

Institutional IPR Policies of Publicly Funded R & D Institutions and Research Universities in India: Current Situation and Future Prospects

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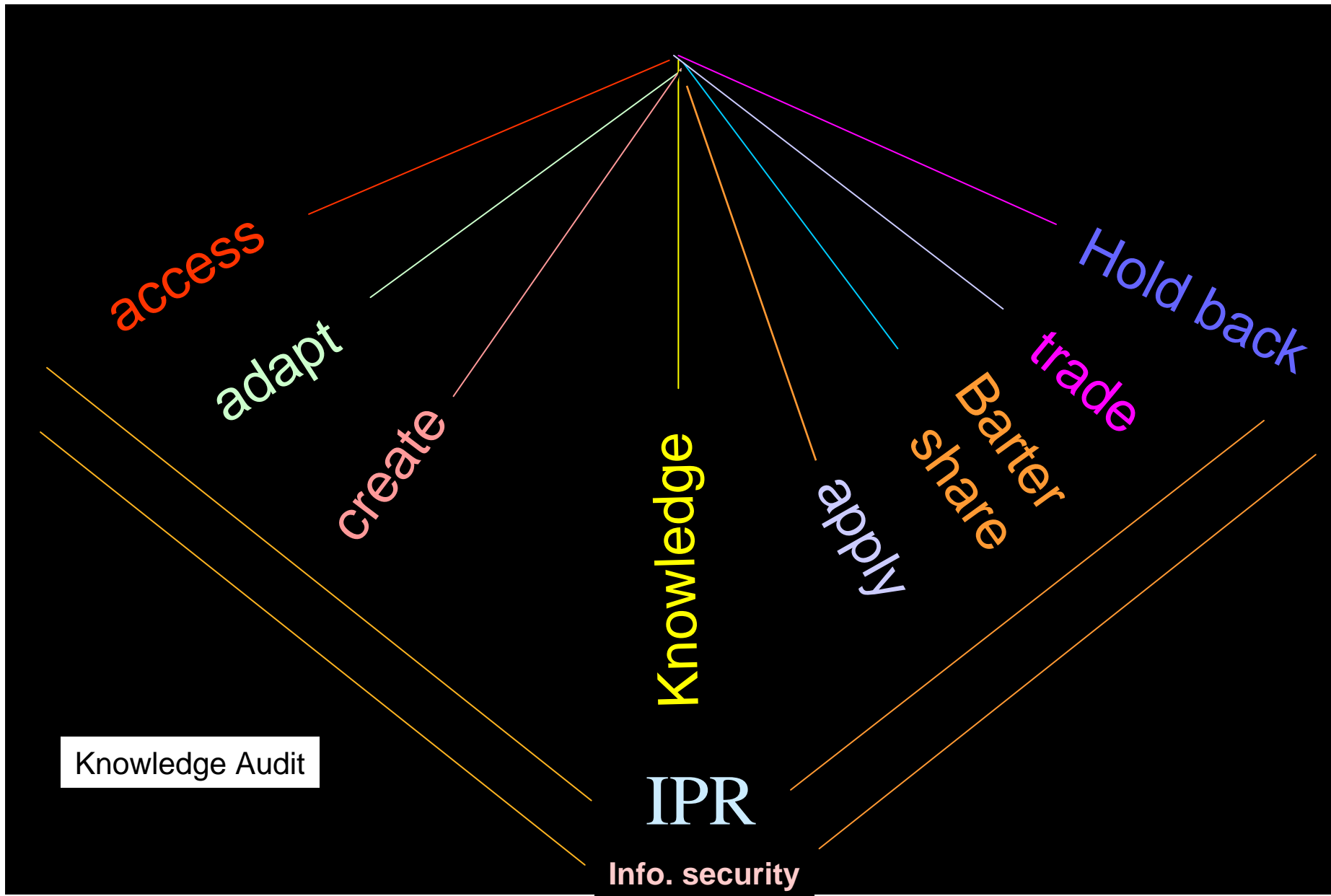
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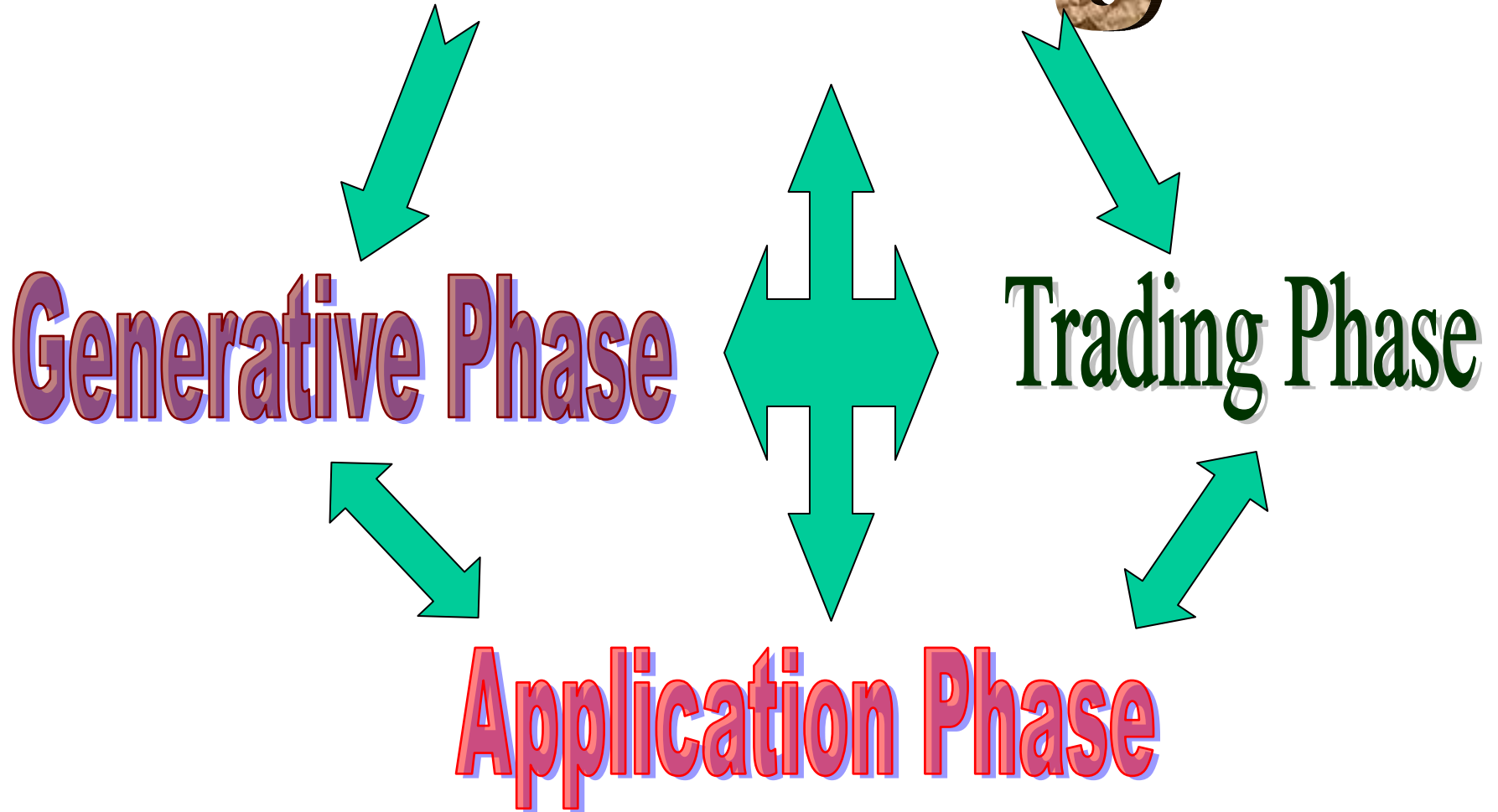
WIPO-BCIL-BIRAP IPR Workshop

