

FORESIGHT TOURISM REPORT

Foreword

Technology and information has put a new spin on access to the global marketplace. The transition towards the information and knowledge economy and the process of globalisation, together with growing international interdependence have changed the rules of the game of the new economy. A new competitive landscape has emerged.

The social institutions which were essentially geared to the functioning of predominantly national industrial societies are fast becoming inadequate or incompatible with the emerging global information and knowledge economy. Advances across a wide range of pervasive technologies are beginning to revolutionise the world of retailing, communications and entertainment, profoundly affecting the way we live, work and spend our leisure time.

The purpose of the process was to encourage dialogue between the various representations. The analysis assumed a richer focus and intensity. This report concentrates on the key issues necessary to gain a foothold in the new millennium. New opportunities for creativity emerged from the Tourism Foresight Report. This is not a 21st century pipedream. This is happening in many industries now. The global convergence of technology is penetrating and supporting the tourism industry through an array of major technologies.

We may ask who benefits from Foresight? This question must be asked and answered at every significant stage of Foresight. It provides a pathway for innovative action, with the purpose to improve the quality of life at the community level by capitalising on scientific and technological progress and expanding business and job opportunities.

The African Renaissance theme with many indigenous processes and lifestyle technology opportunities are coming to the fore as a vehicle for indigenous technology application and community empowerment purposes. Another option includes an array of multimedia technologies, which could be used for capacity building.

Despite technological advances moving frontiers, people still remember information best in the form of stories. Hence the scenarios. The surest way to see something from another perspective is to adopt that perspective.

For tourism destinations the world over, as indeed for South Africa, competitive advantage is no longer natural, but increasingly man-made-driven by science, technology, information and innovation. There is no doubt that the biggest challenge is not a matter of technology or information; it is action. Creating tourism entrepreneurs and new job opportunities is really the key issue.

I want to take this opportunity to thank the Development Bank of Southern Africa for generously freeing up resources for me to participate in this innovative forward-looking project.

Elsa Kruger–Cloete

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Abbreviations and Acronyms

DACST.....	Department of Arts, Culture, Science and Technology
DBSA.....	Development Bank of Southern Africa
DEAT.....	Department of Environmental Affairs and Tourism
DTI.....	Department of Trade and Industry
EIU.....	The Economist Intelligence Unit
FRD.....	Foundation for Research Development
HR.....	Human resources
ICT.....	Information and Communications Technology
IPR.....	Intellectual Property Rights
MCST.....	Ministerial Committee on Science and Technology
NGO.....	Non-governmental Organisation
NRTF.....	National Research and Technology Foresight
NRTA.....	National Research and Technology Audit
NSI.....	National System of Innovation
OECD.....	Organisation of Economic Cooperation and Development
R&D.....	Research and Development
R&T.....	Research and Technology
SACOB.....	South African Chamber of Business
SADC.....	Southern African Development Community
SATOUR.....	Tourism South Africa
S&T.....	Science and Technology
STEEP.....	Social, Technological, Environmental, Economic and Political
SWOT.....	Strengths, Weaknesses, Opportunities and Threats
THRIP.....	Technology and Human Resources for Industry Programme
SMME.....	Small, Medium and Micro-enterprises
WTO.....	World Tourism Organisation
WTTC.....	World Travel and Tourism Council

Executive Summary

The future is never predictable with certainty. New technologies trigger social and economic change for which we must now prepare. Foresight is a story about opportunity, about a technology pathway for the future. In reality, Foresight is part of the knowledge economy, with important links to innovation as we move up the information value chain. The new economy is built on the foundation of technology.

Everyone should have the chance to build something that will make a difference through value creation. Foresight helped to identify markets and technologies that can generate social and economic benefits for the country. Value addition through technology is at the heart of the Foresight process.

The Foresight Tourism development explores options that are most likely to produce benefits for South Africa's socio-economic development and global competitiveness in the future. Advances in technology are transforming society. The growing role of knowledge is crucial and will determine success in achieving sustainable development in the future.

The National Research and Technology Foresight, a collaborative alliance between strategic stakeholders in the public sector, industry, academic institutions and other organisations, helped to break new ground, hunting down opportunities outside current business boundaries for the purpose of catalysing new investments in support of tourism infrastructure. The enhanced knowledge exchange can improve public and private policy decision making. Foresight supports the development of new systems and technologies that could lead to a more effective dissemination of information and analysis of policies.

In this Working Group, there were 30 individuals drawn from academia, industry, government, civil society and labour. A full list of the Sector Working Group members appears in Appendix 1. In order to carry out the Foresight process, the Working Group agreed on certain focus areas for the tourism sector. Seven focal areas were identified, and they are as follows:

- The African Renaissance
- Tourism information management
- An integrated tourism strategy
- Human resource capacity building
- Infrastructure and related facilities
- Sustainable environmental management and practice
- Strategic issues, such as safety and security.

A benchmark of the South African tourism sector in relation to that of other countries in the world was carried out. This benchmark highlighted the necessity in South Africa of looking at the incorporation of modern technology into the South African tourism sector. The Strengths, Weaknesses, Opportunities and Threats exercise (SWOT) was carried out in Chapter 3. Several weaknesses were identified, including the lack of coordination in strategy formulation in the sector, adequately trained human resources, etc. There were several opportunities identified, including the exploitation of e-commerce opportunities, multifunctional smart cards, etc.

In order to identify emerging technologies, a survey was conducted with a view to soliciting views from other expert on the one hand and to develop visions for the tourism sector on the other hand. These technologies were grouped into six themes. They are as follows:

- Global network
- Multimedia
- Infrastructure
- Processing technologies
- Advanced identification systems
- Alternative transport systems.

Global network

In order to meet a number of challenges that the sector faces, global network was identified as one of the technologies that could help the tourism sector to meet a number of challenges, including direct booking, marketing South Africa as an important tourist destination, etc.

Multimedia

This is seen as a crucial technology that could help promote tourism both locally and internationally. Several key technologies that would underpin multimedia were identified, including large, wall-hung, high-definition screens, digital sound and voice recording, and artificial worlds to mention a few.

Alternative transport systems

If tourism is to survive, integrating the Southern African region is the key. Several modes of transport to meet the diverse needs of tourists will have to be considered. These modes of transportation could be divided into two types, the faster mode from one location to the other and the second mode, which is mainly for scenic viewing. For the faster mode, magnetic levitation, fast trains and lighter, faster airplanes have been

identified while for the second mode, airships and hot-air balloons have been identified.

Infrastructure

This is identified as the key to expanding tourism to underdeveloped sites. The infrastructure is also divided into two parts, viz. physical and IT infrastructure. Physical infrastructure includes water purification, renewable energy and light rail, while IT infrastructure includes smart-card readers, satellite links, etc.

In addressing areas of strategic involvement and actions needed for socio-economic development and competitiveness purposes, the following benefits of the collaborative process are apparent:

- Pockets of innovative capacity within the country;
- New ideas, opportunities and future markets;
- Emerging transport, information and infrastructure investment opportunities
- Contribute to influence policy and better decision making.

After navigating the globe in ballooning's greatest triumph, Bertrand Picard's description of his flight in the Breitling Orbiter 3 as 'finding new resources to face the unknown' is perhaps an apt metaphor for the Foresight process and how to take it forward!

Chapter 1: Introduction

The mission of the Tourism Sector of the National Research and Technology Foresight project is —

'To identify innovative tourism opportunities, research topics, strategies and actions within a strategic framework that would realise socio-economic development based on sustainable environmental practice now and in the future.'

1.1 Introduction to the Foresight Process

The aim of the project is to facilitate the country's global competitiveness, and government's role is to create an environment conducive to successful competition in the global arena by the industry. It is recognised that technological progress and human resource development will lay a foundation for continued socio-economic growth and job creation.

Foresight is a series of processes intended to capture the dynamics of change by placing today's reality within the context of a range of potential futures and seeks to add new dimensions to our thinking by providing research and technology challenges. The Foresight process explored a range of possible ways in which the future could develop, a study of which might enable stakeholders to decide what decisions need to be taken to create the best possible future.

Foresight provides a valuable mechanism for serious consideration of significant research and technology trends and their relationship to socio-economic needs. Foresight is inherently proactive and reflects the belief that the future is influenced by decisions and actions made today. By building complex pictures of alternative futures we are better able to assess how well current and proposed research and technology systems might address our future needs.

Foresight's mission is to promote technological innovation and deployment, by identifying opportunities for economic and social development through a national research and technology foresight project up to 2020.

Technological change is driving economic development. In recent times, a number of OECD countries have embarked on technology foresighting to guide research and development and to help with policy design. This is the first time that foresight scenario development is anticipating effects of new and emerging technologies in

South Africa in the longer term. It is useful to evaluate the South African perspective of Technology Foresight in relation to international experience.

International foresight studies converge on a limited number of technologies that will occupy centre stage. Topping the list are information technologies, particularly high-density components and new types of software. In addition, biotechnology and technologies to improve energy efficiency and power generation and those enabling the use of renewable energy will be crucial. Most foresight exercises confirm that interdisciplinary activities have innovative potential and value.

In several countries a foresight culture enabled the comprehensive long-term visions of future possibilities and needs which are so important in providing appropriate contexts for the effective integration of foresight with decision-making. Creating such a culture is complex and requires an appropriate balance between two of the intrinsic tensions in foresight: science-push versus demand-pull, and top-down versus bottom-up. The following components are non-negotiable for this culture to flourish —

- The process should be broad, and should extend beyond established disciplines of panels dominated by specialists and scientists.
- An institutional framework should guide and translate foresight findings into specific policy initiatives and actions, preferably involving both the public and the private sectors.

For example, in Japan, the foresight process tended to involve S&T and industrial experts, while in the Netherlands, a broader community is usually involved. The UK foresight has focused on a combination of these approaches. A similar foresight study in the US tended to list only critical technologies, using a core of selected experts. The South African foresight approach, while informed by international lessons, tended to incorporate local dynamics, framing them within a global context.

Although foresight may use several forecasting techniques (e.g. Delphi analyses, trend analyses, scanning and scoping), the outputs differ significantly. The emphasis in foresight is not on prediction but on the realisation that addressing the future necessitates the management of uncertainty. A richer and better-informed context for current decisions is developed through a dialogue involving all relevant stakeholders, with emphasis on the human abilities of forethought, creativity, systems thinking, analysis and judgement. The adage of 'the broader the range of perspectives, the better the application' holds true.

The foresight exercise in South Africa, though informed to some extent by approaches of other countries, had to adopt an approach that would be appropriate to

the South African context. Some of the unique features of the South African Foresight are addressed below:

- The Foresight programme has been deliberately designed to be inclusive of all stakeholders. The outcomes of the Foresight project will contribute towards new directions for science and technology in South Africa. It indicates a commitment to collaborate with the private sector and other stakeholders to align science and technology with the economic and social needs of the country consistent with a growth and development strategy.
- The aim of Foresight is to help identify those opportunities, technology themes and technology trends that will best improve the quality of life of all South Africans over the next 10 to 20 years.

The reality of declining public investment in research and development worldwide suggested that a new approach to the management of the entire research, science and technology system be established through Foresight. As articulated in the Science and Technology White Paper, the vision is to ensure that science and technology becomes the catalyst for a sustainable quality of life, where all South Africans are afforded an opportunity to participate in a competitive economy.

The desired vision would be realised through a national system of technological and social innovation (NSI), underpinned by knowledge sharing, catalytic support for innovation which is fundamental to sustainable economic growth, employment creation, and equity in social development and the sharing of a democratic culture.

1.2 Working group composition

The Director-General of the Department of Arts, Culture, Science and Technology (DACST) appointed the Tourism Foresight Working Group late in 1998. The idea was to have a Working Group that is representative of a broad cross-section of tourism sector stakeholders, knowledgeable individuals from across the private sector, the various tiers of government, academics, conservation agencies and small tourism entrepreneurs. The Working Group members were identified and invited in their professional and personal capacity. The names were selected from names put forward through a process of co-nomination and supplemented by a wider consultative process. Gaps in gender, race, and regional representation were specifically addressed. The Working Group included Dr. Phil Mjwara (interim sector coordinator) and Ms Elsa Kruger-Cloete of the Development Bank of Southern Africa as Chairperson. The full list of Working Group Members is in Appendix 1.

