

Developing A Comprehensive Database For Assessing The Patenting Activity In India

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INDIA

Objectives

To Capture the Overall Patenting Activity in India and Assess the Strength's & Areas of Concern.

Recommendations for Addressing Gaps and Obtaining Leverage from Patenting Activity in the Country.

- Detailed analysis of India's Patenting Activity in the US and India for the period 1990-2002.

Trends Examined for 2003-2004

- Patents Granted in the European Patent System and Patent Filing in the PCT

Objectives – contd.

- **Impact of Indian Patents on the basis of Citations Given by Other Patents and Scientific Articles (US Patents only).**
- **Comparison of India's Current Patenting Trend (1998-2002) with Patenting Activity of Some Developed and Developing Countries.**
- **Strategic Options for Commercialisation of Patents in India**
- **Implications of India's Patenting Activity in the New WTO Scenario.**

To Meet the Objectives of the Study

Creation of Databases :

Patents Granted by the US Patent Office (USPTO)
to (a) Indian Organisations (b) Foreign Entities in India
(c) Indian Individuals

Patents by (a) Indian Organisations (b) Foreigners
Filing in IPO (c) Indian Individuals

Accepted by the Indian Patent Office (IPO)

Patents from India Granted in the European Patent
Office

Patents Filed by Indian entities and Individuals under
PCT

Creation of Databases (contd.)

Validation of the Databases

Missing Gaps/ Wrong Assignments etc.

Value Additions –

Country and Date of Priority

Process/Product Patents

Industry Wise Patent Grouping

Details of Patent Citations (For Patents in USPTO)

Type and Characteristic of Organisation

Sectors in which Patents were Classified

- **Chemical**
- **Pharmaceuticals**
- **Machinery**
- **Electrical Equipments**
- **Transport**
- **Electronics**
- **Instruments**
- **Miscellaneous**

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- ***Biotechnology*** (culled from above)

Sub-sectors under Instruments and Miscellaneous Sectors

Instruments

- **Medical equipment**
- **Measuring instruments**
- **Industrial process control equipment**
- **Optical instruments**

Miscellaneous

- **Office machinery and computers**
- **Basic metals**
- **Food, Beverages**
- **Rubber & plastic products**

- **Non-metallic mineral products**
- **Fabricated metal products**
- **Textiles**
- **Petroleum products**
- **Furniture, consumer goods**
- **Paper**
- **Leather articles**
- **Wearing apparel**
- **Tobacco products**
- **Watches, clocks**
- **Wood products**

Data Covered in This Study

Period 1990-2002

US Patent Office (USPTO)

Total Patents: 1073

Indian owned patents : 669
(assigned to Indian organisations)

Foreign owned patents: 273

“Unassigned patents” : 109

Indian Patent Office (IPO)

Total Patents: 24518

Indian owned patents : 6687

Foreigners : 15999
(Patents from abroad)

Individuals : 1832

Data on cited patents

EPO patents granted to Indian organisations (1990-2002)

Period 2003-04

Indian owned patents : 462

Indian patents filed in PCT (1999-2002)

Data from CSIR laboratories on patent license, royalty received (1999-2003)

Patents of India and China in USPTO (1998-2002)