Delhi, April 5-9, 2010



Dynamics in the Knowledge Space

Knowledge

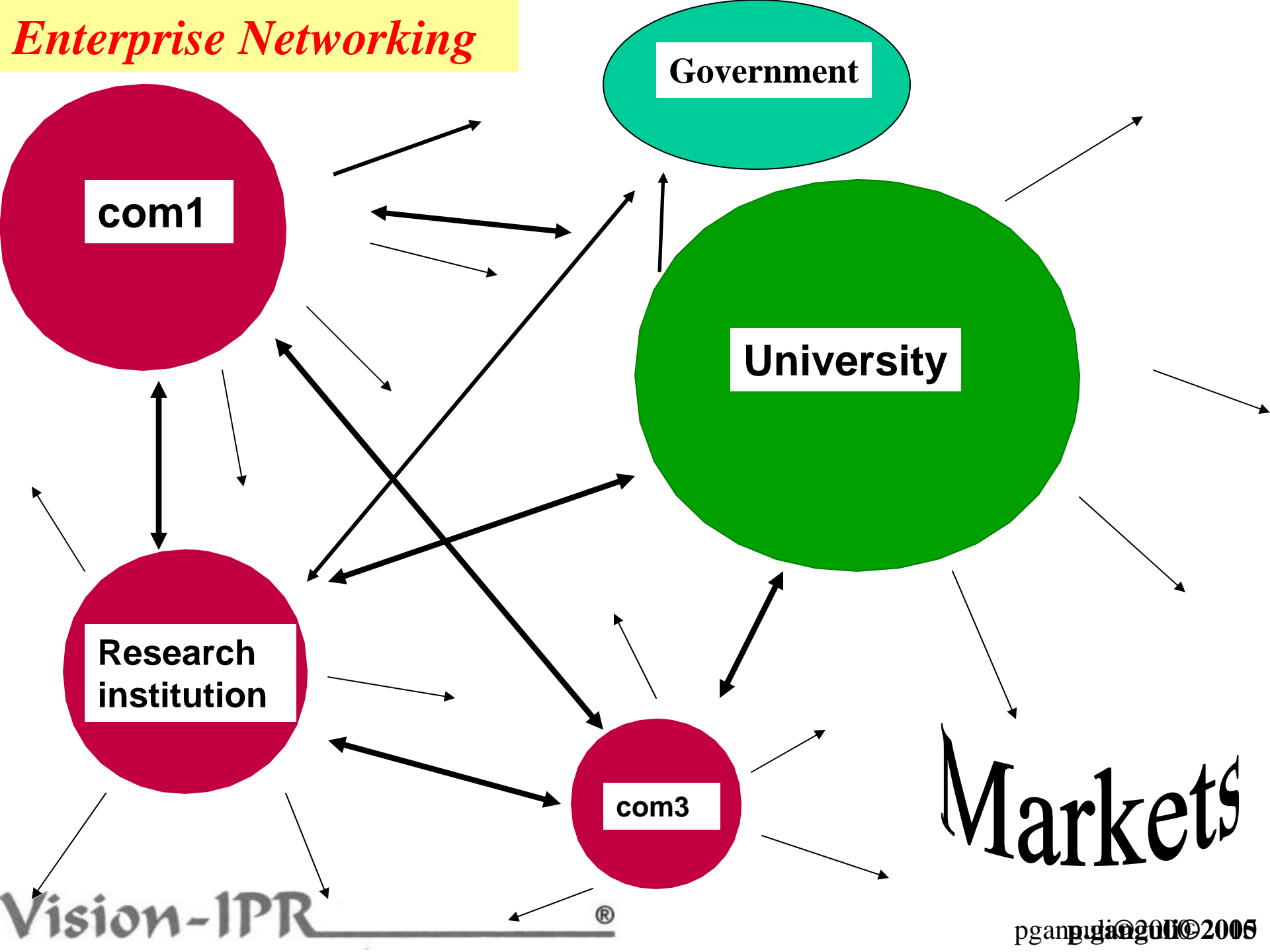


Value Creation ????

Wealth Generation ??

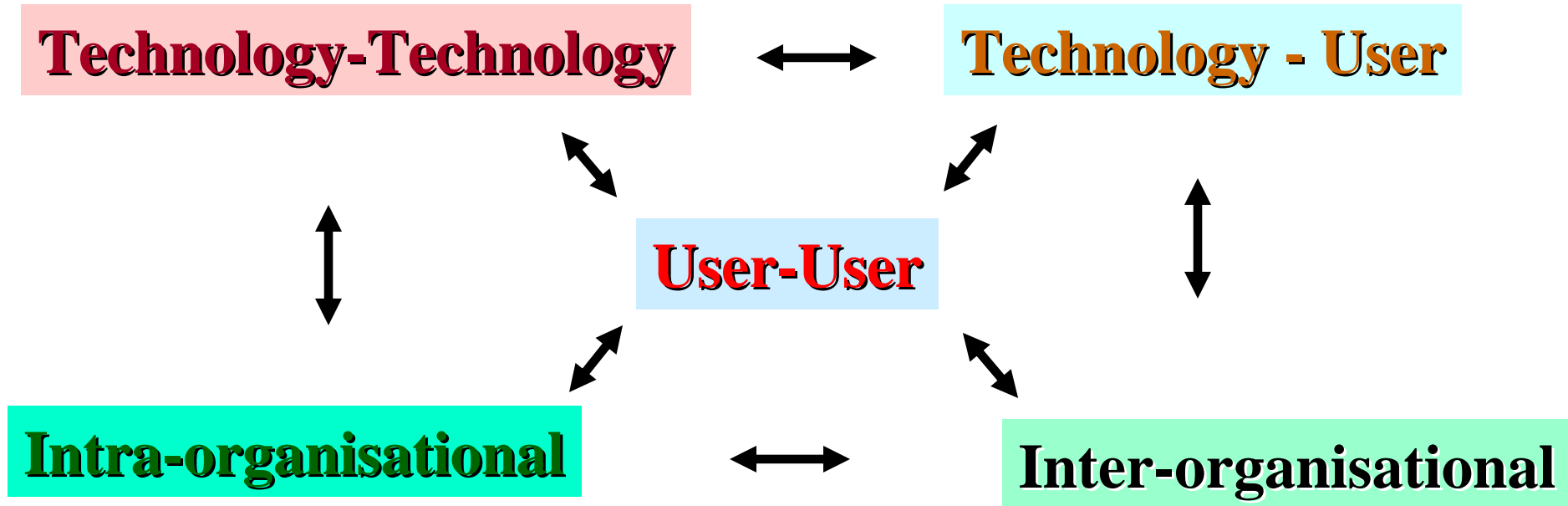
Wealth Realisation ??

