

NATIONAL WORKSHOP ON DEVELOPING INTELLECTUAL PROPERTY POLICIES AND ESTABLISHING INTELLECTUAL PROPERTY AND TECHNOLOGY TRANSFER OFFICES IN TERTIARY AND RESEARCH INSTITUTIONS

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NIGERIA'S EXPERIENCES IN TECHNOLOGY COLLABORATION

by

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BACKGROUND OF TECHNOLOGY ACQUISITION IN NIGERIA

The 1970s was an era of indiscriminate import of various technologies into Africa (developing countries: Nigeria **especially**).

- Ø Industrialisation efforts mainly of turnkey packages with no technological link to the environment. Un-coordinated technology inflows. International Code of Conduct on Transfer of Technology to developing countries was lacking.
- Ø Technology transfer contracts contained very unfair conditions: monopoly pricing; restrictive business practices; export restrictions; high royalty rates; tie-in clauses (w.r.t equipment, raw materials, components, etc); little comprehensive training and management succession programmes; poor/weak local R&D activities, etc.
- Ø Thus the need for a national mechanism for the transfer of technology similar as in Brazil, and other countries.

NATIONAL TECHNOLOGY TRANSFER OFFICE

- Decree No. 70 of 1979 established the National Office of Industrial Property (NOIP) (September 24th, 1979) as a national agency for efficient acquisition (transfer) of technology under more equitable conditions.

The name was changed from NOIP to NOTAP (National Office for Technology Acquisition and Promotion) in 1992, in order to:

- i. ensure that new name adequately reflects its entire functions.
- ii. avoid any misconception with regard to the activities of NOTAP and those of Registry of Patents and Trademarks in the Ministry of Commerce.

FUNCTIONS AND ACTIVITIES OF NOTAP

The major functions and activities of NOTAP include:-

- I Registration of all contracts for the transfer of foreign technology to Nigerian Companies.
- I Development of negotiating skill of Nigerians, to ensure best contractual terms and conditions in any agreement for transfer of foreign technology.
- I Monitoring the execution of registered Technology Transfer Contracts.
- Ø Dissemination of technology information.
- Ø Collation and Documentation of R&D results and inventions.
- Ø Promotion of innovation and IPR awareness among researchers and inventors.
- Ø Commercialization of useful R&D results and inventions.

GUIDELINES ON TRANSFER OF TECHNOLOGY

Published Technology Transfer Guidelines seek generally to:

- ✓ Ensure **fair** contracts.
- ✓ Encourage **skill acquisition** by indigenous staff.
- ✓ Discourage **obnoxious clauses** (export restrictions, materials supply tie-in clauses, etc)
- ✓ Maintain **equitable level of remuneration** (Royalties: 1-5% Net Sales); level depends on type of service/technology.
- ✓ Promote/facilitate transfer of technology & FDI
- ✓ Promote innovation in Nigeria
- ✓ Improve the quality of contracts submitted in order to facilitate their registration
- ✓ Encourage rapid progressive increase in LVA.

Note:

- Application Form provides full data on Contract.
- Monitoring Form to indicate extent of implementation

Since 1983, over 3000 Technology Transfer Contracts have been submitted, and 2,400 registered at NOTAP (as at June 2006).

REGISTRATION OF TECHNOLOGY TRANSFER AGREEMENTS

Procedure for Registration

The actual procedure can be outlined thus:

- Transferee sends in completed Application Form, Monitoring Forms, and NOTAP Questionnaire with a covering letter, copies of the Technology Transfer agreement, Memo and Articles of Association of the local company, and Registration Fees.
- Application is evaluated by NOTAP.
- If all is okay, the agreement is registered within 48 hours.
- If there are problems (e.g. of monopoly pricing, restrictive business practices, export restrictions, high royalty rates, tie-in clauses, no training provision, etc.) the agreement is recommended for review.

ANALYSIS OF TECHNOLOGY INFLOWS TO NIGERIA

Main features of the Technology Inflows:

Charts and Figures from Technology Transfer Contracts (1983-2003) show:-

- ∨ Form/Type of Technology Collaborations
- ∨ Sources of Technology
- ∨ Level of **skill acquisition** by indigenous staff (reflected by **number of foreign personnel**)
- ∨ Extent of **local value addition**,
- ∨ Impact of IPRs on **export capability**
- ∨ **Cost of technology**

REGISTRATION OF AGREEMENTS

Between 1983 and 2006 (June) the total number of 3,918 Technology Agreements/Contracts were submitted to NOTAP in all the industrial sectors and 2,427 have been registered. These are shown in the following tables and figures.

Sectorally

- Agric/Agro Allied – 941 agreements were submitted and 548 were registered
- Solid Mineral/Chemical – 1,359 agreements were submitted and 840 were registered
- Light/Heavy Engineering – 986 agreements were submitted and 596 were registered
- Services – 632 agreements were submitted and 427 were registered.