India owned : 521; China owned: 649


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Combined Patent database

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Main Menu

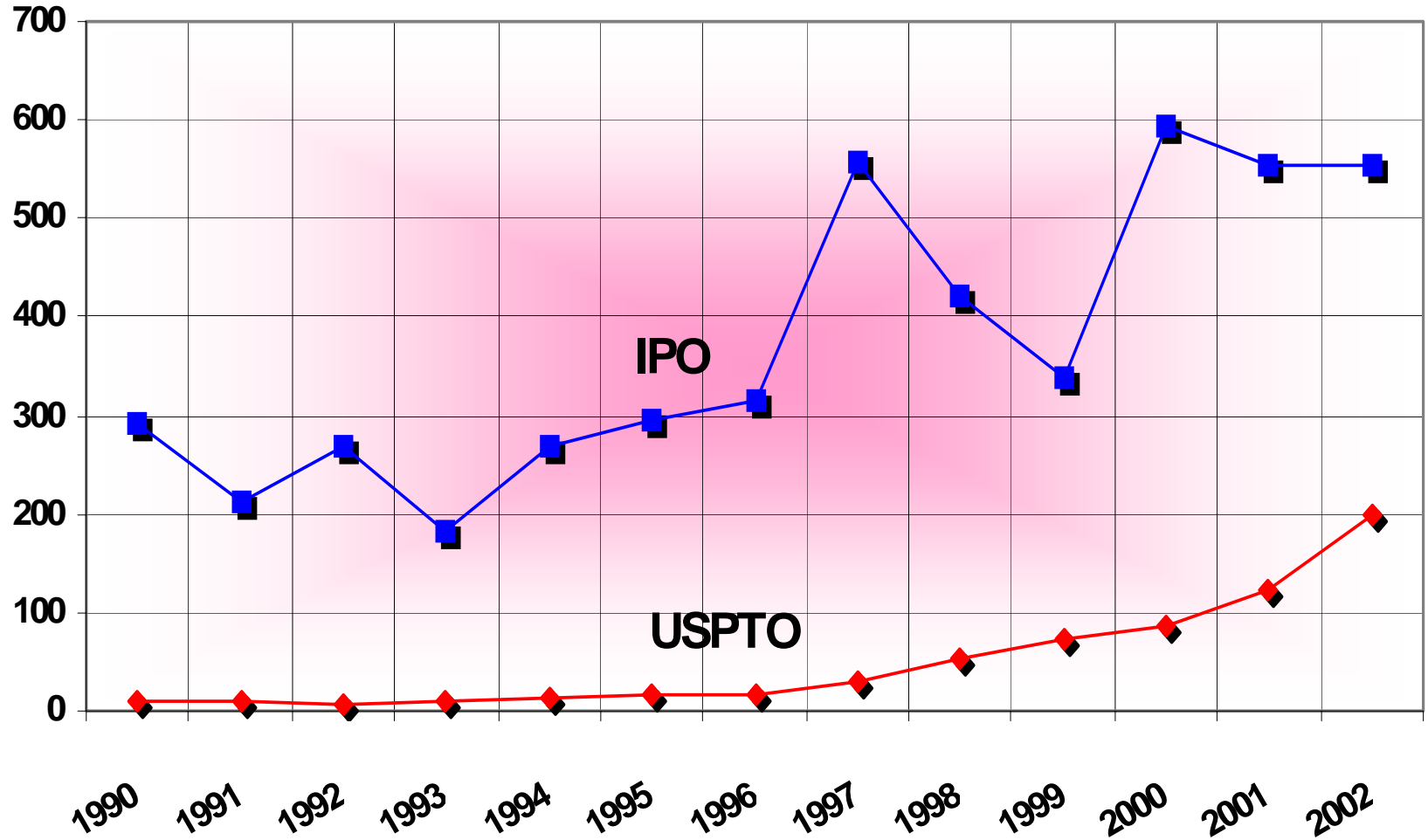


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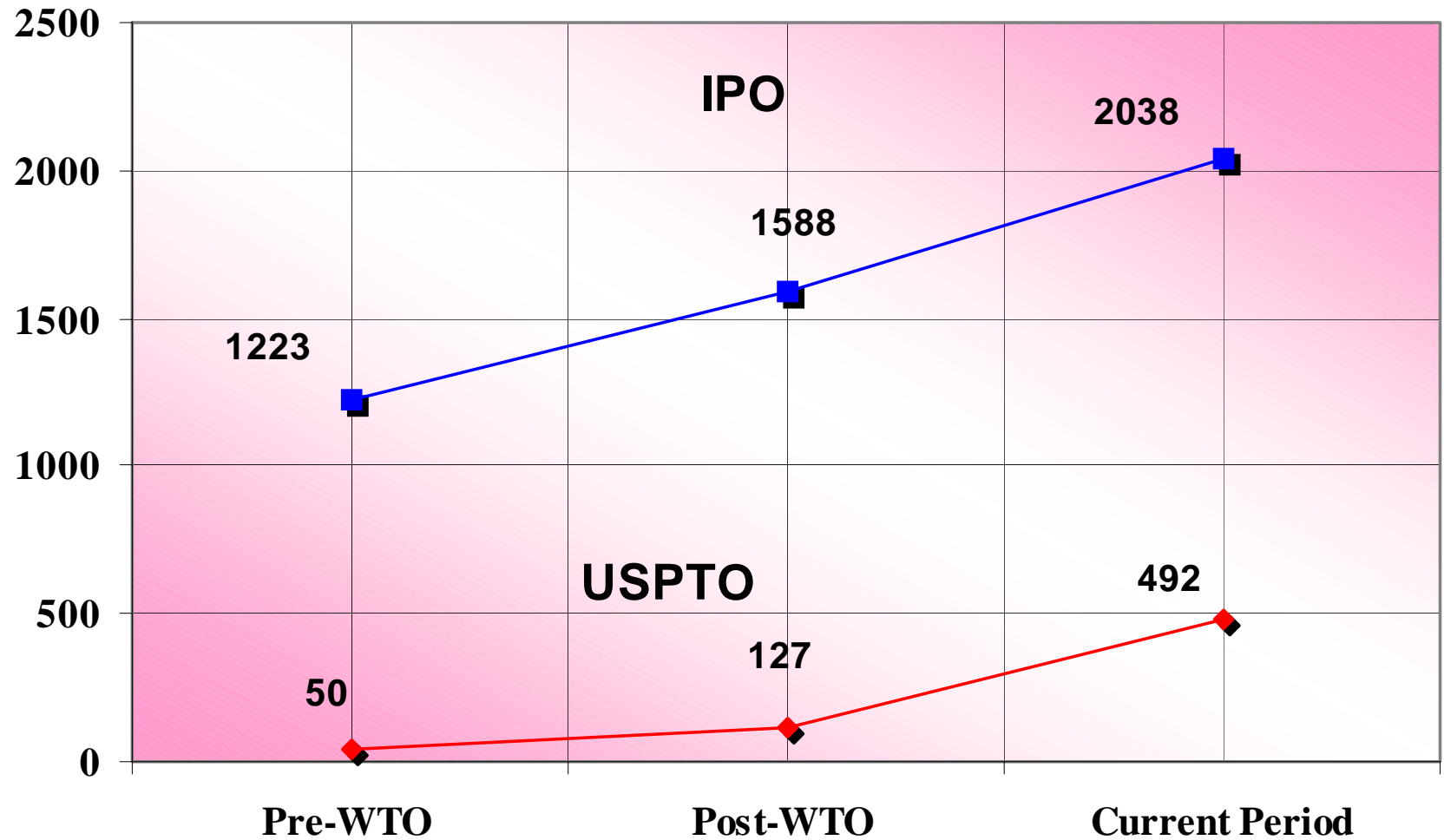