1.3 Sector focus areas

As the White Paper on the Development and Promotion of Tourism in South Africa (1996) aptly articulates, tourism has become a fiercely competitive business. For tourism destinations the world over, as indeed for South Africa, competitive advantage is no longer natural, but increasingly man-made and driven by science, technology, information and innovation. After some deliberation at the first workshop, the Tourism Sector Working Group identified the following focus areas:

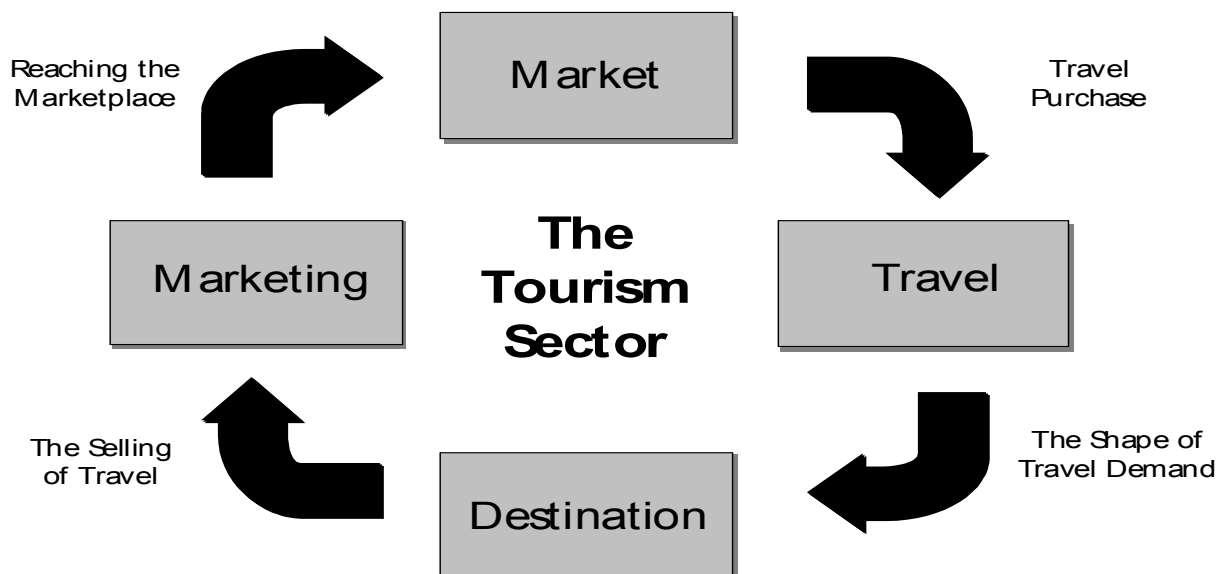
- The African Renaissance
- Tourism information management
- An integrated tourism strategy
- Human resource capacity building
- Infrastructure and related facilities
- Sustainable environmental management and practice
- Strategic issues, such as safety and security.

1.4 A model for discussing technology in tourism

The tourism system is very information sensitive. A model for discussing technology in tourism is indicated in the diagram below.

The tourism destination incorporates a mix of attractions and traveller services and consists of a mix of interdependent elements, such as attractions, facilities, infrastructure, transportation and hospitality. In short, attractions draw visitors to the area. Facilities serve the needs of the visitors while they are away from home. Infrastructure and transportation provide accessibility to tourist destinations and hospitality is concerned with the way tourist service is delivered.

A Model for Discussing Technology in Tourism



Source:TechnoScene@1999: Tourism and Technology Foresight Presentation

Marketing involves getting the message to the market. The essence of marketing is conveying information to the right people at the right time at the right place. The channels allow tourists to make travel purchases.

After defining the target market, segmentation needs to be addressed. Communication channels can be used to reach the target market, and the Internet is playing a key role in this regard. The Internet is an important communication and distribution channel because the World Wide Web it is accessible all over the world. At the same time, however, cyber navigation on the WWW is quite complex and you have to persuade 'the world' to visit your website. The actual marketing value will depend on the promotion of the site. With the future in mind, the WWW can also eliminate expensive, centralised intermediary systems like a global distribution system (GDS). For now, the Internet is being integrated into tourism distribution and work is proceeding towards a network system to stimulate travel purchase. The expected impact of the new technologies on the tourism system will be discussed in the sections that follow.

1.5 The Foresight Project

The purpose of Foresight was to create a collaborative alliance between the science and technology and business communities. Tourism, along with 11 other sectors of the NRTF project, was identified through an extensive process of consultation. Workshops were held with stakeholders all over the country. These inputs were considered in the process and the Foresight Board's proposals were incorporated into the draft final report. The sector selection process was based on the socio-economic objectives and was aimed at aligning technology policy with broad development goals. A Working Group was appointed from the stakeholders as described earlier. The group had a number of workshops. The objectives of these consultative meetings were to develop an understanding of research and technology challenges, development needs and market opportunities over the next 10–20 years and to develop strategies around them. Consultation took place to source specific knowledge from identified experts, as in the case of TechnoScene and Decision Technologies.

1.6 The Tourism Foresight Report

The report is targeted at a wide readership and seeks to guide the strategic thinking of public and private organisations and stakeholders on their priorities and action plans for the future. The outputs of the comprehensive, consultative process are reported in the chapters that follow. The next two chapters synthesise an International and a Local Scan with a view to benchmarking the South African Foresight against that of other countries. The technology themes are placed within a relational context with the seven focus areas identified for the tourism economy.

Chapter 4 introduces the concepts of scenario thinking in order to broaden the horizons of the Foresight process. As the benefits from the outputs of the NRTF project will only be realised in the long term, tourism-specific scenarios are developed and analysed. These scenarios are informed by the macroscenarios for South Africa's science and technology. Chapter 5 reports on the survey results and conclusions reached, and the final chapter recommends a tourism and technology research and development pathway in tandem with the NRTF for South Africa to explore emerging opportunities on the technology horizon in order to realise the tourism economy's potential now and in the future.

Chapter 2:

International and Local Trends and Driving Forces

2.1 Introduction

Global forces of competitiveness, information technology and socio-cultural dynamics are impacting and shaping tourism destinations significantly. Places, culture and identities seem to converge in the world of international travel. The global economy is being transformed by forces of regional trading blocs, global alliances, deregulation, new technologies, the Internet and electronic commerce. It will be necessary to understand the powerful driving forces that will create the future if we are to realign and reframe the agenda for research and technology, and that will be the focus of attention in this chapter.

Global shifts in the economy are driven by new waves of technology, political and social transformation. Countries, institutions and individuals are faced with significant shifts in the global environment characterised by changing patterns of trade and competition, technological innovation, exponential growth of knowledge, and worldwide social concerns for 'quality of life'. Knowledge has become the core competency to create competitive advantage. In the global economy, business solutions require innovations tailored to these technologies. All these trends have ramifications for the tourism industry.

At the same time, travellers are becoming more knowledgeable, more informed and demanding. Competition has shifted from improving productivity to value-added quality, flexibility and agility in the marketplace, and meeting customer demands anywhere, anytime with customised solutions. Decisions are becoming more rapid and reaction times shorter, so that success will depend on one's ability to position products and services and to respond rapidly to customer needs.

While knowledge and innovation are crucial to success, the global economy is also characterised by marked socio-economic disparities between developed countries and developing economies. One-fifth of humankind living in the highest-income countries has 74% of the world's telephone lines, while the bottom fifth has just 1,5%. Whether people are connected or not impacts tremendously on their ability to benefit from or simply contribute to the 'knowledge society'. Both the South African and the regional markets are constrained by income levels as well as the skewed distribution patterns that impact on connectivity.

2.2 Globalisation

A key feature of globalisation is the mobility of information, capital and people driven by the restructuring of economic relations and competition. In responding to the strategic challenge calls for local initiative that is both innovative and flexible. The uniqueness of the local context provides opportunity to embark on innovative action. The competitive advantage of local areas rests more within their own specific context with resources that are immobile (such as heritage culture and the local environment) and not that open to competition. Local communities are increasingly shaped by the interplay between what occurs at the local and global levels.

As the world's largest industry, tourism development is incumbent on the outcome of global and local forces as they impinge on the economy, where tourism caters to the needs and interests of global audiences, but is also geared towards the cultural needs and leisure aspirations of local communities. The challenge is to integrate the local with the global in a relational context. Within the global–local nexus, the goal is to strike a balance, reconciling different market needs to create landscapes appealing to visitors and local residents alike. Therefore it is crucial to place tourism in the context of the localities and the local circumstances in which it is embedded.

Global–local forces are mutually reinforcing. The localisation of culture and the concurrent globalisation of localities are happening simultaneously. What transpires is the intertwined nature of social, cultural and spatial processes. The general lack of alignment in the country's basic economic foundations — in human resources, technology, infrastructure and the regulatory environment — are bottlenecks to tourism growth. Meeting the challenge requires a number of policy and strategy shifts towards becoming internationally competitive and socially responsive.

2.3 Competitiveness

There is growing evidence of a new paradigm in tourism policy to influence the competitive position of a destination under conditions of global competition. In applying the pioneering work of Porter's competitive diamond cluster to the new tourism policies, Fayos–Solà (1996) takes on the challenge to translate the cluster into effective demand and strengthen the tourism industry's strategic position within the value chain. In moving up the value chain, a new dimension has now been added to the debate where 'staging experiences' has emerged as the next step in the progression of economic value (see Box 2.1). Tourism takes centre stage in advancing from the service economy to the experience economy.

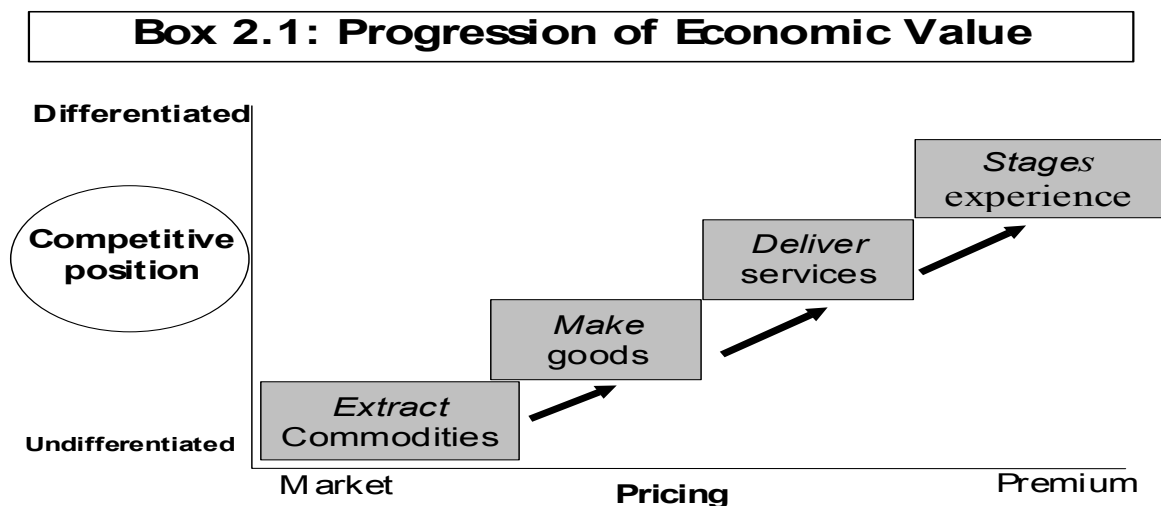
Tourism has become a fiercely competitive business. For tourism destinations the world over, as indeed for South Africa, competitive advantage is driven by technology,

information and innovation. Yet according to the World Competitiveness Report, South Africa ranked only 42nd among 47 emerging and developed countries. There is much room for improvement, particularly in indicators such as skilled labour, the brain drain, harassment and violence, unemployment, science and education, customer orientation, security and growth in direct investments. The low rankings are also influenced by the country's perceived weak international business orientation.

In the Africa Competitiveness Report (1998), South Africa is outranked by six other African countries. Topping the list of issues of greatest concern to the business community in Africa is improved infrastructure, but a proper regulatory and legal framework is a prerequisite for infrastructure investment. Good infrastructure also makes tourism destinations more accessible. The reliability of policy is crucial to competitiveness and to attracting investment. In the final analysis, capacity to deliver will determine competitiveness.

Africa's competitiveness remains an issue and optimism based on realism is conditional on good governance and good leadership. As far as securing a competitive position is concerned, the main obstacles for social and economic development relate to weak institutional structures. The efficiency of public action is at stake. The roles become blurred and government will be hard put to contribute to competitiveness unless their powers and management processes are redefined. Cooperation with the private and voluntary sectors is a prerequisite for the efficient implementation of policy programmes.

Box 2.1: Progression of Economic Value



Source: Harvard Business Review, 'Welcome to the Experience Economy' Nov-Dec 1998

Despite the tourism policy framework for South Africa (White Paper, 1996) and the Tourism in GEAR (growth, employment and redistribution) implementation strategy,

the industry has not yet been able to deliver on the indicated targets. This concurs with a comprehensive analysis of the impact of tourism on the South African economy and the southern African region by the WTTC (1998 and 1999). While the tourism industry has been in an expansion phase since the transition to democracy, it is now at the crossroads. The future prosperity of the tourism industry hinges on whether the gaps in applying innovative solutions can be bridged. The reality is that technology is developing rapidly. The gaps between the old laws that worked in the traditional market and the new cybermarket are not being addressed in a timely fashion. Also, integrating the issues into a regional context is in line with best practice trends.

2.4 Economic impact of tourism

Tourism is the leading economic driver for the millennium. The World Tourism Organisation (WTO) is calling on governments around the world to unleash tourism's job creation potential by improving information networks and capitalising on its human resource capital by incorporating innovation and investment know-how. The World Travel and Tourism Council likewise provides general policy directions based on the WTTC *'Millennium Vision'*. The WTTC estimates tourism's direct and indirect contribution at 11% of GDP.

Travel and tourism are now the largest generators of jobs, accounting for about 11% of the global workforce. A vision of a globally competitive tourism industry is the focus of the WTTC Report entitled *South Africa's Travel & Tourism-Economic Driver for the 21st Century* (1998). The report assesses the size and impact of travel and tourism in the South African economy as it ripples through the economy and demonstrates the job creation potential of the industry. The analysis uses 'satellite accounting' to identify the direct and indirect economic effects of travel and tourism.

Buoyant forecasts for tourism growth in the third millennium are contained in the *Tourism: 2020 Vision* (WTO, 1998). The trends emerging are that tourists will be travelling further afield to long-haul destinations. The expected growth in demand to visit Africa at 7,5% over the next two decades is well above the average for the world as a whole.

