

IPR IN THE CONTEXT OF INNOVATION: THE ROLE OF THE INNOVATION FUND

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Symposium: Current status and emerging challenges and opportunities

The Da Vinci Institute for Technology Management

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Midrand, South Africa



OVERVIEW

INNOVATION VALUE CHAIN

INTELLECTUAL PROPERTY VALUE PROPOSITION

INNOVATION FUND

Various funding instruments

Some case studies



IP MANAGEMENT ALONG THE INNOVATION VALUE CHAIN

IP Registration

IP Prosecution

IP Commercialisation



Competitive Position

- *Offensive*
- *Defensive*

Market Perspective

- *Business Plan*

Value Extraction

- *Valuation*
- *Multi-disciplinary approach*
 - *commercial / corporate law*
 - *corporate law*
 - *tax*
 - *finance & capital raising*
 - *strategy*



CONTEXTUALISING INTELLECTUAL PROPERTY



IP (Seed)

Economic Opportunity



BASIS OF INTELLECTUAL PROPERTY

□ 1603 British courts ruled that ...*patents only good when they benefit the public as a whole*

“Where any man by his own charge and industry or by his own wit or invention doth bring any new trade into the realm or any engine tending to the furtherance of a trade that was never used before and that for the good of the Realm; that in such cases the King may grant to him a monopoly patent for some reasonable time ... otherwise not”



INTELLECTUAL PROPERTY RIGHTS AND INNOVATION

**INVENTORS SHOULD BE GRANTED AN
EXCLUSIVE RIGHT TO THEIR INVENTIONS FOR
A LIMITED PERIOD OF TIME**

➤ **incentive to inventors – added fuel of interest to the fire of genius**

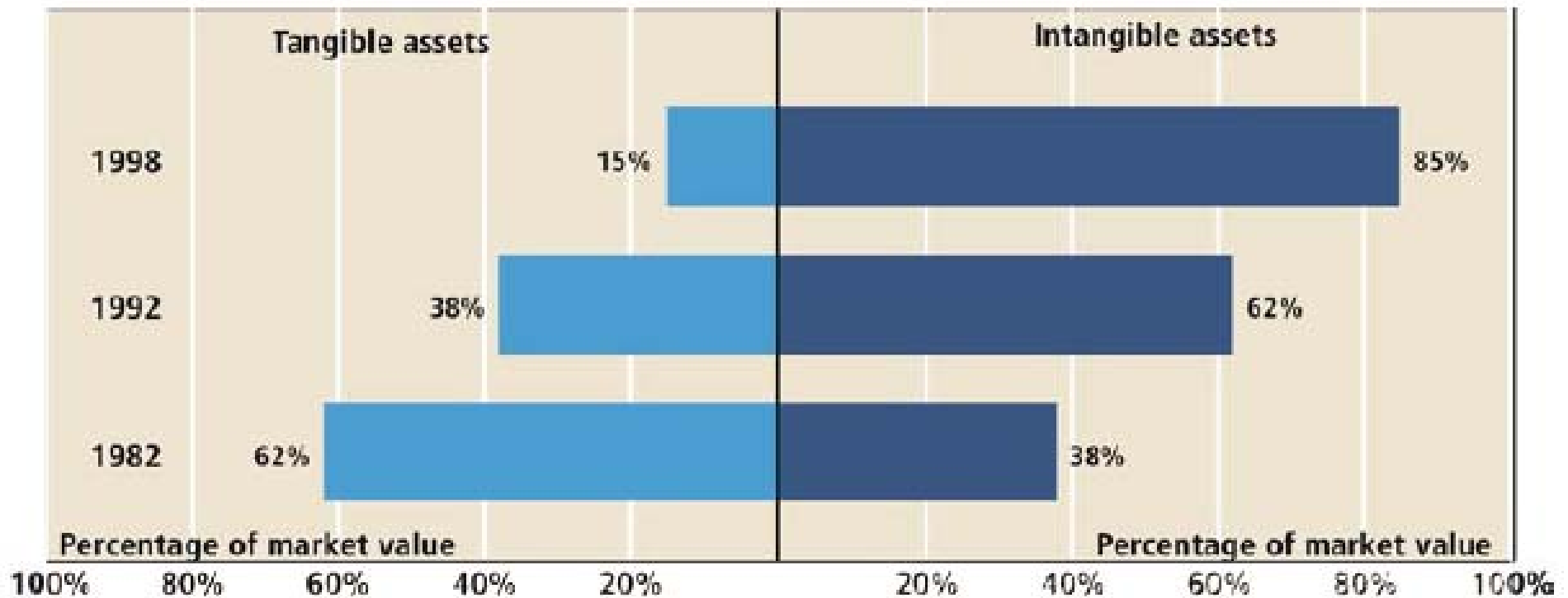
➤ **ensures that others can build on their innovations**