Enterprise Networking



Convergence of Technologies

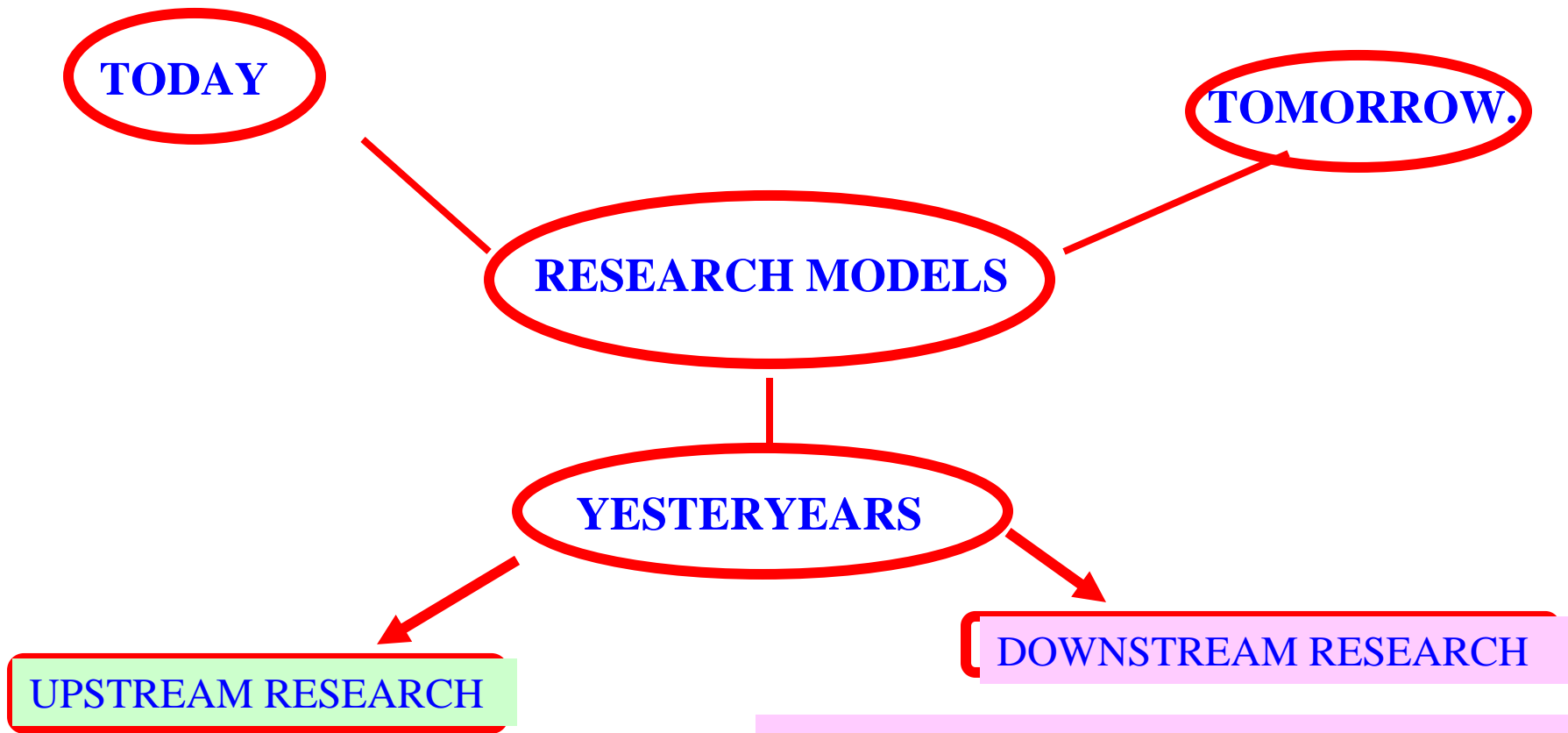
Mapping Interfaces



Global dynamics relevant

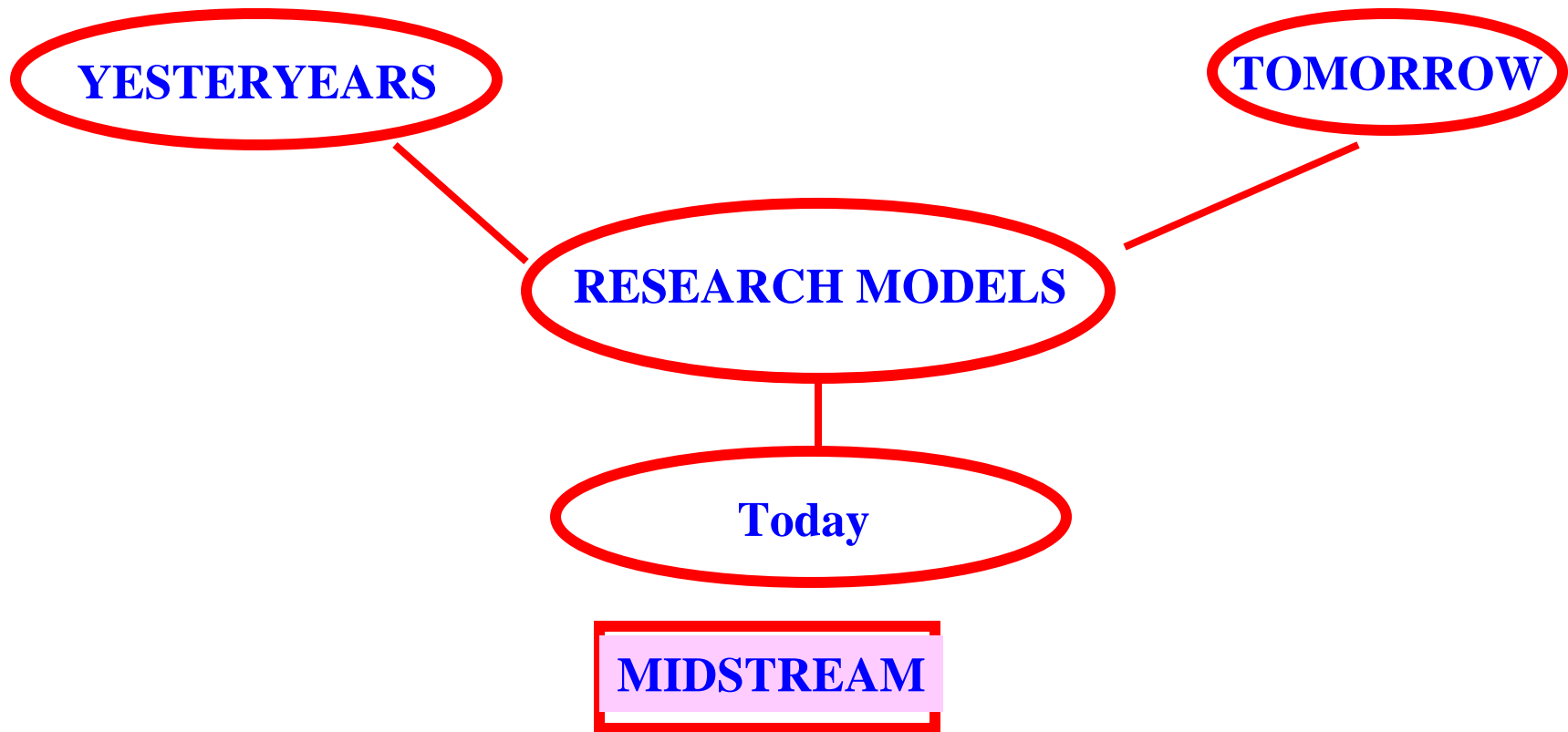
Who owns what ?

Is there a line of control ???