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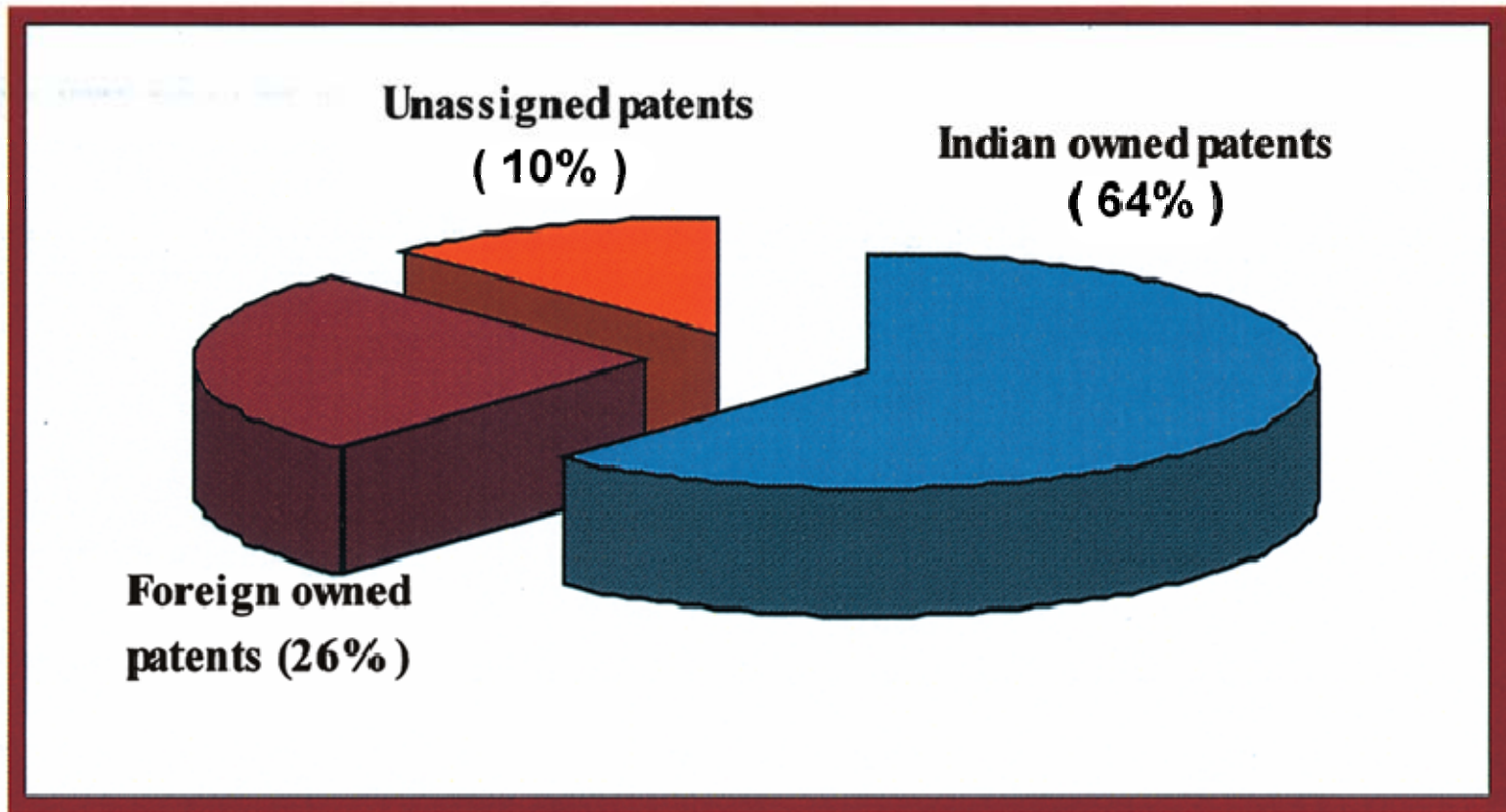
Patenting Activity by Indian Organisations in IPO and USPTO



Patenting Activity in the Three Periods: IPO and USPTO



Patents Granted Under the Three Categories in the USPTO



Indian Patenting Activity in the Three Patent Types in USPTO

Year /Type of Patent	1990-1994	1995-1998	1999-2002	Total (1990-2002)
UTILITY	123	202	683	1008
DESIGN	2	14	8	24
PLANT	-	2	14	16

Prominent Country of Assignment of Foreign Owned Patents

Country	No. of Patents
USA	187
GERMANY	44
SWEDEN	6
SINGAPORE	3

Foreign Institutions that Exhibited High Patenting Activity

Foreign Institutions	No. of Patents
Texas Instruments Incorporated (USA)	40
Hoechst Aktiengesellschaft (Germany)	30
General Electric Company (USA)	26
International Business Machines Corporation (USA)	17
Unilever Home & Personal Care (USA)	8
Cypress Semiconductor Corp. (USA)	6
Monsanto Company (Macao)	6

