis on "people-centred development", "integrated development" and "sustainable development" that is democratic and participatory.

The RDP proposed several dimensions that should be addressed to achieve socio-economic transformation of the South African society. It further set out various socio-economic commitments and targets for delivery, providing an overarching policy for
The White Paper on the Reconstruction and Development Programme, 1995 refined the 1994 RDP document and identified five goals that needed to be addressed in order to achieve socio-economic transformation of South African society. The fundamental goals of RDP were:

- To create a strong, dynamic and balanced economy in order to eliminate poverty and meet the basic needs of every South African;
- Develop human resource capacity of all South Africans;
- Ensure that no one suffers racial or gender discrimination in hiring, promotion or training situations;
- Develop a prosperous, balanced regional economy in Southern Africa; and
- Democratise the state and society.

The RDP was expected to engineer growth, through increased public expenditures on social service provision. The RDP put emphasis on programmes to meet basic needs and enhance human resource development, placed a major emphasis on social infrastructure and development programmes that address poverty and inequality.

The RDP was also reinforced and supported by a number of implementation strategies, such as the Anti-Poverty Strategy, Integrated Sustainable Rural Development Strategy and Urban Development Strategy. These policy documents formed the core of local economic development (LED) policy.

Thus, during the 1994-1996 period, the RDP was viewed as the cornerstone of government development policy, a yardstick against which the success of the government development policy could be assessed. However, according to many policy analysts, as a development policy document, the RDP had a number of shortcomings. First, it looked more like a "wish list" than a strategy document focusing on opportunities and constraints. Second, it made no attempt to set priorities; or to assign responsibility for the implementation of each programme component. Third, it lacked mechanisms for inter-departmental coordination. Finally, local government, which has been assigned constitutional responsibility for promoting socio-economic development, did not have adequate planning and implementation capacity.

In any case, while the government appeared to have been satisfied with the RDP's broadly humanitarian thrusts, problems began to surface from 1995. The economy, in particular, was not growing at the envisaged rates. The sluggish performance of the economy in turn impacted negatively on the RDP, with achievements falling behind expectations. The welfare orientations of the Programme also came under critical scrutiny as investors and international financial institutions began demanding greater clarity on national economic policy. The release (in 1995) of the White Paper on RDP
This resulted in the development, in 1996, of the **Growth, Employment and Redistribution (GEAR)** framework. GEAR was introduced as the guiding force for government economic policy. It did not completely depart from earlier government policy but committed government to accelerating aspects of existing policy, albeit with a very significant compromise to the neo-liberal policy. Consequently, some of the policies initiated in the RDP were incorporated in the GEAR which subsequently replaced RDP in 1996.

The goals of the GEAR package of policies were:

- a competitive fast-growing economy which creates sufficient jobs for all work-seekers;
- a redistribution of income and opportunities in favour of the poor;
- a society in which sound health, education and other services are available to all; and
- an environment in which homes are secure and places of work are productive.

GEAR was designed to achieve high rates of economic growth, to expand the private sector, to improve output and employment, achieve fiscal reform and encourage trade and investment. Furthermore, GEAR sought to achieve redistribution and improvement in basic living conditions as a result of generally, revitalised economic performance. GEAR rests on the assumption that the expansion of the private sector would have a substantial impact on the economy, whilst the role of the state would largely be a facilitative one. The evolving thinking was that the re-distributive role of the RDP was to be attained by a more circuituous route.

In order to facilitate economic growth and the expansion of the private sector, the government undertook to reduce state spending and the budget deficit; reduce corporate taxes and relax foreign exchange controls. It further pledged to control inflation; promote privatisation, and encourage wage restraint: all goals which are prescribed as universal panaceas for development by the Bretton Woods institutions such as the World Bank and IMF.

According to GEAR, the results of such a strategy would be an economic growth rate of 6% per year by 2000, which in turn would generate up to 400,000 jobs per year, boost exports by over 8% per year and lead to a drastic improvement in social conditions. It was thus anticipated that in the period from 1996 to 2000, 1.35 million jobs would be created. Critical to the attainment of the goals was a significant increase in private investment and non-gold exports, together with increased state expenditure on social infrastructure.
Unfortunately, according to many analysts, much of the gains expected from the adoption of the measures were not achieved. In spite of the macro-economic changes established, South Africa's economic performance has been generally disappointing. GEAR failed to effectively attain many of its goals.

In spite of the South African government's commitment to development and reconstruction, explicitly stated in the various development policy documents since 1994, and that allowed the reform of development and sectoral policies to overcome the legacy of apartheid and consequently, to put in place the policy, legislative and institutional framework, however, a significant number of the population still is in greater poverty, and an ever-increasing percentage is unable to afford and/or access basic needs.

In this context, there is a growing and deeper understanding of the importance of the role of public policy in shaping the distribution of income and opportunities through setting developmental objectives. These take into consideration the balance between direct income support, improved public services such as education, health and municipal services and investment in social infrastructure such as housing, water, sanitation, roads and public transport.

The issue of speeding up the pace of investments in communication, transportation, water and energy networks is a priority in the economic development of the country. There is also the need to strengthen the links between further education and training and workplace requirements through upgrading educational institutions and bringing industry and commerce into the governance system, ensuring that funds for skills development are more effectively used.

Some of these priorities are exclusively or mainly the responsibility of government; but, in some areas, and especially when it comes to the use of ICTs for development, it is clear that the public sector seeks to complement and reinforce private sector growth and initiative. In particular, this was required to improve the alignment between public investment for infrastructure and business development opportunities, especially if we consider that in 2004 about 60% of the national expenditure on ICTs (about 8 Million SAR) came from investment by government departments in ICTs solutions and, it was expected to grow in 2005 and in the following years.

In his State of the Nation Address to the first joint sitting of the third democratic parliament on 21st. May, 2004, the President of the Republic Thabo Mbeki addressed the urgent need for the public sector to leverage the significant amount of innovation created by private sector organisations in recent years and, in particular, enabling improved service delivery to the citizens.

This ambitious goal of transposing modern corporate practices into government operations is not new to the ears of the citizenry, as Mbeki's illustrious predecessor Nelson Mandela held a similar vision for the future of South African government. And although this utopian system is some way from being fully realised, the public sector
has in recent years made great strides in building an improved service delivery platform from the legacy system dependant - quagmire of historic inefficiency.

Service delivery is now at the forefront of government agencies' minds. High customer service is no longer a goal but a minimum requirement and ICTs solutions can be deployed to move government from an assisted service to a more "self-service" model while creating a more efficient and less costly operational environment.

The journey towards an e-governance model is therefore a long one, with challenges for both the public sector embarking upon it, and the private sector, which is to provide the underpinnings of this venture. Along with the peculiar historical and infrastructural South African challenges, this process will require all the innovation and cooperation of both public and private ICTs organisations to achieve the desired end goal.

Within this framework, a pivotal role in transforming the public sector with its influence on procurement activities and driving government IT strategies from an holistic overview perspective is played by the State Information Technology Agency (SITA). This is to ensure that all agencies work towards similar goals on platforms that interoperate at an internal communications level.

Although the theory behind this mandate is good, private enterprises have had cause for concern in the past as SITA vacillated between fulfilling this role as facilitator and being at the same time a provider of essential services itself, thus playing on both sides of procuring and delivering ICTs services to the crucial public sector. However not being independent from it, the private enterprises with which it was meant to build mutually beneficial partnerships were put at a disadvantage in the actual delivery of the required services.

Under its new leadership, however, there seems to have been a complete turnaround with the redefinition of the deliverables and the core business of the Agency itself. This allowed the confidence of the private sector to be restored and enabled the Agency to focus on addressing the significant challenges that lie ahead on the public sector's road to transformation. The road that brings improvement of service delivery successfully in the public sector entails fostering meaningful relationships with the private sector to leverage the experience and skills effectively in these organisations for the benefit of the economy and of the citizenry.

