

Topic 2: The Critical Role of IP Policies in Modern Economies

McLean Sibanda
Partner: Sibanda & Zantwijk Attorneys, South Africa

**THE ROLE OF INTELLECTUAL PROPERTY OFFICES (IPOs) IN
PROMOTING INNOVATION, BUSINESS COMPETITIVENESS AND
ECONOMIC GROWTH**

organized by
World Intellectual Property Organization (WIPO) in cooperation with Japan Patent Office (JPO)
February 2 and 3, 2012, Tokyo, Japan.

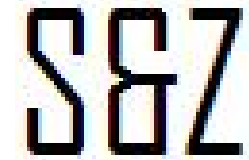
Overview

S&Z

- ❑ Background and Context
- ❑ Critical Role of IP Policies
- ❑ Case Studies
 - USA
 - South Africa
 - Gauteng province
- ❑ Concluding Remarks

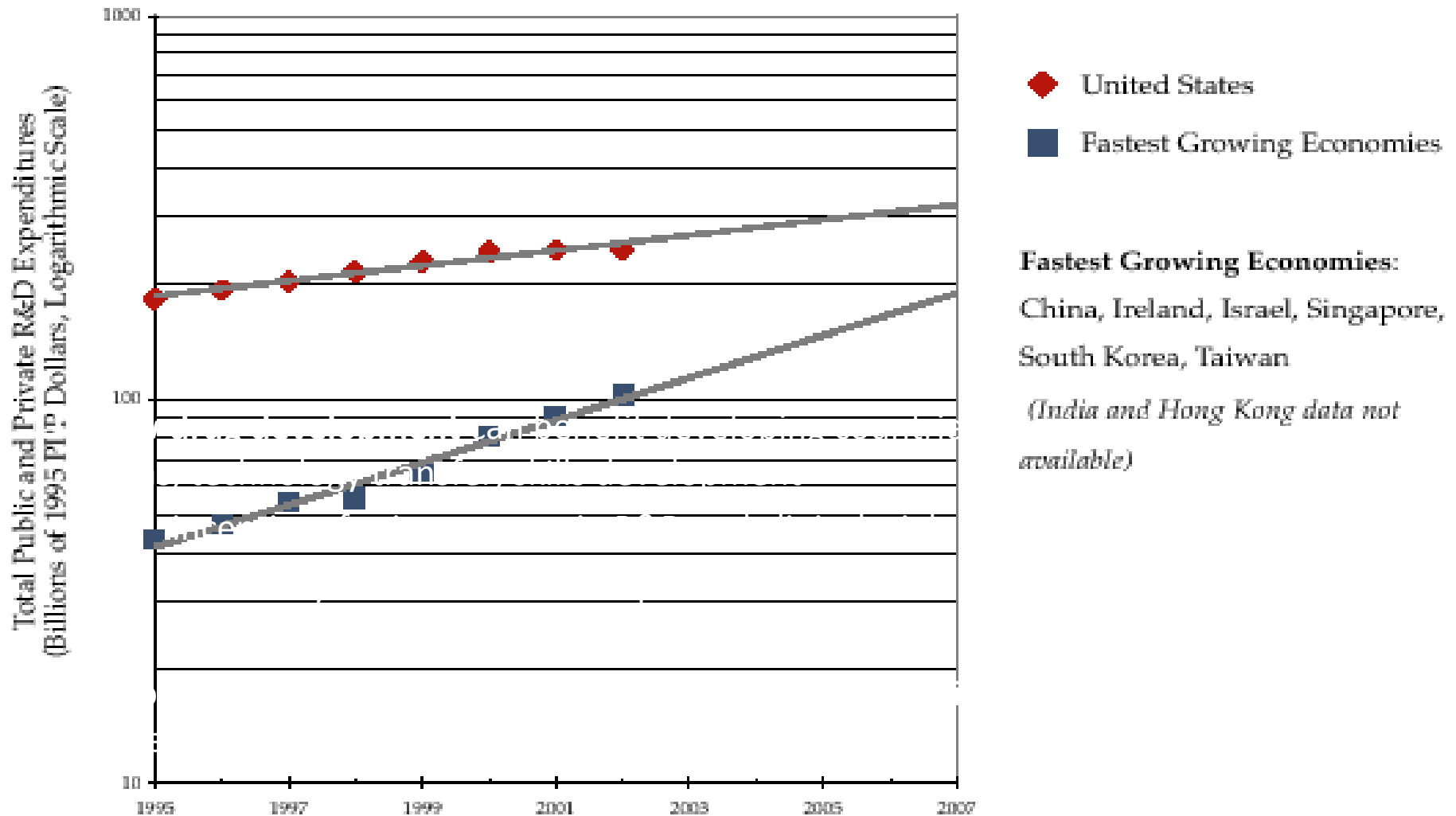
Background and Context

Intellectual Property and Competitiveness



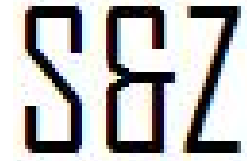
The World Economic Forum Global Competitiveness Report indicates a correlation between the protection of intellectual property rights and national competitiveness. In 2004, the 20 countries that were perceived as having the most stringent intellectual property protection were classed among the top 27 in the WEF's growth competitiveness index. Conversely, the 20 countries perceived as having the weakest intellectual property regimes were ranked among the bottom 36 for growth and competitiveness.

Total R&D Investments: Fastest Growing Economies Gaining Rapidly on U.S.