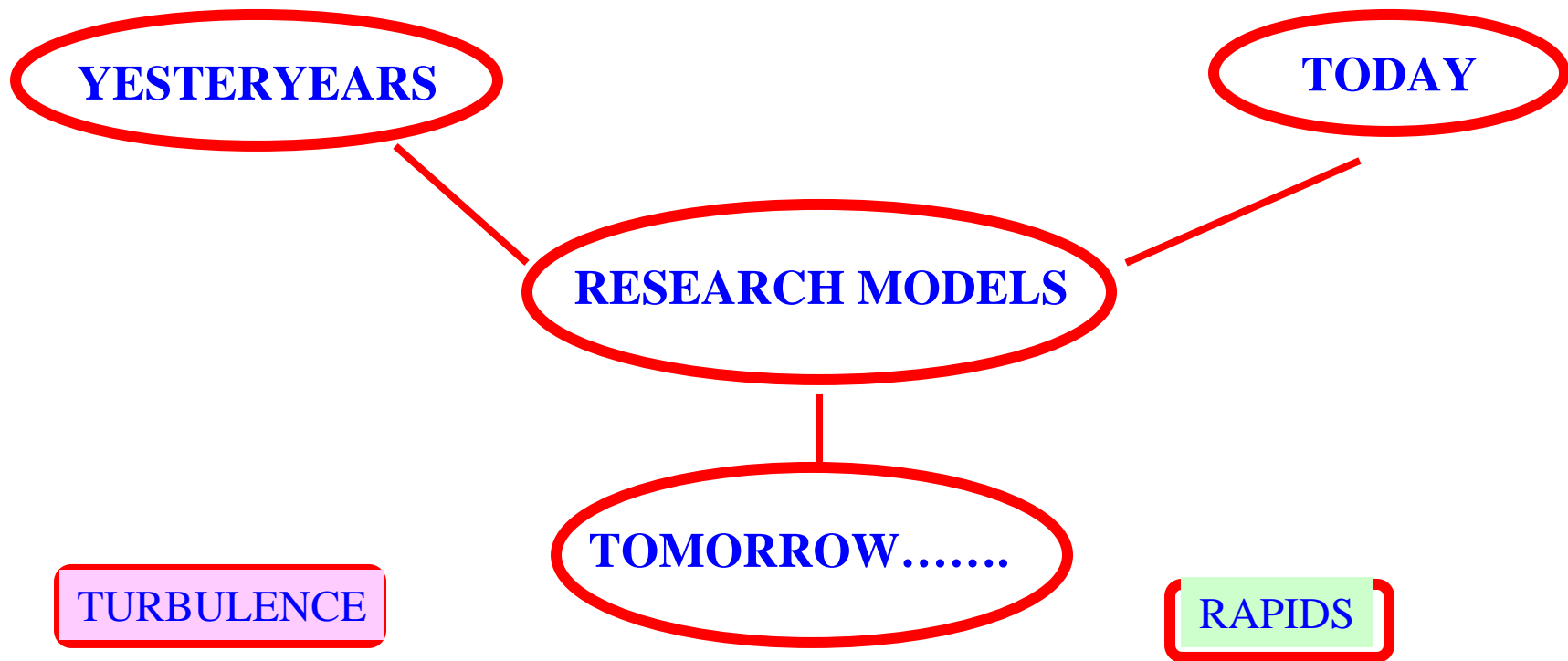


- Typically Conceptual
- State Funded Institutions
- “Open-Ended” Knowledge Generation
- Enrichment of “Public Domain knowledge
- Credits: Enhanced Peer Recognition

- Typically Applications
- Private Funded Institutions
- Targeted End Points
- Optimised use of “Public Domain Knowledge”
- Value Addition as measure of competitive edge
- Profits, Market dominance
- Proprietary Issues



- Partial Funding By Private Enterprises in Upstream Research
- Issues on knowledge Flow
- Benefits Sharing
- Publications Research Schemes, Peer Group Recognition etc.
- Free use by Funding Agency
- Diffused Ownership



- Blurring of boundaries between Upstream & Downstream Research
- Overlap between disciplines
- Quantification of Ownership
- Formalized benefit Sharing by Partners
- Overlapping Claims by different owner
- Challenges to Ownership Criteria
- Anti competition or Monopolistic Issue

- IRP Multi-tier innovation process
- Optimized use of global knowledge base
 - Intra-Enterprise resources
 - Extra-Enterprise inputs
- Global/National licensing issues
- Intricate exclusive/non-exclusive benefits Sharing
- Organisational frameworks for rapid diffusion of innovation to business

**You can be forgiven if you do
not invent!**

**But you cannot be forgiven
for reinventing!**

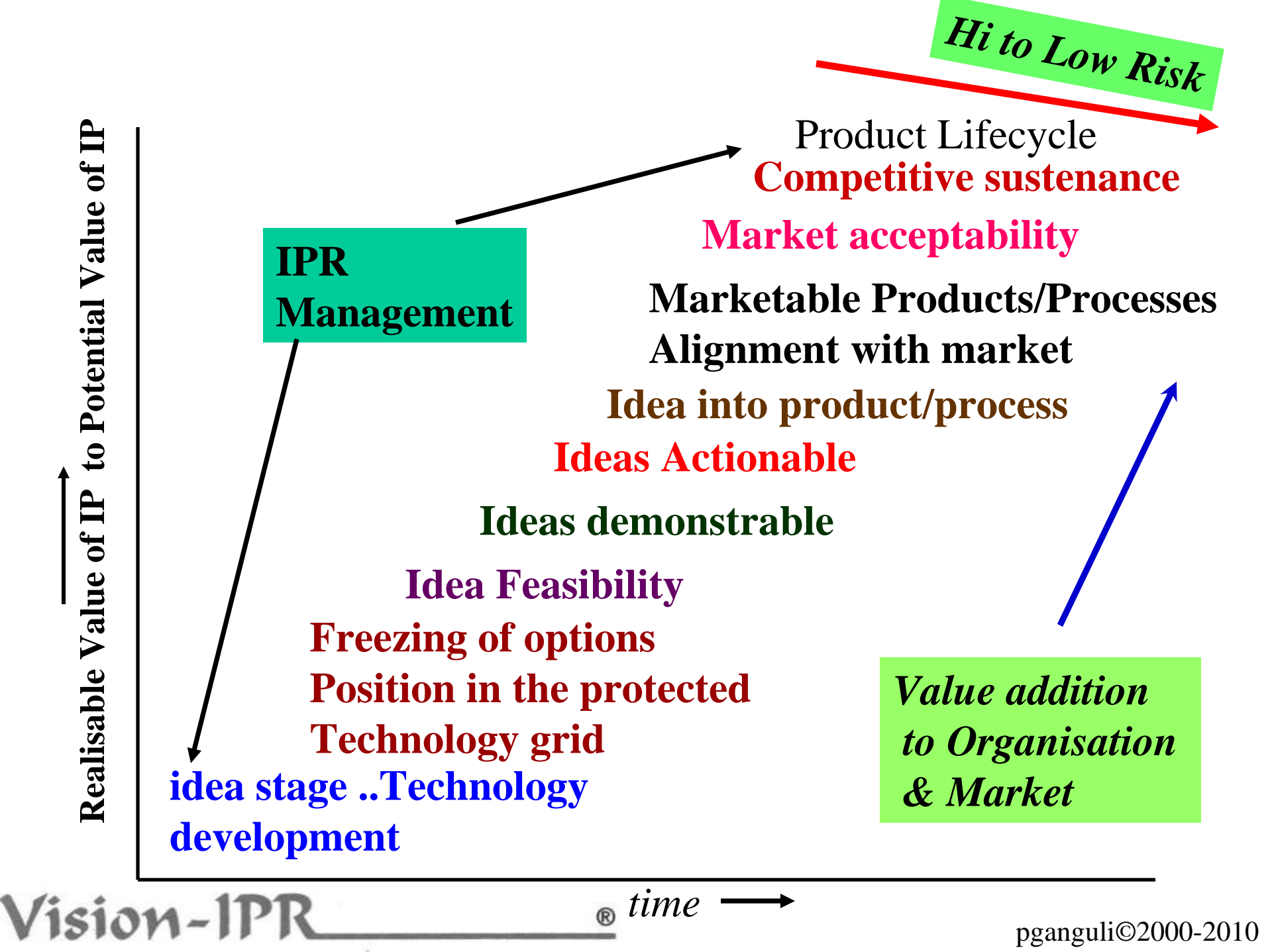
P. Ganguli

IPR Policy in Indian Universities

An Imperative

Universities
Well-springs of learning, scholarship
for
Human Resource Development

WHY
INSTITUTIONAL MANAGEMENT
OF
IPR ??