8.1.2. Local governance Policy and Strategy: from exclusion to inclusion

Following the end of the apartheid in 1994, South Africa was given a rare and historic opportunity to transform local government to meet the challenges of the twenty-first century.

Apartheid was not the beginning of geographic, institutional and social separation at the local level. Segregation was already a policy by the time apartheid was introduced in 1948. However, the Group Areas Act, the key piece of apartheid legislation, instituted strict residential segregation and compulsory removal of black people to "own group"
areas. Through spatial separation, influx control, and a policy of "own management for own areas", apartheid aimed to limit the extent to which affluent white municipalities would bear the financial burden of servicing disadvantaged black areas. The Group Areas Act restricted the permanent presence of Africans in urban areas through the pass system, and reserved a viable municipal revenue base for white areas by separating townships and industrial and commercial development.

Since then, apartheid has left its imprint on South Africa's human settlements and municipal institutions.

Transformation required an understanding of the historical role of local government in creating and perpetuating local separation and inequity and the impact of apartheid on municipal institutions. Equally important is the history of resistance to apartheid at the local level, and struggles against apartheid local government. Various attempts were made under apartheid to introduce "own management" structures for black residents at the local level. This was in part to compensate for restricted rights, and in part to bolster the political and economic privileges of racial exclusion. To some extent these forms of "own local government" acknowledged the permanent presence of black people in urban areas. However, they were designed to reinforce the policies of segregation and economic exclusion. But none had resources to make any real difference to the quality of life of their constituents.

As the 1984 uprising gathered momentum, civic and other community bodies started to organise, calling for social and economic conditions in townships and Bantustans, and protesting systematically against the way human settlements were spatially and economically distorted.

In the late 1980s the apartheid state attempted to prop up collapsing Black Local Authorities and calm political tensions by redirecting funds to disadvantaged areas. A system of ad-hoc intergovernmental grants was developed to channel resources to collapsing townships. Regional Services Councils and Joint Services Boards were established to channel funds to black areas. However, these interventions were "too little too late". By the late 1980s most townships and many home-land rural areas were effectively ungoverned, and it was clear that Black Local Authorities (or any similar structures) would never be viable.

The crisis opened up by the collapse of the apartheid local government system eventually led to the realisation that a new deal was needed. White municipalities, experiencing the financial impact of organised consumers, service and rent boycotts, began to enter into negotiations with township representatives. Initially these fora were little more than crisis management structures. However, these initial talks formed the basis for later local negotiations and the system of the current local government.

Local fora recognised that the legal constraints which separated black residents from the municipal tax base had to be addressed nationally. The popular slogan, "One City, One Tax Base", could only be realised through national legislation. Local fora collectively
Therefore, the crisis in local government was a major force leading to the national reform process which began in 1990. The Local Government Negotiating Forum framed the Agreement on Finance and Services, writing off arrears to Black Local Authorities. It also negotiated the Local Government Transition Act of 1993, which did not provide a blueprint for a new local government, but only mapped out three phases of transition that has then resulted in a wide diversity of forms of local government.

The Local Government Transition Act effectively "deracialised" the system of local government through the amalgamation of former racially-based structures. However, real transformation was yet to occur. The weaknesses of the Local Government Transition Act, such as its urban bias and the lack of structured support processes to enable municipalities to manage the change process, were reflected in the gap between municipal and rural areas.

While newly elected councils in many areas had made significant progress in addressing backlogs and extending services, they were still facing many constraints. The huge infrastructural disparities and inequalities resulting from apartheid local government remained. The transition process has clearly shown that delivery on new municipal mandates could not be achieved within the existing institutional framework.

So, the new Constitution of the Republic of South Africa (1996) envisaged a complete transformation of the local government system. In terms of the new Constitution, local government is a sphere of government in its own right and no longer a function of national or provincial government. It is a distinct sphere of government, interdependent and interrelated with the national and provincial spheres. Municipalities have the right to govern, on their own initiative, the local government affairs of their community, subject to national and provincial legislation. They are required to give priority to the basic needs of the community, promote the social and economic development of the community, and participate in national and provincial development programmes. Local government has thus been given a distinctive status and role in building democracy and promoting socioeconomic development. Its functions are in fact to:

- Provide democratic and accountable government for local communities.
- Ensure the provision of services to communities in a sustainable manner.
- Promote social and economic development.
- Promote a safe and healthy environment.
- Encourage the involvement of communities and community organisations in the matters of local government.

This mandate places local government at the centre of building local environments in
which communities can develop and grow. The task is daunting: apartheid has fundamentally damaged the spatial, social and economic environment in which people live, work, raise families, and seek to fulfil their aspirations. Local government can only rise to the challenge of reversing the legacy of the past, and constructing sustainable living environments for the future, if municipalities are financially and institutionally empowered. It was therefore critical to transform and build the capacity of local government.

Local government must also promote the Bill of Rights, which reflects the nation's values about human dignity, equality and freedom, and uphold the principles enshrined in the Constitution.

Within the framework of the Constitution, the vision for local government is that it should be developmental. It should exercise its powers and functions in a way which maximises the social development and economic growth of communities. It should plan and manage development in an integrated and sustainable manner and promote spatial and social integration.

Local government should be responsive and accountable and deliver services which meet community needs in an efficient and equitable manner. It should seek to promote democratic values, both within the community and within its institutions.

But the process was still incomplete: so, in 1997, The Ministry for Provincial Affairs and Constitutional Development embarked on a policy process to give effect to this new vision of local government and which culminated in the "White Paper on Local Government" of 9th. March, 1998.

In the development of this White Paper, every effort was made to ensure that the process had been inclusive, interactive and transparent. A three-phase approach ensured that all stakeholders were included in the consultative process. The first phase of consultations resulted in a discussion document published in April 1997, containing the initial strategic questions to be addressed in the White Paper. The second phase, which consisted of issue-focused research processes, provincial and local workshops and other consultation mechanisms, resulted in the "Green Paper on Local Government", which was released for public comment in October 1997. The third phase, consisting of Portfolio Committee hearings, a local governance Summit, public submissions and sectoral consultative conferences, resulted in the "White Paper on Local Government", which was approved by Cabinet. Appropriate legislation was then prepared to enact the policy directions contained in the White Paper, establishing the basis for a new developmental local government system, committed to working with citizens, groups and communities to create sustainable human settlements, providing for a decent quality of life and to meet the social, economic and material needs of communities in a holistic way.

The White Paper on Local Government is in a certain way unique, as it does not deal with a sectoral policy, but with an entire sphere of government. It can almost be
or local government, as it will affect all South Africans. Local government is the sphere of government that interacts closest with communities, is responsible for the services and infrastructure so essential to peoples’ wellbeing, and has the task of ensuring the growth and development of communities in a manner that enhances community participation and accountability.

Actually implementing the policies contained in the Paper needs a supreme effort, tremendous resilience and constructive participation of all role players and very specific commitment and effort from national and provincial governments and, not least, from councillors and administrators within local government.

In this context, the implementation of any ICTs for development and e-government strategies are likely to have a strong bias towards cities and provincial towns, where the majority of the population resides. Notwithstanding this bias, President Mbeki noted in his 2004 State of the Nation Address (see above), that "the Departments of Public Service and Administration, Provincial and Local Government, and Communications will work to ensure that modern information and communication technologies (ICTs) are introduced in these development nodes as quickly as possible, to assist in all their developmental and governance efforts." Efforts in this regard have yet to deliver major results and therefore it is crucial to focus on approaches and strategies that address the needs of citizens in local government and, in particular, in urban and rural and remote areas”.

