



*The Only Government-wide
Forum for Technology
Transfer*

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**FLC Annual
Meeting**

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Creating a Climate for Innovation

- Knowledge transfer
 - Issues in Europe
 - Southern Africa



International Technology Transfer
Issues

- Organizations Assisting Innovation
- Issues in emerging democracies
- Indigenous knowledge



Issues in Europe

'the basics'

- Public Research Organizations (PROs)– The major innovation and technology transfer mechanism is still Industry Sponsored / Contract work leading to the development of new technologies.
- 'Open Science Model' – prevails in Europe – as was the case in the US pre-Stevenson/Wydler and Bayh/Dole.
- PROs do not retain IP rights = no need to manage IP or to create TT offices. This is changing.
- Need - training on all aspects of Tech Transfer for univ., business, gov.



Public Research Organizations

- The main disadvantages of the 'Open Science Model' are that it:
 - neither rewards the investment in public sponsored research
 - nor does it ensure that potentially useful new technologies are transferred to an environment that is able to fully develop and commercialize them.
- The 'Open Science Model' does not allow the progressive build-up of a technology pool (portfolio), rarely create spinouts, or grant licenses.
- The Patent filing system – a 12 month grace period for publication of technology before filing does not exist in Europe at the moment.
 - This stifles networking between scientist and creates a very large risk of disclosure to the public – nullifying patent opportunities.
 - This European patent applications system in the absence of a grace period is very vulnerable.



Creating a Climate for Innovation

- Knowledge transfer - Europe Union
 - ProTon Europe – Berlin visit
- 
- Proton Europe's ultimate objective is to boost the economic and social benefits of publicly funded R&D throughout Europe by further developing the professional skills of those working in this field.
 - This will contribute to the recognition and sustainability of the research function at European universities and
 - Lead to the creation of new products, processes and markets,
 - It will also improve the management of innovation, and stimulate sustainable and high value economic growth, competitiveness and employment.
 - Currently more than 220 knowledge transfer offices are full members of ProTon Europe, each involving between 2 to 20 professionals from 26 European countries.
- www.protoneurope.org



Creating a Climate for Innovation

- As a result of the active involvement of many universities and public research institutions in Europe, the rate of **creation of new innovative companies has increased substantially** over the last 10 years and is now comparable to that in the US.
- However, these companies do not grow as fast as their US counterparts.
- The main reasons are believed to be
 - the insufficient uptake of the available technology from public research,
 - the difficulty in finding early stage capital, and
 - the fragmented nature of the European market.



Creating a Climate for Innovation

- Issue 1: Insufficient uptake of available technology from public research
 - Proton Europe and the **Innovation Relay Centres (IRC)** are working together to extend the IRC system of matching available technologies with the needs expressed by SMEs including public partners (PROs). www.innovationrelay.net
 - Previously, only 12% of the deals generated by the IRCs had resulted in straight licenses of available intellectual property.
 - 88% had resulted in some form of collaborative research and development, for instance:
 - use of the know-how,
 - use of the research tools, or
 - use of the infrastructure of the research partners.



By making those resources more easily identifiable, it is hoped that the uptake / licensing of relevant knowledge by SMEs will be boosted.



Issue 2-The Lack of Early Stage Capital



- ProTon Europe warns that there is a dangerous gap between seed and early stage funding sources,
- Funds are generally supplied by local partners, and venture capital, which has the financial resources and the international connections to make innovative companies grow.
- Many innovative companies fail to cross this **"death valley"** and the returns on investment for seed and early stage investors in Europe are small or even negative.



Comments from ProTon Europe on – Early Stage Capital

- Unless the risks taken by investors are properly rewarded, this source of funding may disappear and the efforts to create new companies will be wasted.
- Venture capital needs to be encouraged to kick-in at an earlier stage. Similarly, seed and early stage funds need to be better endowed with capital and managerial resources to be able to follow the investments through several rounds.
- ProTon Europe supports measures such as:
 - more efficient state aid targeted at earlier stage,
 - certifications schemes to reduce due diligence costs, and
 - other schemes to reduce the risks.
- ProTon Europe welcomes the intent of the **European Investment Fund** to provide more risk capital to encourage knowledge transfer.