➤ **provides security for investors**



“Global economy has moved on from traditional industries (mining, manufacturing, agriculture, etc) to knowledge industries”

(As the future catches you - Juan Enriquez)



Source: Baruch Lev (Brookings Institution and New York University) as cited by Jurgen Daum (SAP), 2001

“If you are in the business of selling words, music, or pharmaceuticals and you are not worried about protecting your intellectual property, you are not paying attention”

Thomas L Friedman - The World is Flat, 2005

Patent Challenges Have Wide Impact On Big Pharma

August 31, 2007: 08:05 PM EST

Aug. 31, 2007 ([Investor's Business Daily](#) delivered by New



On Aug. 15, the U.S. Patent and Trademark Office dealt Pfizer (NYSE:PFE) a multi-billion-dollar blow. It upheld an earlier court ruling that had rejected Pfizer's bid to extend patent protection for its blockbuster statin, Lipitor, until June 2011.

The ruling might yet be reversed. But for now, Pfizer's PFE patent is set to expire in March 2010. Generic drug maker Ranbaxy, the patent challenger, can then sell its cheaper version of Lipitor.

Based on Pfizer's annual U.S. Lipitor sales of \$8 billion, at stake is about \$10 billion in revenue if Pfizer can't get the 15 extra months of exclusivity.