Global and regional tourism trends

Tourism worldwide is forecast to grow to 1,046 billion arrivals in 2010 from 672 million estimated for the year 2000, an estimated annual growth of 4,5% (WTO). The WTTC estimates that the value of tourism demand will increase from the current estimated US\$4,5 trillion in 1999 to US\$9,0 trillion in 2010. Africa's share of the global market is estimated at 26,2 million arrivals (3,8%) for 2000 and is expected to increase to 45,6 million (4,5%) arrivals by 2010. Within Africa, tourist arrivals in the

SADC region is expected to grow by 8% per annum to 22 million in 2010. As a trading bloc, SADC has the lion's share at 45,4%, which is up from its 14% share in 1994 (WTO). The current value of inbound tourism to Africa is \$8,742 billion (1997), of which the SADC share is \$4,064 billion or 46% (WTO). The dominance of SADC is expected to continue into the foreseeable future.

Economic generators

The economic impact of tourism in the region is aptly demonstrated by its relative contribution to GDP, foreign exchange earnings and employment opportunities, indicated in Table 2.1 below. Within the SADC countries, the relative importance of the three key economic generators varies from country to country depending on the importance of tourism in the economy.

Table 2.1 South Africa relative to total SADC member states: A Comparison of the economic generators, 1999 – 2010

	GDP contribution	GDP contribution	Visitor and export earnings	Visitor and export earnings	Employment	Employment
	% of total	% of total	US\$ Mil	US\$ Mil	000s	000s
	1999	2010	1999	2010	1999	2010
South Africa	8.2	11	5092.2	12342.0	648.2	948.3
Total SADC	7.1	8.1	8997.0	24285.6	3417.2	5037.7

Source: WTTC: Southern African Development Community's Travel and Tourism: Economic Driver for the 21st Century, July 1999'. Estimates based on the Tourism Economy.

Tourism's contribution to GDP

Tourism's contribution to GDP in SADC (based on the tourism economy) is currently estimated at 7,1% and is expected to increase to 8,1% in the year 2010. South Africa (11%) falls in the category of countries in which tourism plays a significant and increasing role where a contribution of between 10% and 20% over the next ten years is expected, together with Tanzania (16,2%), Botswana (12,3%), Zimbabwe (11,1%) and Swaziland (10%). With regard to the rest of Southern Africa, the WTTC report predicts GDP gains in ten years or so, albeit off a low base.

Tourism's contribution to employment opportunities

Where tourism is well integrated into the tourism economy, the job creation prospects are good. The WTTC estimates that where linkages with other industries and economic sectors are strong, the employment multiplier generates a job in the tourism industry and a further 1,1 indirect job opportunities are created in the tourism economy. But establishing a well-integrated tourism economy takes time and requires significant outlays of infrastructure and superstructure with a commensurate high cost per job opportunity. Within the SADC tourism economy, employment is expected to increase from an estimated 3,4 million currently to 5 million in 2010.

Tourism's contribution to foreign exchange earnings

As a region, SADC has the potential to benefit from tourism-related forex earnings and it is foreseen that by 2010, 42% of its business will be derived from international tourism, 33% from intra-regional personal tourism and 10% from intra-regional business tourism. Visitor and export earnings are expected to almost triple between 1999 and 2010, from \$8 997,0 million to \$24 285,6 million, where South Africa (\$12 342,0 million) is quite dominant in absolute terms. According to the WTTC (see Table 2.2 below) the value of tourism earnings is expected to more than double between now and 2010, from US\$18 241,1 million to US\$42 199,4 million. A significant increase is foreseen in respect of earnings derived from international tourists as compared with that from domestic travellers.

Table 2.2 Value of tourism in SADC by type of tourism

Tourism type	ValueUS\$ million 1999	%	VALUEUS\$ million 2010	%
Domestic	3 824,5	21	6 355,0	15
Inter-regional personal tourism	6 150,7	34	13 900,1	33
Inter-regional business tourism	1 949,7	11	4 138,5	10
International visitors	6 316,2	34	17 805,8	42
TOTAL	US\$18 241,1	100	US\$42 199,4	100

Source: WTTC – Southern African Development Community's Travel & Tourism: Economic Driver for the 21st Century, 1999

Regional demand perspective

The SADC region has a tourism profile that is typical of developing regions. The main origin markets for tourists are the developed world, which requires, among other things, that the region's safety and security, crime and other disasters be carefully managed to minimise international tourism disruption. This reliance on tourism as an economic generator is expected to continue to increase over the next ten years, requiring careful management of the tourism system to ensure sustainability in terms of socio-cultural and environmental impacts.

Supply factors

The countries within SADC are well endowed with a range of attractions, primarily based on non-renewable natural and cultural resources, and therefore the sustainable management of resources is a key issue. Within the region there is a serious lack of data with regard to the provision of facilities (accommodation, telecommunications, shopping, medical facilities, etc.) and therefore it is not possible to calculate the supply-demand gap. The same applies to data with regard to other tourism-related businesses such as restaurants, tour operators, manufacturers of crafts and souvenirs, etc., which would provide many opportunities for local small-business development.

Infrastructure and transport systems

Good transport infrastructure is critical for the development of tourism in the region. Globally, the airline transport market has continued to expand and this trend is expected to continue. This growth demands improvements in airport and airline capacity as well in the efficiency of the civil aviation industry. A 1997 International Civil Aviation Organisation (ICAO) report on air safety painted a bleak picture of the position in African skies, and the southern African region did not emerge unscathed. Air traffic control and safety at many regional airports are poor by international standards and require upgrading in terms of both equipment and staff. The problem areas require improved telecommunications infrastructure and satellite-based navigation. The rapid application of technological developments will improve the current navigation and safety position. South Africa has taken the lead in installing navigational aids across Africa in identified danger spots.

Improving standards of airport management and maintenance would ultimately bring the region closer to 'world-class' services levels. It entails being aware of and sensitive to the requirements of competitive world-class airports in a period of increased international tourism. One of the key challenges faced is improving telecommunications in the high-technology environment. This issue needs to be tackled robustly as a matter of urgency if tourism is to realise its expected potential.

2.5 Technology impact on focus areas

The global convergence of technology is penetrating and supporting the tourism industry through an array of major technologies. The global increase in consumer demand for tourist products has provided one of the main driving forces in the development of a wide range of technologies. The technology impact on the seven tourism focus areas is indicated in Box 2.1. The diagram demonstrates how tourism linkages pervade other sectors as the technology impact ripples across the economy. The character and scale of the technologies will be incorporated in themes when the survey results are analysed in Chapter 5.

Box 2.1 Technology Impact on Focus Areas								
	ICT	Materials	Biot echnology	Energy	Transport	Manufacturing	Health	Business and Financial Services
African Renaissance	◆		◆	◆	◆	◆	◆	◆
Information Management	◆							
Integrated Tourism Strategy	◆							
Human Capacity Building	◆			◆	◆			◆
Infrastructure and Facilities	◆	◆		◆	◆	◆	◆	◆
Sustainable Environment	◆	◆	◆	◆	◆	◆		
Safety and Security	◆	◆		◆	◆			◆

Source: TechnoScene@1999: Tourism and Technology Foresight Presentation

Information is the backbone supporting tourism. Therefore, timely and accurate information relevant to consumers' needs is often the key to satisfying tourist demand. Within the fiercely competitive global tourism environment, prospective travellers are continuously faced with more information and options. The combination of these forces and the need for professionalism in handling the information supplied to the consumer necessitates the use of technology to gather, manage, distribute and communicate information.

Over recent years, information technology has experienced an unprecedented degree of change. The Internet and e-commerce are increasing at a rapid pace and are fulfilling a vital support role in such activities as global connectivity and foreign business activity. The application of information technology (IT) and telecommunications, as well as technologies specifically designed and developed for the tourism industry, includes the management of the various modes of transportation, travel distribution systems, the hospitality industry, and the recreation and entertainment components of tourism. The use of IT technology in the management of ecosystems, wildlife populations and natural areas is becoming increasingly important.

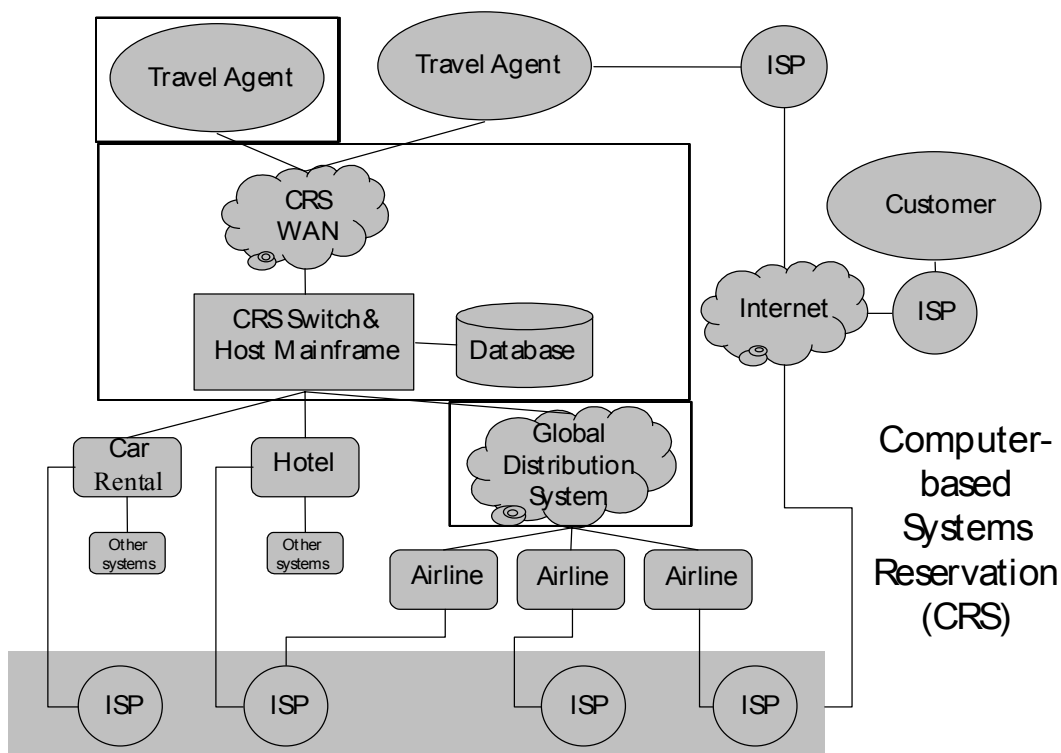
The implementation of various forms of IT in the industry is driven by both the development of the size and complexity of tourism demand and the rapid expansion and sophistication of new tourism products. Three main waves of technological developments established IT in tourism enterprises, from Computer Reservation Systems (CRSs) to Global Distribution Systems (GDSs). The WWW has the potential to eliminate expensive intermediary systems in working towards a network system.

The Internet has the potential to change the balance of power among consumers, retailers, distributors, manufacturers and service providers. Some may experience increase in power and profitability, others will experience the reverse, and still others may even find that they have been bypassed and lost their market share. In the case of air travel, airlines have a motive to bypass travel agencies, which take up profitable corporate business that airlines could easily handle directly, and which they could easily target given all the customer information they have.

Airlines operate flights and offer seats. CRS vendors, such as Galileo and Worldspan, maintain global inventory management systems and communicate inquiries and booking requests between airlines and travel agencies. Some players in the distribution channel for air travel are vulnerable to bypass and disintermediation. While airlines and passengers will always have a role, travel agencies and CRS vendors are less essential. It is likely that agencies will lose much of their easiest corporate business to direct distribution by airlines. Internet-based search agents can locate flights and lowest fares; these same services can be used to book flights and to generate tickets or e-tickets.

On-line search agents, tied to e-ticket selling, could be part of a strategy that would make it easy to attack established agencies. Airlines would start by developing systems for e-ticket selling and would make them available directly to travellers for last-minute changes. The distribution channel of airlines is evolving rapidly as indicated in the following diagram.

Source: TechnoScene@1999: Tourism and Technology Foresight Presentation



Community-based tourism projects require accessible and effective communication in order to reach their target markets — also through Internet access. Information that entices the potential tourist to Africa is readily available in the tourism origin countries in the form of multimedia videos, TV documentaries, CD-Rom and the printed media. A number of films have captured the mood and enticed visitors to the African setting, for example 'Out of Africa' and 'Gorillas in the Mist'.

A joint venture between the CSIR's division for Roads and Transport Technology (Transportek) and Satour offers a new Tourism CD-Rom Series. This is an integrated approach towards packaging and marketing South Africa as a tourist destination. This holistic approach offers the end user such advantages as interactive functionality, which allows tourists to plan a trip for specific interests and needs and also allows them to book through the Internet from the comfort of their own homes.

The package is envisaged as consisting of three CDs, the first of which will contain general information about the country, augmented by video clippings, 360-degree IPEX photos, sounds and music. The second CD contains a comprehensive accommodation and booking database, and the third features an advanced trip planner, with virtual-reality models of, for example, Robben Island and animals of South Africa.

The explosive growth of multimedia and its impact on tourism is demonstrated in the diagram. The capacity of the Internet to become the main conduit of travel business for the future supplemented by electronic commerce is compelling.

Multimedia in Tourism					
	Text	Picture	Voice	Sound	Video
Viewdata	◆				
Teletext	◆	◆			
TravelNet	◆				
CRS	◆				
Telephone		◆	◆	◆	
Brochures	◆	◆			
Personal Selling	◆	◆	◆		
Video		◆		◆	◆
CD	◆	◆		◆	◆
Internet	◆	◆	◆	◆	◆
Interactive TV	◆	◆		◆	◆

Source: TechnoScene@1999: Tourism and Technology Foresight Presentation

2.6 Socio-political factors

International travel and cross border travel could be facilitated by the concept of a UNIVISA. It would contribute substantially to the freer flow of international tourists. Perceptions of safety and security and daunting levels of crime, particularly in South Africa, is a serious constraint on the ability of the country and the region to reach its full tourism potential.