European Investment Fund =





Issue 3-The Fragmented Nature of the European Market

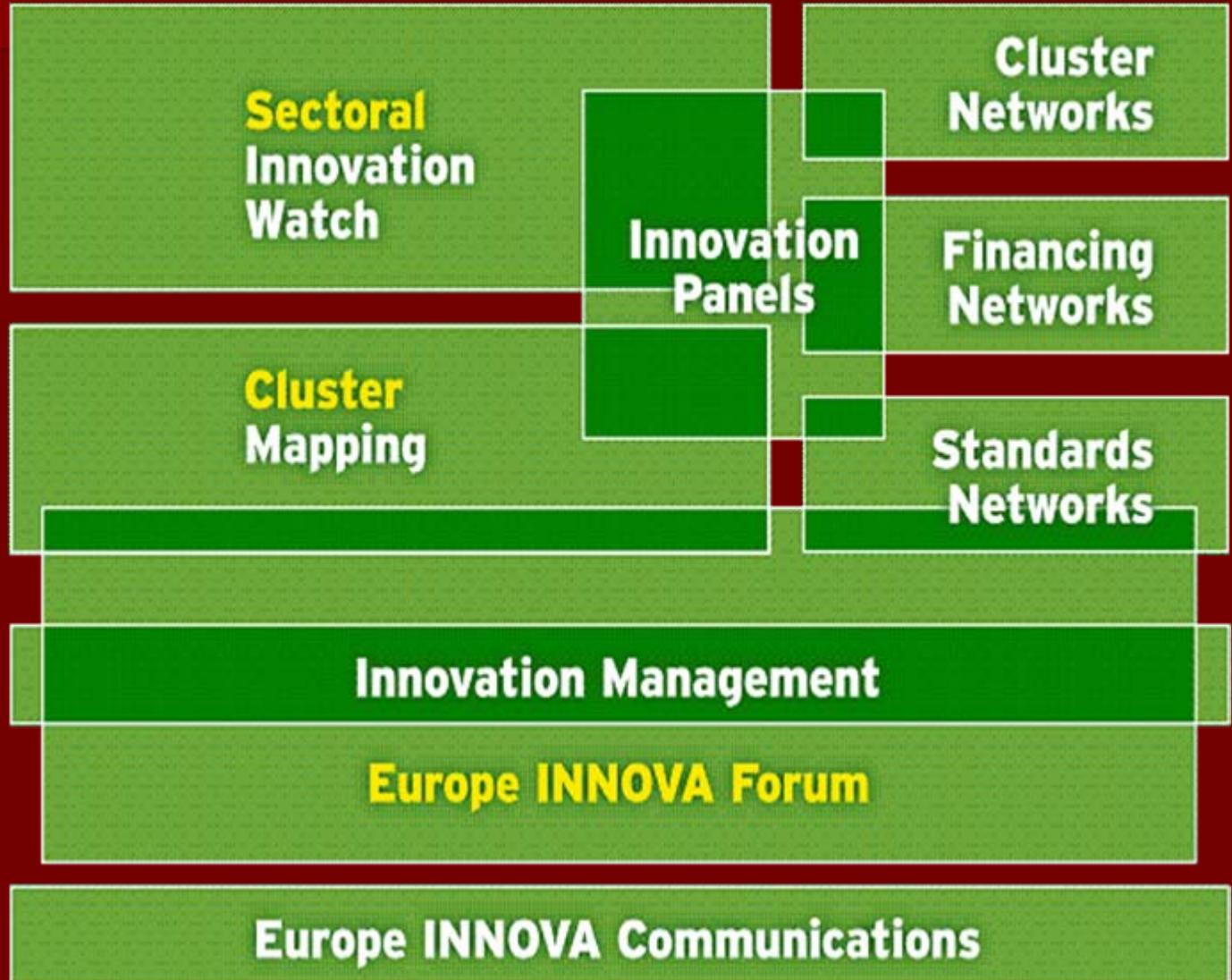
- Because of the many countries and communities in Europe it has created a fragmented nature.
- **Europe INNOVA with its Sector Financing Networks** brings together a range of interest from across Europe to identify the critical factors involved in obtaining funding and to enable better access to capital for innovative enterprises within each country and community, such as:
 - business associations and incubators,
 - the financing community,
 - academia and policy makers.
- Each network is busy identifying and analyzing sector-specific problems ranging from the drafting of business plans and the preparation of appropriate IP strategies, to the identification of the most likely sources of funding.