Beware !!!!

Premature disclosure of information

Seek usage clearance

Public Testing of Inventions

What do we do ?

- **Formulate Institutional IPR Policy**
- **Institute Information classification policy**
- **Significance and Implications of MOUs, contracts,**
- **Make all faculty and students aware of the IPR and information classification policies, Material Transfer Agreements**
- **Users at departmental level made aware of issues & responsibilities. Manual of best practices.**
- **Set up patent information service**
- **Structured annual training and awareness workshops**
- **Protection ... establish a continuous process**
- **IP Transactions ..a strategic process**

Institutional Imperatives

- Institutional IPR Policy
- Integrating IPR into business strategy & project management
- Effective Use of IPR information
- Identifying areas of possible infringements
- Licensing strategy
- Policing of institutional IP assets
- Litigation strategy
- IPR audit
- Effective utilisation of International Conventions.

Top university-owned patents by revenue generation

University	Top-selling product	Pharmaceutical partner	Revenue earned in 1997-1998 licensed (\$millions)	Gross revenue from all patents in 1997-1998 (\$millions)
Florida State University	Taxol (cancer)	Bristol-Myers Squibb	45	57.3
Stanford University	Recombinant DNA Technology	Non exclusive license	38.5	43.2
University of California	Hepatitis B vaccine	Merck & Co.	30.1	88.5
Yale University	Zerit (HIV)	Bristol-Myers Squibb	28.2	38
Columbia University	Xalatan (glaucoma)	Pharmacia & Upjohn	20(2001)	61.4; 96(2001)
University of Florida	Trusopt (glaucoma)	Merck & Co.	15.5	19.1
Michigan State University	Cisplatin; Carboplatin (cancer)	Bristol-Myers Squibb	24.3	24.3

Patent numbers and claims for the top revenue-generating licensed products

Product	Patent Number	Patent Claims
Taxol	US 5,136,060	Method of synthesis
Cohen-Boyer recombinant DNA Technology	US 4,237,224; US 4,468,464 US 4,740,470	Method of use
Hepatitis B vaccine	US 4,415,491	Composition of matter
Zerit	US 4,978,655	Method of treatment
Xalantan	US 4,599,353	Method of treatment
Trusopt	US 4,619,939	Method of treatment
Cisplatin	US 4,140,707; US 5,562,925	Method of use

Source: Nature Biotechnology, Volume 19, September 2001, Page 882

SBIRI of DBT

'Small Business Innovation Research Initiative (SBIRI) Scheme

- Grants and Loans
- Only Grants
- Only Loans

For Industry-Publicly Funded Institutions

DBT has engaged M/s Biotech Consortium India Ltd. (BCIL) as SBIRI Management Agency to manage the funds on behalf of DBT

PRDSF of DST

Pharmaceutical Research and Development Support Fund (PRDSF) was created under the administrative control of (DST) in January, 2004. Government's budgetary contribution of Rs.150 crores as corpus to this fund. Interest accrued is used to assist R&D Projects in modern and Indian Systems of Medicines jointly proposed by industry/academic institutions/laboratories and to create national facilities.

Indian scientists are engaged in the development of medicines for several diseases such as malaria, filaria, cancer, ulcer, tuberculosis, Etc., and vaccines for rotavirus, cholera, DNA rabies, tuberculosis, HIV, malaria, etc.

The leads obtained from the screening of new chemical entities, extracts from plants, traditional preparations, microbes and fungal sources are at different stages of discovery chain like pre-clinical and clinical trials.

NMITLI of CSIR

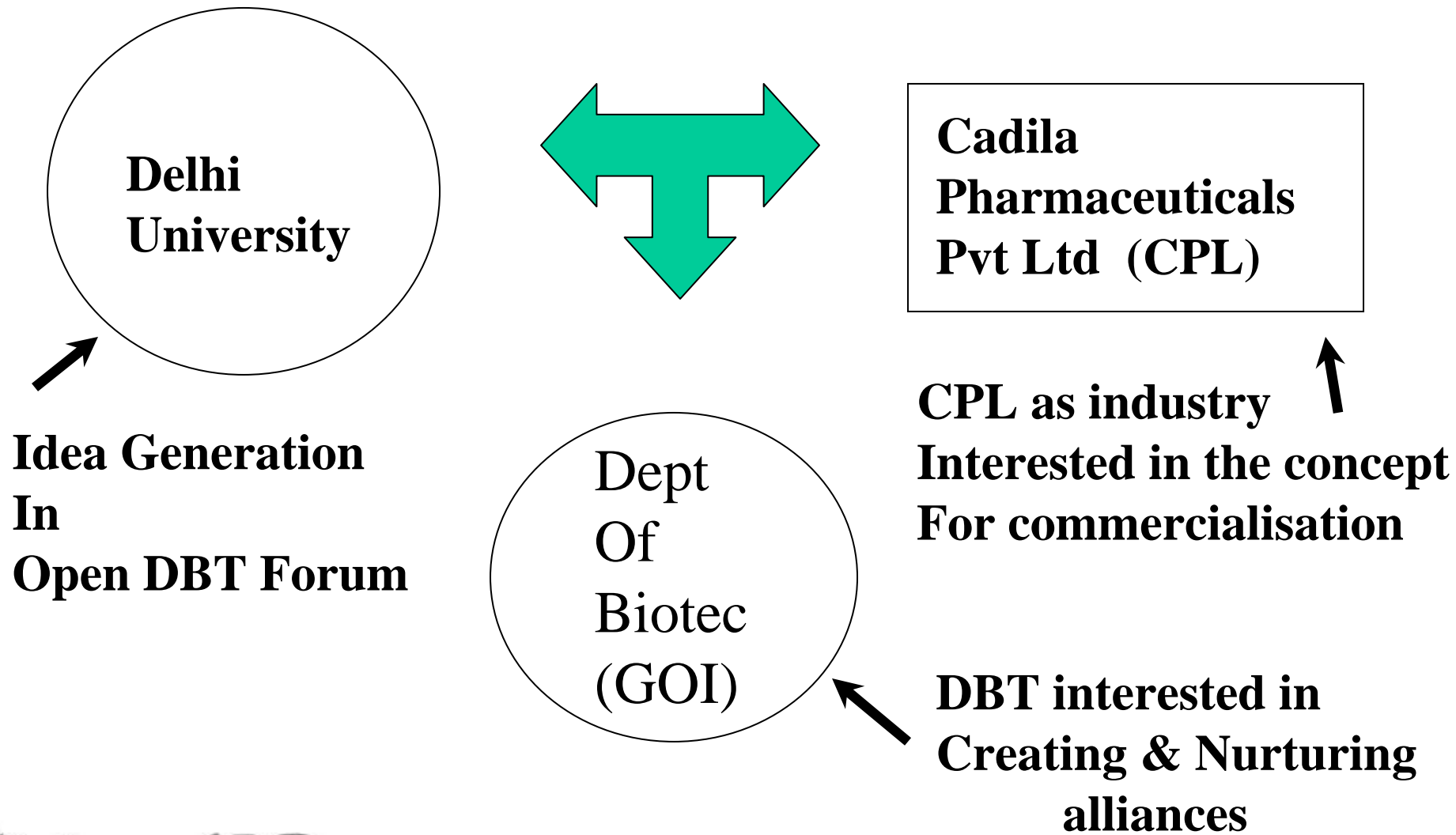
New Millennium Indian Technology Leadership Initiative (NMITLI)

A unique “Team India” public-private partnership.