The Economist Intelligence Unit (EIU) analysed the impact of safety and security concerns on international tourism (1994). A critical understanding of this issue is necessary as international holiday tourism already accounts for 34% of tourism value in the SADC region and is expected to increase to 42% by 2010. The risk of having this growth disrupted or permanently retarded because of safety and security actions should be addressed by government otherwise the tourism industry and its potential for jobs are at risk.

According to the EIU study, tourism is a soft target for those wishing to achieve more general political objectives. Radically-inspired interest groups often choose to damage the tourism industry as a means of gaining political vantage points, such as the bombings at the Cape Town V&A Waterfront in 1998. More generally, crime damages international tourism by generating bad publicity that makes tourists feel insecure and induces them to cancel bookings or opt for alternative destinations.

2.7 Benchmarking

Key uncertainties such as the economic, political and social factors have been analysed and South Africa has been benchmarked against the key tourism countries' strategic and/or foresight plans. In Canada, Australia, Scotland and Singapore, the focus is mainly on marketing and to remaining competitive. These top tourist destinations are aggressively realigning their tourism industry through strategies and plans to diversify products, upgrade infrastructure, and make optimum use of technology. Technology is focused on promoting and enhancing competitiveness within the information and communications fields rather than exploring the full range of opportunities in a holistic sense. The tourism industry is supported by an array of major technologies, and the global increase in consumer demand for tourist products has provided one of the main driving forces in the development of a wide range of technologies.

Where foresight studies have been undertaken (Japan, Germany, the UK, the USA, the European Union, etc.) these have focused on technologies that could support tourism. This applies particularly to issues such as transport, information, communication and infrastructure. In the UK, the foresight process included the topic 'leisure and learning,' but this, like others, dealt only partially with tourism-related technologies. The concept of 'sustainable tourism' pervades best tourism practice and was also the outcome of a priority area identified by the sustainable environment foresight. While technologies have numerous benefits, they also pose socio-economic challenges, such as changing labour practices, employment, and social behaviour patterns.

Chapter 3:

Swot (Strengths, Weaknesses, Opportunities and Threats)

3.1 Purpose of the SWOT process

In an era of rapid and continuous change in the economic, political, social, regulatory and technological environment, a new competitive landscape has emerged. Software applications are transforming entire business models and stimulating the discovery of new products and markets. While the canvas available to today's strategies is large and new, tourism stakeholders need to understand global forces, react quickly, and become innovative when defining their business models. The most prevalent and widely used tools of strategy analysis cover Strength, Weakness, Opportunities and Threats (SWOT) analyses, industry structure analyses (five forces), value chain analyses and others.

Accelerating global trends and technological convergence are disrupting traditional industry structures. Tourism industry players will have to come to terms with the effect that transformation of technological convergence and digitisation will have on the dynamics of the industry. This calls for a new mindset. Further, the impact of the World Wide Web and the Internet is just beginning to be felt. Stronger ecological sensitivities and the emergence of non-governmental organisations are also new dimensions in the competitive landscape. These discontinuities are changing the nature of the industry structure — the relationships between consumers, competitors, collaborators and investors. Increasingly, the distinction between local and global tourism business will be narrowed. Tourism businesses will have to be locally responsive and at the same time will be subject to the influences and standards of global players.

Globalisation is forcing tourism stakeholders to come to terms with new standards, a capacity for adaptation to local needs, multiple cultures and collaboration across national and regional boundaries. For this, speed of reaction is of the essence. Speed is also an important element in how fast a company learns new technologies and integrates them with those already in use. Increasingly, the focus of innovation has to shift towards innovation in business models. For example, how does an auction-based pricing market (for airlines and hotels) in an industry with excess capacity change its business model?

Exploring the broad contours of the future we recognise the trends, the desire for mobility and travel, access to information; and the relentless spread of the Web. The problem is not information about the future, but interpreting it to gain insights about how these trends will unfold to transform the tourism industry and to identify new opportunities that may emerge.

The SWOT analysis focused on discerning socio-political trends, economic and environmental issues and new waves of technology. It identified the key issues. The purpose of this chapter is not merely to repeat the issues, but to integrate them in a meaningful way with the driving forces impacting on the seven focus areas relevant to the National Research and Technology Foresight Tourism project.

While there are many opportunities in the growing world tourism market to tap into and our product base complements global trends and market needs, there are serious implementation weaknesses. Fragmentation and weak institutional capacity at all tiers are some of the real challenges. An implementation mode that will improve quality of life at the community level by expanding business and employment opportunities and capitalise on scientific and technological progress is the best option to explore. Creating the future requires alliances, networks, and partnerships, often also with competitors.

Matching the emerging technologies with the issues relevant to tourism in the seven focus areas provides a menu of opportunities to explore. A proposed approach that is a useful way to integrate the issues with the cluster of technology themes is by way of a matrix (see Box 3.1).

Box 3.1 Tourism focus and technology theme matrix

Technology themes						
Tourism focus areas	Global Network	Multimedia	Alternative Transport	Infrastructure	Processing	Advanced ID
African Renaissance	◆	◆	◆		◆	
Information Management	◆	◆				
Integrated Strategy	◆	◆				
Human Capacity Building	◆	◆				
Infrastructure and Facilities			◆	◆		
Sustainable Environment	◆	◆		◆		
Safety and Security	◆					◆

In the sections that follow, the key issues will be explored along with the emerging technology opportunities clustering in the various focus areas.

3.2 Finding balance in sustainable environmental management

At the dawn of the third millennium, the Agenda 21 for Travel and Tourism will be the essential reference to becoming environmentally responsible and thereby more sustainable. The environmental limits to growth hold several important lessons for tourism. Following the Rio Earth Summit, the WTO, the WTTC and the Earth Council produced a draft Agenda 21 for the Travel and Tourism Industry. In terms of the goals of Agenda 21, tourism is capable of providing a financial incentive for protecting the natural, cultural and social environment. The intertwined nature of the co-evolutionary process in an economic environmental system requires balance in the economic, ecological and equity paradigms. The goal in achieving sustainability is to embrace ideas of globalisation and localisation and to find a balance.

As part of a series of regional reviews of Agenda 21 for Travel and Tourism organised by the WTTC and its partners, the WTO, the Earth Council and delegates from 10 countries examined the economic and environmental patterns in Africa. They concluded that the best potential for job creation, poverty eradication and social development in the 21st century lies in sustainable tourism. In a consensus statement, they reiterated the challenge to create effective public-private partnerships, with Agenda 21 at their core, that would also benefit local communities. Reviewing a number of successful programmes for environ-mentally responsible tourism, it is evident that —

- tourism can be a key element in poverty eradication and social development;
- partnerships among all relevant stakeholders are crucial to scope, shape and deliver tourist activities; and
- sustainability principles need to be in the vision, planning and delivery of all tourism development programmes.

The globalisation of tourism has engendered concerns over its effects on destinations, and particularly the impact on local environments, cultures and social systems. A Charter for Sustainable Tourism (WTO 1995) incorporates the following criteria:

- Balancing ecologically sound, economically viable, and socially equitable tourism development;

- The natural, cultural and human environments must be integrated in assessing the impacts on cultural heritage and local communities;
- Ensuring participation at all levels requires efficient cooperation mechanisms;
- Incorporating innovation is the real challenge in creating integrated planning and management instruments;
- By using ecologically honest pricing, a more equitable distribution of the benefits of tourism can be achieved;
- In technical assistance grants, priority areas such as environmental and cultural spaces should be targeted; and
- The creation of open networks for information, research, dissemination and the transfer of appropriate tourism and environmental knowledge and technology are prerequisites.

The progress in addressing sustainable environmental practice is notable, but there are still many challenges to be met in finding balance in sustainable tourism practice. There is still a way to go in creating awareness, but the incorporation of sustainable tourism development principles in a framework for development augurs well for ensuring sustainable practices in future. There are strong linkages with the issues emerging from the Biodiversity, Environment and Agriculture and Agroprocessing Foresight Sectors.

The opportunities emerging in this focus area include global network, multimedia and infrastructure technologies.

3.3 Integrated tourism strategy

In the digital economy there is an emerging infrastructure of networks that blurs the boundaries between sectors. The drive towards sustainable tourism development therefore requires integrated strategies. It is well known that tourism's impact and linkages pervade a number of industrial and services sectors. Private business is crucial to driving the strategic positioning and implementation of competitive tourism and marketing strategies. Forging collaborative alliances is a pattern that will result in a dynamic interplay of capacity in strengthening strategic partnerships.

With job creation arguably the greatest challenge to the economy, growth and employment targets are indicated in Tourism in GEAR: A Strategy to Implement the Tourism White Paper: 1998–2000. The potential for tourism to produce revenue and emerge as a major job creator is evident from the WTTC scenarios. Under the baseline scenario it is estimated that travel and tourism could add more than half a million jobs across South Africa's economy over the next twelve years. Currently, tourism provides some 250 000 direct jobs and 300 000 indirect jobs in an environment where official unemployment is pegged at 27% in rural areas and at 22% in urban areas. No

breakdown is available as to how many jobs are provided in the various subsectors or how much they contribute to GDP.

Tourism Sector			
Contribution to GDP		Contribution to Job Creation	
Direct impact	R17.0-bn	Direct impact	248 141
Indirect impact		Indirect impact	
Tourism-related investment	R6.4-bn	Tourism-related investment	93 791
Suppliers	R29.7-bn	Suppliers	395 685
Direct + indirect impact	R53.1-bn	Direct + indirect impact	737 617
	Local = R29-bn (55%) Foreign = R24.1-bn (45%)		
M inus business travel	R8.8-bn	M inus business travel	122 242
Direct + indirect impact		Direct + indirect impact	
Tourism only	R44.3-bn	Tourism only	615 375
Induced impact	R36.3-bn	Induced impact	504 246
TOTAL IMPACT	R80.6-bn	TOTAL IMPACT	1 119 621

Source: TechnoScene @ 1999 and SA Foundation

The WTTTC scenarios and the policy recommendations that the study concludes will give a powerful boost to the proposal for stronger regional integration based on the concept of Transfrontier Conservation Areas and Spatial Development Initiatives (SDIs) as the engines for regional economic growth. Of the cooperative ventures in the region, Transfrontier Conservation Areas are among the most significant. These new corridors or tourism access routes will enhance the tourism appeal of the region. It intends to unlock economic and tourism potential in specific locations through the crowding in of public sector expenditure and private sector investment. The aim is to create environmentally sustainable nature reserves and sustainable jobs, grow the economy of the area, and contribute towards restructuring the ownership base in the economy.

A recently signed Memorandum of Understanding on Transfrontier Conservation Areas (TFCA) supports the establishment of a TFCA that will bring the parks of Gaza in Mozambique, the Kruger National Park in South Africa and Gonarezhou in Zimbabwe together under joint management, creating one of the biggest conservation areas in the world. The agreement recognises that ecosystems transcend national boundaries and recognises the need for cross-border cooperation in the conservation and management of natural resources for the benefit of the people and the region. The purpose is to promote biodiversity and socio-economic development in the area.

The necessity of embarking on an integrated tourism strategy is now appreciated by most role players. Various initiatives, such as the tourism cluster study, the tourism information management framework and others need to be integrated with the outcome of the Foresight insights. The opportunities in support of integrated tourism strategies catering for ecotourism development, cultural heritage and adventure tourism include multimedia, digital image technologies, experiential tourism

technologies, virtual reality and digital museums. These and other technologies will be fully explored in Chapter 6.

3.4 Infrastructure and transport systems

Good transport infrastructure is critical for the development of tourism in the region. Globally, the airline transport market has continued to expand and the trend is expected to continue. This growth demands improvements in airport and airline capacity as well as in the efficiency of the civil aviation industry. The international tourist's ability to reach a desired destination from the origin market is dictated by international treaties and standards, particularly with regard to air travel, and this impacts on long-haul safety. Aviation safety is critical to compete in the emerging global economy. At the same time it will be catalytic for trade, investment and growth in the tourism industry.

With fierce competition prevalent in the tourism industry, a key issue is the provision of appropriate infrastructure to catalyse demand. The rapid increase in the number of frequencies into and out of South Africa has increased pressure on infrastructure. Air-traffic control infrastructure in airspace north of South Africa is acknowledged as deficient. Sufficient investment in navigational facilities (radar, VHF radio coverage, meteorological information), airports and airways are needed. The fleet airline age is also amongst the highest in the world.

'Moving South Africa 2020' determined the country's land, sea and air transport needs over the next 20 years. The project focuses on the structure, infrastructure and functioning of the South African transport system and advances solutions for the short, medium and long term. It also clarified responsibilities, while foreseeing the creation of separate agencies funded through user charges to deal with issues such as the construction and maintenance of roads and aviation safety.

In view of the need to develop a tourism infrastructure investment framework, DEAT and DBSA commissioned KPMG (1999) to identify tourism infrastructure development areas where future tourism potential was strong and the need for development clear. The priority tourism infrastructure investment areas identified the linkages between areas and focused attention on the tourist flows that take the visitor through a series of gateways, routes, staging posts, and distribution points to various destinations and attractions. Delivery will take place at the local level.