8.1.3. The policy framework for ICTs and e-government

The use of ICTs within government, whether this is for the purpose of improving service delivery to citizens or to enhance back-office operations has been significant for at least the last two decades. At the national level, there are currently several large information systems, including the National Population Register, a deed register, the National Transport Information System (NATIS), systems to manage welfare grants, subsidies as well as systems to manage tax collection and liabilities which have been implemented in the last 10-15 years. The responsibility for these systems resides within the appropriate government department that manages the introduction of the systems through budget allocations made to it directly.

Over the last few years, there have been numerous efforts that have been implemented or which are in the process of being implemented by individual government departments. These included the creation of systems that enabled the tax authorities to have a single view of taxpayers, a major upgrade and modernisation of NATIS now known as eNATIS, the introduction of systems to manage better co-operation between the police services, the justice system, correctional services and other government departments, and finally, moves to introduce Smart Cards by the National Department of Home Affairs which was due for roll-out in 2006.

In addition, national government has put in place large 'internally-facing' transversal systems to manage the internal operations of government like payroll, financial management and supply chain management. However, these are mainly applicable to
The existence of primary systems for the payroll function for all employees at national and provincial levels and large parts covered by a common financial management and supply chain management was largely due to the requirement imposed by central coordinating departments like the Department of Public Service and Administration (DPSA) and the National Treasury that these would be the systems that would be used.

Over time, a number of challenges have emerged with the current transversal systems including the fact that they are not able to deal with current realities. On this basis, a process is underway to create an integrated financial management system (IFMS). The move to the new system is likely to take between 5-7 years to implement.

At the municipal level, the picture is less clear. Due to the history and fragmentation and the recent creation of the current 284 municipalities, the deployment of ICTs varies substantially between these municipalities. In general, it would be the larger urban municipalities, covering large areas which would have the systems in place to manage payments, rates and taxes, registrations, as well as manage their own internal operations. New municipalities and those that exist in marginalised areas are likely to have very few systems in place to assist the municipality. A large scale survey and audit was conducted by a private research agency in 2004 and has been repeated in 2005 (but being done in close association with government). This survey and audit revealed major ICTs deficits in many marginalised local municipalities including the lack of basic ICTs facilities like a stand-alone computer. In addition, many of these local authorities did not see ICTs as crucial when they were facing more basic needs such as housing, water, sanitation, roads, etc.

In 1999-2000, there was an acknowledgement that despite the considerable initiatives in place, there were still many challenges that needed to be addressed if the information systems were to deliver on the development priorities of the new state. These included concerns about inter-operability, duplication of efforts, not achieving economies of scale, and security. In addition, the arrangements were not conducive to the creation of seamless access to government services and these will need to be assessed. For this purpose, the post of a Government Information Technology Officer (GITO) was established in each department, to facilitate the use of ICTs for meeting the business objectives of government.

In terms of formal legislation, the Department for Public Service and Administration (DPSA) (through the Public Service Act) has the authority to determine policy and strategy on e-government and the use of ICTs within government. This was exercised in a strong way in 2001 when the department released an e-government framework. In the terms of the framework, each government department is required, as part of their strategic planning processes, to develop an information management plan and strategy.
In the implementation of the first phase of the e-government over the last few years, considerable gaps and weaknesses were identified. As a result, a policy review process is underway. Draft policy proposals were developed by the DPSA and presented in July 2005 to the GITO's that identified a number of concerns. As such, it was unclear what policy direction would finally be taken and how this would differ from the previous policy framework. It is important to note that the jurisdiction of the DPSA does not extend to local government and as such the policy proposals do not extend to local government level.

Over the last few years, government has identified a need to harmonise conditions to co-ordinate the three spheres of government as well as public sector agencies and entities. Although the debates have been strongly driven by human resource considerations (i.e. harmonising conditions of service, enabling the easy transfer of staff, etc.), it is likely that governing frameworks on e-government and technology use will also feature in the discussions and policy proposals. Once again, these policy processes are currently underway and it is difficult to tell what the final outcome would be.

To supplement the evolution of the e-government strategy, the Centre on Public Service Innovation (CPSI) produced a research report that dealt specifically with the development of an access framework to support the e-government strategy. The report proposed a multi-channel approach including the use of intermediaries. It proposed that local governments should play a greater role in designing an access strategy as they have the best sense of the needs of the community, are responsible for spatial planning, and are a major role in overseeing overall socio-economic development. However, there are major capacity constraints in many local authorities and such an approach would require a minimum 10-year implementation strategy. This model was under discussion within the DPSA and the Governance and Administration cluster at the time of the mission. At the same time, SITA was also studying how to include the local government level in the new "Enterprise Architecture" system which was developing to improve the provision of ICTs services to the overall government and the public sector at large. The debate about the "form" of the state is also discussing the best organisation of the "developmental state", that according to Ms. Geraldine Fraser-Moleketi, Minister for Public Service and Administration, should not be seen as a "centrist state" but, as a "spider web", with many concentric circles. It is the lines that cross the circles and come together in the centre that give strength to the web and hold it all together. ICTs can play a pivotal role in developing and reinforcing the web, thus linking the local to the national level of the governance system.

8.2. BUILDING A KNOWLEDGE SOCIETY IN THE WESTERN CAPE
The Western Cape Province is a SR120 billion annual economy that has recognised and embraced the important role ICTs play in poverty reduction and economic growth.

Considering that in the primary and secondary sectors, growth and employment are either stagnant or in decline, not only as a peculiarity of the province, but as a global trend and in light of the "fundamental shift" from an industrialised to a knowledge-led economy, the provincial governments have taken numerous steps to ensure that its 4.5 million people will have the opportunity to embrace the new paradigm.

For this reason, in 1998, the Cape IT Initiative (CITI) was launched. CITI is a not-for-profit networking and cluster development organisation that brings together people, ideas and capital to grow the Western Cape ICTs sector. CITI's goal is to promote Cape Town as a global IT hub and gateway into Africa, thus facilitating the creation of jobs and prosperity through IT. CITI identified three main goals to shape the direction of the organisation: 1. enhancing the development and collaboration in the ICTs cluster; 2. promoting the ICTs industry; and 3. making CITI the pre-eminent industry information source. The objectives of CITI are to identify, facilitate and assist entrepreneurial ICTs business in the province through research, networking, collaboration, promotion and marketing activities. These objectives are closely aligned to that of the provincial and local government that also provide funds to CITI and were involved in its creation. But CITI also receives funding from the private sector, thus it cannot merely be considered a Public-Private Partnership. CITI plays a more central role in the context of the government's overall development. CITI's initiatives in fact are built around fostering linkages between firms in the Western Cape through, for example, arranging and facilitating networking events to encourage competition and collaboration, as well as actively bringing together firms, government and education institutions. CITI proved to be indispensable to the development of the ICTs industry in the Western Cape. Since its founding, the number of IT companies in the province have increased from 248 to over 1,200 and which employ about 27,000 people, making it the second largest employer - next to tourism - in the province.

8.2.2. The Cape Online Strategy and the Centre for e-Innovation (Ce-I)

A White Paper published by the Provincial Government of the Western Cape (PGWC) in 2001, titled "Preparing the Western Cape for the Knowledge Economy of the 21st Century" contends that "In the new millennium, economic opportunities will increasingly lie in people and the knowledge they have, rather than in capital or natural resources". In addition to this shift, almost two-thirds of the output of the provincial private sector is threatened by international competition, especially from emerging economies, such as India, China, or the nearby "small" Mauritius. Given that these challenges were embedded in the transition from industrial to knowledge society, the PGWC elaborated a further e-government Strategy, or "The Cape Online e-government Programme". This strategy is based on the assumption that, "to speed the transition 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". In
preparing the programme, however, the already existing initiatives underway were considered, since the IT infrastructure and website had already been developed at national, provincial and local level.

The strategy has therefore been developed through a "discovery" process, during which all available materials and information were sought and analysed, followed by an "exploratory phase. It 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 phase of "decision", involved the identification of key projects and tasks, as well as the initial specification of the resources required for the implementation of the programme.