Background and Context

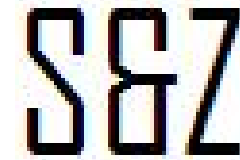
The Asian Tigers



The intellectual property system was an important catalyst for the development of indigenous technology by Korean companies, several of which have become global market leaders. Korea's spectacular transformation from a poor farming economy in the 1960s with a per capita income of less than US \$100 to a highly industrialized country with a per capita income of US \$12,000 today, resulted from a systematic economic and trade development policy that included incentives for technological innovation and the development of domestic intellectual property assets.

Chulsu Kim, Integrating Intellectual Property into the National Development Policy: the Korean Experience, keynote address at WIPO/ KIPO Ministerial Conference on Intellectual Property for Least Developed Countries

Background and Context



World's most rapidly developing countries

BRICS nations - Brazil, Russia, India, China and South Africa – are expected to make a major economic breakthrough in the next ten years

Country	GDP per capita based on PPP* in 2009 (USD)	GDP growth in the past ten years (%)	GDP growth needed to catch up with the largest economies by 2050 (%)	Time needed to catch up with the largest economies (years)
Russia	15,039		4.6	17
Brazil	10,455		5.3	119
China	6,549		5.7	23
India	2,930		7.4	50
Poland	17,536		4.0	22
Mexico	14,534		4.7	55
Argentina	14,125		4.0	17
Turkey	13,138		5.3	28
South Africa	10,136		4.6	135
Indonesia	3,980		7.2	181

* Purchasing power parity (PPP) is a theory of long-term equilibrium exchange rates based on relative price levels of two countries

The New World Powers in Innovation

Measuring innovation by how many patents a country files for each dollar of research budget reveals the true map of innovation winners around the globe. And The Republic of Korea is leading the way in efficiency.



Japan	patents granted per R&D expenditure	217,564	Czechia	patents granted per R&D expenditure	995
United States	patents granted per R&D expenditure	156,162	New Zealand	patents granted per R&D expenditure	896
South Korea	patents granted per R&D expenditure	102,638	Ireland	patents granted per R&D expenditure	874
Germany	patents granted per R&D expenditure	50,091	Brazil	patents granted per R&D expenditure	585
China	patents granted per R&D expenditure	26,292	Hong Kong (SAR), China	patents granted per R&D expenditure	406
France	patents granted per R&D expenditure	25,688	Czechia	patents granted per R&D expenditure	403
Russia	patents granted per R&D expenditure	19,641	Poland	patents granted per R&D expenditure	399
United Kingdom	patents granted per R&D expenditure	13,983	Hungary	patents granted per R&D expenditure	337
Netherlands	patents granted per R&D expenditure	9,949	Slovakia	patents granted per R&D expenditure	277
Canada	patents granted per R&D expenditure	7,533	Mexico	patents granted per R&D expenditure	252
Sweden	patents granted per R&D expenditure	7,224	Peru	patents granted per R&D expenditure	196
Finland	patents granted per R&D expenditure	4,341	Turkey	patents granted per R&D expenditure	184
Australia	patents granted per R&D expenditure	4,163	Thailand	patents granted per R&D expenditure	158
Austria	patents granted per R&D expenditure	3,537	Israel	patents granted per R&D expenditure	114
Spain	patents granted per R&D expenditure	3,221	Greece	patents granted per R&D expenditure	98
Belgium	patents granted per R&D expenditure	2,773	Cuba	patents granted per R&D expenditure	87
Italy	patents granted per R&D expenditure	2,534	China	patents granted per R&D expenditure	83
India	patents granted per R&D expenditure	2,267	Costa Rica	patents granted per R&D expenditure	78
Denmark	patents granted per R&D expenditure	2,170	Ecuador	patents granted per R&D expenditure	69
Poland	patents granted per R&D expenditure	1,216	Denmark	patents granted per R&D expenditure	63
Norway	patents granted per R&D expenditure	1,138	Ecuador	patents granted per R&D expenditure	5
			France	patents granted per R&D expenditure	6

Patent Filings Per Research and Development Expenditure

Figures taken from 'World Patent Report: A Statistical Review (2008)' supplied by the World Intellectual Property Organization



The size of the box illustrates relative patent filings per R&D expenditure

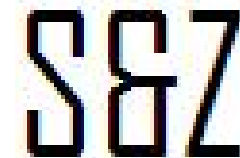


No Data Available for the Following Countries:

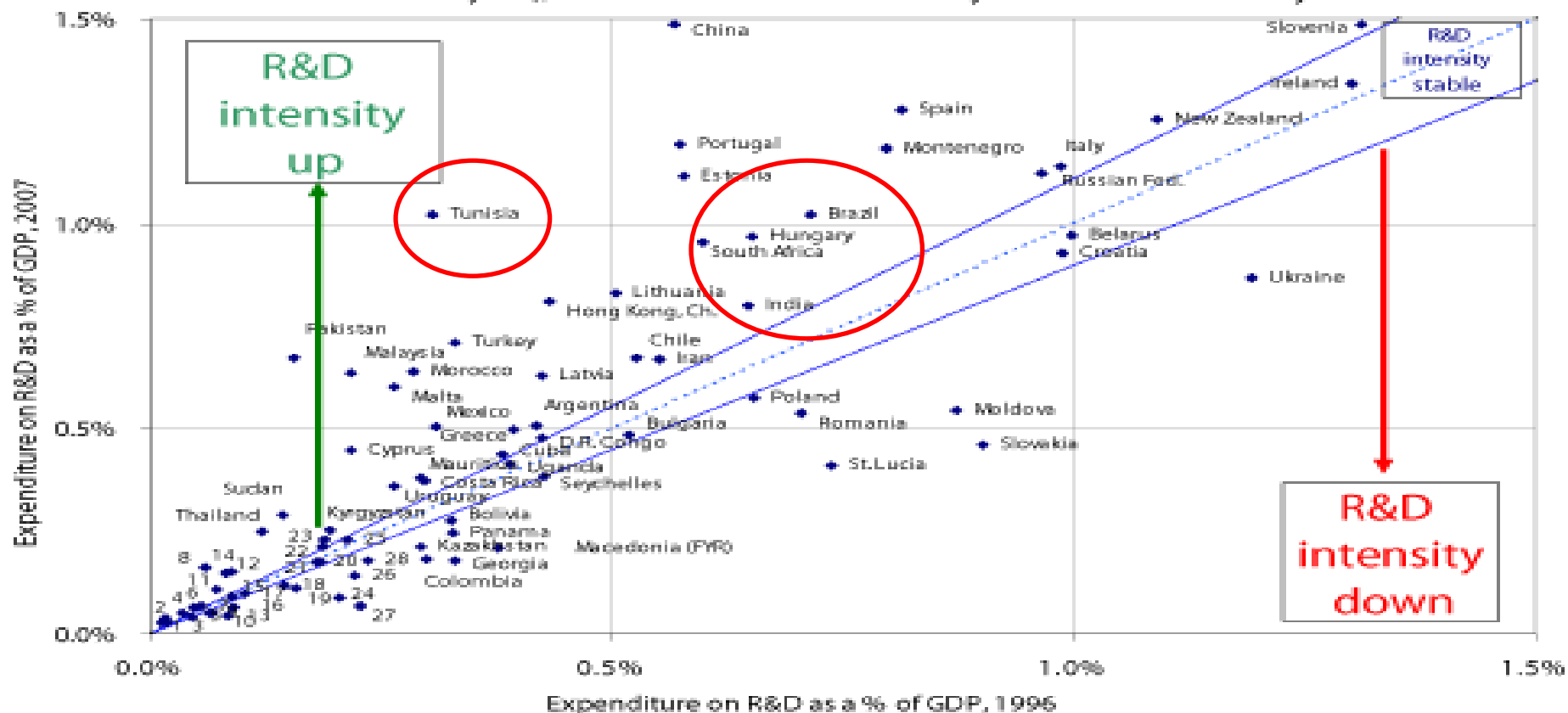
Albania, Angola, Benin, Chad, Dominica, Gabon, Ghana, Iraq, Libyan Arab, Jamaica, Papua New Guinea, Saint Kitts and Nevis, United Republic of Tanzania, Ethiopia, Marshall Islands, Mauritania, Saint Vincent, and the Grenadines, T.F.Y.R. of Macedonia, Bahrain, Nigeria, Oman, Cameroon, Bolivia, Vietnam, Saint Lucia

Background and Context

R&D Intensity



The evolution of R&D intensity
GERD as a percentage of GDP, 1996 (or earliest available year) and 2007 (or latest available year), countries with R&D intensity below 1.5% in both years.

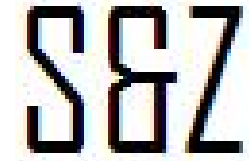


Note: countries in the left-bottom corner of the graph are represented by the following numbers. 1: Zambia; 2: Brunei; 3: Bosnia & Herzegovina; 4: Guatemala; 5: Honduras; 6: Lesotho; 7: Jamaica; 8: Myanmar; 9: Saudi Arabia; 10: Indonesia; 11: Macao, Ch.; 12: Peru; 13: Nicaragua; 14: Ecuador; 15: Paraguay; 16: Tajikistan; 17: Trinidad & Tobago; 18: Philippines; 19: Burkina Faso; 20: Ethiopia; 21: Sri Lanka; 22: Armenia; 23: Mongolia; 24: Kuwait; 25: Egypt; 26: Madagascar; 27: Algeria; 28: Azerbaijan.

Source: UNESCO Institute for Statistics, September 2009

Critical Role of IP Policies

Importance of clear IP Policies



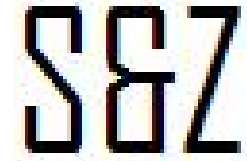
- ❑ Alignment with country's economic policies
- ❑ IP policies facilitators of investment decision and certainty in respect of trading environment
 - e.g. India and Brazil on compulsory licensing
 - e.g. USA on IKS

e.g. Brazil vs Jordan on pharmaceuticals

Jordaan	Brazil
<ul style="list-style-type: none">• 75% of production for export market• Allows both product and process patents• Bolar provisions – development and testing of patented drug permitted before patent expiry• 5 year data exclusivity – from date of registration by JFDA	<ul style="list-style-type: none">• Lack of clarity in Industrial Property Law, ANVISA used its prior consent role to reject patent applications on the basis of novelty and inventiveness which is officially the role of the Brazilian Patent Office (BPTO).• AG decision of 2011 - ANVISA's sole responsibility is analysis of the sanitary risks of the patented drug to health.