Patenting Activity in Major Sub-sectors in USPTO:1990-2002

Sectors/Sub-sectors	India owned (% of total)	Foreign owned (% of total)	Unassigned (% of total)
Pharmaceuticals	284(42%)	73(27%)	17(16%)
Chemical/ Basic Chemical	195 (29%)	24 (9%)	11 (10%)
Miscellaneous/ Office machinery and computers	7 (1%)	67 (25%)	4 (3%)
Electronics/Electronic components	6 (1%)	15 (5%)	1 (0.8%)
Electronics/Signal Transmission, Telecommunications	3 (0.5%)	14 (5%)	2 (2%)
Transport/Motor vehicles	4 (0.6%)	- (0)	8 (6%)
Instruments/Medical Equipment	5 (0.7%)	9 (3%)	7 (6%)
Instruments/Measuring Instruments	14 (2%)	15 (6%)	6(6%)

Cited Patent Distribution

Year	Total Patents	No. of Patents Cited	No. of Times Cited	Citation Per patent	Uncited Patents
1990- 1994	50	36 (72%)	175	3.5	14
1995- 1998	127	77 (61%)	317	2.5	50
1999- 2002	492	149 (30%)	328	0.7	343
1990- 2002	669	262 (40%)	820	0.8	407

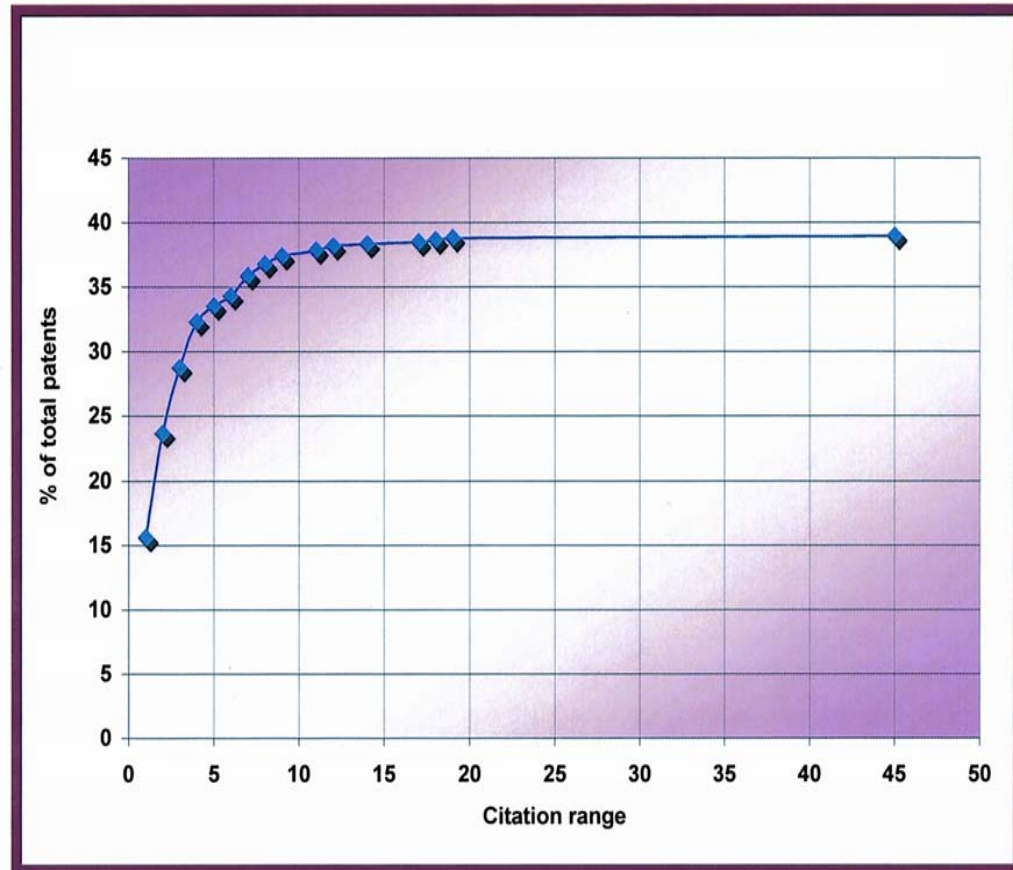
Subject Domain of Highly Citing Journals