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 of the people". This is to be realised through "Enabling government to harness the capabilities of the Internet to grow the appropriate use of ICTs, increase internal efficiencies and provide better service to its citizens as a pathway to e-government".

In order to achieve its goal, the Cape Online Programme has been designed around a number of "core" projects that address the internal government structure, and its capacity to deliver the services. Complementary to these, there are some "Online Community Projects", which are intended to have an impact on various communities of interest, involving specific groups of citizens and organisations, other than the Provincial Government. The Programme is completed by some "External Projects", which are non-governmental in nature, and yet have an impact on the online environment for the improvement of business organisations and individuals.

In order to better co-ordinate the Cape Online Programme implementation, the Information Technology (IT) and e-government (KEEG) units of the Provincial Government of the Western Cape joined on 1st. April, 2004 to form the Centre for e-Innovation (Ce-I).

The Centre's purpose is to provide ICTs services to the PGWC, including driving its e-government strategy. The role of the Centre is: 1) to provide and support the basic ICTs infrastructure upon which most of the government's activities depend; 2) To provide and support applications that improve the efficiency of government administration, lower costs and reduce the scope for corruption; 3) To provide and support applications that enable the government to deliver better services; and 4) To build an inclusive Information Society.

The main projects currently under implementation, include the following:

- The Khanya Project, a joint venture between the Ce-I and the Western Cape Education Department, uses ICTs to support the educational curriculum throughout the Western Cape by providing content for teachers and learners and
Of 432 schools in the province, 276 had been equipped with an ICTs lab by the end of January 2005, many of them in rural areas such as Merweville, Baartmanstown and Wellington.

- **Schools Administration Management System Project (SAMS)** aims at providing a way for even the most remote and isolated schools to upload administrative information to a central server automatically and fast. This not only cuts the paperwork burden for schools, it also supports better planning and administration. There is also a project underway to make all management information available over the web, so it can be accessed anywhere, anytime by those who need it.

- **Maternity System (CRADLE)** intends to support the important efforts of the public health system in reducing maternal and infant mortality and improving the health of mothers and babies. To achieve these objectives, health care practitioners and managers need accurate, timely and comprehensive information. CRADLE is one element of the extensive system that Ce-I is building to supply this, collecting data on mothers and babies during pregnancy, labour and delivery and early infancy. The information is used for statistical and research purposes, and it enables officials to track problems and intervene where necessary. It is linked with the Health Information System, which provides consolidated electronic health records for patients across the provincial health system. CRADLE has been piloted in Gugulethu, and will in future be rolled out to all provincial hospitals.

- **Networking Community Health Centres (CHCs)**. Although an important component of the primary health care system the CHCs are often isolated. Because of their important role especially in implementing and monitoring anti-retroviral treatment for people living with HIV/AIDS, the CHCs are now being networked and linked with other health care systems to provide accurate information for health workers. By the end of March 2005, 28 out of 33 CHCs in the Western Cape were networked. In future, the network could enable additional services like improved administration systems and wireless outreach programmes.

- **Social Service Electronic Document Management System (EDMS)**. One of the biggest problems in the Department of Social Services & Poverty Alleviation, which administers grants and pensions, is that applications take a long time to process through its old paper-based system and too many files get lost. The Ce-I is helping the department to convert all its existing records to electronic format, as well as generate all new files electronically. This not only eliminates the problem of lost files, it also offers drastically reduced scope for fraud and corruption. Once the system is well established, the department and the Ce-I will introduce more benefits. Recipients of disability grants and old-age pensions, for example, currently have to travel long distances to government offices to make applications. In future, community workers may be able to travel to people's homes, capture data directly using the EDMS system and
• **FleetMan:** The provincial government owns a fleet of around 4,000 vehicles including ambulances, fire engines and passenger vehicles. FleetMan is helping fleet managers track and take care of this several hundred million-rand investment. The asset management system, for example, supports automatic logging of vehicle use, enabling departments to be billed promptly and accurately. This improves cash flow and financial accountability, as well as eliminating many disputes. FleetMan is web enabled, so government employees can quickly and easily book pool vehicles or track vehicle movements.

• **e-Fuel:** The fuel management component brings together bank, fuel supply and vehicle tracking systems to ensure that government fuel purchases are tightly controlled. The combination of electronic fuel pumps and vehicle identification means it's no longer possible to fill non-authorised vehicles using a government garage card. The system has all but eliminated fraud, leading to expressions of interest from several other provinces.

• **Cape Gateway,** the Ce-I's most publicly visible project, provides government information to Western Cape citizens via a web portal, a call centre and a walk-in centre in Cape Town's Long Street. Demand for the service has been growing strongly since its official launch in March 2004: by January 2005 the portal was receiving around 50,000 visits, the call centre around 14,000 calls and the walk-in centre around 500 visitors per month. The most popular queries from members of the public are about social grants and pensions; other popular services include access to the office of consumer protection and information about car vehicle registration procedures—the volume of calls to the traffic department has dropped by 60% since Cape Gateway's launch.

• **Cape Access:** Information has no value if people can't access it; so, to complement Cape Gateway, the Ce-I is also rolling out programmes to provide computer access and skills in rural communities. e-Community Fora have been established in six pilot communities, where ICTs activists are being mobilised around existing physical and ICTs infrastructure. In Oudtshoorn, Struisbaai and Bitterfontein libraries are the focal point; at George and Elim this role is filled by schools in partnership with Khanya, and a multi-purpose community centre is being used at Vanrhynsdorp.

• **e-Literacy:** As Cape Gateway staff point out, it's pointless and foolhardy to offer access to ICTs without also offering training so people can use facilities effectively. The Ce-I is developing a series of community training and e-literacy projects, including training modules that will be free for anyone to adapt and use for themselves.

Of course, none of the projects presented would be possible without a robust, well-run and up to date ICTs infrastructure, with its vital hardware and software services linking
The information backbone to the officials so that they are able to perform their tasks efficiently. At present, the ICTs infrastructure is dependent on a Wide Area Network (WAN) that provides connectivity to 9,000 workstations in 108 buildings. More than 11,000 officials continually used one or more of the 377 custom developed applications in conjunction with commercial software packages (this is confirmed by the 5,000 Help Desk calls per month and the 120,000 emails per day). To improve its "ICTs backbone", the Ce-I is planning a forward-looking project to ensure that the PGWC has the right infrastructure in place to take advantage of "next generation" technologies. This is the Project Foundation initiative that aims at realising an ambitious programme of integration of the current Local Area Networks (LAN) and the WAN, provided by the State IT Agency (SITA), and to prepare to be a "model" for future IT-governance planning.

8.2.3. Strategy Alignment and Holistic Governance in the Western Cape

The Western Cape's Premier's Department has set out a draft strategy for Holistic Governance, in which it sets out its intention to realign and reorganise itself to be more relevant, effective and efficient in managing the activities and delivery of a modern government service within a developmental African state. The vision of the Premier, Mr Ebrahim Rasool, is that Holistic governance is about .... "optimising the potential of networked governance and organisation. It is premised on the view that fragmentation is a problem that can be overcome, not a condition to be lived with". The three key aspects of such governance are:

- **Alignment**: planning and operational activities are explicitly based on policy instruments such as the "iKapa Elihlumayo", the provincial strategy.

- **Co-ordination**: in which the different role-players act in concert with each other, and

- **Integration**: in which collaboration and co-operation are built into systems and instruments to effect holistic governance.

In consistency with the Premier's strategy, the Centre for e-Innovation has developed an "Ignition Strategy" which lays out in detail the strategic direction for the Centre, taking into particular consideration the alignment with the Provincial Development Strategy, the iKapa Elihlumayo, its key priorities, objectives and action plan.