Critical Role of IP Policies

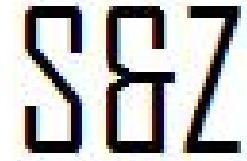
Importance of clear IP Policies



- ❑ IP policies inform R&D investment and objectives
 - e.g. USA, South Africa, and Philippines
- ❑ Roadmap for international negotiation positions and hence inform trade policies as well as development policies
- ❑ Provide mechanisms of stimulating socio-economic development

Case Study: USA

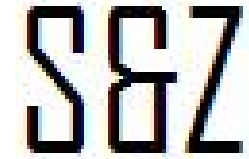
Bayh Dole - Impact of University Ideas



- ❑ Prior to Bayh-Dole, government used to own intellectual property developed in university and federal laboratories
- ❑ Bayh-Dole Legislation
 - Ownership with universities and federal laboratories – institutional IP Policies
 - Empowered to commercialise their intellectual property and innovations
 - Preference for SME
 - Substantial manufacture in the USA

Case Study: USA

Bayh Dole - Impact of University Ideas



Universities creating 1.25 new products a day

Campus patenting 495 issued patents in 1980

3,278 issued patents in 2005

4,932 academic licenses in 2005

28,349 active licenses overall

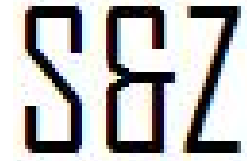
Biotechnology industry rooted in academic research

Nanotechnology following similar trend

From: Joe Allen, USA, Ex-staffer to Senator Bayh,

Case Study: USA

Bayh Dole - Impact of University Ideas



❑ STANFORD UNIVERSITY

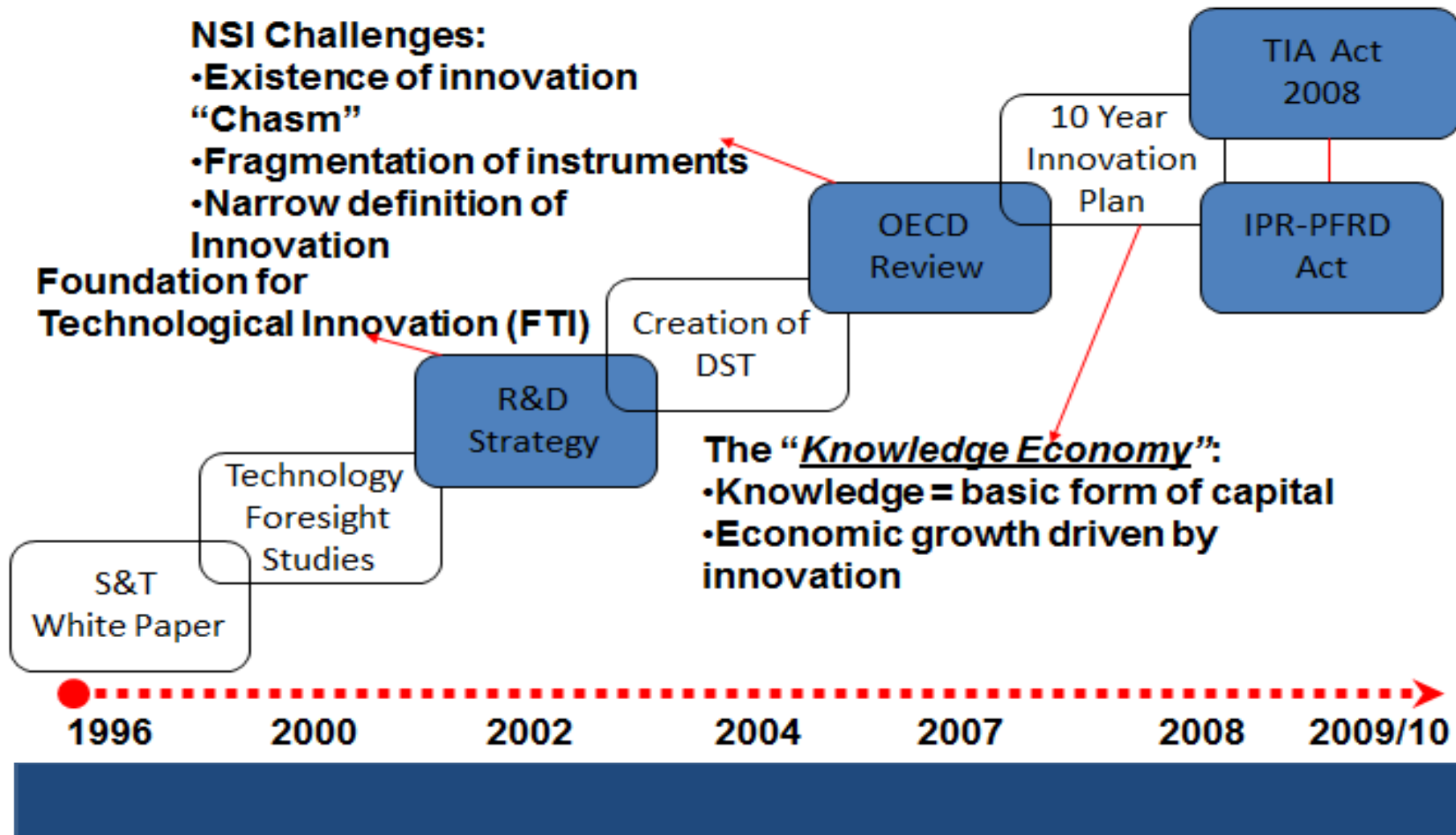
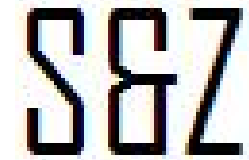
- **Recombinant DNA Cloning Technology (total royalties US\$255 million)**
- **Functional Antigen-Binding Proteins (total Royalties US\$30.2million)**
- **FM Sound Synthesis (total Royalties US\$22.9million)**