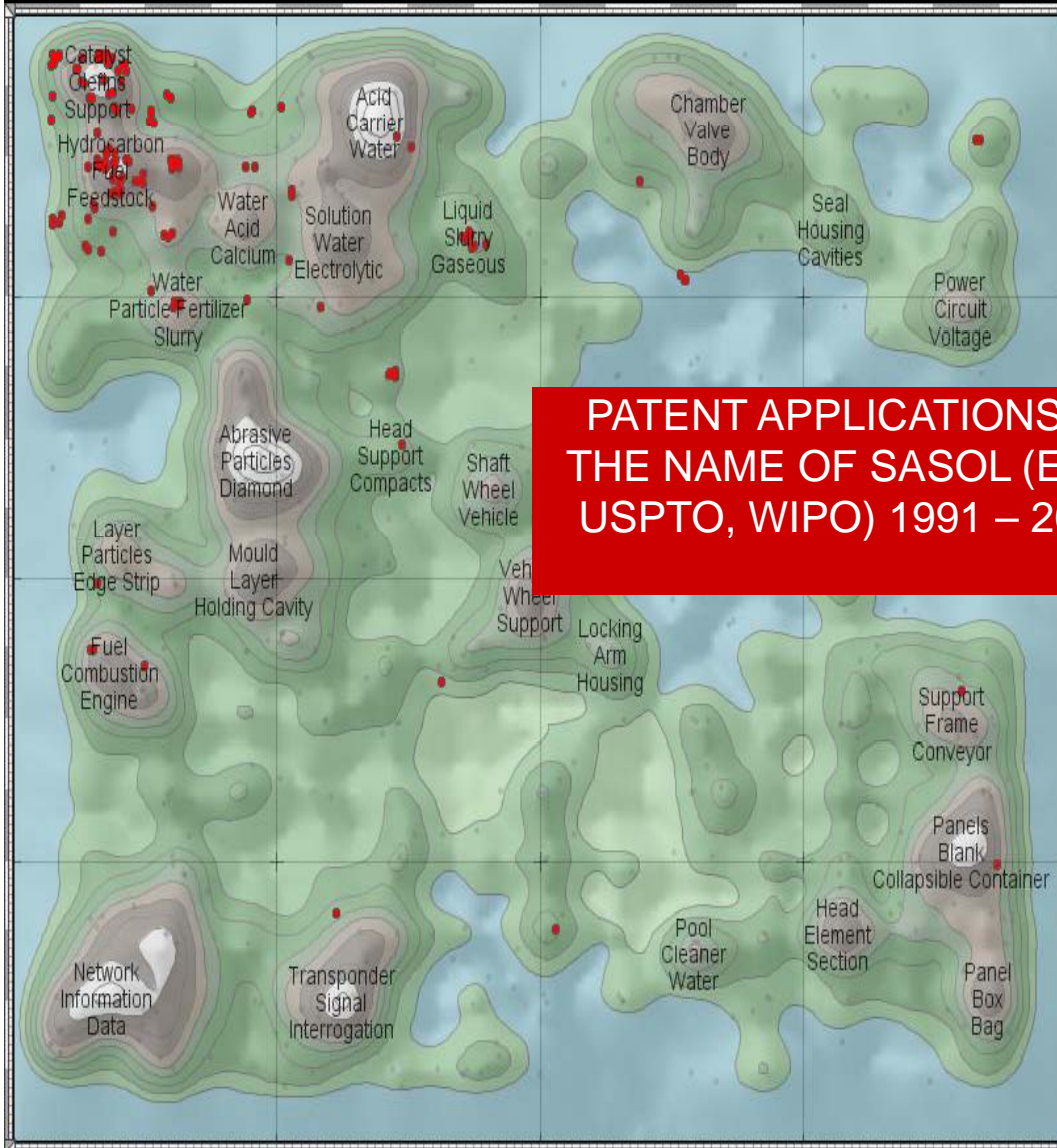
WHAT IS THE STATE OF IP IN SOUTH AFRICA?

Private sector

Public sector



PRIVATE SECTOR (case study)



□ SASOL

- **IP a tool for core business**
- **Sasol - Petrochemical industry**
- **IP an important negotiation asset in international JVs**
- **Cross-licensing and defensive strategy**
- **Chevron, Qatar, etc.**