The aim of the Centre is to ensure that its strategy is in line with the Premier's Departmental Strategy by demonstrating good practice and current activity in areas of collaboration, centralised strategy and policy development, with the Provincial government as well as with the City Administration.

In this regard, of particular interest is the collaborative framework agreed upon by the Centre for e-Innovation and the Information Technology and Economic Development and Tourism Directorates of the City of Cape Town. This agreement "Working Together – Learning Together", established in 2004 after discussions and practical
Although the two governments have worked together in the past, there was the need to develop and formalise a collaborative partnership in order to ensure that the agreed objectives are met and that the City of Cape Town and the Western Cape are strategically positioned for the future.

The partnership between the two institutions, eventually open to other departments and players, has the objective of establish a mutually beneficial relationship, to realise the following:

- provide strategic direction in terms of e-government initiatives;
- target key customers' needs through programmes and projects;
- access, use and deploy scarce resources;
- share implementation lessons and practices; and
- allow for more focussed and structured interaction with other external and internal stakeholders (including the national government, other local authorities, potential donors, the private sector, other non-governmental and civil society groups).

The partnership document therefore outlines the purpose and principles to be used to guide the collaboration; the specific goals and objectives; and the management framework. It also indicates the collaborative projects already conducted and the planned activities for the future, thus becoming an effective "road-map" for implementation of activities at different level of governance.

Within this framework, the "Smart City" Strategy of the City of Cape Town, represents an example not only of successful implementation of an ICTs-driven re-engineering of the City government, but a way to address the twin challenges of poverty alleviation and globalisation of the overall provincial government, by identifying the way that ICTs can enable economic and social development and enhance good governance, in the City and in the Province, but also in consistency with the national and regional objectives.

**8.3. THE CAPE TOWN'S SMART CITY STRATEGY**

**8.3.1. ICTs opportunities and divides in Cape Town**

The City of Cape Town is home to 75% of the provincial population and, with its 94 Billion SA Rands annual economy, makes up 80% of the provincial Regional Domestic Product (RDP) with an average growth rate of 3% from 1995 to 2002, the highest in South Africa. Numerous factors have contributed to this, such as the presence of the
Parliament in the province, a well-developed infrastructure and an expanded skills base relative to other provinces.

Figure 1 – The Capegateway website reporting the statement on NEPAD by President Mbeki

Although Cape Town is one of the most productive areas in the country, it recognises that its output per capita is less than one-sixth that of industrialised countries and large sections of the community live in poverty, unemployment and ill health.

The economically active population has grown almost twice as fast as the whole of South Africa (21% versus 11%), however its unemployment rate was at 24% in 2005 which translates into 500,000 people, some 80% of whom are classified as youth.

The City has established that to improve its unemployment rate, it needs an estimated 7% annual Gross Regional Product (GRP) growth.

Thus Cape Town, through its multi-award winning Smart City Strategy, and together with a range of complementary city council strategies, represents the possibility of providing an answer to the challenges of the knowledge-economy and increasing globalisation in South Africa.

Through this strategy, the City administration, since 2002, is focussing on providing ICTs skills enhancement opportunities, access to ICTs and business development opportunities.
At the same time, it developed a policy discussion document on ICTs and Business Development Services and has undertaken a groundbreaking Digital Divide Survey. In fact, recognising that the Digital Divide is having an increasing impact on economic and social development, the City commissioned a survey to determine where its communities, businesses and organisations stood in terms of their access to, and use of, ICTs. Information was collected through 19 community meetings, with 1,852 attendees generating 826 questionnaires resulting in that:

- 67% of respondents had never used a computer;
- 10% or respondents have PC access at home and 11% at work;
- 14% have access to the Internet;
- 44% did not know of an access point to ICTs;
- More people have access to cell phones than to fixed-line phones;
- Majority of low-income residents can't afford to pay for basic services, so ICTs remain out of their reach;
- Most viewed ICTs as critical to the future of their organisations;
- ICTs activities and programmes are mostly unavailable or are perceived to be ineffective in Cape Town's communities.

The study underlined that there is a great enthusiasm for ICTs in general, but a feeling that some communities are being left out of the Information Society. According to McConnell International, South Africa needs to focus on improving its basic infrastructure, human capacity and overall regulatory environment. This is of particular importance in Cape Town where, however, the activities under implementation were going in the direction of filling these gaps.

8.3.2. Vision and Strategic Framework

The vision of the City Council for Cape Town, is "to build a City for all, a City in which no-one is left out". The Smart City vision, is that of "a Smart City populated by informed people connected to the world and each other by the technology of the information age".

The long term objectives set up, are to have:

- A city where 80% residents, businesses and institutions are connected to each other and the world;
- A city in which all residents will have access to digital information and communication and the skills to use it thus bridging the digital divide in the
A city where 80% of the population will be able to interact with the city administration through the use of ICTs.

To achieve these ambitious objectives, the City Council developed in 2001/2002 the "Smart City" Strategy that is a strategic framework aimed at positioning Cape Town as a leading city and region in the global knowledge economy. The strategy focuses on transforming the way local government delivers its services. The five pillars of the strategy are the following:

1. **Leadership**: Leadership in technology policy and strategy should be located at the most senior levels in the organisation, both politically and administratively. Other leadership areas are in business, in interaction with citizens, in non-profit organisations and in other collaborative initiatives.

2. **Development Strategy**: ICTs should be used to foster the city's economic and social development, through the growth and retention of the ICTs industry, creation of employment potential through the use of ICTs as a skill, and the use of ICTs for social development.

3. **Policy and regulatory environment**: the entire city's legislation needs to be reviewed and all new legislation passed by the city needs to be designed to ensure digital age appropriateness.

4. **Digital democracy**: the city should make a concerted effort to ensure more equitable access to, and spread the benefits offered by, ICTs to all. For local government, communities and business to take full advantage of the benefits offered by ICTs there is an overall need for infrastructure, skills development, and planning.

5. **Administrative/e-government**: ICTs should be used as strategic tools to transform local government to:
   - Create a highly efficient and effective organisation;
   - Reduce transaction costs;
   - Allow service to citizens anywhere, anytime;

   Allow citizens to deal with local government services in an integrated manner, via "one-stop-shops";

   Make local government more customer-friendly and citizen-oriented;

   Improve decision making by providing easy, timely access to relevant, accurate Council information.

Moreover, it is important to underline that, as already mentioned above, the city works in close partnership with the Provincial Government as well as other stakeholders, to
opportunities to use ICTs to support the growth and development of its business, organisations and communities, taking advantage of synergies and common goals.

8.3.3. Activities and Results

Although Smart City has five focus areas, it is important to understand that it is an integrated strategy, aimed at a common end point. In this regard, it was imperative to create a world-class IT organisation that together with other City Services and Directorates, supports the achievements of the overall "Smart City Strategy". For this Strategy, Cape Town is recognised as a leading local government in South Africa, and was awarded the "African ICTs achievers e-government award", in 2002 and 2003.

To this end, the Directorates of ICTs, Social Development and Economic Development and Tourism, started implementing a number of projects, from both "externally" and "internally" focussed perspectives.

The "externally" focussed projects, are the following:

- **Smart Cape Access**: This is a pilot project making computers with free Internet access available in six public libraries. The pilot project was a success and it is now being rolled out to all City libraries in a phased two-year programme. Smart Cape computer facilities are provided by the city administration for use by any citizen. Users must be a member of the library and have a valid library card ([www.smartcape.org.za](http://www.smartcape.org.za)). It won the Bill and Melinda Gates Access to Learning Award 2003.