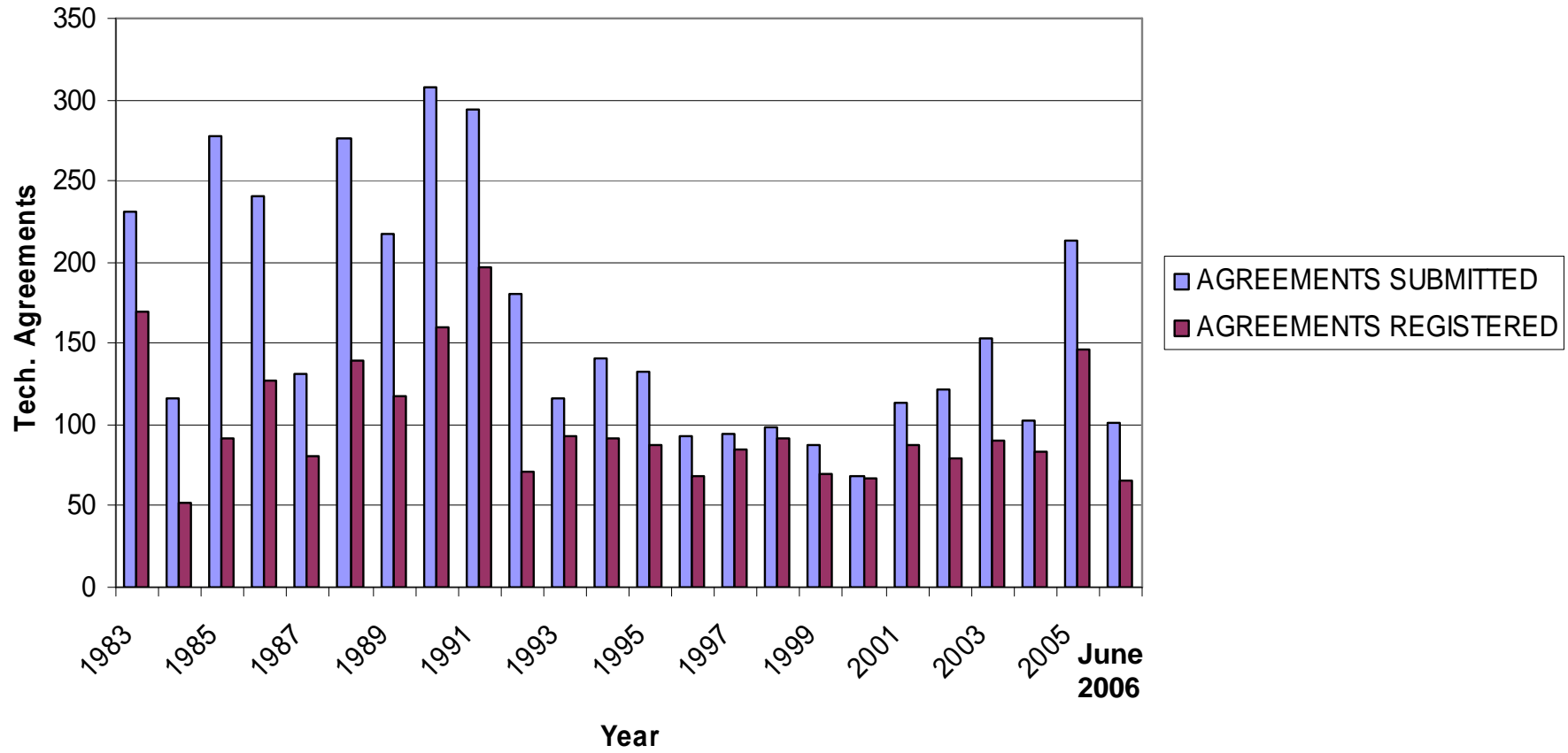
**TECHNOLOGY AGREEMENTS SUBMITTED/REGISTERED
(1983 – JUNE, 2006)**

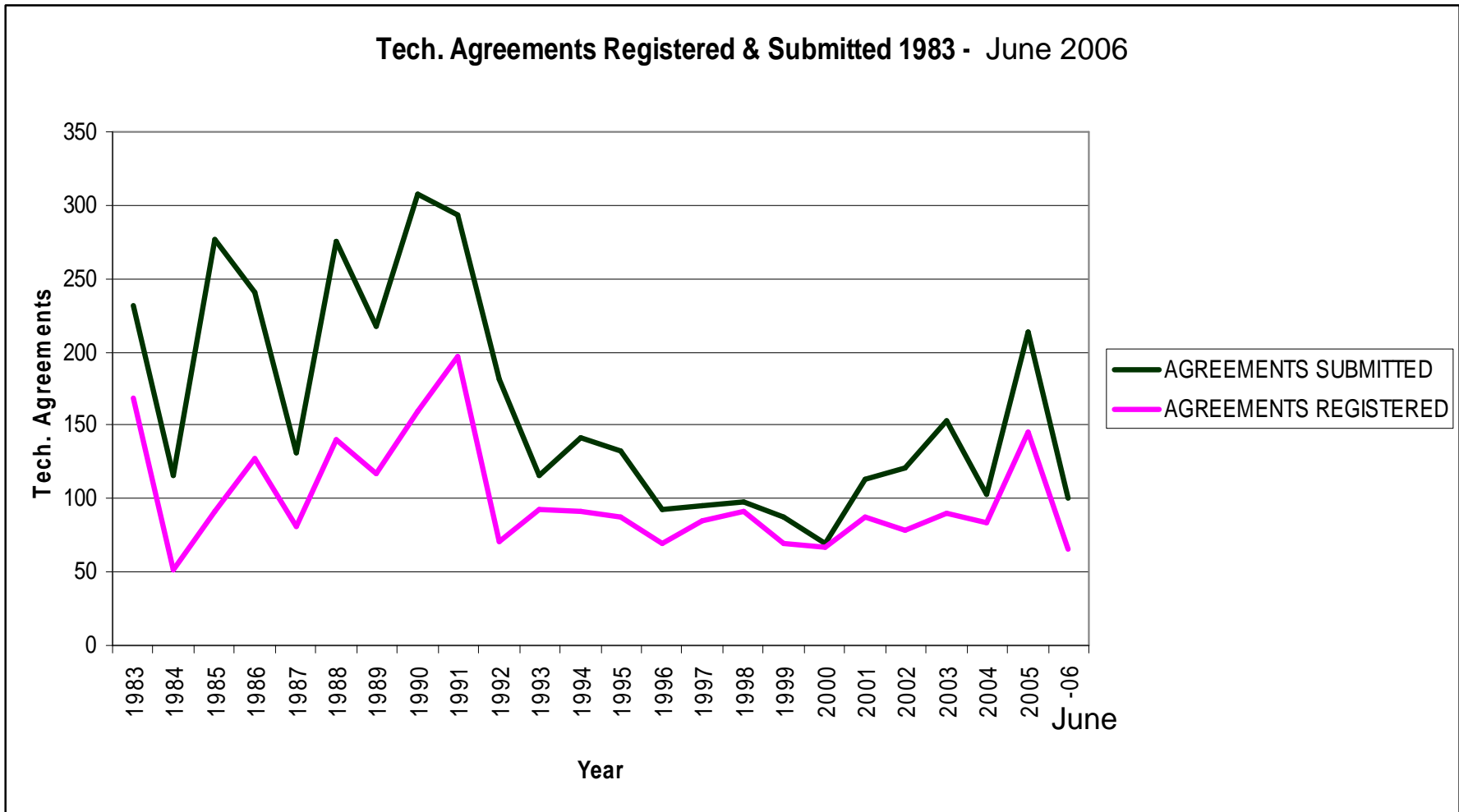
YEAR	AGREEMENTS SUBMITTED	AGREEMENTS REGISTERED
1983	231	169
1984	116	52
1985	277	91
1986	240	127
1987	131	81
1988	276	140
1989	218	117
1990	308	160
1991	294	197
1992	181	71
1993	116	93
1994	141	92
1995	132	88

**TECHNOLOGY AGREEMENTS SUBMITTED/REGISTERED
(1983 – JUNE, 2006) Contd**

YEAR	AGREEMENTS SUBMITTED	AGREEMENTS REGISTERED
1996	93	69
1997	95	85
1998	98	92
1999	88	70
2000	69	67
2001	113	87
2002	121	79
2003	153	90
2004	103	83
2005	213	146
June 2006	111	81
TOTAL	3,918	2,427