❑ EMORY UNIVERSITY

- ***\$525M Deal on ARVs developed by researchers at Emory***

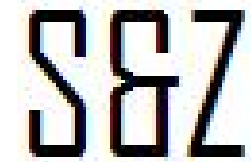
Case Study: South Africa

Innovation Policy Milestones



Case Study: South Africa

Management of IP at Universities (2008)

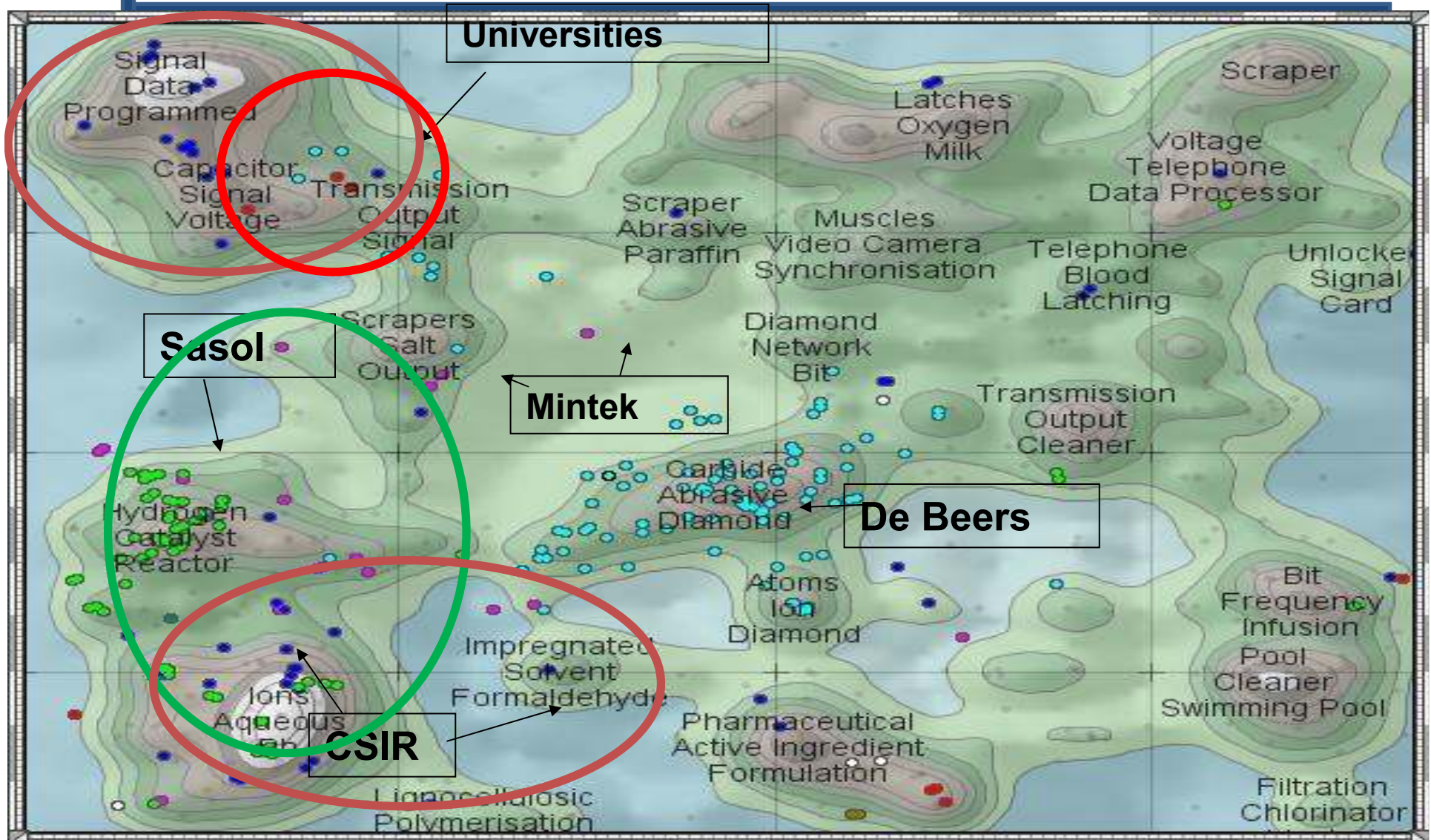


Institution	IP Policy	Tech. Transfer Capacity (Year Established)	Institution	IP Policy	Tech. Transfer Capacity (Year Established)
University of Cape Town	Yes	Limited (2002)	University of Pretoria	Yes	Limited (1996)
University of Stellenbosch	Yes	Yes (1999)	North West University	Yes	Yes (2003)
Nelson Mandela Metropolitan University	Yes	Limited (2007)	University of the Witwatersrand	Yes	Limited (2003)
Rhodes University	Yes	No	University of Limpopo	No	No
Walter Sisulu Metropolitan	Yes	No	Tshwane University of Technology	Yes	Limited (2005)
Durban University of Technology	No	No	University of KwaZulu-Natal	No	In process of establishment
University of Fort Hare	No	No	UNISA	No	No
Cape Peninsula University of Technology	No	No	University of Western Cape	No	No
Vaal University of Technology	No	No	CSIR	Yes	Yes (2001)
University of Johannesburg	Yes	Limited (2004)	Water Research Commission (WRC)	Yes	Limited (2003)
Central University of Technology	No	No	University of FortHare	No	No
Mangosuthu University of Technology	No	No	University of Zululand	No	No
Vaal University of Technology	No	No	Agricultural Research Council (ARC)	Yes	No
Medical Research Council (MRC)	Yes	Yes (2004)	Mintek	Yes	Limited