The methodology for developing a Tourism Infrastructure Investment Framework incorporated GIS. A spatial pattern emerged through layering factors, such as existing infrastructure, product strengths and weaknesses, current demand and supply, potential growth of products and demographic patterns. The strength of the framework lies in incorporating socio-economic issues and poverty indicators in

identifying the tourism development areas. But the 'affordability' of the required infrastructure was not factored into the equation. The viability of an infrastructure requirement often stalls on this critical element.

Box 3.2: Types of Infrastructure required

- Transport infrastructure such as passenger transport, service utility and communications infrastructure required to transport the tourist safely and efficiently to tourism consumption points (TCP).
- Delivery infrastructure such as freight transport, service utility and communications infrastructure needed to deliver goods and services to the TCP thereby ensuring its functionality.
- Locational infrastructure such as scenic and built environment, culture, history, trade, retail and entertainment necessary to ensure that the TCP is able to attract tourists.

Source: KPMG Tourism Infrastructure Investment Framework for South Africa

The KPMG study concludes that infrastructure directly impacting on tourism is good, but the main potential pressure points are road and air and tourism growth could be constrained if the provision is inadequate. The types of infrastructure required include the following:

- Transport infrastructure that serves the traditional destinations efficiently but is lacking in emerging destinations and at border posts. Gaps emerged in inter-modal transport systems, capitalising on the trend towards rail usage by international tourists and identifying areas for inter-modal connectivity. The focus is on rail and freight rather than passenger transport, and over-regulation of the coach industry impacts negatively on competitiveness.
- Delivery infrastructure is not yet in place in all areas with tourism potential, but stakeholders such as Eskom and Telkom are confident that they can provide the required delivery elements once demand is proven.
- Location infrastructure is polarised around the traditional tourist areas and the economic hub of Gauteng. Likewise, accommodation is highly concentrated in Cape Town, Durban and Gauteng, which account for approximately 40% of total room stock. A general lack of tourist information centres is evident.

The direction provided by the Tourism Infrastructure Investment Framework (TIIF) focuses mainly on the following:

- An integrated national spatial framework.
- Potential investment opportunities in 19 priority areas for tourism infrastructure investment.

Although the infrastructure base supporting tourism is good, it is highly polarised. This results in limited dispersal of tourists to other areas with potential. To maximise tourism potential, targeted investments in tourism infrastructure is predicated to leverage private sector investments into less traditional areas that have product strength and can satisfy future market needs. The TIIF provides direction for investing in all the major elements of tourism infrastructure and also recommends maximising the use of sunken investment in a rail network thereby providing opportunities for the emerging market to become active in the tourism economy.

This partnership approach provides a menu of opportunities by matching the requirements with potential partners. South Africa's banking and finance industry is not yet geared to meet the demands of small and medium-sized tourism enterprises. Two core impediments to financial services are a lack of economies of scale and a lack of good information.

Emerging technologies are providing new challenges in the provision of infrastructure. If tourism is to expand along a continuum into rural areas as well, there are several challenges to face and opportunities to capitalise on, such as effluent treatment and the provision of clean water, and using renewable energy resources to a greater extent. The emerging opportunities together with ICT infrastructure are explored further in Chapter 6.

The opportunities and possible applications in support of infrastructure and transport systems include infrastructure technologies such as smart-card readers, physical infrastructure: effluent treatment plants or effluent demonstrators. Other useful solutions include alternative transport such as faster rail transport systems to enhance travel in the SADC region.

3.5 Beyond human resources development to capacity strengthening

In the human resources sphere, the development and nurturing of an attitude of friendliness, helpfulness and service are as necessary for the private sector as for the public. Teaching people to appreciate the potential benefits and responsibilities associated with the industry is a prerequisite for creating a culture friendly to tourism.

The Hospitality Industries Training Board (HITB) is in the process of getting its Tourism Learnership Project under way. The skills need will be tackled by the new Sector Training Authority and a South African Tourism Training Institute. Both the HITB and the Travel, Education and Training Authority of South Africa (TETASA) are training facilitators rather than providers, promoting it as the key to improved services and quality levels. The Business Trust will spend R80 million on tourism education, facilitated by the HITB. The Reach & Teach organisation's Travel and Tourism Programme assists aspirant entrants to the industry and has also been instrumental in

spearheading the introduction of travel and tourism as a subject in 65 pilot high schools throughout South Africa.

Tourism is essentially an activity led by local demand, and because it is locally driven, capacity to manage and implement at the local level needs to be strengthened. The division of responsibilities among the various government levels is being more clearly defined. At least three provinces, namely the Western Cape, KwaZulu–Natal and the North–West, have embarked on tourism implementation strategies. The remaining six provinces are all on a steep learning curve and will benefit from the knowledge of the provinces that already have experience. Sustainable tourism development requires active involvement to translate the principle of 'learning by doing' into concrete action. Active involvement brings commitment to the lessons being learned.

The key opportunities in support of human capacity building are emerging through multimedia, computer–based instruction and multi–channel distribution networks.

3.6 *African Renaissance*

Global realities and the inevitable demands of a location shape marketing strategies. The branding theme of a *Tourism Renaissance* will drive the marketing strategies on the basis of the vision of an African Renaissance. The image serves the purpose of promoting a memorable African experience. In their efforts to competitively market South Africa as a preferred tourist destination, it is not surprising to find Tourism South Africa (Satour) embracing the African experience in their mission statement, i.e. to make tourism the leading economic sector for sustainable development and social empowerment of all the people. Images used for marketing also serve as a guideline in the development of plans and policies. 'Striving for excellence' could be used as a tool to improve Africa's competitiveness in the global economy. A secondary but equally important purpose could be to strengthen nation building.

Global trends are being adopted everywhere and are moving to the stage where tourists now unquestionably desire experiences. Global tourism and local identity complement each other. Imaging strategies in the form of branding messages embody the overall vision of a place. Satour's slogan of '*a world in one country*' not only conceives of a promise of value for tourists, but also creates a desirable experience in the global–local nexus. The integration of experience into the larger social system can result in a renaissance of indigenous culture.

South Africa competes with many other destinations considered 'long haul' by tourists. In 1997, the top 10 tourist destination countries attracted more than 60% of all international visitors. Europe is also the origin of most outbound travellers, with 40 million travellers moving on long–haul journeys to other parts of the globe. Long–haul

tourists from Europe, America and East Asia amount to almost 100 million per annum. In all regions of the world, most outbound tourists are intra-regional or domestic. The high level of intra-regional and domestic travel is largely due to geographical locations, continental size and the diversity of tourist attractions. A focused production and marketing drive capitalising on the African Renaissance theme could draw far greater numbers of tourists.

The country's unique heritage and rich culture together account for 46% of foreign tourist motivations, second only to scenic beauty. African crafts and indigenous products using African lifestyle technologies could be used to brand the renaissance theme. There is an urgent need for niche operators to offer integrated products across all interest areas and to use process technologies for this purpose.

The real value of cultural attributes and artefacts, namely their role in creating jobs and glueing societies together has not been properly recognised. The African Renaissance challenges people to draw on its traditions, values and indigenous knowledge to make development more effective. The branding of products with the African Renaissance theme will go a long way towards stimulating local economic activity. Several branding and process technologies that can make the dream a reality are explored in Chapter 6.

The opportunities in support of African Renaissance branding include processing technologies for cosmetics, indigenous exotic foods, and beverages.

However, marketing and investments in community-based tourism initiatives will matter little if soaring crime levels are not brought under control.

- The drive towards safety and security

Socio-political stability and security are the necessary minimum, but not sufficient, conditions for tourism development. Safety and security are fundamental because even minor security incidents can have a major impact on the way destinations are perceived. Levels of crime and violence pose a major threat to the country's tourism industry. Crime, and the offshore perception of South Africa as a crime-ridden environment, will have to be tackled far more effectively. Both the perceptions and the realities must be addressed. International hotels are now required to provide a safe haven as part of the total experience.

South Africa has twice the international average number of crimes per capita. A Tourism Safety Task Group comprising representatives from government departments and other stakeholder groups is tackling a wide range of tourism security issues, including the use of more dedicated tourist police and the establishment of a database of tourism security intelligence. The key challenge is whether South Africa will

overcome external perceptions of safety and security as well as service delivery constraints and capture a growing share of the world's tourism market in the future.

The safety aspects of travelling influence the selection of a destination and are therefore an important consideration. Safety and security issues pervade concern at a global level and influence repeat visits. The Tourism Working Group, like the World Leadership Forum, considers it a key strategic issue.

The opportunities in support of safety and security include global networks, improved encryption for safe cybertransactions and advanced identification systems.

3.7 From information technology to knowledge exchange

Information will be crucial to compete effectively in the global market place. At a strategic level, information on global trends, competitors, market opportunities are essential for informed decisions and to facilitate market-driven strategies. The *Foresight* collaboration aims to add value by identifying markets and technologies that can generate social and economic benefits for the country. Technology is the golden thread that runs through to create opportunities to spread learning and knowledge.

In a bid to align with global destinations, Satour is currently upgrading its tourism information infrastructure. The planned website will improve on the current site by providing a showcase of South Africa, and it is envisaged to be at the forefront of website destination marketing in the global market place. This will be crucial to ensure strong growth relative to other global destinations.

Technology has made it possible for on-line reservations to increase dramatically, with business generated on-line growing at an unprecedented rate. Much of the growth of ticket sales on the Internet comes from the Internet's ability to reflect modern lifestyles. The Internet acts as a *catalyst* to take basic brand strategies to full-fledged dialogues. The Internet is tailor-made to host such dialogues, because it provides scope for marketers to integrate their interactions with customers and enables companies to discover and exploit the individual interests of the target audiences.

Internet-based competition changes the meaning of prices. Auctions are becoming the basis for setting prices. The information infrastructure and software requirements of a hotel or an airline to cope with an auction-oriented pricing strategy are very different from the requirements of a fixed-price regime. Information infrastructure has emerged as an important source of competitive advantage and competitive risk.

From a tourist market perspective, destination information can shape market segmentation strategies. The expectation goes beyond this to the provision of

information on trends and information about international and local tourism market developments as well as e-commerce and commercial marketing opportunities on the World Wide Web. E-commerce, whose value was expected to reach \$1 trillion in the next three to five years, is ideally suited to small and medium-sized firms. Start-up costs for establishing a website are relatively less expensive when compared to opening a shop in a city space.

Steps have been taken towards creating an integrated tourism information management framework (TIMF) for South Africa. Finding a shared vision and a common focus is at the heart of the TIMF. A further goal of the TIMF is to contribute to the empowerment of local communities through information in order to enable them to become active and knowledgeable stakeholders and entrepreneurs in the industry. The whole TIMF process is based on strong public-private sector collaboration to ensure accountability.

The opportunities relevant to wider information technology applications include global network, smart cards, virtual reality and future web applications.

3.8 Technology impact on tourism

In the quest for competitiveness, tourism takes centre stage and is moving up the value chain. The rapid transformation in new technology, more experienced and discerning consumers and travellers, global economic restructuring and environmental limits to growth all augur for a new paradigm in tourism and technology. Competitive strategies are setting the stage and are prerequisites for ensuring that industry players and tourism destinations create competitive positions.

While global economic and technology shifts provide new challenges for sustainable tourism development, however, they also offer new opportunities and have made open participatory processes essential for long-run success. The country is finding balance in sustainable tourism development. Competition and collaboration are needed for efficiency, innovation and customer satisfaction. Strengthening institutions and building capacities to deliver tailor-made services harnessed by new and emerging technologies are the catalysts to drive the tourism economy into the new millennium. To stage the country and the region as a preferred tourist destination that celebrates diversity and that will draw and satisfy global and local tourists alike calls for memorable 'African' experiences.

Chapter 4:

Scenario Thinking

4.1 Background

The future can never be predicted with a great deal of certainty. The tools of scenario planning represent a systematic way of getting at future possibilities. It's simply contingent thinking to prepare the mind's eye to recognise the signals of change in a timely way so as to be able to respond appropriately. Long-term strategic planning and sound decision-making are based on this type of thinking to prepare for the future. Scenario thinking is a powerful tool to think ahead in a systematic and imaginative way. Scenarios help to make sense in a new context. Scenarios can create a more agile and responsive mindset with the ability in some cases to actually influence the future.

The way to use scenarios is to systematically evaluate them, to look at different possible combinations. Scenarios are relevant stories about the future and how it might play out in the long term. Scenarios of what might happen can be used today to prepare for tomorrow.

Scenarios ease the eye to the possibilities of imminent change in the socio-economic environment of the country. Besides helping nations or communities see the future with new eyes, scenarios have managed to position leading corporations such as Dutch Shell into strategic thinking and planning. It is with this strategic agenda in mind that the NRTF embarked on scenario planning as a crucial step in positioning South Africa's research and technology at the forefront of strategic development.

A set of four macroscenarios depicting four possible pathways to the millennium and beyond to 2020 pose alternative options. The gist of the scenario known as **The Innovation Hub** describes how South Africa's comparatively developed infrastructure creates opportunities for strategic regional development. **The Global Home** captures the dynamics of global competitiveness and the facilitation of the private sector to embrace globalisation in response to global economic shifts driven by new waves of technology. The third scenario, called **Our Way is *the Way***, portrays South Africa's perceived ability to challenge the conventional route to globalisation by rallying developing countries' support for the development of a significant South-South economic bloc. This approach results in isolation by the developed world. The last scenario, **The Frozen Revolution**, plays out on the non-delivery of government's socio-economic policies, which is frustrating the expectations of the masses and leaving key players fragmented.