Tech. Agreements Submitted & Registered 1983 - June 2006



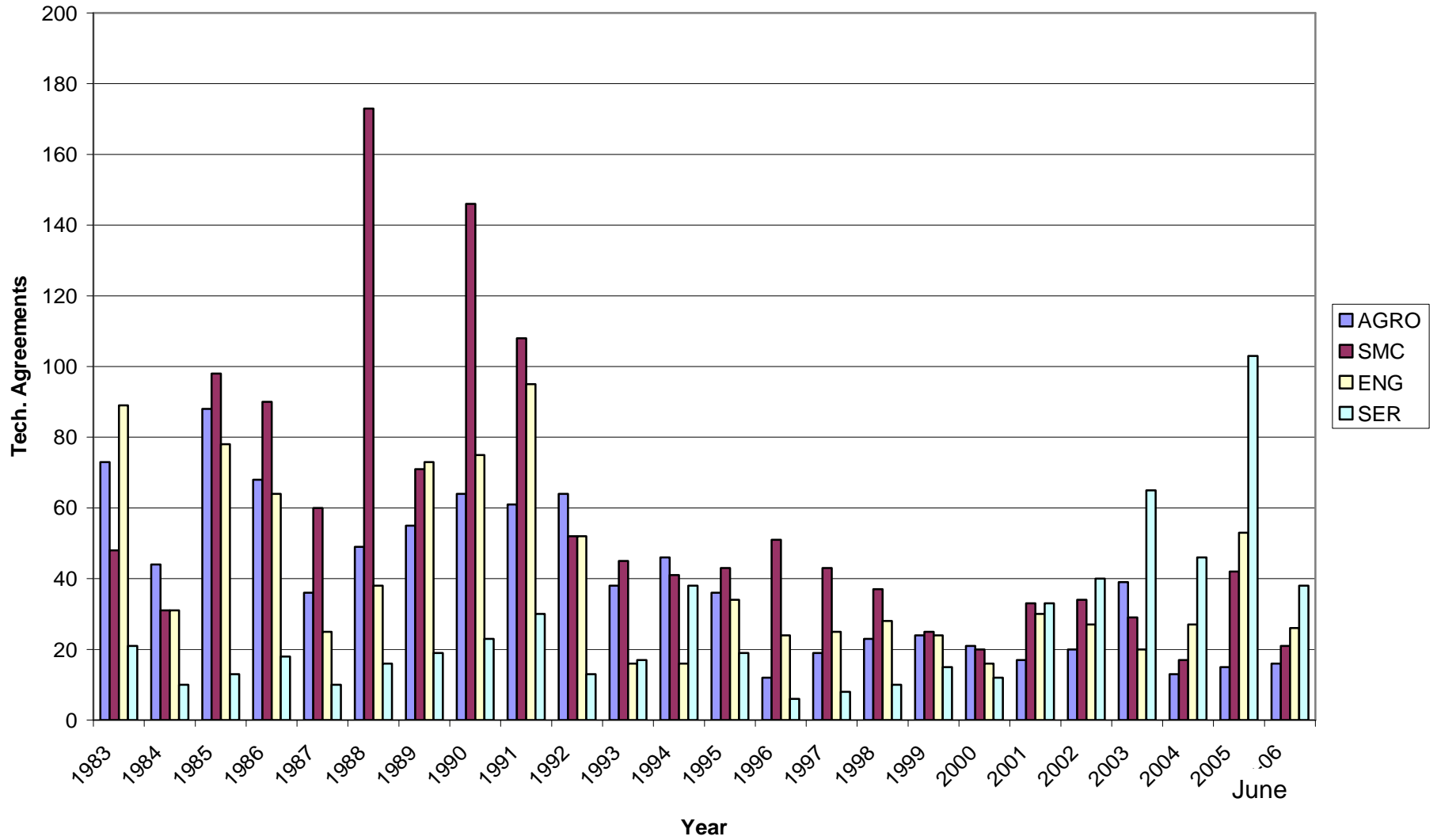


TECHNOLOGY COLLABORATIONS BY SOURCE (1983 – June 2006)

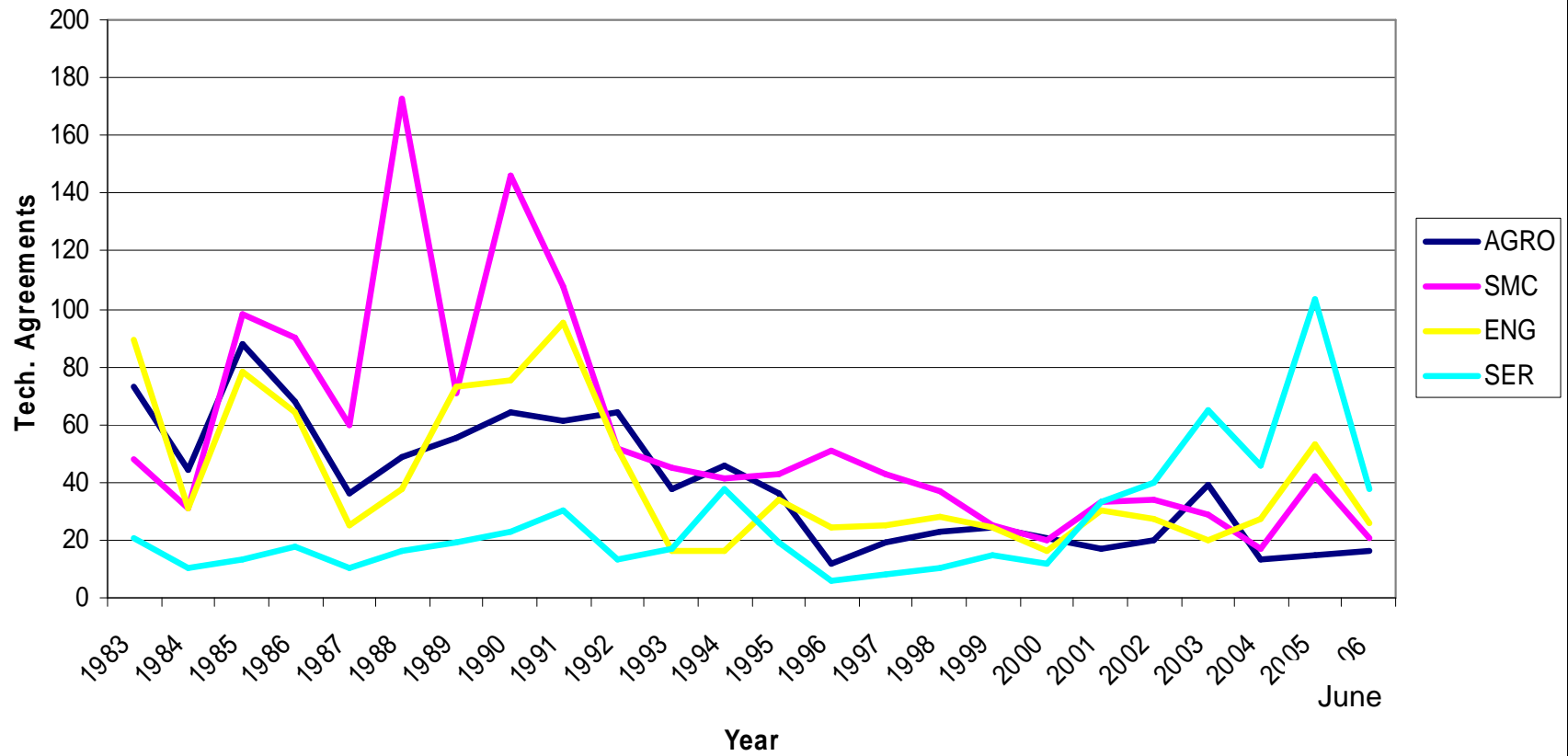
No. OF TECHNOLOGY AGREEMENT SUBMITTED PER INDUSTRIAL SECTOR (1983 – June 2006)