Case Study: South Africa

The State of Patenting 2008 Report – USPTO & EPO (1991 – 2005: 2050 patents)-5% from universities

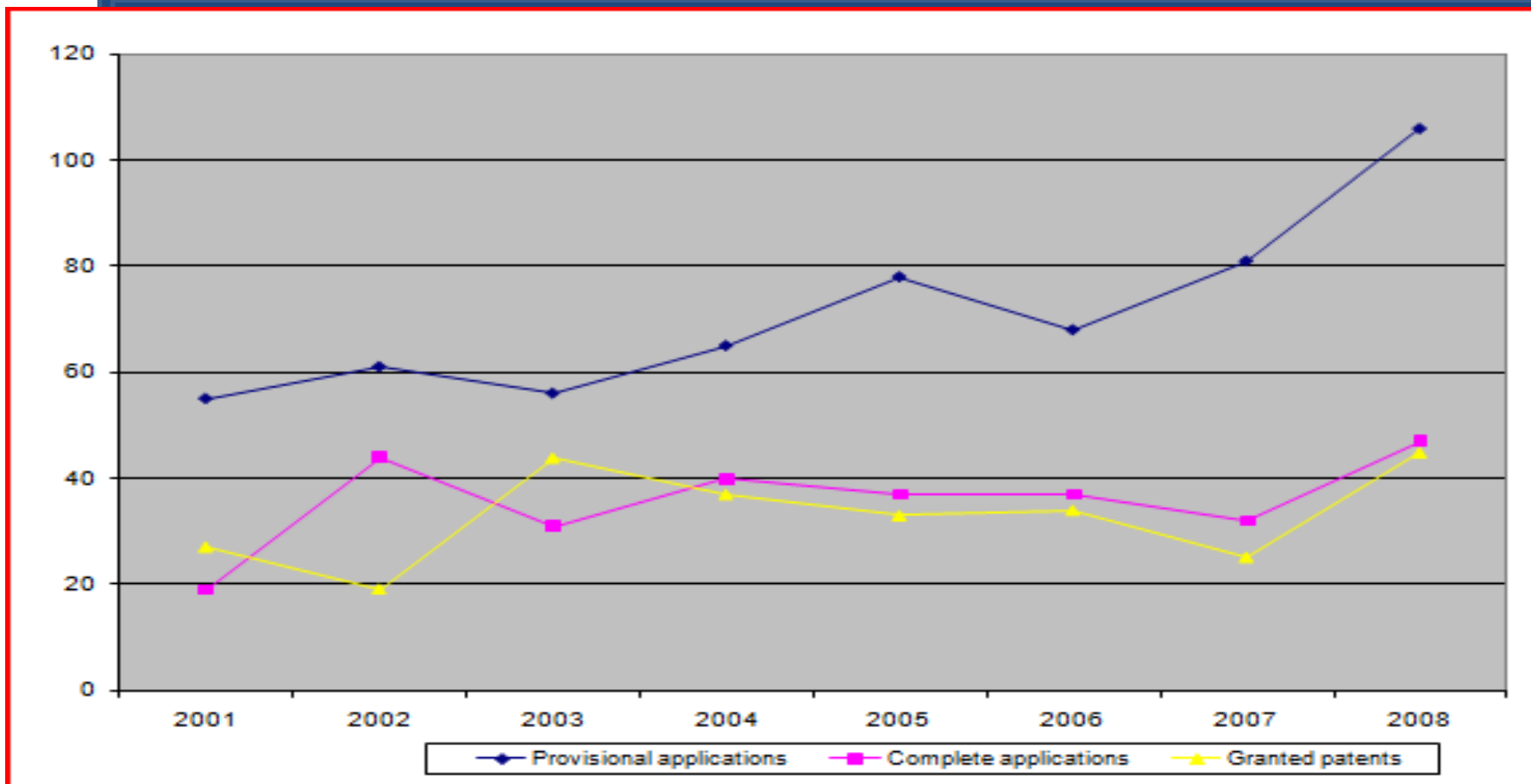
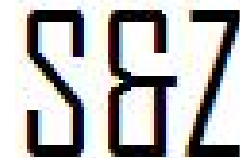
S&Z



Case Study: South Africa :

The State of Patenting by Public Institutions

Impact of various Policy Decisions and Initiatives



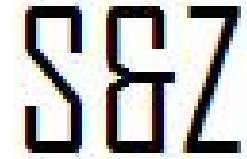
2002 R&D Strategy

Patent Support Fund

IPR Policy Framework - 2006

Case Study: South Africa

Technology Stations Program



❑ Technology based support services for and directed towards creation of SMEs

❑ Universities of Technology - technology base

- Provides engineering capabilities
- High value equipment
- Linkage to needs of industrial clusters

❑ Key industrial clusters include:

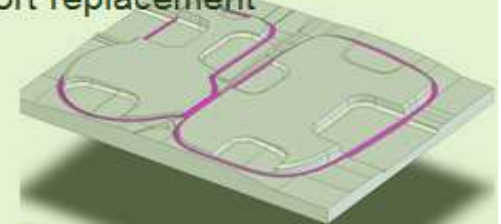
- Agro-processing and Chemicals
- Primary and Secondary Manufacturing
- Tooling and Metal Casting

❑ Human capital development - engineering and technical skills



❑ **Automotive Components Technology Station / Institute for Advanced Tooling - NMMU**

- ❑ Manufacture of products for the local motor industry e.g. VW Polo dashboard
- ❑ Import replacement