These stories about the future have been used as a point of departure in the NRTF project to develop the sector-specific scenarios that enabled the Working Group to generate strategies for the sector and to test the robustness of the developed strategies. The following are the four scenarios depicting possible pictures of how development in the tourism economy could unfold on the basis of scenario thinking.

4.2 Scenarios

- **Scenario 1: Innovation Hub**

Summary of the scenario

South Africa's comparatively development infrastructure creates opportunities for strategic regional investment. Building on our skills base and knowledge generates possibilities for comparative advantage and a competitive edge regionally and globally. The Innovation Hub explores building of collective regional strategic investment and indigenous technology capacity; excellence in scientific research, human resource development and policy instruments geared towards the socio-economic problems of the region.

The Innovation Hub scenario

As the innovation hub of the region, South Africa benefited immensely from exporting finished goods and services. The country achieved this largely through improved and strengthened marketing and development strategies in support of the economy and the tourism industry. A lot of innovation is happening. Top of the range is the communications technology to brand South Africa as *the* African Renaissance destination. At the same time, government is harnessing the support of the private sector to maximise the resources in a focused growth approach. The partnership subscribes to the notion reflected in the Tourism White Paper policy document, which advocates that tourism should be 'driven by science, technology, information and innovation'.

Technological innovation and rapid shifts in the economy impact directly on the country's global competitiveness. While 'knowledge is power,' the ability to compete is subject to the country's ability to innovate. In the technology field the required pace of innovation will be relatively fast in order to maintain the country's capacity to be an innovation hub. This is supported by significant levels of investment in ongoing research into ways of maintaining technological 'know how'.

The market bases its propensity to continuously absorb new technological devices on the production line, giving direction to the level and scope of South Africa as an innovation hub. This justifies the Cape to Cairo journey by road to assess

technological needs across Africa. The development of the innovation hub gives impetus to the African Renaissance in terms of intra-regional trade, with South Africa contributing most of the information hi-tech requirements. The returns are enormous, as this will also present a window of opportunity to market our products and services, including tourism, so as to give the country a global competitive edge.

South Africa is hailed far and wide as a beautiful country that is also friendly towards tourists. Largely through the information available on the Internet, tourists are choosing South Africa as their holiday destination. The use of the Internet and websites are crucial and effective channels by which to convey tourism information to tourists wanting to visit the country. There are also networks of the 'adventure' and 'culture' market segment, which entices the targeted markets to come. Communications technology is crucial for efforts to present the country as a top African tourist destination.

By following an integrated tourism-development approach, the necessary linkages are created between the different clusters of the economy. This requires the product base to be sufficiently diversified through a progressive system of innovation. The advantage of an integrated approach is that it will contribute towards enabling the local people to have a stake in tourism ventures through properly structured partnerships. It will also ensure that leakages are minimised and that the bulk of the profits remains in the country.

As South Africa is an innovation hub, the challenge of globalisation and competitiveness presents endless opportunities because a globalised market means a bigger market base. Tackling the challenge means remaining innovative and being a step ahead and relevant in terms of global market trends. Another important issue is the need to strengthen capacity and expertise with appropriate technology in order to stay competitive. This position is maintained only through ongoing research programmes that facilitate innovation and are supported by government's 'innovation fund'. Vast opportunities are explored to increase exports, earn vital foreign exchange and create the job opportunities that come along with being the innovation hub.

- **Scenario 2: Global Home**

Summary of the scenario

The **Global Home** scenario recognises global trends and opportunities which government embraces and government facilitates private-sector empowerment to respond to global market forces. S&T strategies are focused on international trends with pockets of excellence.

The Global Home scenario

The globetrotter's home has changed. The world has become more complex, dynamic and knowledge-based. Globalisation, new technologies and new management paradigms created a brand-new economy, the most competitive market space in the world. South Africa towers in the global economy. Companies can source travel goods, information and technology from around the world with a click of a mouse-button.

Global competitiveness in the new knowledge economy has changed some basic business paradigms. The rules of competitiveness have been redefined by electronic trade routes. Information and communications technologies are stripping out time and distance from the value chain. Companies are tapping into global information infrastructures like the Internet everywhere. Travel management has moved beyond the management of alliances with multiple business partners to the creation of a business network that is embedded in a business 'nervous system'. Information and communications technologies are shrinking the globe, but at the same time turning local uniqueness into a competitive weapon.

In a global economy with high-speed communication and rapid transportation, world markets have become much more accessible. Surprisingly, the enduring competitive advantage of a global economy lies increasingly in local things, based on concentrations of specialised skills, knowledge and institutions!

Global integration and increasing openness are the key drivers in the creation of an environment conducive to tourism growth and wealth creation. Tourism is the growth catalyst in the competitive dynamics of the new global economy. Today's economic map is dominated by clusters: critical masses in a specific location of unusual competitive success in fields such as tourism. Clusters build on local sources of uniqueness.

Cities exemplify local places in a global village because they plug into global networks of capital flows and the transfer of technology and people while also serving as local nodes where global processes converge. One trend is clear: as the travel industry goes global, developed and developing countries alike are embracing the concept as an important generator of growth in the economy. Historically, travel and tourism had a national character. That model is increasingly irrelevant as globalisation takes hold.

South Africa's tourism policies and marketing branding message are moulded by the interplay of global and local forces and trends. The cyber landscape is shaped by local and global influences and has become a showcase to demonstrate the good sense of being sensitive to the uniqueness of location while framing development with a global awareness.

There's no shortage of work or opportunity in the global home — only a shortage of skills and ideas. The 'old' jobs are gone forever. There are some new rules of work and wealth challenging much of the conventional wisdom. Tourism clusters create the skills for the 21st century. Skills that fuel the new economy harness the power of the mind — thinking skills, fundamentally different knowledge and service skills. Escalating customer expectations have resulted in a competitiveness based on innovative customer service, flexibility and the provision of products tailored exactly to customer needs. The cyberspace is converging, providing unprecedented access to product information on the Internet.

It's an open world, where the real market power has moved from governments and large corporations to SMMEs. This shrinking importance of 'bigness' created a proliferation of 'small is beautiful' businesses. As individuals and consumers we have never had such personal power to shape markets and economies. Now it is really OK to be self-employed, to work in a service industry like tourism, to be a web designer or programmer rather than a doctor or lawyer. These are the new professions. Entrepreneurial skills create economic sparks in the tourism industry. Getting wired — with wide-spread Internet access in schools, libraries and public places to facilitate and access travelling opportunities depends on the establishment of a great telecommunications infrastructure for the knowledge economy.

Developments along multiple fronts are converging to create the context for electronic commerce and future financial services. Tourism and service and information work increase to more than 30% of GDP. Business based on services, intellectual capital and ideas (rather than trade in physical goods) is able to move royalties, revenues and profits seamlessly around the globe.

The best skills are attracted to the most exciting projects. South Africa is attracting global skills and creating an environment in which they will want to work. Apart from the relatively crime-free environment, the world's leading companies are investing here because of the favourable investment climate. Meaningful, quantum change creates an inspirational economic policy, one that every businessman can explain and understand. This captures the imagination of the world's investors. We are noticed as an exciting tourist destination. We've become the place to invest and work in. South Africa is now a 'favourite' in the new travel and tourism economy, boasting new skills and creating new jobs.

- **Scenario 3: Our Way Is The Way**

Summary of the scenario

The **Our Way Is *The Way*** scenario highlights a belief in the country's ability to challenge the conventional route to globalisation by rallying developing country support for the development of a significant South-South economic bloc. This results in isolation by the developed world. In terms of S&T, it means skills-base development, focused on self-development and self-sufficiency, a government focus on innovation investment and a lesser focus on the science base and the gathering of scientific information by all means.

Our Way Is The Way scenario

Remember when the only tourist we wanted to chase was the international one? Remember when the general perception was that the only people from the rest of Africa who travelled were those who came to shop for goods they couldn't buy at home, or even worse, illegal immigrants hoping to snatch a better life in South Africa? Remember when crime and violence were leading to declining tourism figures, when holidays were only for the rich, when many of the people of the country had never come into contact with a tourist, let alone gone on holiday themselves? Remember the days when we believed that everything that was 'best' had to come from 'overseas,' that we could never be world leaders ourselves? Ah yes, but that was before the dawn of the new millennium, before the advent of the *African century!*

What happiness to be the African citizen of 2020! It was a bright April morning and Jackson's face was beaming as he set off in his spanking new microbus to collect his newest group of passengers. How times had changed from the days when he had to evade the taxi wars that were so prevalent in Johannesburg. How proud he had been when he had managed to change his clapped-out kombi for a car in which he could transport the rich western tourists from the airport to their hotels in Sandton. How he had gazed in envy at the shining vehicles with their tour guides arriving to collect their passengers. Jackson had dreamt that he, too, would one day be a tour operator travelling with his own passengers. Only that day had seemed so far away!

But South Africa had changed much in the first two decades of the new millennium. Under President Mbeki the African Renaissance had flourished. All the citizens of this great land had become proud of their diversity of cultures and tolerant of each other's foibles. Eyes had turned to new markets north of our borders as brothers joined hands in forging a new future for this vast continent. At first, things had been tough. The western world, consumed with their passion for globalisation and accumulation of greater wealth, had scorned South Africa's desire to develop at her own pace, to process her own raw materials, to decry the ever greater accumulation of riches by the few in favour of a better life for all. And so, in time, the eyes of the world had turned back to Africa, with new respect and with a new desire to share and experience the vibrancy and diversity of this beautiful continent.

Jackson arrived and parked his vehicle at Africa's most vibrant airport. Aircraft from all corners of the globe were parked on the tarmac. Foot-tapping local music and colourfully clad ground hostesses welcomed the passengers as they disembarked. After a long flight, what a pleasure to be greeted by such friendly immigration and customs officials, and how efficiently documents were processed using locally developed technology as good as that found anywhere in the world. The speed with which luggage appeared on the carousels left everyone astounded. South African technology was visible here too — nowhere in the world could an aircraft be off-loaded or passengers cleared faster.

Jackson's smiling face greeted his tired visitors, whose own weary countenances brightened at his warmth and enthusiasm. What was truly amazing was the fluency with which he greeted them in their own language — being Japanese they were accustomed to language difficulties wherever they travelled. Jackson smiled when they commented on this. Little did they know that he spoke not one, but five foreign languages, all learnt with the aid of technology that made such knowledge so easily accessible. Calmly and comfortably he sped them to their beautifully appointed, yet traditionally styled, hotel in Soweto. Smiling faces and express check-ins soon had everyone relaxing in long hot tubs before they embarked on their exciting tour of this vibrant city.

Two weeks later, Jackson and his new-found friends were still smiling when he took them back to the airport for their long flight home. What an experience they had enjoyed, how they longed to spread the good news about this exciting country among their friends and colleagues. Everywhere they had stayed in traditionally styled hotels designed and built by local architects utilising local materials, decorated by local artists. Everywhere they had enjoyed cultural music and dance of the highest calibre. Their luggage was brimming with their purchases — artefacts and jewellery of the highest quality and the most exquisite craftsmanship. Gone were the days of exporting South African gold and gems to be processed elsewhere. South African designers were now recognised as the best in the world. And all around them, wherever they had journeyed, were the warmth, vibrancy and natural exuberance and enjoyment of travellers from the rest of Africa all sharing their diverse cultures and adding to the spirit of festivity that seemed the trademark of the country.

Yes, thought Jackson, as they shouted their last fond goodbyes, times had been hard, and sometimes it seemed that the end of the road was never in sight, but just look at us now, and the best of all was, we did it *our way*.

- **Scenario 4. Frozen Revolution**

Summary of the scenario

The **Frozen Revolution** scenario depicts a situation where the government is trying to address social and economic upliftment through endless policy formulation processes. Policy paralysis, manifested in non-delivery and involvement in populist projects, leaves the masses dissatisfied.

The Frozen Revolution scenario

A village in the Eastern Cape began to engage with its population of one million in an attempt to counter growing apathy and the increasing inability of the community to work together. An initiative aimed at getting a better understanding of the backlogs helped to get the development of this village off the ground.

The approach is based on the conviction that people organised in small groups can help themselves to become self-reliant. The premise is that if social and economic organisations in a community are strengthened, services and material conditions such as water purification plants, clinics and job training will improve and, perhaps most importantly, employment and income opportunities will be created. Residents were organised into groups of 20 to 40 families living in the same village. The rationale was that these families would generally know and trust each other.

They started with a programme. The research undertaken showed that if the cost of water purification was reduced to include only labour and materials, people generally could afford the service and infrastructure. The result was a stand-alone water system financed, managed and constructed by local residents. An NGO provided organisational skills and technical assistance for the community. Once the programme gained momentum, it gradually expanded into other community efforts. These included a basic health and family-planning programme, a credit programme for small family enterprises, a low-cost housing-upgrade programme, a programme to help with the upgrading of physical conditions at schools, a women's work-centre programme and a rural development programme.

Most of the households participated in the project and invested some in the infrastructure. It is estimated that if local government had provided the same infrastructure, it would most probably have cost in the order of five times more. During this same period, many local organisations were created. These organisations have changed the relationship between the people and local government.

When communities assume responsibility for services formerly considered the responsibility of government, things can happen. The community provided the service for itself with appropriate indigenous knowledge systems. Now they are ready to cater for the influx of tourists to the Wild Coast and the Sunshine Coast. The initial constructive relationship between local government and the community seems to be under strain, pointing to the difficulties experienced when governance stalls. It was

anticipated that the successful execution of projects by the community would convince local government to accept the indigenous approach.