YEAR	AGRO	SMC	ENG	SER	TOTAL
1983	73	48	89	21	231
1984	44	31	31	10	116
1985	88	98	78	13	277
1986	68	90	64	18	240
1987	36	60	25	10	131
1988	49	173	38	16	276
1989	55	71	73	19	218
1990	64	146	75	23	308
1991	61	108	95	30	294
1992	64	52	52	13	181
1993	38	45	16	17	116
1994	46	41	16	38	141
1995	36	43	34	19	132
1996	12	51	24	6	93
1997	19	43	25	8	95
1998	23	37	28	10	98
1999	24	25	24	15	88
2000	21	20	16	12	69
2001	17	33	30	33	113
2002	20	34	27	40	121
2003	39	29	20	65	153
2004	13	17	27	46	103
2005	15	42	53	103	213
June 2006	16	22	26	47	110
TOTAL	941	1359	986	632	3,918

Tech. Agreements Submitted Per Industrial Sector 1983 - June 2006



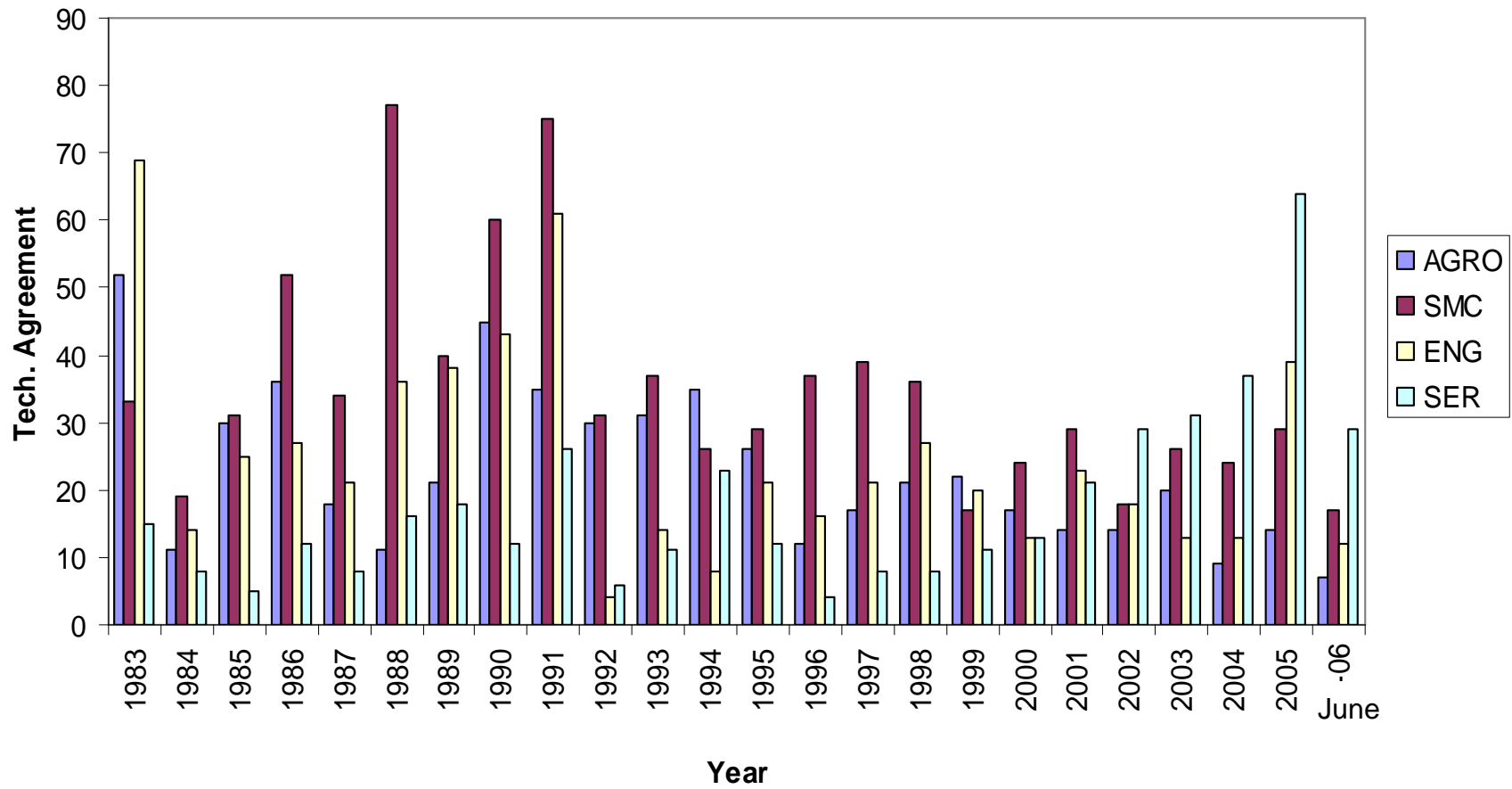
Tech. Agreements Submitted Per Industrials Sector 1983 · June 2006



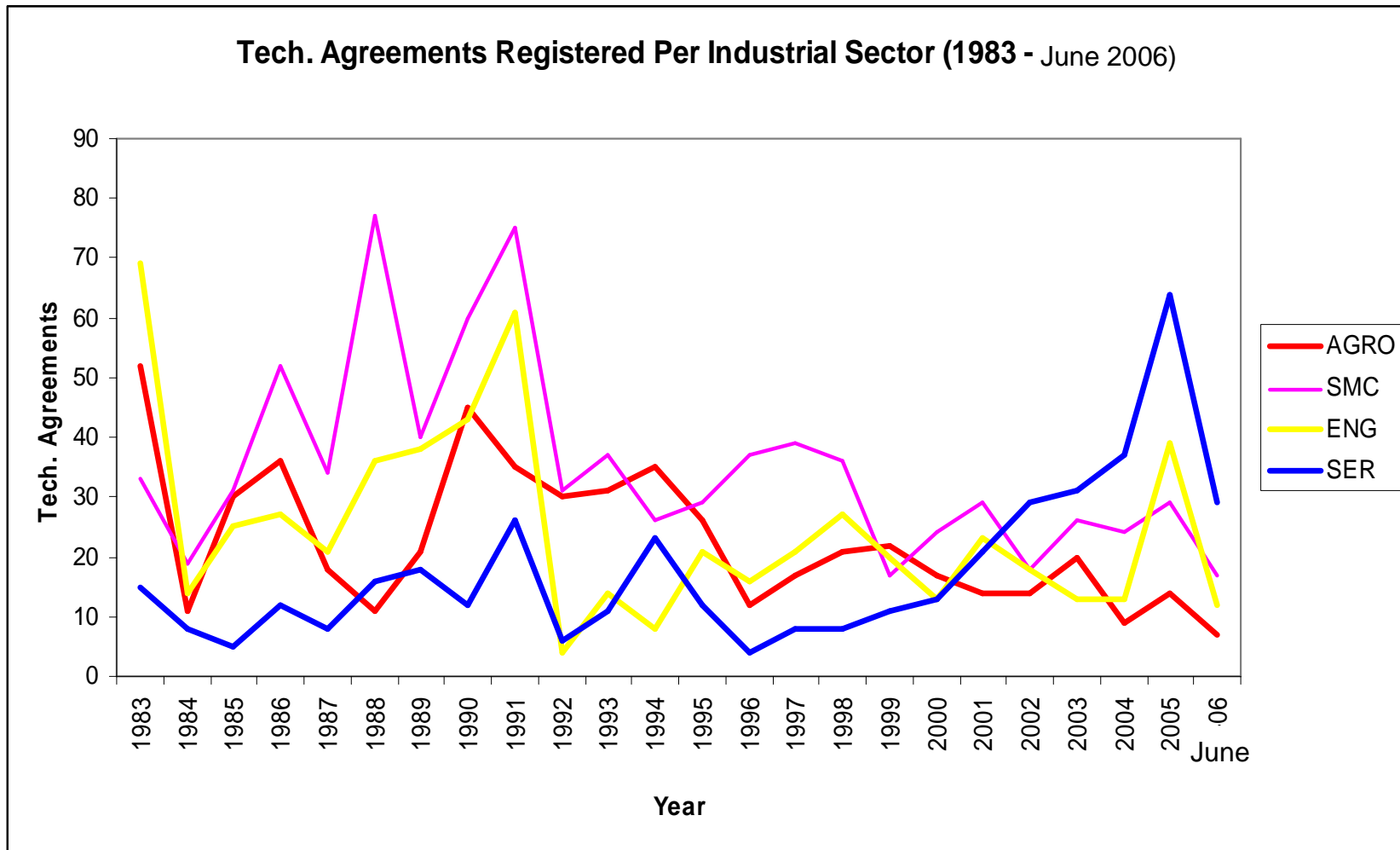
No. OF TECH. AGREEMENTS REGISTERED PER INDUSTRIAL SECTOR (1983 – June 2006)