–the fragmented nature of the European market.

Europe Innova

The
Network
driving
European
Innovation





Profession of Knowledge Transfer in Europe

- ProTon Europe is also partnering with the **Patent Academy of the European Patent Organization** and with other institutions in order to develop and disseminate through partner universities
 - training modules, good practices and useful tools.
- ProTon Europe is supporting initiatives announced by the European commission in the **Europe INNOVA program** to support innovation professionals and is encouraging participation by its members.



The Profession of Knowledge Transfer in Europe

- The goals of ProTon Europe, INNOVA, and others are:
- To integrate intellectual property management with business development skills in order to interface with industry and support the creation of new companies.
- To encourage companies to integrate the IP dimension into their development plans.
- To develop training and professional development courses in the efficient use of intellectual property





Summary: Europe Creating a Climate for Innovation

- Through the coordination and cooperation of a number of EU and sector based initiatives the barriers to innovation have been identified and approaches to eliminate those barriers have been instituted.
- These identified areas will continue to be reviewed and addressed by the EU – ProTon Europe, Innova and others -
 - The insufficient uptake of the available technology from public research,
 - The difficulty to find early stage capital,
 - The fragmented nature of the European market, and
 - The education of Technology transfer professionals.



AFRICA



Botswana



Africa - Botswana

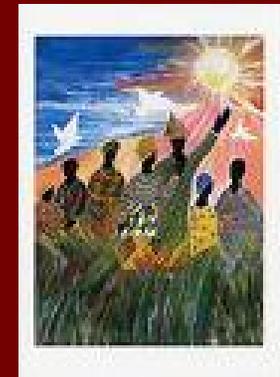
Botswana Ministry of Communications, Science & Technology

- FLC was invited by IIPi to participate in an upcoming conference with representatives from Botswana.
- Topic: Technology transfer in government-funded research laboratories.
- IIPi funded the conference.
- IIPi projects are funded from a Congressional earmark received by the USPTO through the Department of Commerce from the foreign operations appropriation.
- Conference was an effort in international development of an emerging democracy.



Africa - Botswana

- The aims of the IPI conference were to:
 - Discuss government and university intellectual property ownership rights,
 - Educate participants regarding the transfer of technology,
 - Encourage a stronger entrepreneurial spirit among university inventors, and
 - Provide the opportunity to make connections between private industry and university-based technology researchers.
- Representatives of the Ministry of Communications, Science, and Technology;
- The conference addressed points of view from around the globe, including the U.S. perspective, and hopefully gave participants a better understanding of some of the issues surrounding technology transfer in research institutions.
- Speakers from the Southern African Research & Innovation Management Association (SARIMA) are playing a big role.





Southern African Research & Innovation Management Association – (SARIMA)

- A membership association of institutions and persons engaged in advancing research and innovation management (similar to AUTM and FLC)
- Provides professional development in managing research and innovation systems.
- Promotion of best practice to create value for education, public benefit and economic development.
- Creation of awareness of the value of a stronger research and innovation system and the contribution it can make to economic and social development.
- Advocacy of appropriate national and institutional policy
- Advancement of science, technology and innovation



SARIMA

some of its supporters

- The Association is an outgrowth of the **Research Directors Forum (RDF)** which met annually for a number of years in the South African region to review various issues related to research management and administration.
- The **International Intellectual Property Institute (IIPi)** have offered support for the Association and ongoing training and development activities. In addition to their resources, IIPi has mobilized additional support from **USAID, US PTO and the FLC.**
- The **Association of Commonwealth Universities (ACU)**, in the UK has supported a best practice workshop.
- Association of University Technology Mangers (**AUTM**) visited SA and facilitated a workshop at which the Founding Steering Committee was formed.