Chapter 5:

Survey Analysis

5.1 Introduction

The aim of the Foresight survey is to assess market opportunities and technological trends expected to emerge over the next five, 10 or 20 years that will inform decisions on the balance and direction of research and technology development. The Delphi survey was structured to elicit views regarding the importance, timing, opportunities and constraints of specific tourism-related topics. The interpretations are based on the empirical evidence presented.

Generating the survey statements involves a lengthy and complex process. The first stage is to identify a wide range of strategies of significance to tourism over the next five, 10 or 20 years. During the process, a series of issues for each of these proto-strategies incorporating —

- new market opportunities arising from the SWOTs;
- new products, processes and/or services to meet some of the market opportunities; and
- technologies, breakthroughs, scientific advances or innovations that should underpin products, processes, services and products

were considered.

The resulting list of strategies was then prioritised and the twenty most important were selected. The seven focus areas covered focusing on the identification of longer-term technologies, breakthroughs, scientific advances or innovations needed to underpin identified possible emerging markets.

5.2 The topics of most importance

Of interest are the following 15 statements that pervade the 'top twenty' on all the stated criteria and across all respondents and for the levels of high and medium confidence (these statements give an indication of their relative importance across all the stated criteria, but are not here ranked in order of priority):

Topic No.	Tourism Statement
5	Widespread use of the Internet to access global networks
6	Widespread use of Internet tourism management training
8	Courses based on video, radio, and other electronic media for tour-guide training

11	Mobile visual technology to provide customised tourism sector	training for the
12	Practical use of e-commerce opportunities to Africa	promote tourism in South
13	Low-cost, community-based water-treatment rural attractions	technologies at
15	Stand-alone water-purification systems to provide rural areas in order to stimulate	clean water in tourist activities
16	Stand-alone sludge and waste-treatment plants for environment	a cleaner
17	Alternate energy sources (biomass) for a clean conducive to attracting tourists to rural areas	environment
19	Practical use of indigenous products – herbs for foods and essential oils for theme	ailments, spices perfumes to promote the African Renaissance
20	Practical use of handcrafting technology for African associated products	curios and
26	Development of internodal transport systems to congestion in cities	minimise traffic
40	Practical use of GIS to survey strategic tourist	attractions
41	Widespread use of DNA testing and database-track criminals for surveillance purposes	linked fingerprints to
42	Practical use of advanced detection systems (e.g. emanations) to monitor criminals around	subtle airports and in other public places

Table 5.1 below provides details of the top twenty items (in terms of perceived importance to South Africa). Three indices were developed to denote 'importance to South Africa'. The first two are derived from the variables 'wealth creation' and 'quality of life'. The third, a 'joint index,' is derived from the other two.

Topic No.	Tourism Statement	Joint index
25	Synthesis of textiles and clothing appropriate for local weather	83,33
40	Practical use of GIS to survey strategic tourist attractions	81,25
13	Widespread use of low-cost, community-based water-treatment technologies at rural tourist attractions	75,00
20	Practical use of handcrafting technology for African curios and associated products	73,08
19	Practical use of indigenous products – herbs for ailments, spices for foods and essential oils for perfume to promote the uniqueness of Africa	70,83
5	Widespread use of the Internet to access global networks	67,50
35	Development of infrastructure (distribution and vending) to use smart card interchangeably throughout Southern African countries	62,50
15	Development of stand-alone water-purification systems to provide clean water in rural areas in order to stimulate tourist activities	61,61
34	Widespread use of multifunctional smart cards to reduce the need for use of cash thus minimising crime	61,11
41	Widespread use of DNA testing and database-linked fingerprints to track criminals for surveillance purposes	61,11
32	Practical use of light-rail systems (e.g. magnetic levitation railways at 500 km/h) to allow faster travel from city to city in the country	61,11
42	Practical use of advanced detection systems (e.g. subtle emanations) to monitor criminals around airports and in other public places	61,11
23	Practical use of food-processing technology for domestic and export markets	60,00
11	Practical use of mobile visual technology, newspapers and magazines to provide customised training for the tourism sector	59,07
8	Development of video, radio, and other electronic media-based courses for tour-guide training	57,14
26	Development of internodal transport systems to minimise traffic congestion in cities	57,14
16	Development of stand-alone sludge and waste treatment plants for a cleaner environment	55,95
17	Practical use of alternate energy sources (Biomass) for a clean environment conducive to attracting tourists to rural areas	55,36
12	Practical use of e-commerce opportunities to promote tourism in South Africa	55,00
6	Widespread use of Internet tourism management training	54,76

Various items that respondents feel are of least importance are also the items lowest on the composite index across the 'bottom 10' on the separate scales and have a relatively long-term technology context. They are:

- | | | |
|----|---|---------------------------------------|
| 31 | Practical use of electrical cars to view game at | game parks |
| 28 | Widespread use of global positioning systems (GPS) to provide accurate traffic information aimed at minimising traffic congestion | |
| 7 | Practical use of satellite technology to train | tourism service providers |
| 4 | Practical use of digital billboards using satellite links in open-air games to create awareness of | South Africa as a tourist destination |
| 22 | Widespread use of digital voice recording for unique African sounds | capturing |
| 29 | Development of lighter planes for faster travel and using shorter runways | |
| 43 | Widespread use of wristwatches to connect to global positioning systems for the safety of | backpackers |
| 32 | Practical use of airships to provide tourists with | scenic views. |

In analysing the survey responses the following trends emerged:

5.3 South Africa's comparative standing

More than 80% of respondents believe South Africa equal to or ahead of other developing countries. Interpreting these figures requires caution in the light of the results of the Africa Competitiveness Report, according to which countries such as Mauritius, Botswana, Egypt and Morocco outrank South Africa in terms of competitiveness. Slightly less than 80% of respondents believe we are behind developed countries. The issues impacting on comparative standing incorporate the following:

- Environmental impact technology
- The use of ICT-based safety and security devices

- Development of technologies to support tourism in rural areas, e.g. water-purification systems
- Development of technologies serving Afrocentric niche markets
- Improvement of transport infrastructure.

Time frame for realisation

In conformance to typical Delphi surveys, the median value for all statements shown at the end of the chart is within five years, well within the twenty-year horizon of the study.

Issues that the respondents believe will be realised well within a ten-year time horizon include items that relate to —

- the widespread use of the Internet to access global networks;
- practical use of mobile visual technology for customised training purposes;
- the widespread use of multifunctional smart cards;
- the widespread use of the Internet for purposes of tourism management training;
- the use of multimedia to train tourist guides; and
- the provision of information for purposes of community capacity building in rural areas.

Largely as a result of the relatively small number of respondents, very few were able to see beyond the 10-year time horizon. Indeed, a number of respondents are not convinced of several of the possibilities occurring. Respondents indicated how they thought South Africa might acquire such technology or capacity. For most statements there was a dominant view, with a large percentage of the respondents feeling that one of the strategies discussed below could be considered:

- Develop in South Africa:

This related to the promotion of indigenous products in support of the African Renaissance theme as well as the development of technologies serving Afrocentric markets and the dominance of knowledge work in the local economy.

- Engage in joint ventures:

Since respondents suggest that so many aspects be undertaken as joint ventures, this trend could be related to the option of partnerships emerging within the pattern of increasing globalisation. At the same time, the responses suggest a perceived need for local adaptation rather than automatic adoption of new technologies, and a confidence that South Africa has or could develop the managerial and professional capacity to partner with overseas firms in developing products for local application.

- Customise existing technology:

Here the issue is local use of already existing technologies, so customisation to suit local conditions may be all that is needed to achieve widespread use.

- Import complete:

The respondents felt that production of such items could require substantial capital investment, and that benefit could be derived from economies of scale if produced in the developed world.

- Constraints on the realisation of possibilities:

In the questionnaire, finance was perceived as a constraint to be addressed in realising most of the statements. Other constraints were ranked in order of perceived importance, with *technology human resources* emerging as the most significant, followed by *infrastructure, market constraints* and *policy*. R&D *issues* are of less concern relatively speaking.

5.4 Conclusions

This chapter reports the design, development and delivery of a formal Delphi survey of tourism experts in the country. The interpretation of statements in the survey was the outcome a workshop by the Tourism Working Group. The response rate was reasonably acceptable for a 'cold canvass,' especially since the survey demanded a good deal of time from respondents who regard themselves as knowledgeable in the field.

The chapter highlights those items the respondents regard as most important for wealth creation and quality of life. Several relate to two broad clusters, namely information and communication technologies and gaining access to the global network in the shorter term, while those technologies relevant to alternative transport systems have a more futuristic bent. Those least important in their eyes are also noted and reflect really futuristic 'high-tech' possibilities for the future.

In almost all cases, the respondents consider South Africa to be equal to or ahead of other Southern African countries and also developing countries in general. At the same time, most consider this country to be far behind the developed world.

The most popular path to the realisation of the items in the questionnaire is local development in line with the African Renaissance theme, followed by the creation of joint ventures. This is consistent with the assessment that South Africa is generally

behind the developed world but has the capability to partner and adapt technology for local needs. Among the more significant constraints to realising the items in the survey are human resource capacity. Human resources are seen as the major inhibitor to local development of human/computer interfaces. Social/cultural factors are impediments to the exploitation of the global network for business transactions.

The next chapter moves on to consider how all the empirical and conceptual data gathered in this study could be combined into a framework for proposed recommendations.

Chapter 6:

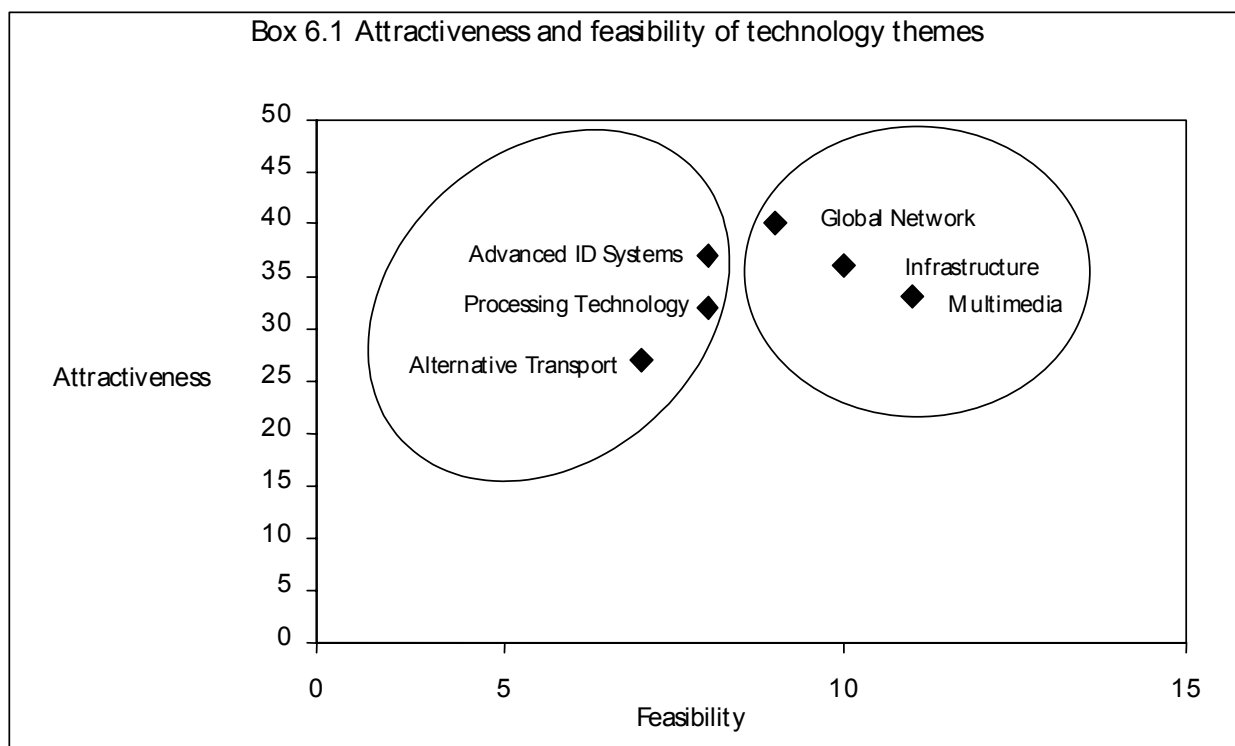
Recommendations

6.1 Introduction

The sustainable development of the country's unique resource base and cultural heritage is a prerequisite for future tourism development. Governments and industry have to implement policies that spur the interaction of economic, technological and social change in a positive way as they prepare to respond to the challenge of the 21st century. The transition towards the information and knowledge economy and the process of globalisation, together with growing international interdependence, calls for value-added interventions.

In this section of the report, specific recommendations on the issues identified in the previous chapters will be presented. With a view to structuring the recommendations succinctly, technologies developed in Chapter 5 are grouped into technology themes. The themes are then analysed in terms of *attractiveness* and *feasibility*.

In this approach, attractiveness, which denotes the desirability of a theme, incorporates ten variables, including factor advantages, alliances, the state of internal technology, conducive government policy, implementation infrastructure, the involvement of corporate and/or small and medium enterprises, single and/or multiple business opportunities, margins and level of cluster synergy. The feasibility criteria highlight what hurdles need to be overcome and are defined by three variables, namely the size of a technology base working in that area in South Africa, the cost of developing a technology theme and the knowledge required. The issues are clustered and illustrated in the diagram in Box 6.1.