YEAR	AGRO	SMC	ENG	SER	TOTAL
1983	52	33	69	15	169
1984	11	19	14	8	52
1985	30	31	25	5	91
1986	36	52	27	12	127
1987	18	34	21	8	81
1988	11	77	36	16	140
1989	21	40	38	18	117
1990	45	60	43	12	160
1991	35	75	61	26	197
1992	30	31	4	6	71
1993	31	37	14	11	93
1994	35	26	8	23	92
1995	26	29	21	12	88
1996	12	37	16	4	69
1997	17	39	21	8	85
1998	21	36	27	8	92
1999	22	17	20	11	70
2000	17	24	13	13	67
2001	14	29	23	21	87
2002	14	18	18	29	79
2003	20	26	13	31	90
2004	9	24	13	37	83
2005	14	29	39	64	146
June 2006	7	17	12	29	81
TOTAL	548	840	596	427	2,427

Tech. Agreement Registered Per Industrial sector (1983 - June 2006)



Tech. Agreements Registered Per Industrial Sector (1983 - June 2006)



TOTAL No. OF AGREEMENTS SUBMITTED/REGISTERED FROM (1983 - June 2006)

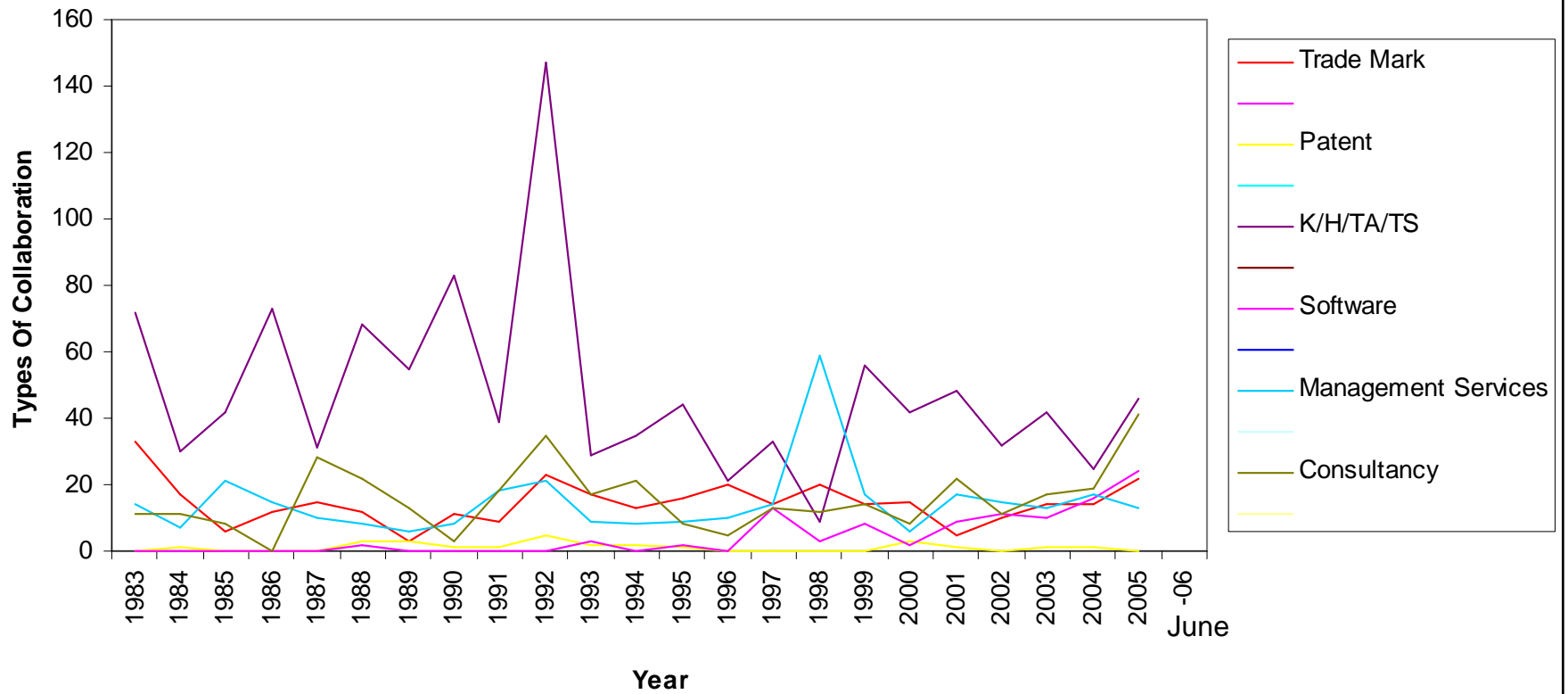
TYPES OF COLLABORATION FOR TECHNOLOGY ACQUISITION (1983 – June 2006)

Year	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Trade Mark	33	17	6	12	15	12	3	11	9	23	17	13	16	20
Patent	0	1	0	0	0	3	3	1	1	5	2	2	1	0
K/H/TA/TS	72	30	42	73	31	68	55	83	39	147	29	35	44	21
Software	0	0	0	0	0	2	0	0	0	0	3	0	2	0
Management Services	14	7	21	15	10	8	6	8	18	21	9	8	9	10
Consultancy	11	11	8	0	28	22	13	3	18	35	17	21	8	5
TOTAL	130	66	77	100	8	115	80	106	85	231	77	79	80	56