Field Name	Cited activity
Chemistry	67
Clinical Medicine	14
Biomedical Research	11
Engineering & Technology	10

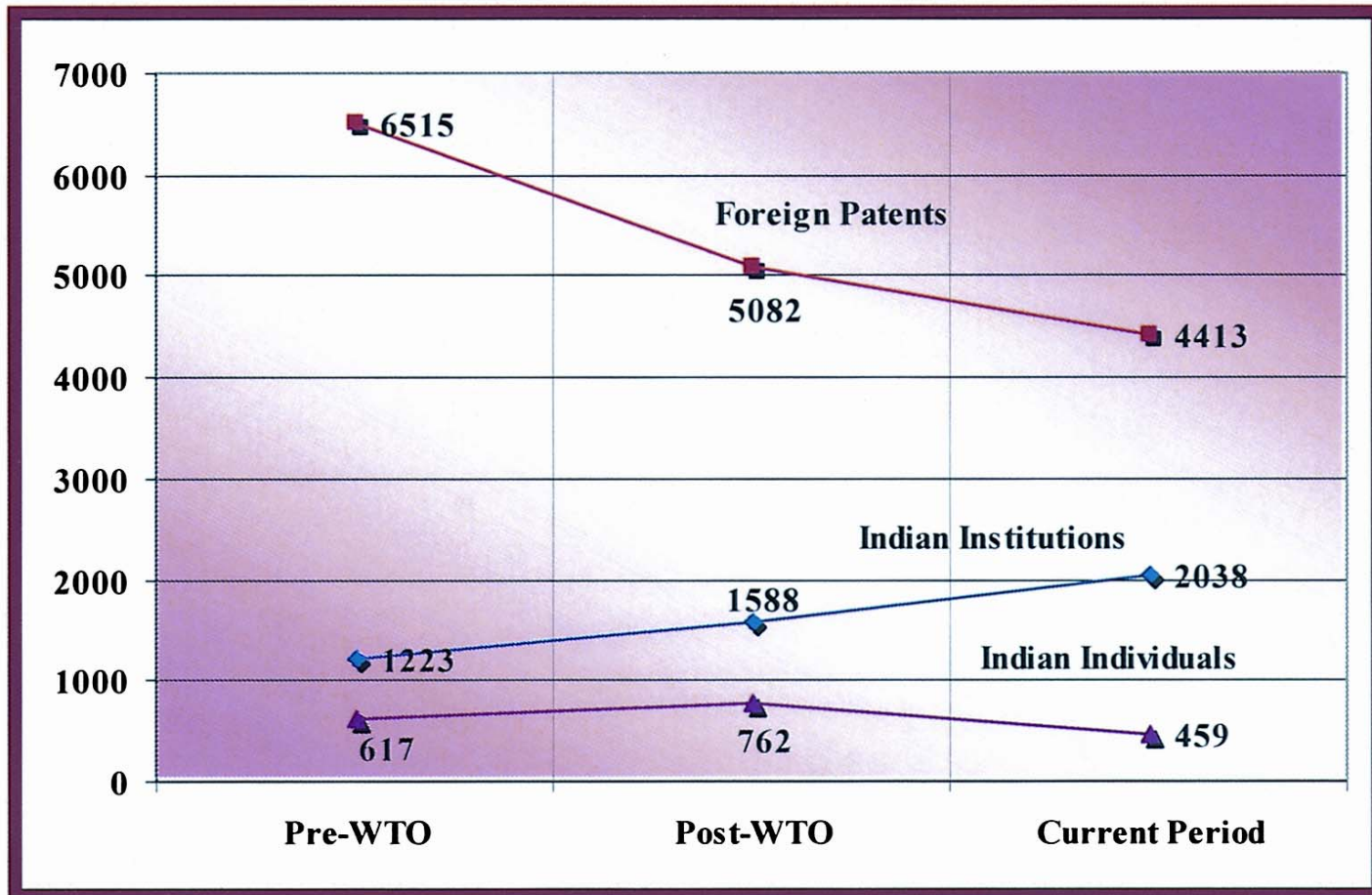
Patents Cited by journals

Assignee	Total Patents	No. of patents cited	No. of times cited	Citation per patent
Council of Scientific & Industrial Research	378	68	130	0.34
Ranbaxy Laboratories Limited	39	1	1	0.03
Dr. Reddy's Research Foundation	35	6	8	0.22