![Smart Cape Access](http://example.com/smartcape.png)

*Figure 2 – The logo of the [www.smartcape.org.za](http://www.smartcape.org.za) initiative*

- **Library Business Corners**: Based in 33 of the City's public libraries, these corners provide accessible information on starting and running small businesses, as well as resources and access to support services and other national, regional and local small business support networks. An example of which is B.R.A.I.N. the Business Referral and Information Network. It also focusses on youth entrepreneurship awareness.
Figure 3 – Internet users in the public libraries in Cape Town

- **Digital Business Centres**: based in Khayelisha, Guguletu and Langa, each centre includes telephones, faxes, scanners, photocopiers and printers, and will cater for business services such as accounting, legal, tourism, e-business, graphic design and business management.

- **ICTs Sector Support**: In consistency with the overall Provincial strategy, the ICTs sector has been identified as one of the key priority areas which will promote economic growth and job creation. The City of Cape Town thus supports the development of the sector to ensure that it becomes globally competitive, through supporting CITI- Cape IT Initiative.

- **Kulisa Project/Training learnerships in ICTs**: this project offers exciting training opportunities to 130 previously disadvantaged individuals to acquire ICTs skills. It is directed at unemployed matriculants and it is sponsored by ISETT, SETA and other partners, including CS Holdings and the City Administration.
But the “starting” big effort conducted so far, with the most rewarding results achieved, is in the area of "internally" focussed projects. In particular, already in 2001/2002, the City administration started the rationalisation and standardisation of the IT services within the organisation, as well as enabling internal electronic communications (intranet, emails); developing the City government Web Site and providing training on ICTs, through the Councillor ICTs support project, a training activity addressed to councillors, to enable them to effectively utilise the ICTs facilities provided.

In 2001, the implementation of the Ukuntinga Project – MySAP.com also started: this is the largest SAP-Enterprise Resource Planning (ERP) implementation and staff training initiative for Local Government in the world, and won the 2004 Computer World Honours Award as the most significant IT project in a Government and Non-profit making organisation.8.3.4. The Ukuntinga Project

The Project Ukuntinga, meaning to soar and rise above in isiXhosa (one of the official language of South Africa), is about the design and implementation of an ERP (Enterprise Resource Planning) System that offers a comprehensive solution for managing financial, revenue, human resources, operations and other services (in practical terms its "back office" systems) on a single integrated IT system.

The city's ERP programme is a key component of the Smart City Strategy as the foundation on which its e-government capabilities will be built.

The reasons why the City of Cape Town implemented this project are the following:

1. **To facilitate the merger of the previous Municipal Local Councils into a unified City of Cape Town.** To do this, it was necessary to implement standardised, integrated financial, human resources, maintenance, revenue, procurement, inventory, assets and customer contact policies and procedures within an integrated system, as well as to consolidate and normalise all data objects on a single data base. However, legacy IT systems differed for each of the previous administrations and did not adequately meet the requirements of the unified city.

2. **To transform Local Government:** By creating an organisation based on standardised and best practice business processes, and replacing back office systems which were deemed to be outdated, functionally inadequate, not integrated and not able to render the level of service the city had committed to offering its citizens and visitors, as well as allocating scarce resources to value adding and service delivery activities.

3. **To unlock Financial Value for the City of Cape Town:** The lack of cost transparency in legacy systems made it difficult to determine where money was spent and what the city was getting in return; by improving and identifying new revenue and income streams, the efficient utilisation of scarce resources could
In order to realise these objectives the City of Cape Town elected to implement an ERP system, using the proprietary solution SAP. The current implementation project has focussed on merging the 7 previous Municipal Local Councils and standardising the entire organisation's back office functions and business processes across the various organisational units. In brief, the ERP system implemented has created a platform from which future strategic imperatives are to be realised.

Approximately 300 end-to-end business processes have been designed, documented and implemented through the system. These processes relate to the following functional areas:

- Financial Accounting (Financial statements, treasury and cash forecasting).
- Asset Management (Asset accounting and control).
- Management Accounting (Financial planning, job costing, cost distributions and activity based cost allocations etc.).
- Plant Maintenance (Maintenance Management of infrastructural and moveable assets).
- Materials Management (Inventory management, procurement, accounts payable).
- Real Estate Management (Lease-out of municipal land and property holdings).
- Customer Interaction Centre (Customer account queries, task allocation and monitoring and infrastructure defect reporting).
- Human Resources (Organisational management, recruitment and staff development, training and facility management, personnel cost planning, leave management and payroll).
- Industry Solution for Utilities (Utility consumption, meter reading and management, invoicing and debt management).

Through the implementation of this system the complexity of corporate processes has been reduced. Duplication has been minimised, manual processes have been automated and location and distance are no longer limiting factors as the system does not hinder the location from where a service can be delivered.

This project has enabled the city to facilitate the merger and transformation of the ICTs systems of seven previous autonomous local authorities. More than 113 legacy systems and 70 interfaces were replaced with a single, functionally rich ERP-SAP system to streamline operations, reduce costs and enhance service delivery. This has been
achieved by reengineering and standardising more than 300 end-to-end business processes on a single integrated transactional system and by training 6,500 staff members to transact on the new system.

Figure 5 – The SAP Centre at the IT Department of the City Council

This new IT platform has enabled the city to manage its resources more efficiently and help create a citizen-focussed environment. Access to the city's new system is available from more than 500 sites across the city, where all citizens have access to a consistent level of service.

The city's ERP programme aimed to capitalise on the output of the organisation by optimising the way it deploys its resources, aligning business processes and by exploiting appropriate ICTs. No one component was more important than the other; the success of the programme hinged on how well these three dimensions worked together to achieve the strategic objectives of the administration.

Prior to implementing the ERP's system a study was undertaken to determine if the project would have a positive return on investment (ROI). Senior staff members identified the Value Creation Opportunities (VCOs) they believed the project would create and the benefits this would bring about were then quantified. VCOs were opportunities that the organisation can pursue to deliver value through increased revenues, reduced costs or improving the utilisation of assets.

Opportunities in areas that did not have a direct financial return, such as improving service delivery or advancing social upliftment, were also considered value creation opportunities, but were not used in the cash flow analysis as it was very difficult to quantify these benefits.

In fact, in order to calculate the "pay-back" period, a detailed financial model was developed. This indicated that, by the end of the 2003/04 financial year, the total 3-year
The long project cost of SAR355 million would have been reduced to 50% of the project costs, seeing that benefits with a value of SAR232 million have already been realised, and would continue to produce benefits in the future. The city in fact now generates accounts through the ERP system to a value of nearly half a billion Rands each month. Improved visibility and transparency of information on the new invoice, the possibility for citizens to pay their accounts at any municipal pay point and the implementation of a call centre to address billing queries has enabled the Revenue Directorate to implement income recovery actions. This had improved the ratio between the value of municipal accounts sent out and payments actually received.

In total, after implementation of the ERP system, there is a net return per year of SAR40.6 million; and it will allow a financial break even in 2009. Considering the additional opportunities to create financial value, in addition to the benefits already achieved, in the financial year 2004/05 the project cost had already been fully recovered. In fact, in every part of the organisation there are opportunities to make financial savings and it is every person's responsibility to ensure that they are realised.

The project design phase commenced in March 2002, and the completed project was implemented in two releases. The first release focussed on the expenditure related aspects of the business and was commissioned during December 2002, with the second income related functionality being commissioned during September 2003.

Through this ERP programme the city has created a modern transactional and management information system. It will enable it to build a flexible and responsive organisation which will continually improve its efficiency and effectiveness in delivering its programmes and services to the benefit of more than 3.2 million people.

Internally, 6,500 staff members have been trained on how to transact on the new system and its associated business processes. This was after more than 1,650 were directly involved in the various design and implementation stages of the project.

A subset of these staff members was the project implementation team of 120 staff members. They were drawn as volunteers from all levels of the organisation and worked with external resources to design, test and build the new system. Prior to joining the project these people had no SAP knowledge and through a process of knowledge transfer have developed significant new skills which will enable them to form the core of the system support structure.