With a workable benchmark of short project cycle with high-risk low investment, has emerged the concept of generously funded time bound and resulted oriented projects.

This has emerged as the biggest funding route for biotech sector. The initiative so far is worth Rs 1500 million.

Exploiting Idea clustering through institutional policy. industry initiative



The Project

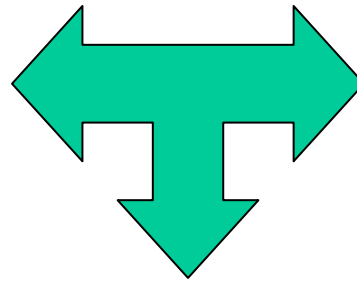
- Delhi University thought of a Naked Eye Visible Agglutination Test (NEVA) ..simple, bedside, rapid, and as good as ELISA.
- CPL identified it as a good India Centric Product Concept for Commercialisation.
- Project funding both by DBT and CPL
- Technology developed by DU, Knowhow transferred to CPL, CPL developed it into a commercial product
- A 3-Party MOU between DBT-DU-CPL signed
- DU received lump-sum and milestone payments from CPL



PPP --- Industry Initiative

**National
Institute
of
Immunology
NII**

**NII: Basic Science
for Leprosy
Vaccine**

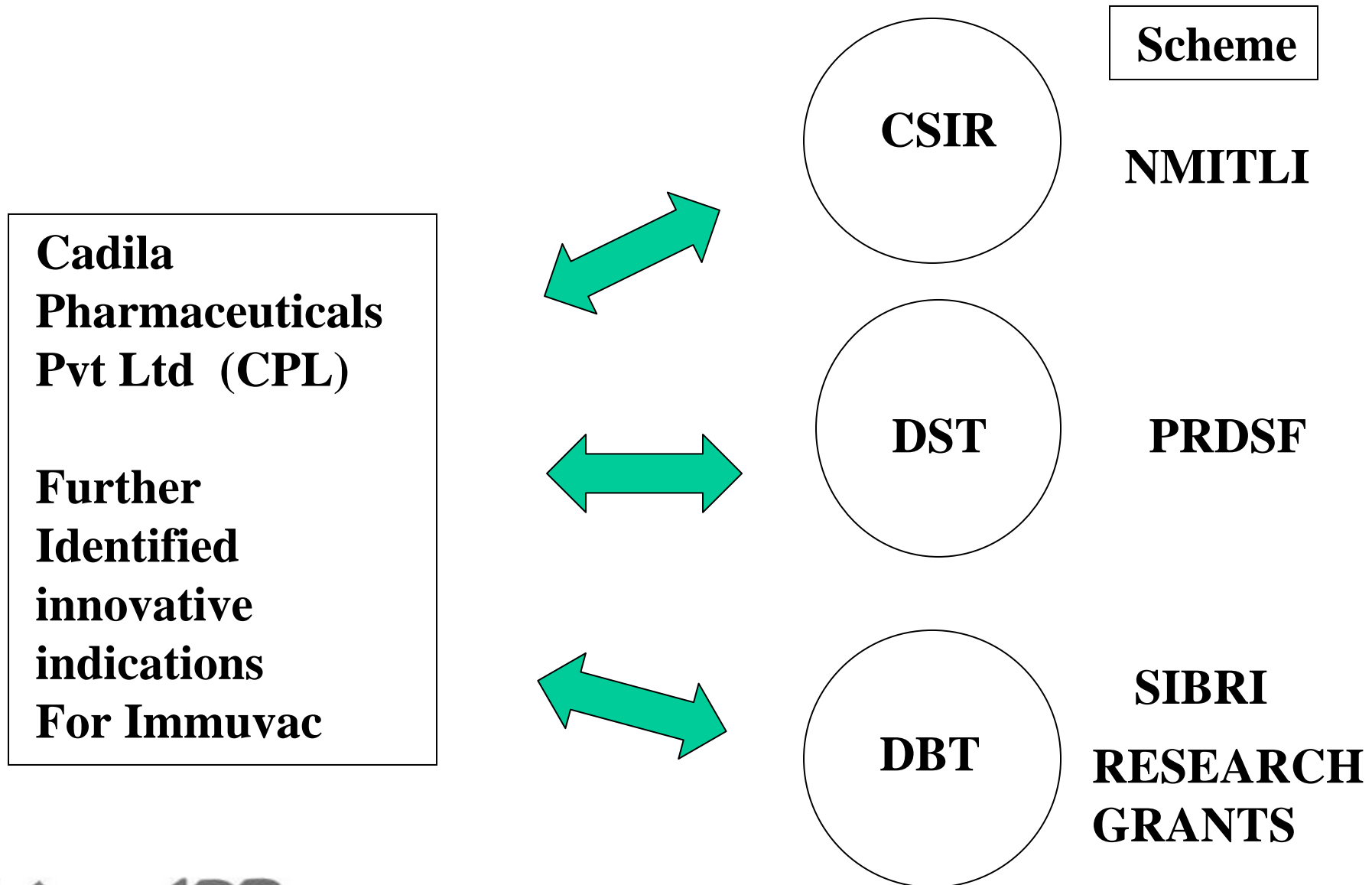


**Cadila
Pharmaceuticals
Pvt Ltd (CPL)**

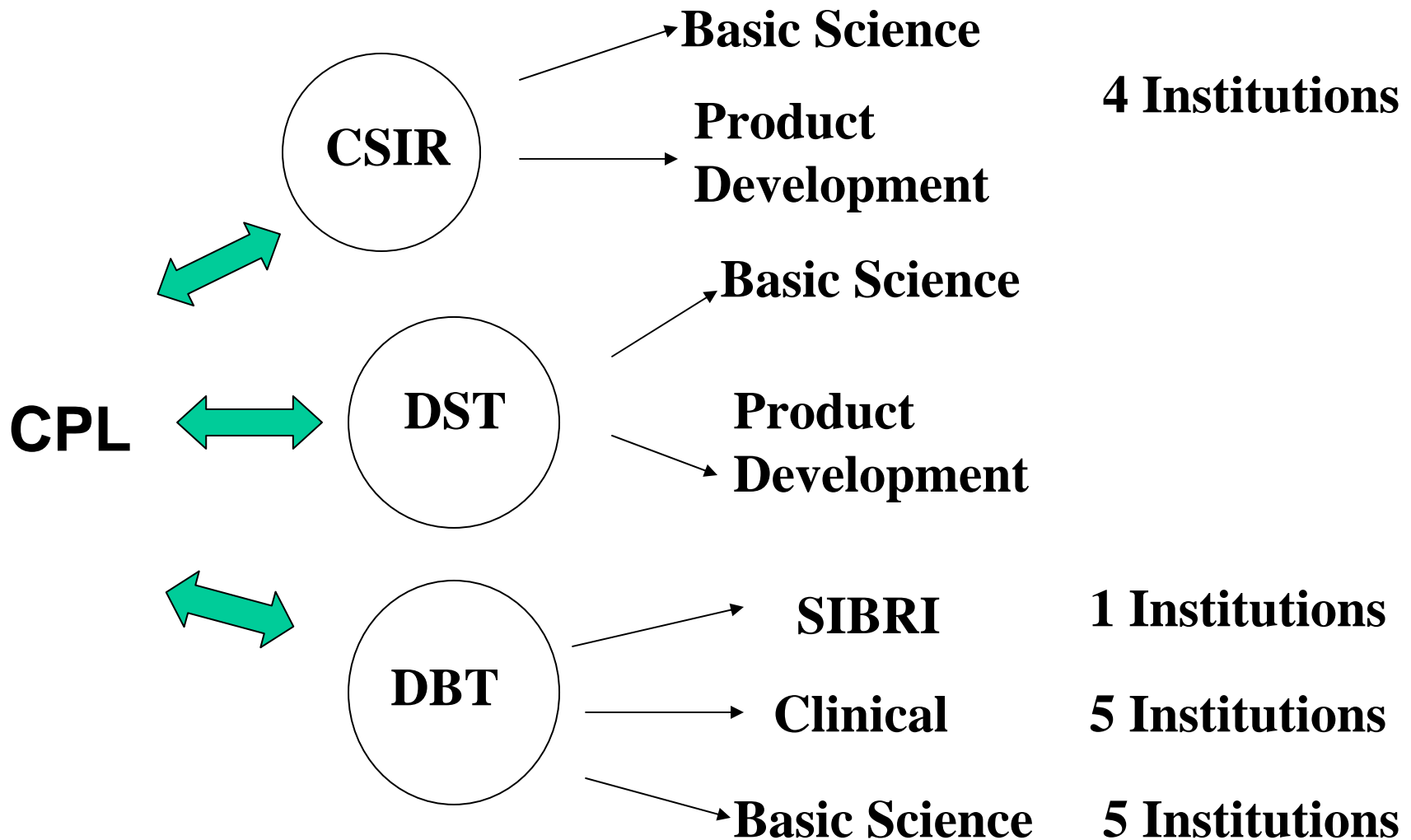
**CPL: Under license
Developed it
to a commercial
marketable
Product**