Dabur Research Foundation	15	5	5	0.33
Indian Petrochemicals Corporation Limited	9	5	10	1.11
Department of Science and Technology	9	2	5	0.56
Vittal Mallya Scientific Research Foundation	5	2	3	0.60

Distribution of Citation



Patenting Activity of Indian organisations, Foreigners and Indian individuals in IPO



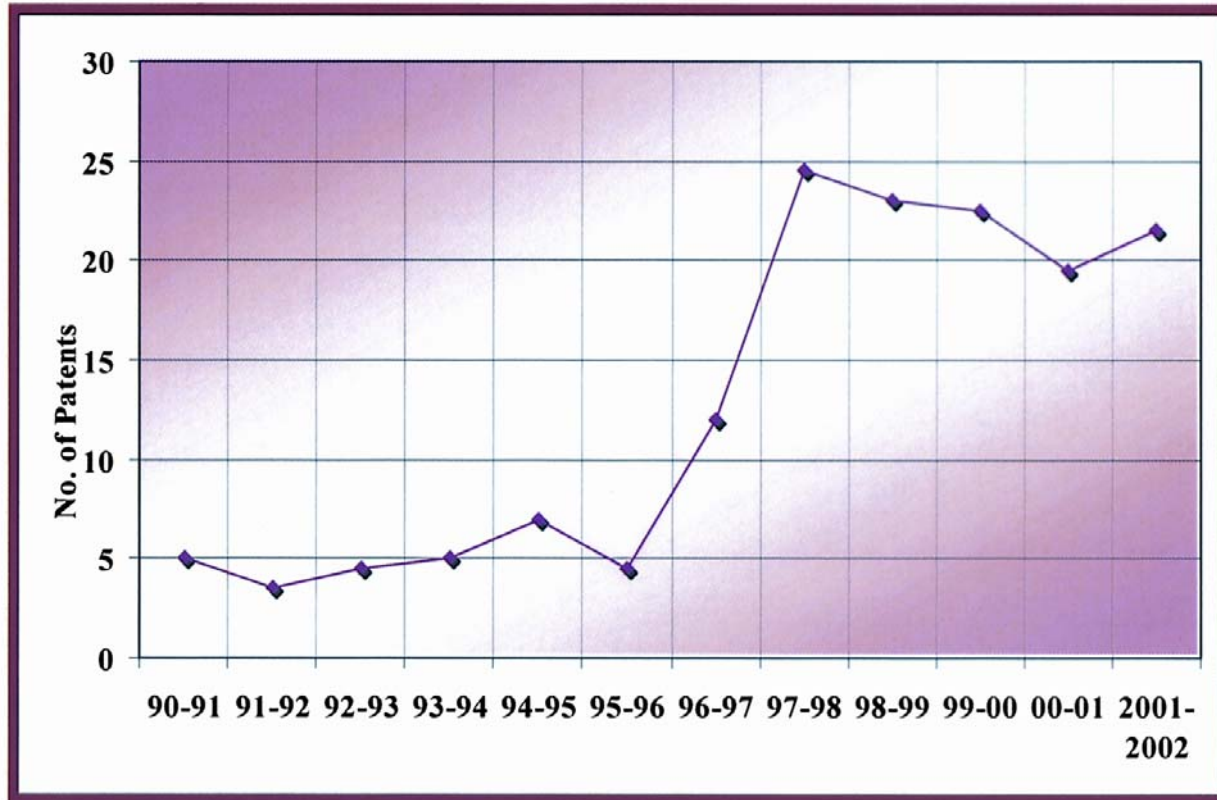
Major Sectors of Patenting Activity in IPO