Increased in-house capacity development programs to effectively manage IP



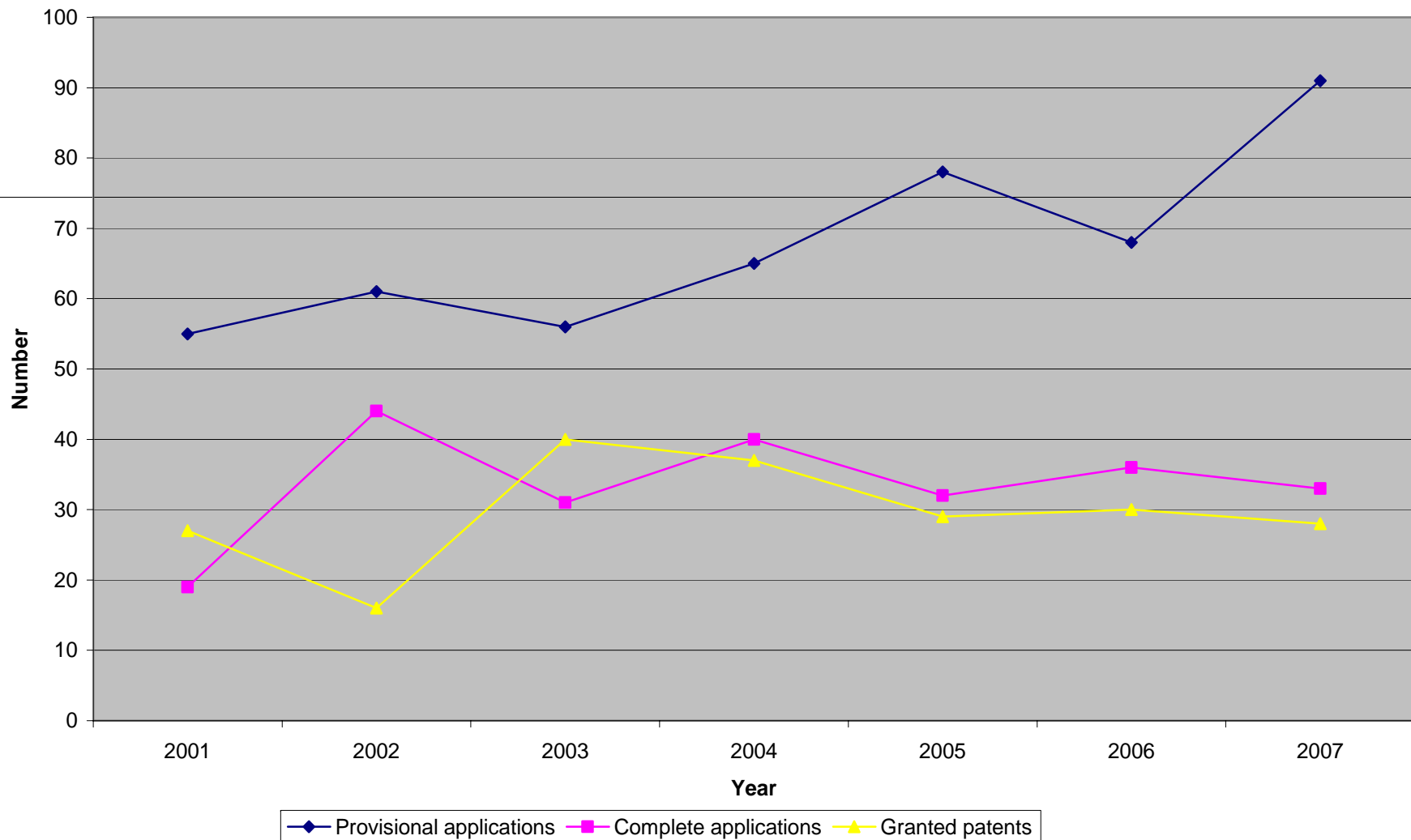
PUBLIC SECTOR (case study)

**PATENTS (EPO, USPTO)
1991 – 2005 (2050 patents)**





SA PATENT OFFICE - Publicly Financed Institutions -





CHALLENGES IN RESPECT OF PUBLIC SECTOR RESEARCH

- PUBLISH OR PERISH!
- LACK OF HARMONISED POLICIES IN RESPECT OF IP OWNERSHIP
- AWARENESS ISSUES
- LACK OF SUPPORT FOR IDENTIFICATION, PROTECTION AND COMMERCIALISATION OF IPR
- FINANCIAL BURDEN OF OBTAINING IPR RIGHTS

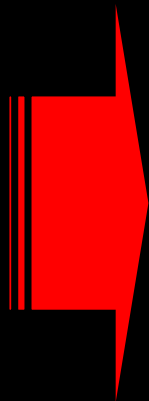




PUBLIC SECTOR

□ RESEARCH COUNCILS AND UNIVERSITIES

- To date, practice has been to licence IP out
- Limited instances of 'start-ups'
- Fairly new terrain, the norm being publications
- Now seen as a possible mechanism of not only transferring research results to market place BUT potential 'third stream' income



**LIMITED IN-HOUSE CAPACITY FOR EFFECTIVE IP
MANAGEMENT AND TECHNOLOGY TRANSFER**



INNOVATION FUND

-Investing In Innovation-

The **Innovation Fund** promotes technological innovation through investments into novel technologies that will lead to establishment of successful companies or the expansion of industrial sectors.