Industry Initiative National PPP spinoffs



Industry Initiative National PPP spinoffs



Lessons learnt

- Universities have no comprehensive IPR policy
- Inconsistency in policies across different government departments; e.g. DBT, DST, DSIR, ICMR, ICAR, etc.
- Government Institutions have policies but they are often unrealistic and not practically applicable
- Present draft innovation Bill is also not comprehensive has several defects that need to be addressed before it goes to the parliament.
- Technology transfer mechanisms not streamlined.

Concerns

.....Several Science and Technologies getting orphaned due to non availability of funds to progress IPRs on global scale

.....inadequate infrastructure, management skills, negotiation acumen, inadequate venture capital culture

.....No clout to negotiate due to fragmented technologies

sprouting of IPR trolls in India to exploit the existing vacuum created by lack of competent IPR Management in Universities and institutions

Concerns

.....lack of patent information search skills, avoiding of “reinventing the wheel”

.....when is traditional knowledge legitimate prior art

.....Social cost of granting wrong patents

.....high cost of litigation

...lack of skill and maturity in the process of forging partnerships between society (community), academics and private enterprises.

(Recommendation from S&T Steering Committee for the Eleventh Plan)

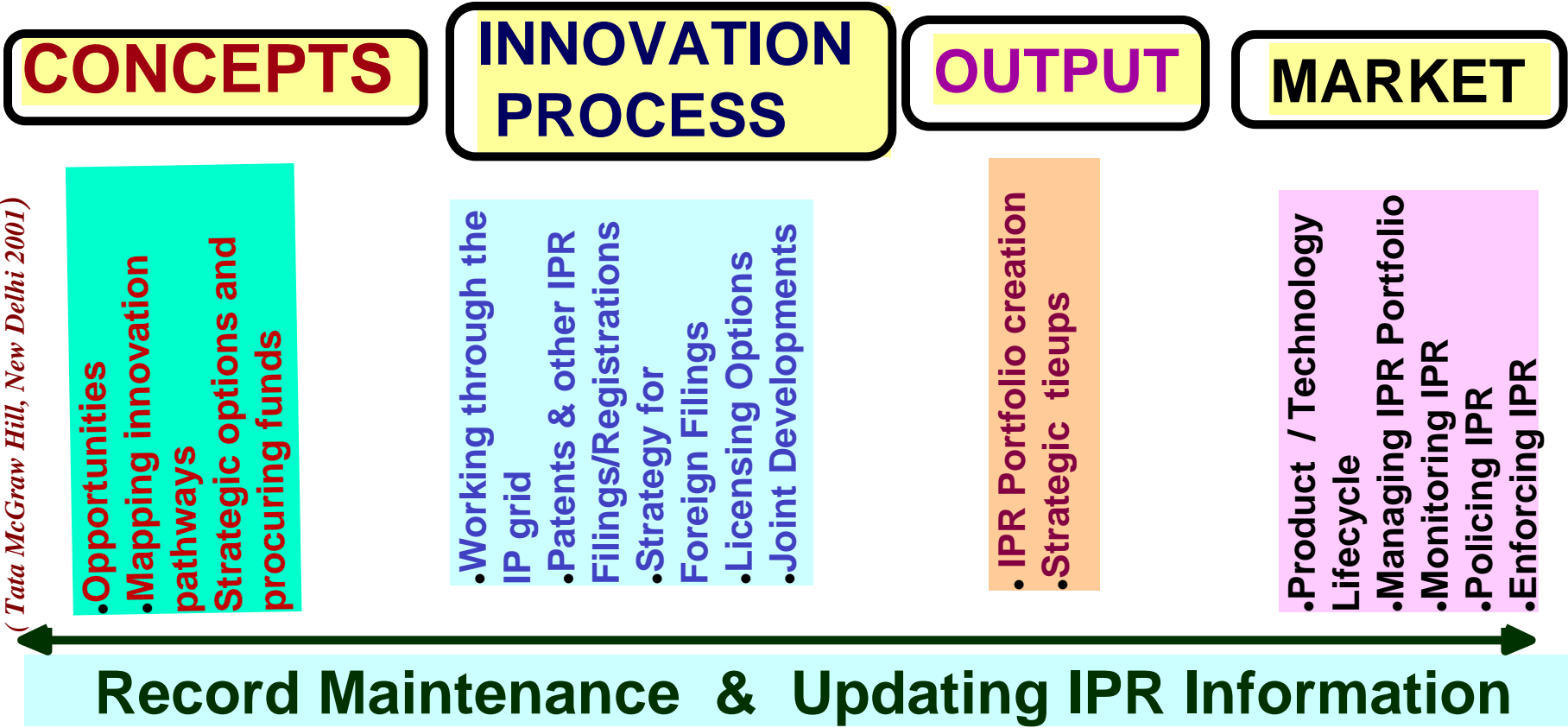
Cross-disciplinary Technology Areas for Research

- Desalination and water purification technologies
- Nutrition
- Health care- medical devices and vaccines
- Advanced computing
- Advanced manufacturing
- Robotics and automation
- Combustion research
- Sensors and integrated systems
- Security technologies
- Advanced functional materials