Major Sectors	Indian Institutions	Foreigners	Indian Individuals
Pharmaceuticals	1073	1124	129
Chemical	1579	3791	191
Machinery	691	3917	534
Instruments	200	1050	171
Electronics	74	940	58
Transport	122	805	139
Electrical Equipment	99	658	86
Biotechnology	130	128	10

Patenting by Indian Organisations: USPTO & IPO

Sectors	USPTO (% share)	IPO (% share)	Total patents
Pharmaceuticals	284 (42%)	1579 (32%)	2863 (52%)
Chemical	232 (35%)	1073 (22%)	1405 (25%)
Miscellaneous	65 (10%)	919 (19%)	982 (18%)
Machinery	28 (4%)	691 (14%)	719 (13%)
Instruments	18 (3%)	200 (4%)	218 (4%)
Transport	6 (1%)	122 (2%)	128 (2%)
Electrical Equipment	1 (0.15%)	99 (2%)	100 (2%)
Electronics	9 (1%)	74 (2%)	83 (2%)
Biotechnology*	53 (8%)	130 (3%)	183 (3%)

Patenting by Universities in IPO: 1990-2002



Indian Patenting Activity in the PCT: 1999-2002

Year	No. of Patents	Assignee
1999	7	Individuals-4, Dr. Reddy's Research Foundation, Nile Limited, Varma Trafag Limited (1 Each)
2000	54	Dr. Reddy's Research Foundation-7, Dabur Research Foundation-2, Lakshmi Machine Works Limited-2
2001	122	CSIR-12, Biocon India Limited-5, Panacea Biotec Limited-5, Cipla Ltd.-3, Dabur Research Foundation-3, Nagarjuna Holdings Private Limited-3
2002	216	CSIR-66, Carborundum Universal Limited-7, Biocon India Limited-6, Orchid Chemicals And Pharmaceuticals Limited-6, Dr. Reddy's Research Foundation-4

Patents Assigned to Six Countries in USPTO (1998-2002)

Country	Utility	Design	Plant	Total Patents
USA	363424	32771	1482	397677
Japan	160720	6896	76	167692
Korea	16789	558	0	17347
Brazil	252	34	0	286
China	362	312	0	674
India	520	3	13	536

Patenting in Major Sectors: 1998-2002

Sector	USA	Japan	South Korea	China	Brazil	India
Electronic Equipment	83499	40208	7441	49	2	7
Office Machinery & Computers	63049	37568	3876	16	8	6
Machinery	62212	23426	2453	66	91	17
Instruments	56359	21047	1401	24	40	16
Pharmaceuticals	39772	5959	437	43	15	245

Main Implications

- **Lack of online database of Patents Filed/Granted by Indian Patent Office is a major drawback in assessing patenting activity in IPO**
- **Patenting in pharmaceuticals show significant growth**
- **A few Indian research organizations/firms play a major role**
- **Lack of design innovations needs to be addressed**
- **Indian patenting activity in plant patents is important**

Only a few patents are a result of collaboration.

Universities are beginning to participate in patenting activity, at least in the IPO.

Foreign R&D institutions in India are patenting in advanced/emerging technological areas like 'Computers' and 'Communications'.

Some Indian owned patents were cited by other Patents and in Journals.

Some organizations like CSIR, Ranbaxy, Dr Reddy's laboratory are building up portfolio's.

Substantial increase in patenting activity in USPTO in 2003-2004.

PCT route is being used by Indian firms to file international patents.

Recommendations

Need of Online Patent Database of Patents Granted/Filed in IPO

Design Innovations Require Attention

Patenting in 'Computer & Communications', and Electronics.

Joint Technology Development

IPR policy of Organisations

Portfolio creation

THANKS