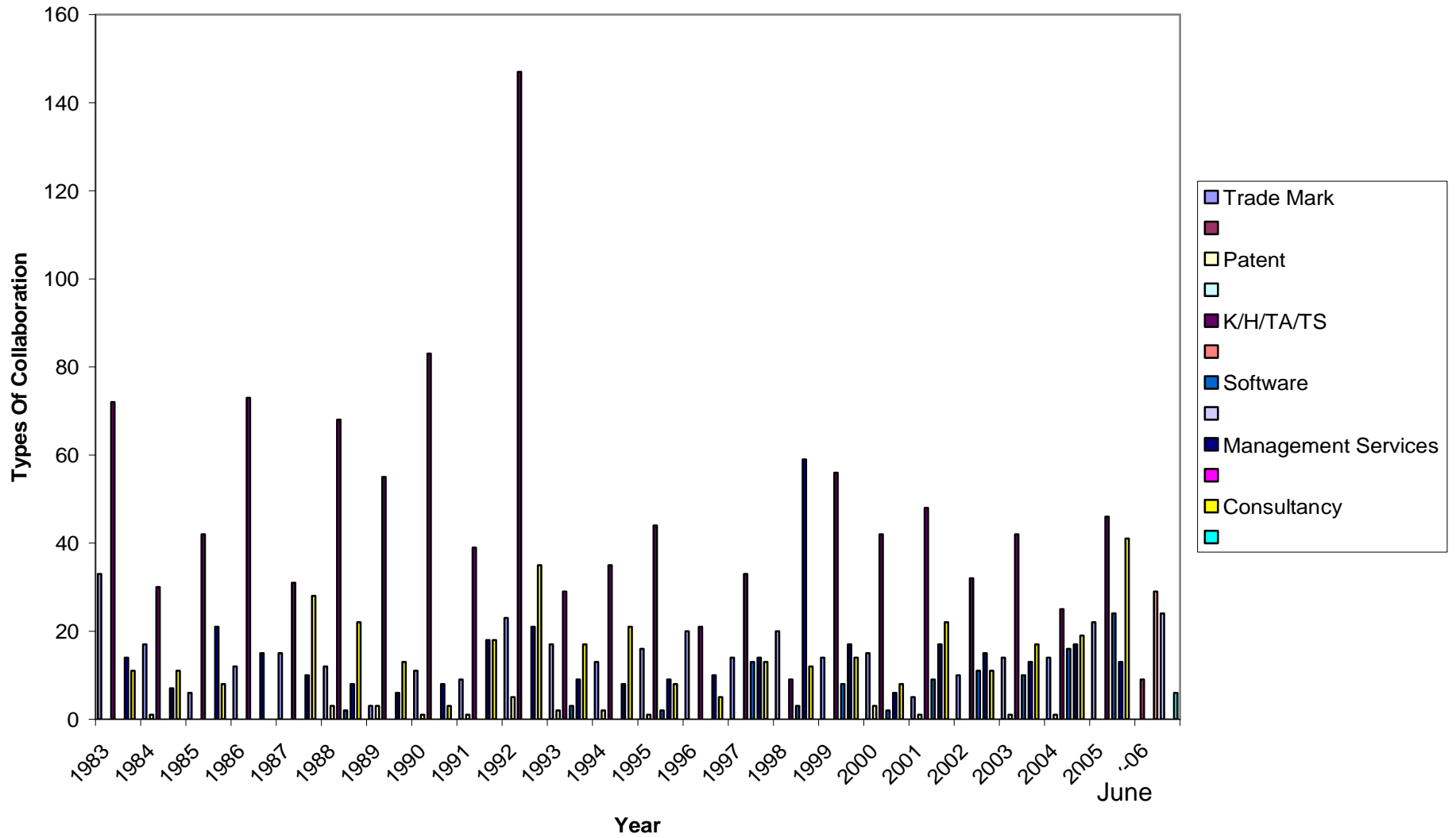
TYPES OF COLLABORATION FOR TECHNOLOGY ACQUISITION (1983 – June 2006) Contd

Year	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	TOTAL
Trade Mark	14	20	14	15	5	10	14	14	22	10	345
Patent	0	0	0	3	1	0	1	1	0	0	25
K/H/TA/TS	33	9	56	42	48	32	42	25	46	36	1,138
Software	13	3	8	2	9	11	10	16	24	24	129
Management Services	14	59	17	6	17	15	13	17	13	0	335
Consultancy	13	12	14	8	22	11	17	19	41	8	365
TOTAL	87	103	109	76	102	79	97	94	146	78	2,337

Types Of Collaboration Tech. Agreements (1983 - June 2006)



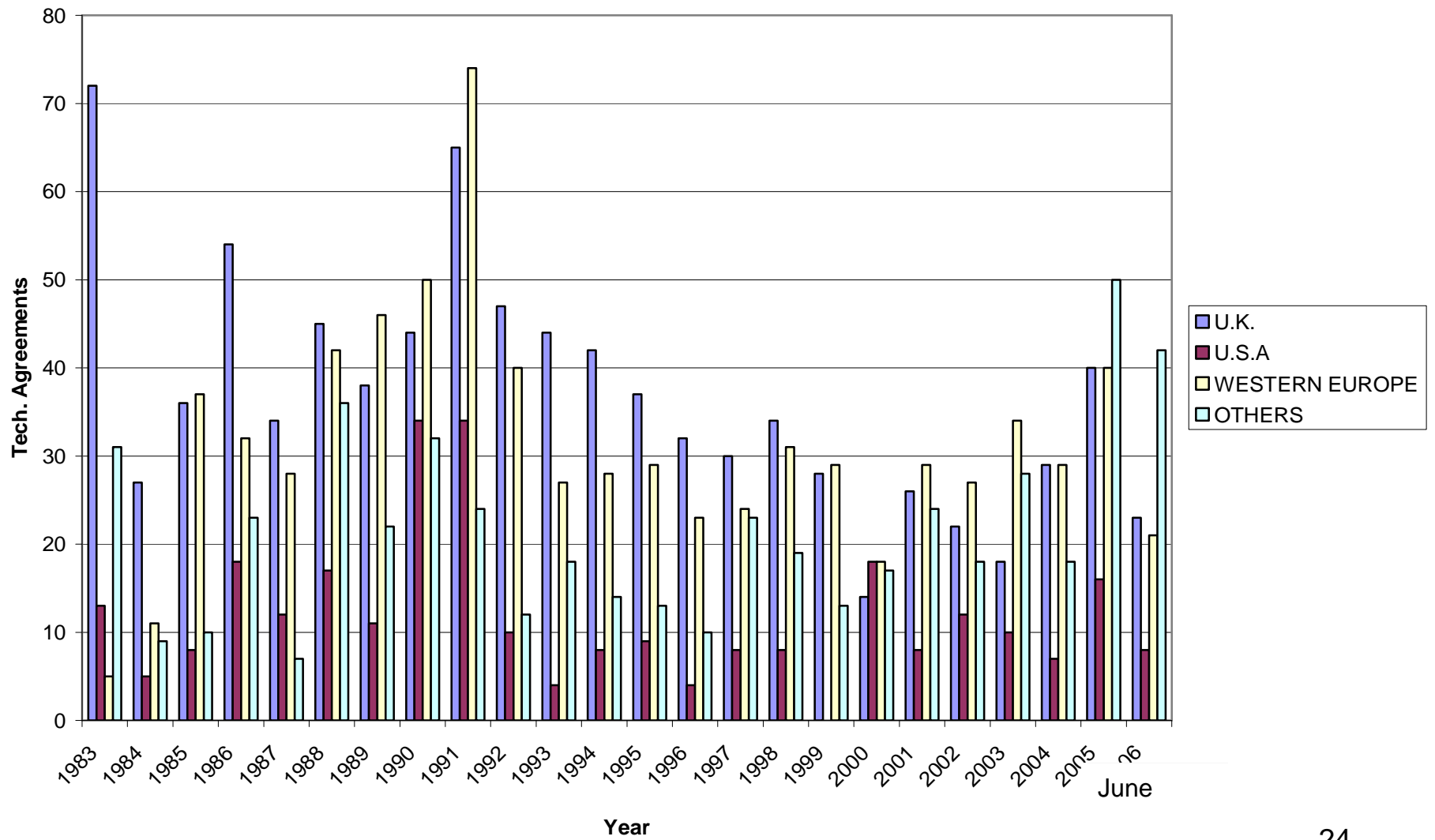
Types Of Collaboration For Tech. Agreement (1983 - June 2006)