AN INITIATIVE
OF



science
& technology

Department:
Science and Technology
REPUBLIC OF SOUTH AFRICA

MANAGED BY
THE



NATIONAL RESEARCH FOUNDATION



FUNDING TECHNOLOGICAL INNOVATION

IF FUNDING INSTRUMENTS



TAP



MITECH



**SEED
FUND**



**PATENT
SUPPORT
FUND**



**PATENT
INCENTIVE
FUND**



PATENT SUPPORT FUND (Institutions)

BACKGROUND:

National R&D Strategy



'a dedicated fund to finance the securing of intellectual property rights resulting from publicly financed research and development, when this is in the national interest'

PURPOSE: To provide wholesale subsidy (50%) to institutions for costs incurred for patenting activity


KEY REQUIREMENTS

- : Ownership of the IP by an institution
- : ensure protection of commercially viable inventions
- : IP Policy with benefit sharing arrangements between inventors



PATENT SUPPORT FUND (SME)

BACKGROUND:



Securing of IPR is an important aspect for economic growth in a knowledge driven economy. A large portion of innovations and inventions emanating from the South African public, and in particular, Small Medium Enterprises (SMEs) have not made their way to the marketplace because of a lack of support mechanisms, largely financial, for patent protection.

PURPOSE:

Financial support for intellectual property protection emanating from South African SMEs - particular focus on those SMEs with a Black Economic Empowerment (BEE) component



PATENT SUPPORT FUND (SME)

- **POLICY POSITION:**

- **Maximum of R250 000 for a patenting programme extending over a maximum period of 3 years**
- **Novel and commercial potential**
- **An investment - loan, equity, and royalty.**
- **Open call**
- **Preferably, a Provisional Patent Application must have been filed**
- **IF has right of first refusal in respect of further funding sought for the exploitation of the invention**



PATENT INCENTIVE FUND

POLICY POSITION:

To encourage innovation and increase patenting activity by **post-graduate students and researchers at institutions** by **providing monetary incentives to researchers to get patents granted at the South African Patent Office**