Case Study: South Africa

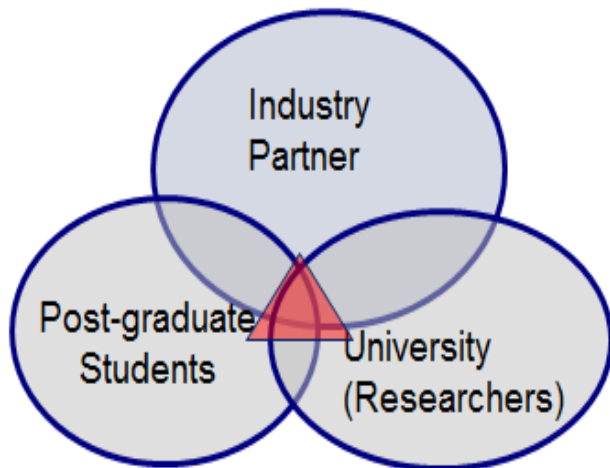
THRIP Programme

S&Z

www.nrf.ac.za



Co-funding for
Human Capital
Development



- Grants to universities partnered by industry
- Human capital development
 - postgraduate students
 - industry-academic exchanges
- Applied research for industry
- Competitive Funding
- Development of Intellectual property that industry exploits



Case Study: South Africa

Gauteng province ...1/3

S&Z



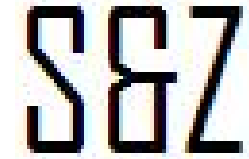
- 22% of the national population (11.2 million)
- 34% of South Africa's GDP
- 11% of Africa's GDP
- 52% of the share of national R&D (2008-2009)
- 63% of national trade
- Host to > 40% of South Africa's SMMEs
- 33% of GHG emissions and power demand



South Africa's strengths and challenges are amplified in Gauteng – opportunity to be a leader in innovation

Case Study: South Africa

Gauteng province ...2/3



GEGDS

- Becoming an innovating economy
- Innovation extends beyond high-tech R&D and includes ICT and socio-economic innovations and environmental breakthroughs to support green jobs and growth

New Growth Path

- Knowledge and green economies
- Opportunities for investment and employment in manufacturing; new energy technologies; knowledge-intensive sectors of ICT, healthcare, mining-related technologies, pharmaceuticals and biotechnology

Gauteng Innovation Strategy

- A more efficient use of resources – both public and private – delivering on objectives of various provincial government strategies and policies
- Creation of new and valuable knowledge relevant to the social and economic priorities
- Support movement towards an advanced, knowledge-based economy by creating appropriate functions and infrastructure.

Case Study: South Africa

Gauteng province ...2/3

S&Z

The Innovation Hub
South Africa's 1st Science Park

mlab
southern africa

mlab
SOUTHERN AFRICA

Skills Development and Entrepreneurship

CoachLab Model

Students

Company Projects

Company Projects

Company Projects

maxum
SOUTH AFRICA

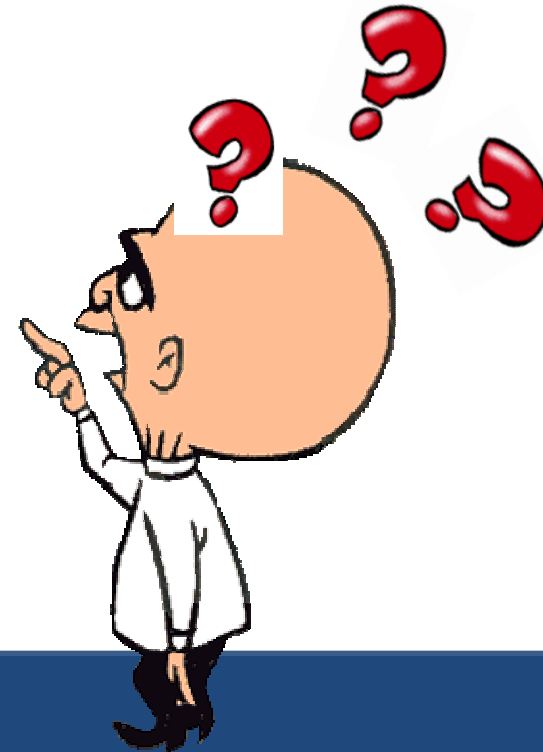
- ❑ Focus – ICT, Biosciences and Green Economy
- ❑ Multi-helix collaborations and networking
- ❑ Incubation and Skills Development

Case Study: South Africa

Importance of an Integrated Approach

S&Z

Lawsuit against the Government of South Africa (February 18, 1998)



Case Study: South Africa

Importance of an Integrated Approach

S&Z

Do National Measures that require the involuntary transfer or withdrawal of IP rights achieve the long term developmental goals of developing countries?

**Lawsuit against the Government of South Africa
(February 18, 1998)**



Case Study: South Africa

Importance of an Integrated Approach

Section 15c to the Medicines and Related Substances Control Act

S&Z

Court Case Between 39 Pharmaceutical Firms and The South African Government

A group of 39 pharmaceutical companies has dropped its lawsuit against the government of South Africa. They had taken South Africa to court over its Medicines and Related Substances Act. The main issue was Amendment 15(c) which would allow TRIPS-compliant [compulsory licensing](#) and [parallel imports](#) of medicines in South Africa. The suit was first filed on February 18, 1998.

WHAT OTHER OPTIONS?