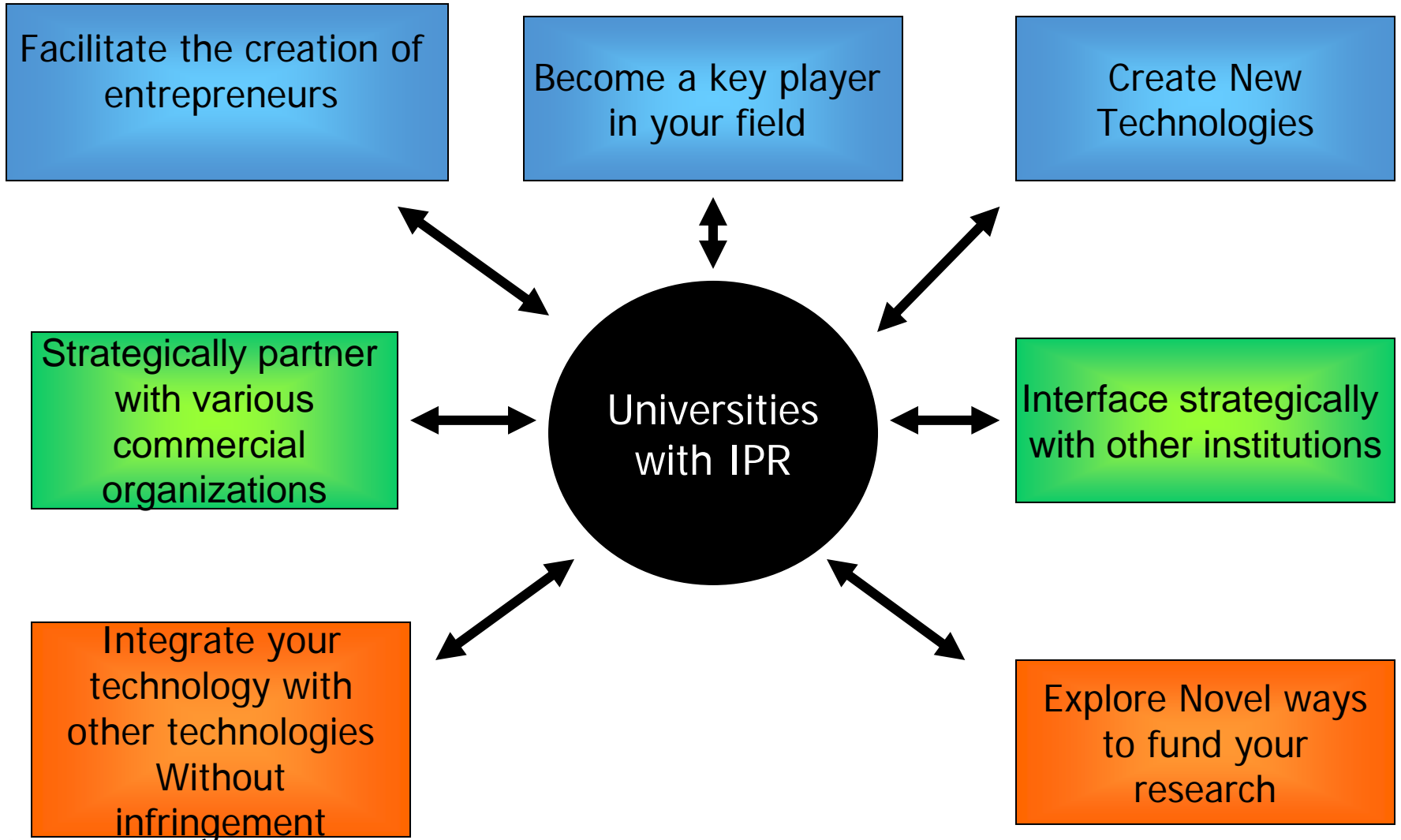
The Way forward

- Institutional Innovation and IPR Policies to be formulated to facilitate innovation keeping IPR perspective
- Provide a manual of best practices that Universities and Institutions can follow that will comprehensively Internalise the IPR Process in Institutional Activities
- Create a single window within the government system to facilitate the commercialisation of innovations
- Formulate a national innovation policy with comprehensive directives on technology transfer and IPR matters

Intellectual Property and Strategic Management of IPR

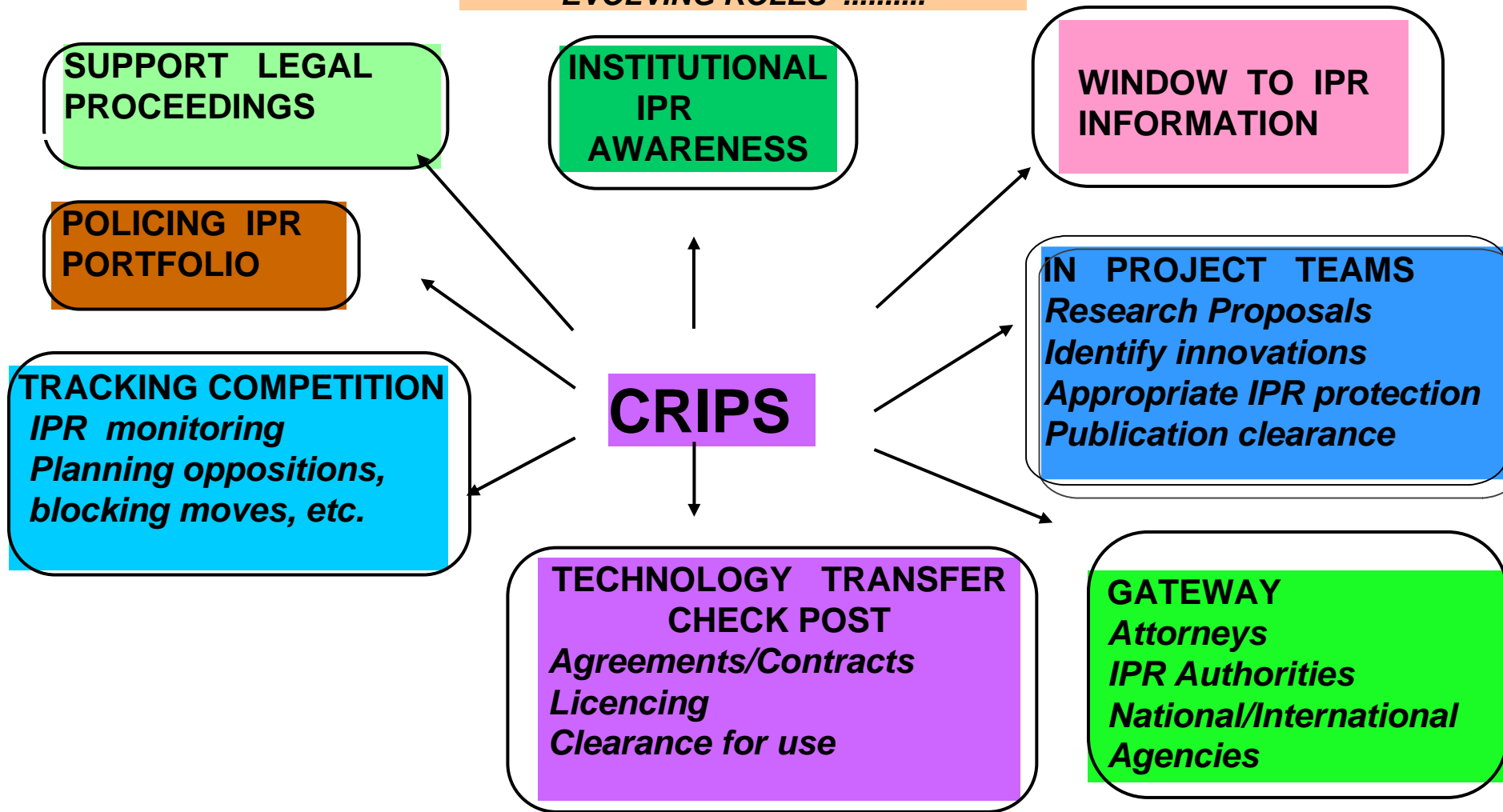


Successful Universities in an IP Ecosystem



Core Intellectual Property Services (CRIPS)

EVOLVING ROLES



INSTITUTIONAL STRATEGY, SPEED, CONFIDENTIALITY, QUALITY
..... THE KEY