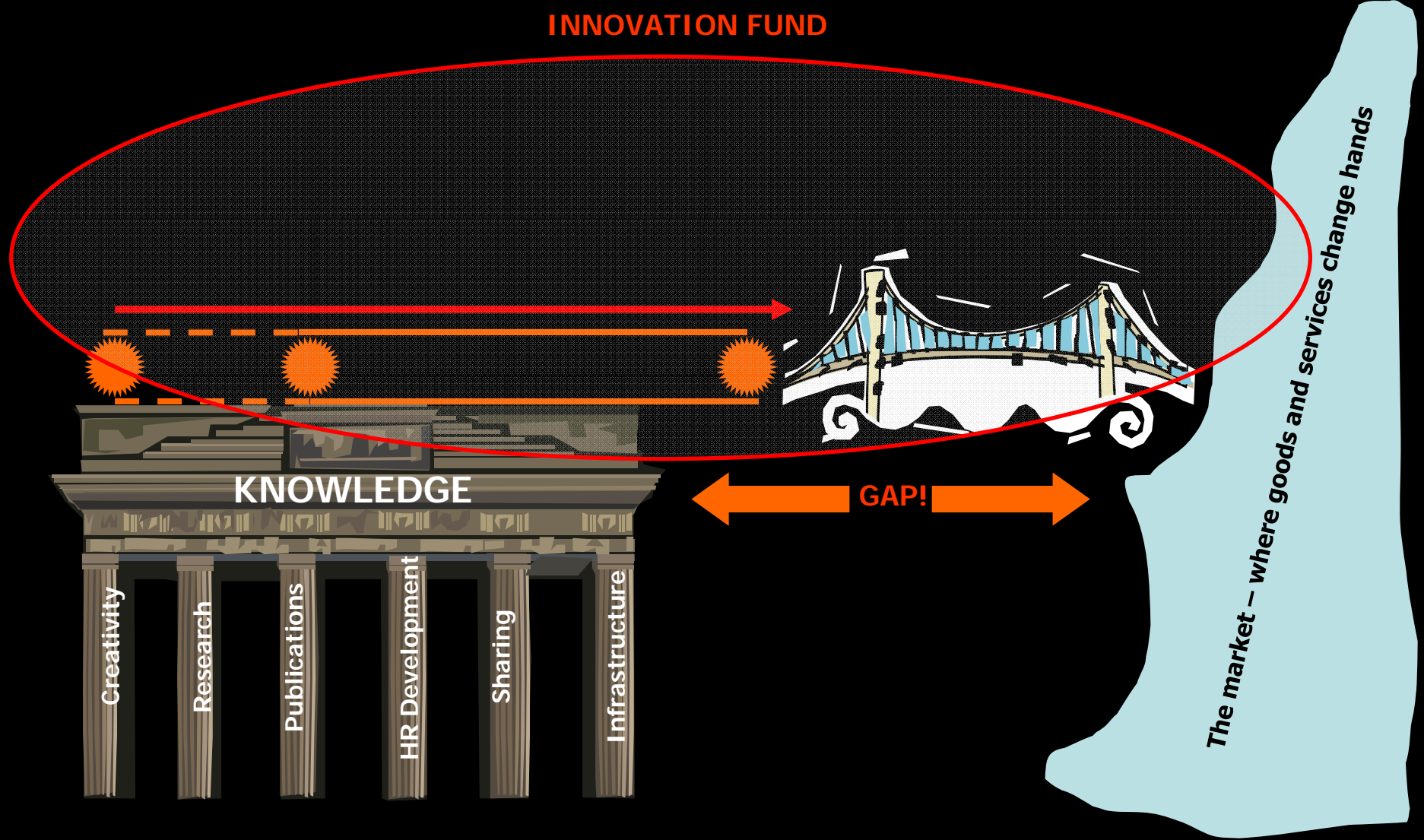
..... promote the right kind of behaviour - *“throw enough mud on the wall and sooner enough, some will stick”*

WHO DOES IT APPLY TO: Researchers at institutions

PROCESS: MANAGED ENTIRELY BY IPMO, who identify patents in issue



IF ROLE IN THE INNOVATION CHALLENGE





INNOVATION FUND SEED FUND

- 'proof of concept'
- Post
- R5M

- <26% equity

- Co-Funding with Venture Capital

**** BEE/SMME and National Benefit Focus**



INNOVATION FUND



Investments >> ZAR1billion

- 1 patented technology licensed internationally (PTIP)
- Unpatented technologies in mineral resources (Geratech)*
- 2 patented technologies in mineral resources (Blue Cube / Inkomazi)
- 1 patented technology sold off-shore (Oxyrane)
- 1 patented technology for public benefit (Eyeborn)
- 3 unpatented technologies in biocontrols: 2 local start-up companies (Mycoroot / PHP)*
- Multiple local licensed and unlicensed patented technologies in healthcare, ICT



INKOMAZI CHEMICALS (PTY) LTD



Johanna Solar Technology and IFE are awarded the contract to build an ultra modern thin film solar module plant in China



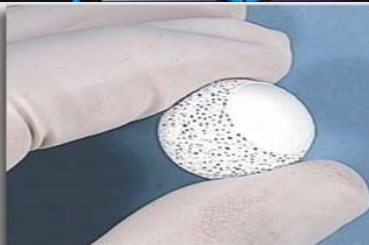
Plant Health Products

(PHP) cc

PTIP - PHOTOVOLTAIC TECHNOLOGY



eyeborn



Eyeborn® orbital implant



The story behind Oxyrane is a fascinating but somewhat complex example of a promising piece of research which later opened out a whole area with much broader potential. Research by Dr Adriana Botes (now Oxyrane's Director of Research) showed that an enzyme, an epoxy hydrolase, had commercial potential. Further work in South Africa led to a search for a host organism which could be genetically modified to express this enzyme, and it was at this stage, linking with groups in France and Belgium, that the possibilities of the chosen system dawned. The South African company was formed in 2004 and the UK company, now the main operational base, in 2005.