Under Patents Act: **Section 4 (National Emergency) and s56 (compulsory licensing)**

Case Study: South Africa

Importance of an Integrated Approach

Section 15c to the Medicines and Related Substances Control Act

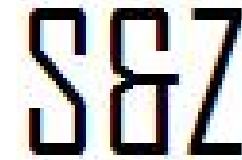


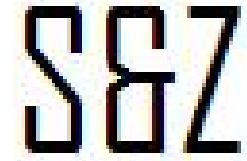
Table 1: Initial Burden of Disease Estimates (2003)

	Rank	Cause of Death	%	Group %
Group 1	1	HIV/AIDS	39.0	58.9
	3	Tuberculosis	5.0	
	5	Diarrhoeal diseases	3.8	
	6	Lower respiratory infections	3.8	
	7	Low birth weight	3.3	
	10	Protein-energy malnutrition	1.4	
	15	Septicaemia	1.0	
	17	Neonatal infections	0.8	
	20	Bacterial meningitis	0.8	
Group 2	8	Stroke	2.7	9.9
	9	Ischemic heart disease	2.4	
	12	Diabetes mellitus	1.2	
	13	Hypertensive heart disease	1.1	
	16	Chronic obstructive pulmonary disease	0.9	
	18	Asthma	0.8	
	19	Nephritis / nephrosis	0.8	

Case Study: South Africa

Importance of an Integrated Approach

Section 15c to the Medicines and Related Substances Control Act



The minister may prescribe conditions for the supply of more affordable medicines in certain circumstances so as to protect the health of the public, and in particular may-

(a) notwithstanding anything to the contrary contained in the Patents Act, 1978 (Act No. 57 of 1978), determine that the rights with regard to any medicine under a patent granted in the Republic shall not extend to acts in respect of such medicine which has been put onto the market by the owner of the medicine, or with his or her consent;

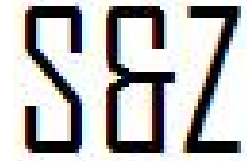
(b) prescribe the conditions on which any medicine which is identical in composition, meets the same quality standard and is intended to have the same proprietary name as that of another medicine already registered in the Republic, but which is imported by a person other than the person who is the holder of the registration certificate of the medicine and which originates from any site of manufacture of the original manufacturer may be imported:

(c) prescribe the registration procedure for, as well as the use of, the medicine referred to in paragraph (b).

Case Study: South Africa

Importance of an Integrated Approach

Section 15c to the Medicines and Related Substances Control Act



- South Africa still faces significant economic and health disparities
 - approximately 40% of South Africans are living in poverty – with the poorest 15% in a desperate struggle to survive.

- HIV / AIDS and TB account for > 45% of all deaths in South Africa

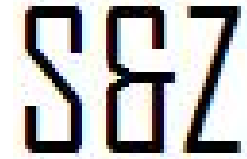
- Potential benefits of compulsory licenses
 - Lower price of AIDS pharmaceuticals to protect health of public
 - Make AIDS pharmaceuticals more affordable

- Need for balance
 - Service needs of needy
 - Build absorptive and R&D capacity

Case Study: South Africa

Importance of an Integrated Approach

Section 4 and 56 of the Patents Act



4. State bound by patent.

A patent shall in all respects have the like effect against the State as it has against a person: Provided that a Minister of State may use an invention for public purposes on such conditions as may be agreed upon with the patentee, or in default of agreement on such conditions as are determined by the commissioner on application by or on behalf of such Minister and after hearing the patentee.

56. Compulsory licence in case of abuse of patent rights.

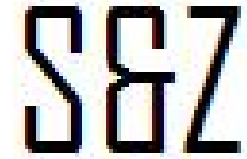
(1) Any interested person who can show that the rights in a patent are being abused may apply to the commissioner in the prescribed manner for a compulsory licence under the patent.

[Sub-s. (1) substituted by s. 45 (a) of Act No. 38 of 1997.]

Case Study: South Africa

Importance of an Integrated Approach

Public Policy Considerations – Medicines Control Act and IPR Act



- ❑ MEDICINES CONTROL ACT – s31

Provisions of Medicines Act (giving Govt autonomy to grant licenses where pressing need arises)

- ❑ IPR from Publicly Financed Research and Development Act, 2008

Objects of Act

2. (1) The object of this Act is to make provision that intellectual property emanating from publicly financed research and development is identified, protected, utilised and commercialised for the benefit of the people of the Republic, whether it be for a social, economic, military or any other benefit.

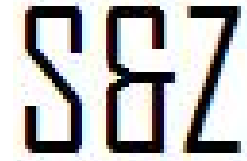
(g) where necessary, the State may use the results of publicly financed research and development and the attendant intellectual property in the interest of the people of the Republic.

Concluding Remarks ...1/2

S&Z

- Intellectual Property Policy, strategies and Legislation has to be relevant
- Must meet demands of global knowledge driven economies as well as local and regional development
- An integrated approach provides certainty and options – options to negotiate mutually beneficial outcomes
- Must be aligned with other developmental policies and strategies, e.g. Health Policy, Innovation Policy, Industrial Policy, Foreign Policy, Education Policy,


Concluding Remarks ...2/2



- Modern Economies are knowledge based economies
- Intellectual property is the currency in modern economies – value lies in the intangibles
- Patent Offices have a critical role in assisting government, institutions as well as private sector to establish appropriate IP Policies and strategies
- Holistic approach to IP Policies required

Certainly an inventor ought to be allowed a right to the benefit of his invention for some certain time. It is equally certain it ought not to be perpetual; for to embarrass society with monopolies for every utensil existing, and in all the details of life, would be more injurious to them than had the supposed inventors never existed... How long the term should be is the difficult question.

—Thomas Jefferson, 1807



SNZ

THANK YOU

mclean@snz.co.za