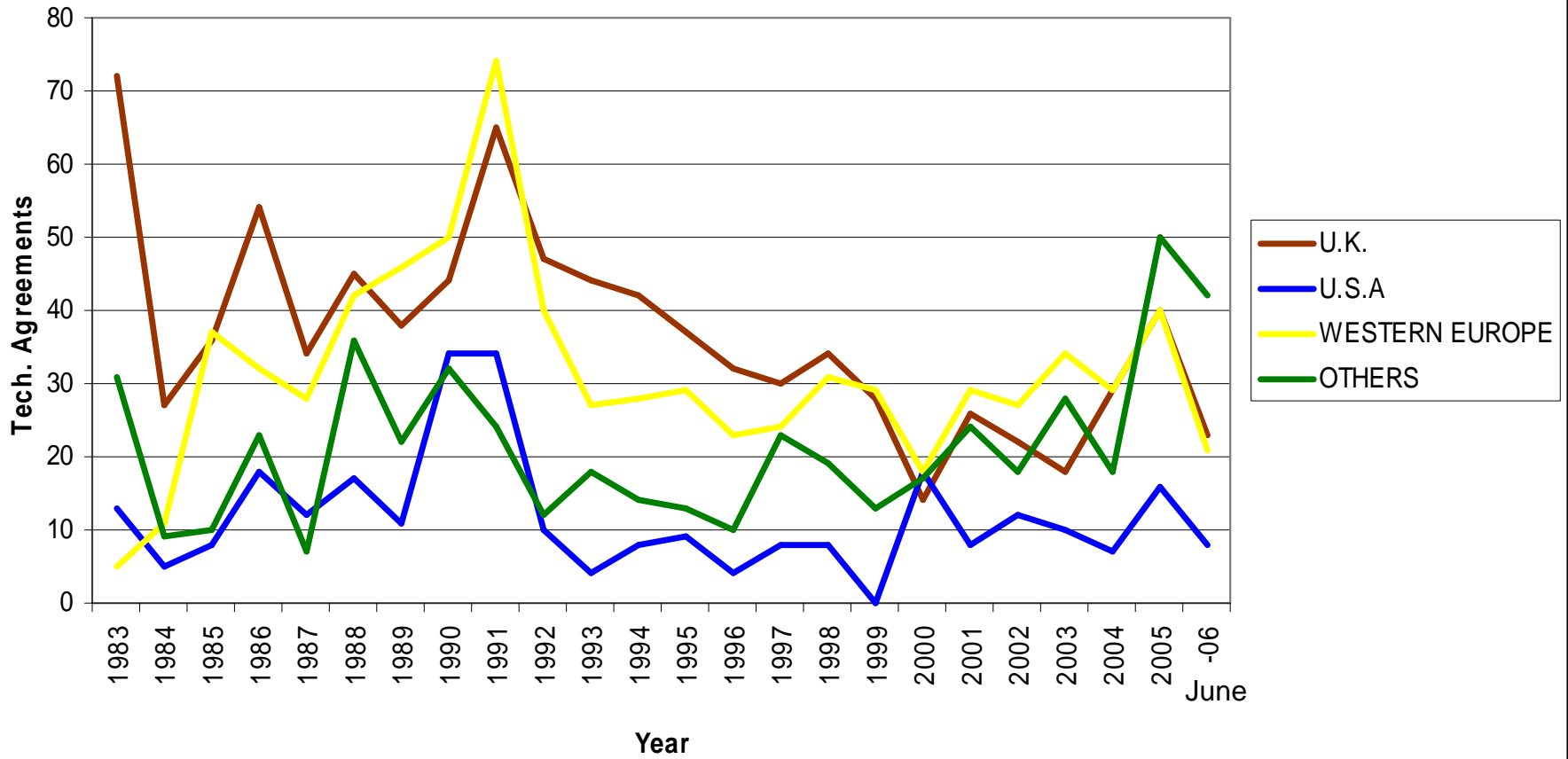
YEAR	U.K.	U.S.A	WESTERN EUROPE	OTHERS	TOTAL
1983	72	13	5	31	121
1984	27	5	11	9	52
1985	36	8	37	10	91
1986	54	18	32	23	127
1987	34	12	28	7	81
1988	45	17	42	36	140
1989	38	11	46	22	117
1990	44	34	50	32	160
1991	65	34	74	24	197
1992	47	10	40	12	109
1993	44	4	27	18	93
1994	42	8	28	14	92
1995	37	9	29	13	88
1996	32	4	23	10	69
1997	30	8	24	23	85
1998	34	8	31	19	92
1999	28	0	29	13	70
2000	14	18	18	17	67
2001	26	8	29	24	87
2002	22	12	27	18	79
2003	18	10	34	28	90
2004	29	7	29	18	83
2005	40	16	40	50	146
June 2006	24	9	23	48	81
TOTAL	882	283	756	519	2427

Technology Collaboration by source (1983 – June 2006)

Tech. Collaboration By Source 1983 - June 2006



Tech. Collaboration By Sources (1983 - June 2006)



FINANCIAL SAVINGS

FINANCIAL SAVINGS ON THE TECHNOLOGY TRANSFER AGREEMENTS REGISTERED BY NOTAP SINCE INCEPTION (1983 – JUNE 2006)