IP TRANSACTIONS (local)

▪ LICENCE

CSIR,
Eggbert
University of Pretoria
Delphius



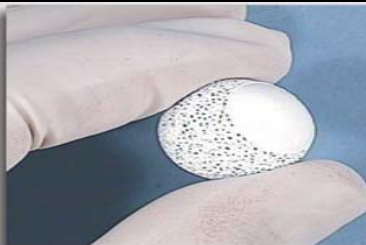
- Patents
- Know-how
- Copyright in drawings for unit
- Trade mark

Funded by Innovation Fund

▪ ASSIGNMENT

CSIR
University of the
Witwatersrand
Pretoria Eye Institute

eyeborn®



Eyeborn® orbital implant

- Patents
- Design
- Trade mark

Funded by Innovation Fund



IP TRANSACTIONS (international)

▪ LICENCE

University of
Johannesburg

Funded by Innovation Fund

**PTIP - PHOTOVOLTAIC
TECHNOLOGY**

Johanna Solar Technology and IFE are awarded the contract to build an ultra modern thin film solar module plant in China



- Patents
- Know-how / trade secrets
- Copyright in drawings for pilot plant

▪ ASSIGNMENT

CSIR
University of Free
State

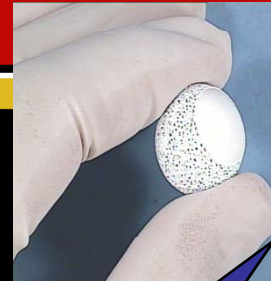
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IP FOR PUBLIC GOOD



Manufacturing

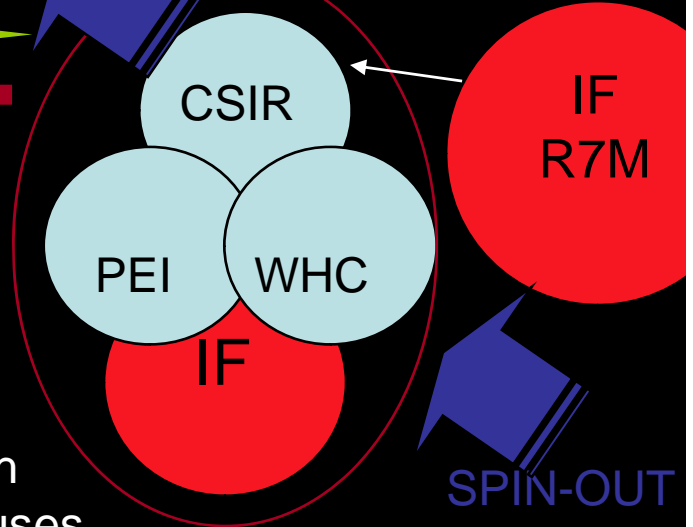
Royalties and CE Mark

IP development, protection



Technology Transfer and Manuf. License

Royalties



Product

R

Visicare

Distribution Agreement with Performance clauses

SPIN-OUT

Marketing and distribution

THE TECH PAGE

(Business Day 04/01/27)

New artificial eye offers hope

Local scientists have developed a cheaper alternative to coral implants

Tamar Kahn

Local scientists have developed a cheap new material for making artificial eyes offering hope to the thousands of poor South Africans who bear the dual burden of sight loss and facial disfigurement. A female child in an Iqal phone call to say there was a doctor who wanted to help her with an eye, says Thekosa Tshabalala, a KwaZulu-Natal teacher who was blinded in the eye in the local town. She was obliged to take part in a recent clinical trial to test the safety and efficacy of ceramic eye implants developed by scientists in the National Centre for Scientific and Industrial Research (CSIR).