From the diagram it is evident that there are two clusters of technology themes. The first cluster is characterised by high attractiveness and high feasibility and incorporates the themes of multimedia, infrastructure and global network. This cluster can be implemented within a relatively short time frame because of the high feasibility. The second cluster, consisting of processing technology, advanced identification systems and alternative transport systems, displays medium attractiveness with relatively lower feasibility. This cluster is expected to be implemented within the medium to long term, i.e. six to 10 years. Transport systems will probably have a longer time span to implementation.

Advances across a wide range of pervasive technologies are beginning to revolutionise the worlds of communications and entertainment, retailing, medicine, and agriculture, profoundly affecting the way we work, live and play. Information technology is transforming the way companies do business. IT as an investment will deliver value-added benefits. Among the benefits are improvements to infrastructure efficiency and new business opportunities made possible by new IT platforms. They include value-enabling technologies and value-creating business opportunities developed and deployed in the IT platform.

These opportunities include improvements in external and internal processes, tapping employees' and outsiders' knowledge and expertise and the creation of networked communities of customers and staff. Where the old platform was physical, the new platform is virtual: it is digital, global, interconnected, fast-changing and inter-connected. We are currently in the midst of transition and this prompts new opportunities. The increased flexibility and speed with which opportunities can be pursued increase the value of investments in infrastructure, thus minimising the financial risk of pursuing new business opportunities. Moreover, technology enables people to work smarter, and information and knowledge can be used to create new products and services or to add value to existing ones, thus improving the company's competitive position.

6.2 Recommendations

6.2.1 Cluster 1

Global network, multimedia, ICT and physical infrastructure technologies

Global network

From a tourist-market perspective, destination information can shape market segmentation strategies. The expectation goes beyond this to the provision of

information on trends and information about international and local tourism market developments as well as e-commerce opportunities and commercial marketing opportunities on the World Wide Web. Technology has enabled on-line reservations to increase dramatically, with business generated on-line growing at an unprecedented rate. Much of the growth of ticket sales on the Internet comes from the Internet's ability to reflect modern lifestyles. The Internet provides scope for marketers to integrate their interactions with customers into one medium and enables companies to discover and exploit the individual interests of target audiences.

To remain competitive, top hotels are reportedly scrambling to install systems that add Internet connectivity and e-mail to traditional hotel systems in a way that makes sense both economically and from a guest-relations viewpoint. High-speed internet services and e-mail access coupled with access to enhanced in-room hotel and local information and entertainment systems such as Pay-Per-View (PPV) are all now coming on-stream. The service is linked through a new Guestlink Global system, a web-based productivity, entertainment and communication tool for business and leisure travellers.

Currently, the impact of e-business in travel is most visible in the growth of Internet reservation systems and automated check-in procedures. The look-to-book ratio is becoming more and more crucial for airlines wanting to make the most of e-business opportunities by enticing more customers to book via the Web. But managing human service relationships is one of the less obvious challenges facing the airline industry as it seeks to embrace e-business technologies such as the Internet, electronic tickets and kiosks. Everything from aircraft maintenance to customer sales and airport operations is facing substantial change as a result of Internet technologies. The transaction costs are cut to the bone if a traveller books a flight through the Internet and opts for ticketless travel. Research confirms that only 10% of ticket sales are currently made over the Web.

The proliferation of new distribution channels creates new opportunities for the travel industry to employ creative marketing and build customer loyalty. The advantages in linking the industry's frequent flier scheme into its website include a wealth of information on the travelling habits of its most valuable customers. All these developments present the major challenge of pulling e-business initiatives together into a cohesive strategy that simplifies rather than complicates the traveller's life. The e-ticket of the future will be a combined passport and visa in electronic form on a smart card. The contemplated e-ticket will provide the flexibility to fly or if necessary to re-book.

The Global Networks pose both challenges and opportunities in tourism for a variety of services. These include marketing South Africa as a world-class tourism destination internationally, direct booking through virtual sites and multifunctional smart cards, e-business, airline electronic ticketing and encryption to make cybertransactions safe.

At the same time it is well worth taking note of the shifts in the industry with the travel agents coming increasingly under threat in the move to a full-fledged network system.

Multimedia

Institutional issues are becoming crucial because the rules of the game and the social institutions which were essentially geared to the functioning of predominantly industrial societies are fast becoming inadequate or incompatible with the emerging global information and knowledge economy.

Multimedia could play a significant role in creating awareness about tourism locally and internationally and for providing quality-service training in the hospitality industry. The key technologies that can be applied for this purpose include the following —

- Artificial worlds (experiential tourism) — large, wall-hung, high-definition screens linked via satellite worldwide.
- Computer-based instruction, environmental education technologies and multi-channel distribution network.

The demand for multimedia capabilities is increasing for such applications as distance collaboration tools. Audio, image and video assets are becoming a major component of databases and of information infrastructure. These technologies are just evolving and include data compression and image database technologies, video streaming and video logging. The rapid evolution of technologies suggests that early experimentation is a critical part of the development of new applications.

Infrastructure technologies

Although the infrastructure base supporting tourism is good, it is highly polarised and results in a limited dispersal of tourists to other areas with potential. To maximise the tourism potential, targeted investments in tourism infrastructure is predicated to leverage private-sector investment in less traditional areas that have product strength and can satisfy future market needs. The funding of tourism infrastructure development requires a partnership of all the stakeholders from the private sector through to development agencies. A comprehensive framework incorporating all the issues requiring funding for tourism development based on a new set of relationships that incorporate various financing partners for a specific need is recommended. This partnership approach provides a menu of opportunities by matching the requirements with potential partners.

Investing in all the major elements of tourism infrastructure provides opportunities for the emerging market to become active tourism participants.

The research issues and technology themes in support of infrastructure technologies include:

- water resource;
- wetland and estuary management;
- catchment research;
- water quality and availability;
- clean energy;
- biotechnology for waste management;
- technologies for less intensive resource use production systems;
- smart-card readers;
- satellite; physical infrastructure, e.g. effluent treatment plants/water purification;
- light rail and renewable energy technologies.

In rapidly changing businesses such as financial services and travel and tourism, the information infrastructure has become critical.

Steps have been taken towards creating an integrated tourism information management framework (TIMF) for South Africa. Creating a shared vision and a common focus are at the heart of the TIMF. A further goal of the TIMF is to contribute to the empowerment of local communities through information to enable them to become active and knowledgeable stakeholders and entrepreneurs in the industry. The whole TIMF process is based on strong public/private sector collaboration to ensure accountability. The recommendation is to build on this concept in establishing a centre of excellence in tourism research and technology.

Box 6.2: Tourism and technology themes and sample applications

Theme	Technology area	Sample applications
Global network (IT)	Information systems (W) Internet (W) Satellite-based (P) Smart card (P) GIS (W) Software (W) Virtual reality (P) Simulation software (P) Information security/ encryption (P, D, W) GPS (W)	E-commerce Strategy formulation Marketing model (4 dimension) Service-quality measure Strategic planning (All/local level) Direct booking (information @ source) Virtual reality education (SD + marketing)
Multimedia (IT) ▪ Video ▪ Audio ▪ Digital	Digital billboards (P) Large, wall-hung, high-definition (P) Computer-based instruction (P) Artificial worlds (D) (experiential tourism) multi-channel distribution network (W) digital sound and voice recording (W)	e-commerce Promotion/marketing Marketing, information Training Awareness of local tourism
Alternative transport systems	Magnetic levitation (D) Electric cars (P,D) Fast trains (P,W) Airships (P) Hot-air balloons (W) Hybrid electric cars (P,D) Lighter planes (W) Lighter vehicles (W)	Day-night game viewing Inter-city travel Inter-country travel SADC travel Scenic views Shorter ⇒ Sustainable development
Infrastructure	Advanced materials (W) IT internodal (P) Light rail Smart-card readers (P) Satellite (Hartbeeshoek) Physical infrastructure (W) Effluent treatment/ demonstrators (P) Water purification (P) Alternative energy (P) (renewable energy)	Sustainable environmental practices Promotion of tourism in rural sites = accessibility Minimise traffic congestion, ease of travel
Processing	Extracting technologies (P) Handcarving technologies (D) Taxidermy (W) Lifestyle products (W)	Medicinal use Indigenous exotic foods (Marula jam) Branding cosmetics + beverages (Marula liqueur)
Advanced ID system	Smart sensors (P, D, W) DNA database (biometrics/ forensic) (P, D) Navigation (W)	Monitor criminals Transaction security Criminal detection +

6.2.2 Cluster 2

Processing technologies, advanced ID systems and alternative transport systems

Processing technologies

As we prepare to journey into the new millennium with all its promise of new scientific and economic gains, we cannot afford to forget how culture and history can shape modern development by passing legends and indigenous knowledge down through oral traditions. From tourism to restoration, investments in cultural heritage and related industries promote labour-intensive activities that generate wealth and income. The country's unique heritage and rich culture together account for 46% of foreign tourist motivations, second only to scenic beauty. African crafts and indigenous products using African-lifestyle technologies could be used to brand the African Renaissance theme. There is an urgent need for niche operators offering integrated products across all interest areas and using process technologies for this purpose.

Technologies in support of the African Renaissance include *processing technologies* that in turn support lifestyle technologies —

- indigenous exotic foods
- the branding of cosmetics and beverages
- lifestyle products for design, styling etc., textiles
- apparel
- extracting technologies and safety engineering
- surveillance technology
- handcarving technologies
- taxidermy.

Advanced ID systems

Tourists, especially backpackers, armed with 'the ultimate communications kit for travellers,' can enjoy new Internet services offered by shoestring travel-guide publishers 'Lonely Planet'. The LP 'Travel Vault' stores details of vital travel documents such as passport, tickets, credit cards, jobs, insurance and other information. Travellers scan or type in details to the secure website before departure. If they become victims of theft they can phone a toll-free help line to find the nearest consulate where they log on and download the missing information, or at any computer connected to the Internet, including cybercafés.

The level of crime in the country has also reached such enormous proportions that the impact on future tourism will be detrimental if the issue is not tackled effectively. The technologies that enhance safety and security include —

- advanced ID systems
- technologies related to smart sensors
- personal navigation
- subtle emanations
- DNA databases (biometrics) for forensic purposes.

Alternative transport systems

Well aware of the large and latent potential of the tourist component locally and in the SADC region, faster modes of travelling may enhance and stimulate tourists in the region. At the same time, tourists may wish to embark on scenic views during their travel using hot-air balloons.

The maximum use of sunken investment in the rail network and the exploration of transport technologies related to fast trains is recommended. Alternative transport technologies relate to —

- Magnetic Levitation
- light-rail
- Airships
- hybrid electric cars for day-night game viewing
- hot-air balloons for scenic views.

6.3 Conclusion

Moving into the new millennium, the competitive environment creates major opportunities, but also represents major risks for those who don't change or adapt to the change. In exploring the options and potential areas of investment, it is prudent to benchmark the technologies (see table below). Areas in which technologies are

prevalent across the spectrum of research through to design and manufacturing require further attention.

The travel and tourism industry has to work hard at integrating multiple channels that allow customers to switch effortlessly between them. The Chicago-based Doblin Group developed innovative landscapes to map the innovativeness of the travel and tourism industry across categories. The new technique visualises innovation through mapping to help spot patterns and craft strategies. High peaks indicate a need for intense innovation activity and big investments just to keep pace. The dizzy heights of the peaks in the computer and peripherals map suggest a robust level of innovation. The topography of the airlines map is relatively flat, revealing a paucity of innovation. The innovation that does take place is concentrated on processes and services.

In the digital economy there is an emerging infrastructure of networks, which blurs the boundaries between sectors. The convergence of technologies is apparent as demonstrated by an example from the airline industry. This effectively implies that Boeing becomes a design, networking, project management and marketing company, working with suppliers and customers in e-business communities to design aircraft in cyberspace.

New ground will have to be broken to provide policy frameworks. We recommend forward-looking policy responses that should pay handsome dividends for the Southern African region. Opportunities to open rural areas for tourism development should be actively explored. The African Renaissance theme with its many indigenous processes and lifestyle technology opportunities should be pursued as a vehicle for indigenous technology application and community empowerment purposes. The feasibility of a fast-rail system to open areas in the SADC region with a view to involving far greater numbers of emerging travellers in the tourism economy should be given consideration.

A wider dissemination of the outcome of the Foresight process is recommended to create an understanding among all stakeholders of the importance of science and technology to drive tourism into the future.

Technology benchmarking

Theme	Technology area	Research	Design	Apply	Mfg
Global Network	Information systems	X	X	X	X
	Internet		X	X	
	Satellite-based		X	X	
	Smart card		X	X	X
	GIS	X	X	X	
	Software	X	X	X	X
	Virtual reality	X		X	
	Simulation software			X	
	Information security/encryption	X	X	X	X
	GPS			X	
Multimedia	Digital billboards			X	
	Large, wall-hung, high-definition			X	
	Computer-based instruction	X	X		
	Artificial world/experiential tourism				
	Multi-channel distribution network	X	X	X	X
Digital sound and voice recording			X		
Alternative transport	Magnetic levitation				
	Electric cars	X	X	X	X
	Fast trains				
	Airships				
	Hot-air balloons			X	X
	Hybrid electric cars	X			
	Lighter planes	X	X	X	X
Lighter vehicles					
Infrastructure	Advanced materials	X	X	X	X
	IT internodal				
	Light rail				
	Smart-card readers			X	
	Satellite (Hartbeeshoek)			X	
	Physical infrastructure				