AFRICAN

Botswana



Issues



Indigenous Knowledge





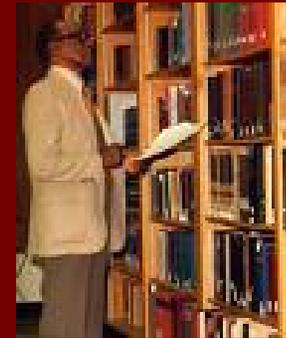
Africa's Indigenous Knowledge

The big issues of the conference were IP protection, technology transfer, and IK.

- **Indigenous Knowledge (IK)** is local knowledge and is unique to every culture or society.
 - IK is commonly held by communities rather than individuals.
 - IK is tacit knowledge and therefore difficult to codify.
 - It is embedded in community practices, institutions, relationships and rituals.

- It is the basis for local-level decision making in:
 - Agriculture,
 - Health care,
 - Food preparation,
 - Education,
 - Natural-resource management, etc.

- IK provides problem-solving strategies for communities.





IK – The World Bank



- **The World Bank is very interest in the preservation of Indigenous Knowledge.**
- “Learning from IK, by investigating first what local communities know and have, can improve understanding of local conditions and provide a productive context for activities designed to help the communities.”
- **Investing in the exchange of IK and its integration into the assistance programs of the World Bank** is an important contribution to global development knowledge.
- Recognition of IK and its application in the development process is a source of empowerment for local communities.
- IK has traditionally been an underutilized resource in the development process.
- IK systems are at risk of becoming extinct.



Why is Indigenous Knowledge at risk?



- Women in most societies of the world, as mothers, grandmothers, wives, sisters, or daughters, often represent the first line of health care, meals preparation, convey values, and farming.
- In many rural societies of developing countries, women carry the burden and the knowledge of farming and on-farm transport; they arrange for household energy (mostly firewood) and water.
- During periods of hunger, women know which plants can provide emergency meals to help keep their families alive.
- Beyond the provision of livelihoods for local communities in the areas of family health, growing of staple crops, conflict management, and bio-diversity conservation, women have also found local answers to broader issues such as trade, tourism, education, health, employment and HIV/AIDs.





Protection of Traditional or Indigenous Knowledge - Botswana

- In comparison to other countries in the region, Botswana has maintained a strong culture with traditional systems and values remaining relatively unimpaired.
- SARIMA and the World Bank are investing in the protection of indigenous knowledge
 - Through Intellectual Property rights and other property rights,
 - Through methods for compensating peoples for sharing their knowledge
 - Methods for protecting them against unfair exploitation
 - Methods and ethics for investigating indigenous knowledge are being explored
- The relationships between traditional knowledge and the Western scientific tradition are being merged more carefully and are called out in **specific agreements**.

Results being seen so far:

- the close involvement of local communities with new development planning,
- the development of formal and non-formal education systems for the transmission of traditional knowledge, and
- strategies for empowering local communities and indigenous peoples to strengthen and incorporate their own belief systems into their self-determined development.



Indigenous Knowledge. How do we protect Indigenous Knowledge?

"The Elders Speak to Tomorrow's Children" a manual of traditional knowledge of Botswana



One exciting program is the "Training Resource Handbook"
Upon completion of the programs, the material will be used to develop
a handbook that will contribute to the process of sustainable rural
development by Southern African organizations and agencies.

- This book will be copyrighted and protected through efforts of the World Bank.



HIV/AIDS in Africa (Ethiopia)

Thandi Haruperi



- “Given the central cultural role of traditional healers in communities, they provide one of the best hopes for treating and stemming the spread of AIDS.”
- Considering only the role of improved nutrition, it has been established that incidences of HIV are increased by vitamin A deficiency (Mostad et al. 1997), therefore supplementation of this vitamin alone might play a role in prevention of HIV as well as treatment. And vitamin A from local fruits and vegetables are preferred for treatment of local people.
- Healers rely on medicinal plants and there has been a significant decrease in the abundance of many important medicinal plant species as specific habitats are lost.
- “The Ethiopian government, with World Bank assistance, will soon start to implement the first conservation and sustainable use of medicinal plants project in Sub-Saharan Africa. The overall objective of the project is to initiate support for conservation, management and sustainable use of medicinal plants for human and livestock health care.”



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