Six months after the implementation of Release 1 the acceptance level of the new system was tested by performing a user acceptance survey. The overwhelming response indicated that users believed that the organisation is better equipped to address the challenges facing the city as a direct result of implementing the ERP system. Although many of them still lacked confidence in their ability to optimally use the system a level of excitement and pride within the organisation in what it had achieved, was evident.

This business case shows that implementing an ERP programme for the City
Implementation of an ERP system can provide a positive financial return. In addition to the financial benefits, it enables the organisation to achieve its amalgamation, transformation, and service delivery objectives through enforcing a uniform business process.

Implementing the ERP system was a corporate-wide project and, by creating value through the system, demanded the collective efforts of all the stakeholders. The ERP project team supported the organisation in the use of the system and where financial value was realised.

This programme, therefore, did not emphasise the implementation of new technology as its sole objective, but focussed on using ICTs to bring about sustainable transformation in local government with far reaching benefits to the citizens of Cape Town.

8.4. Conclusions

8.4.1. Impact on local governance

The Smart City Strategy, and its ICTs-enabled administrative reorganisation foundation, the Ukuntinga Project, clearly demonstrate the successful use of ICTs as an enabler of transformation, whilst merging seven municipal authorities into a single administration with 28,000 payroll members and serving a population of 3.2 million citizens.

This was not purely about the implementation of an IT system, but about the relationship between the technology, the city's business processes (contained within the system) and how the organisation structures itself around these processes – which the ERP system aims to optimise in support of the strategic objectives of the city. Any change to a single dimension should result in changes to the other two.

The overall impact of the new system has been felt across three areas, namely:

- **Organisational**: the transformation impact of the project has been significant. Prior to embarking on this programme staff operated in their respective functional and regional silos with a great deal of suspicion and guarding of information. During the design phase of the project more than 1,600 employees from diverse backgrounds rallied around to create a common design for the future business processes of the city, thereby laying the foundations of a new organisational culture and service delivery model.

- **Human Resource**: for the city's staff, the introduction of modern technology and integrated systems has improved peoples' pride in their jobs. The integrated nature of the system has provided staff with a greater insight into how processes and tasks relate to each other and the impact their actions have on the outcome. This has enhanced accountability and clearly defined roles, with a greater width of responsibilities that have now being allocated to individuals.

- **Citizens**: for the citizens of Cape Town the distributed nature of the system
An increased number of municipal services are now available at more convenient locations. No longer will citizens be forced to engage the local authority in the area where they live, but are able to transact at any municipal office within the greater metropolitan area. This is particularly important in a city where a large percentage of citizens do not have access to public or private transport.

This project has provided the City of Cape Town with a single, integrated system. To date the emphasis has been on getting the basic processes right across the organisation, giving the city a robust, stable platform for further developments.

Figure 6 – Recognition of the success of Smart City by the Minister of Communication

Key opportunities identified by the city fall into three broad categories, namely:

- Making local government accessible 24 hours per day, 7 days per week to the citizens, visitors and businesses operating in the city. This includes the ability to query or pay municipal accounts, log electrical faults, apply for a new connection or disconnections for water or electricity, report potholes, or complain about parks, beaches and other recreational facilities across the city;

- The new system also provides a unique opportunity to re-engineer Revenue Services and Customer Care, focussing on tariffs, taxes and grants, arrears incentives and sanctions in a manner that significantly enhances the city's
The new system also provides an opportunity to holistically address poverty and indigence in the city, given that the system touches nearly every aspect of local government business that has an impact on the lives of poor people, such as the provision of basic services, public housing and municipal infrastructure.

The greater reliance on ICTs-enabled business processes has fundamentally changed how tasks are performed. In the past citizen interactions were characterised by front desk staff only being able to receive requests and then passing them to the back office for action. Significant delays and repeated requests for the same service were necessary as paperwork got lost.

The intention now is to ensure that as many tasks as possible can be concluded at the point of citizen contact and where necessary to escalate the task for action - this gets done via workflow. Queries and requests for information are handled via a centralised call centre and convenient walk in centres will be established across the city. Staff can now be moved from the back office to the front office to improve the level of service but most importantly tasks will be initiated electronically or concluded where possible at the point of citizen contact.

These changes will unfold over an extended period, but only after structural changes have been made to the city's fixed establishment will their full benefit be realised.

One of the benefits of having so many automated business processes is the improved visibility this gives management. A breakdown in a process or a backlog in a service can now be managed and remedial actions implemented based on objective indicators. The city is now able to monitor its service offerings centrally, but has the freedom to deliver them through devolved structures. Remedial action can be taken pro-actively, based on objective measures and no longer will the number of people who complain or the length of the queue be the only insight into the demands being placed on a service. A more comprehensive set of performance indicators is to be introduced and the ability to report on these will drive the new performance culture for the city.

8.4.2. Key factors of success and difficulties

The successful implementation of ERP systems in private enterprises is proven world wide. This is however the first time that a full scale ERP system has been implemented in the South African public sector and is considered to be one of the world's largest (if not the largest) SAP installations in local government. Thus its originality.

One of the key social objectives of the programme was black economic empowerment and the up-skilling of previously disadvantaged individuals. A progressive implementation contract was prepared. This sought to provide emerging ICTs vendors, who were previously excluded from projects of this nature, with an opportunity to share in the economic and skills development opportunities. Both financial penalties and rewards associated with meeting empowerment objectives were specified and tracked.
Through this, the city ensured that its investment in ICTs community and that previously marginalised groups were not excluded. The significant risk associated with a project of this scale was lessened by contracting an experienced, international, implementation partner and who were bound contractually to ensure that the city's affirmative programmes were realised.

The **uniqueness** of many aspects of the system can be identified in the support to the city's social and developmental objectives. These include:

- The need to manage property as a primary object for the purposes of billing;
- The raising of property tax and the implementation of progressive utility tariff models which makes provision for the economic realities of citizens and provides for the indigent;
- Creating a financial accounting system which complies with the Generally Accepted Municipal Accounting Principles being introduced in South Africa;
- Providing system generated documentation in all 3 official languages of the Western Cape.

Although the project was implemented in record time it was conceived through a deliberate process spanning many years and with the involvement of all the key stakeholders. During 2000 a strategy was developed to enable the city to get off an increasingly dysfunctional platform created by its disparate and non-integrated systems. The implementation of an ERP system to facilitate the merger of the separate local authorities and drive its transformational agenda was envisaged. The need to obtain the buy-in of all stakeholders was identified at an early stage resulting in a detailed and inclusive process being followed to identify system requirements and software / implementation partner selection.

During the implementation phases of the project a multi-tiered governance structure was established to steer the project and keep it on track during the turbulent times associated with a young and unstable organisation.

Of course, as can be expected with a programme of this size and complexity numerous difficulties had to be overcome during the project life cycle.

Challenges both of a functional and technical nature were experienced. These were made even more demanding due to the large number of social objectives, in addition to the business requirements and local government specific legislation with which the programme had to comply.

The technical problems were, however, insignificant in comparison to the organisational challenges which had to be overcome.
Midway through the implementation phase of the project the political leadership of the city changed - resulting in the restructuring of the executive management level of the organisation. Three different CEO's were employed during this period.

- The city's administration was in a state of flux. The original requirement that a new organisational structure be developed and populated prior to go-live - was not met. The new uniform ERP business processes had to be implemented without being allowed to amend the organisational structures of the previous 7 administrations resulting in new business processes having to be implemented on an old organisational structure.

- So as not to preclude any staff member from future employment opportunities in the city all potential system users had to be trained in terms of the roles they performed in the previous administration. This resulted in a significantly more training effort than originally anticipated.

- The line management structure of the city was ill-defined and no reliance could be placed on it to ensure that instructions would filter down to lower levels of the organisation. To mitigate this risk the ERP programme had to create its own structures with a comprehensive communication and change management plan to ensure that its target audience was kept informed and acted on instructions.