The coral implants are usually superior to the glass ones because they do not irritate a living eye - the muscles and blood vessels around the eye are not damaged. In fact, the coral support structure, which is in part of the body and grows to fit the eye, is made of coral. The patient to receive the artificial eye along with its healthy neighbour. Glass or other synthetic materials that are used to fix the eye from the socket.

But the high price of natural coral means government hospitals cannot afford to provide coral eyes to the thousands of poor people who have lost an eye due to trauma or disease, says Dr Lewis Lenz, a part-time consultant at the White House. Thousands of patients are left permanently disabled and suffer the medical trauma of being surgically treated, he says. But there is now hope of a

cheaper and kinder alternative, thanks to the locally hydroxyapatite ceramic developed by the CSIR's National Product Development Centre. Unlike coral, it has no sharp protrusions, so implants made from this porous white material are kinder to the eye surface. Some abrasions mean less swelling and a reduced risk of infection, says Lenz, who operated on patients participating in the six-month trial that ran last year at the Johannesburg Hospital, the Pretoria Eye Institute and KwaZulu-Natal Hospital.

Some patients were also given capillary precursors, which are hand-painted to look just like the healthy eye, which are taken out at night for cleaning, he says. It takes at least a week to see these cells, which soon have tiny red blood vessels and slightly discoloured, the origin of the eye painted on to them.

The scientists have developed a patented process for controlling the size of the hydroxyapatite pores, which with the surgeons

help they have optimised for eye implants. The CSIR is negotiating also investigating the possibility of international licensing agreements for exporting the ceramic implants.

Dr Lenz, the National Product Development Centre manager, says the consortium of scientists from the CSIR, Witwatersrand University, the National Health Consortium and the Pretoria Eye Institute are delighted with the trial results, which are to be presented at the Ophthalmology Society meeting in March.

He will not specify what the cost will be because negotiations are at a delicate stage, but says the eyes will cost about half the price of those from natural coral.

The project was funded in its first stages by the Innovation Fund, but is in effect the culmination of more than a decade of research by the CSIR's ceramic scientists, says Dr Lenz.

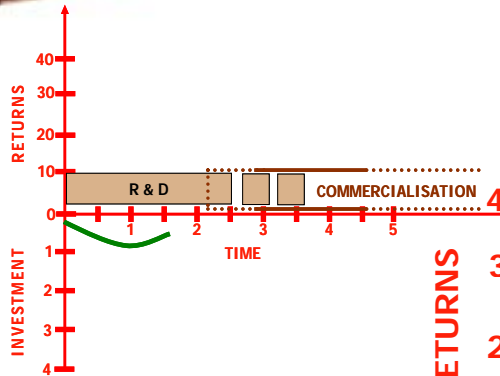
"Most of our patients were young and were afraid to go out," says Lenz. "These artificial eyes have changed their lives."





INNOVATION FUND
INNOVATION FUND

EGG PASTERURISATION – Safe Eggs (Pty) Ltd –



Pasteurised Eggs

- SPAR Pasteurised Eggs have been pasteurised using a method developed in South Africa and patented internationally.
- SPAR Pasteurised Eggs have been heat treated in order to kill the pathogenic and spoilage bacteria present in eggs.
- SPAR Pasteurised Eggs will have a shelf life of up to 6 weeks at ambient temperature.
- SPAR Pasteurised Eggs can be enjoyed with peace of mind in dishes where eggs are used raw or semi cooked (funny yolk).

Egg white whippability will be affected slightly due to the heat treatment





A PARTING THOUGHT

“JUST AS GOOD FENCES MAKE GOOD
NEIGHBOURS, STRONG IP MAKES FOR
STRONG AND SUCCESSFUL OPEN
INNOVATION COLLABORATION

..... IP has become
much more a bridge to collaboration than a
barrier between companies”

- Marshall Phelps, Corporate Vice President, Intellectual Property Microsoft Corporation



THANK YOU!



Nurturing new ideas