- In many areas of the organisation IT was being introduced for the first time and basic computer literacy, as a pre-requisite to ERP training, had to be provided.

These difficulties were overcome with a high degree of success, but the City of Cape Town still faces a number of challenges in moving forward:

- Ongoing training and education on SAP, teaching staff more advanced SAP functionality that increased the usability of the system and allowed them to make better decisions based on the information available. The set-up of cross directorate user groups would support this process and also ensure ongoing ownership.

- Ongoing focus on breaking down the silo mentality that existed between some directorates and functional areas. Through the ERP implementation, significant progress has been made in this area but will require ongoing focussed attention.

- Deepening senior management understanding of the information that was now available to them and their ability to access and interpret this information. Workshops with the directors had already started. At each of these, the focus was both on broadening understanding of available information, as well as building hands-on capability.

- A SAP Competency Centre staffed by people with a good understanding of the city's processes, transactional systems and future strategies would have to be
The resistance to a project that called for such a large financial commitment (SAR355 million), especially when seen in the City of Cape Town context, was significant. The city faced financial constraints and a large backlog in basic services in previously marginalised communities. Investing so significantly in ICTs systems was questioned from both internal and external sources.

In order to overcome these challenges and obtain the necessary funding the project was positioned within the overarching 'Smart City Strategy'. The importance of getting the back office in order to achieve financial sustainability and the need to create a transactional platform from which other service delivery and developmental objects can be pursued, was debated extensively. The final approval was however only given after a compelling business case had been prepared and it was shown that the project would provide a positive financial return on investment.

Obtaining initial funding was however only the first step. In a programme that spanned three financial years the importance of ongoing stakeholder management cannot be over emphasised. Especially in a political environment the need to ensure that this support spans party political boundaries is essential and the creation of a multi-party political steering committee was crucial to the success of the programme.

A further key obstacle to success is that a programme of this nature could be misperceived to be a Finance or IT project (or any other part of the organisation for that matter), whereas in fact it is an organisational transformation project addressing end-to-end business processes. The support and buy-in from all sectors of the enterprise is crucial. This can only be achieved with the full support at an executive management level. For this reason the successful implementation of the ERP project was a key performance area in the performance contracts of each executive management board member.

The external challenges to the project were addressed through debating its merits in the public arena and the implementation of a pro-active communication plan. Prior to any release which could have an impact on external stakeholders, press releases and other channels of communication were used to make the citizens of Cape Town aware of this in a pro-active manner, highlighting potential risks and asking for continued support and so making it possible to mitigate any emotional response if there was a danger of this happening.

8.4.3. Lessons Learned

As in many cases in Africa, the City of Cape Town operates as two distinct societies ï one wealthy and developed, and the other poor and underdeveloped. The key challenge faced by the city is the notion of "inclusivity". The poor and disadvantaged must be catered for no less than anybody else. This has generally not been the case. By the same token, the city recognises that an approach that seeks to cater for the special needs of
which impacts unreasonably on the interests of any other segment of the city is also not supported. Therefore, any project, including the ERP system, needed to ensure that it enabled the city to work for all its citizens and effectively address the inequalities of the past.

A serious concern surrounding the introduction of such an ERP system, was that it is a "first world" solution and only benefits the wealthy, developed communities in the city. This can result in exacerbating the "digital divide" across the city, and in the process leave poor communities further behind. As a city, Cape Town needed to ensure that the poorest communities were able to keep pace with the latest technology developments.

Hence, the approach followed has been focussed on solutions that provide equivalent benefits to all communities, addressing the needs of the broader society, rather than focussed on the needs of any specific segment. An example of this was the translation of the municipal accounts from English into isiXhosa (a local national language). The Ukuntinga Project, moreover, has to be considered as part of a holistic strategy that, in addition to reorganising the back office for better service delivery, sought to address the "digital divide" challenge by, for example, providing free access to computers and the Internet to the people of Cape Town at municipal libraries (the city's Smart Cape Access Project), or providing training on ICTs to disadvantaged people (the Kulisa Project). A further example of this challenge was the ability to get small, micro and medium enterprises to embrace ICTs in order for them to more effectively do business with the city (Library Business Corners; and Digital Business Centres).

However, a well-managed and optimal use of the ERP system can enable local authorities to comply with statutory requirements relating to transparent governance, financial, resource and performance management. Through this system the city aimed, first of all, at optimising and enhancing service delivery to the citizens of Cape Town but, at the same time, the system especially proved itself to have been the key enabler of transformation of local government in Cape Town.

The functional objectives of this programme were enabled through technology, but the impact and structure that implementing a technology solution had on the transformation objectives of the city were even more profound.

Moreover, government authorities in South Africa have a reputation for being good in developing strategy, but fail when it comes to implementation. This programme, through the demands associated with a binary system, forced strategic intent to be converted to operational plans and key decisions having to be taken. The project plan spanning 18 months from design concept to implementation demanded that these decisions were taken against an aggressive time line.

Although many people referred to the project as an ERP implementation project, it was in essence a transformation project, driven by the technology implementation. The technology forced the execution and implementation of the new processes and organisational design. It forced the City of Cape Town administrators to make and
implement decisions that may have been postponed, were it not for the aggressive implementation plan.

It is therefore important to underline the need to have a strong and capable leadership capacity as well as the involvement of the necessary expertise.

Another criticism that could be made of the project is the fact that a proprietary system was chosen instead of open source software. The return on the financial investment seems to show that this was not the main issue and the city decided to use already proven technologies, taking advantage of the professional advice that would come with the technology, instead of embarking on an even more complex operation.

The Project Ukuntinga itself can also be used as a showcase in terms of the development of historically disadvantaged individuals. Through the innovative partnering and deal structure between the City of Cape Town and the international consulting and technological private company contracted, the project gave the opportunity to more than a hundred historically disadvantaged individuals and small and medium sized companies to build ERP and SAP capacity and experience. These individuals gained from the private companies' experience, methodologies and knowledge through working side by side with the consultants for the duration of the project and have now highly marketable skills in the ERP market for future work.

During the transformation from seven previous administrations to one Uni-city, one of the major obstacles was moving away from several disparate systems (113 legacy systems) into a single system that consolidated all information aspects into a single source.

Not only did the conversion from the old legacy systems consolidate the information, but it also presented the City of Cape Town with the opportunity to conduct structured data cleansing, leading to significantly more accurate data representations. The single source of information enables the citizens to conduct their business with the City of Cape Town regardless of their home location. The developed technology enabled the City of Cape Town to provide service delivery anywhere and anytime, at the convenience of their citizens.

Furthermore, through the transformation project, the City of Cape Town, for the first time, deployed a central call centre which can conduct business with citizens who prefer to use the telephone.

For the first time the leadership of the City of Cape Town is able to extract and view information that is based on a single version of the truth, unlocking insights that were not possible while it had all disparate systems. The consolidation of data is much more than the aggregate of the previous administration data, but has enforced the integration between functions, driving a process based view of information. The impact of the unlocking of this potential will have a radical impact on how the City of Cape Town
The ERP system has been deployed to more than six thousand end-users, working in more than 500 locations. The users range from being very sophisticated through to people for whom working with an IT system was a new concept. All of the deployed users ways of communicating and processing of information changed significantly, allowing them to be now part of a process orientated culture, rather than being isolated in a functional and geographical silo.

Implementing an ERP system per se, is not rocket science and has been done many times before. Implementing a wall-to-wall ERP in a local government in a first world / third world country like South Africa and a city like Cape Town provided many unique challenges and opportunities for the innovative use of technology.

The challenge for the City of Cape Town is now to manage the balance between the city's sophisticated, tourist and investor friendly face to the developed world and its accessible and affordable service delivery to its citizens, of whom many come from historically disadvantaged communities with limited access to first world facilities.

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