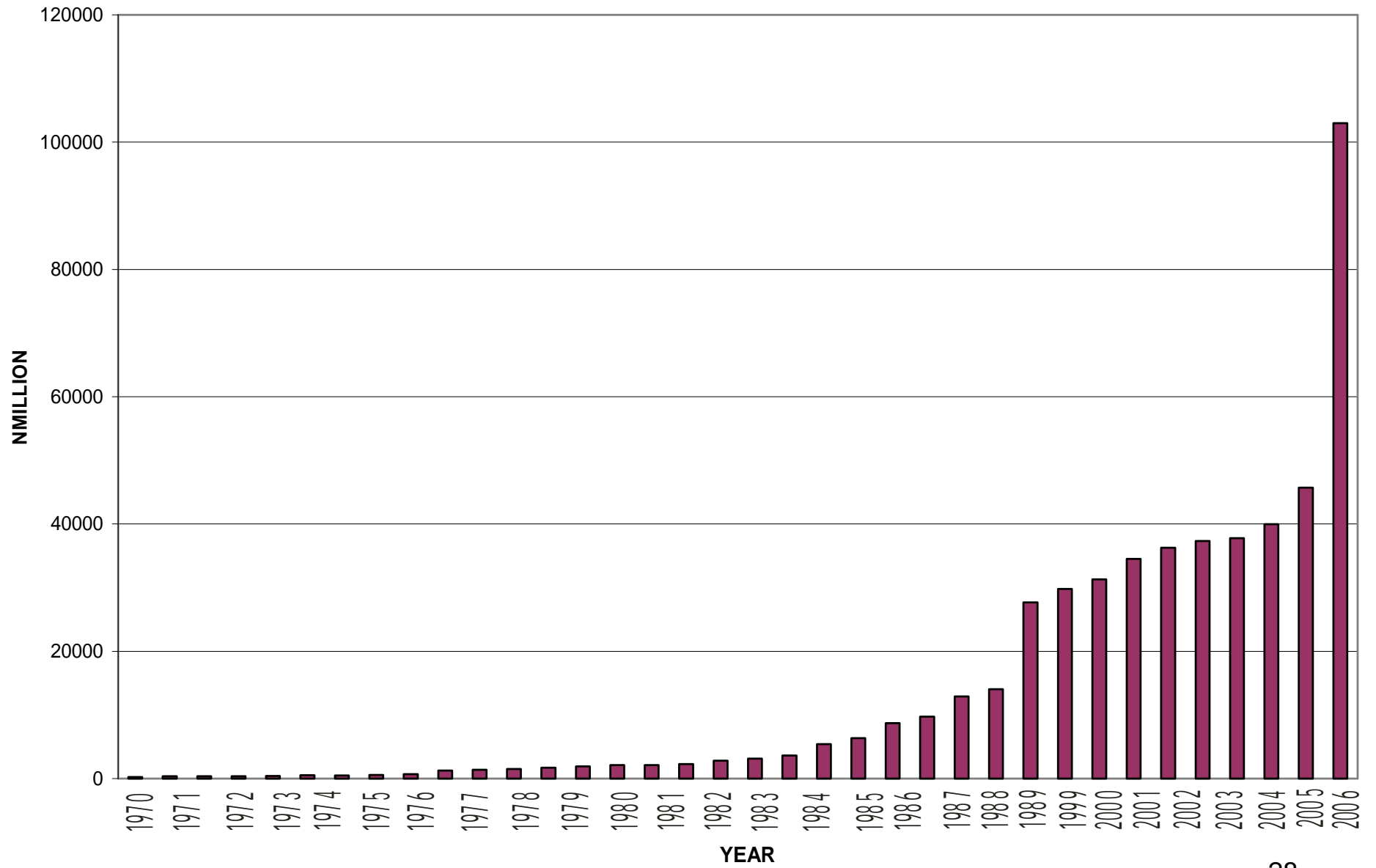
YEAR	SAVINGS (NAIRA)
1983	41.2m
1984	76.36m
1985	44.4m
1986	30.2m
1987	46.13m
1988	34.89m
1989	111.7m
1990	166.96m
1991	218.1m
1992	125.49m
1993	555.8m
1994	166.96m
1995	281.44m
1996	670.98m
1997	55.5m
1998	2.320Bn
1999	5.421Bn
2000	7.148Bn
2001	8.150Bn
2002	10.223Bn
2003	19.133Bn
2004	23.778Bn
2005	23.778Bn
June 2006	10.820Bn
TOTAL	79.483Bn

Foreign Investment (Cumulative) in Manufacturing and Processing Sector (1970 – 2004)

Year	Total (Million Naira)
1970	224.8
1971	378.8
1972	378.8
1972	356.6
1974	409.0
1975	520.4
1976	506.2
1977	550.7
1978	703.4
1979	1,263.4
1980	1,402.5
1980	1,503.9
1981	1,705.7
1982	1,922.5
1983	2,128.1
1984	2,109.3
1985	2,278.1
1986	2,810.2
1987	3,122.3
1988	3,637.0
1989	5,406.4
1990	6,339.0
1991	8,692.4
1992	9,746.3
1993	12,885.1
1994	14,059.9
1995	27,668.8
1996	29,814.3
1997	31,297.2
1998	34,503.9
1999	36,282.1
2000	37,333.6
2001	37,779.6
2002	39,953.6
2003	45,719.4
2004	102,995.8

Source: CBN Statistical Bulletin, 2004

Foreign Investment (Cumulative) in Manufacturing and Processing Sector (1970 – 2004)



COST OF TECHNOLOGY AND SAVINGS

The cost of technology and financial savings from 1990 to June 2006. from the table, the cost of foreign technology to Nigeria is about N376billion. The Office through its evaluation process has saved over N70billion during the period.

Cost of Technology and Financial Savings for the years 1990 – August 2006

Year	Cost of Technology		Financial Savings	
	N	\$	N	\$
1990	7,909,968,459	988,746,057.4	3,079,237,923	384,904,740.4
1991	1,570,300,297	152,456,339.5	66,017,009.48	6,409,418.4
1992	17,032,368,296	915,718,725.3	1,175,083,039	63,176,507.47
1993	11,273,365,743	569,361,906.1	2,627,555,693	132,704,833.0
1994	8,010,995,235	364,136,147.0	241,761,151	10,989,143.23
1995	12,356,765,807	561,671,172.7	70,912,616	3,223,300.73
1996	9,127,303,652	414,877,438.7	605,166,231.12	27,507,555.96
1997	4,052,860,131	184,220,915.0	242,419,300	11,019,059.09
1998	5,725,044,892.75	69,817,620.63	0	0.0
1999	10,194,520,523	106,192,922.1	1,481,521,816	15,432,518.92
2000	15,287,511,776	152,875,117.7	4,096,987,548	40,969,875.48
2001	26,747,425,560	238,816,299.6	2,339,720,265	20,890,359.51
2002	21,147,389,762	185,992,873.9	5,314,128,919	46,738,161.12
2003	17,801,837,323	140,171,947.4	3,746,419,005	29,499,362.24
2004	27,352,407,526.60	202,610,426.1	12,390,510,907	91,781,562.22
2005	127,820,579,643	946,819,108.1	21,442,120,686	158,830,523.6
2006	52,458,158,276	388,578,950.1	12,300,676,039	91,116,118.74
TOTAL	375,868,802,902	6,583,063,367.0	71,220,238,148	1,135,193,040

ANALYSIS OF TECHNOLOGY TRANSFER TRENDS IN THE BANKING AND IT SECTORS

The analysis of technology transfer fees approved for banks and information technology companies from 2000 to September 2006 are presented below:

- **Approved technology transfer fees for information technology (IT) companies**

A cumulative technology transfer fee of N 4,4921.02million was approved. The highest approved fee was in 2004, with a value of N15,963.22million. This was followed by 2005 with a value of N13,680.81million. 2000 had the lowest fee of N217.41million.

ANALYSIS OF TECHNOLOGY TRANSFER TRENDS IN THE BANKING AND IT SECTORS (Contd)

- **Approved technology transfer fees for banks**

In the banking sector the total amount is N5,044.21million. The highest fee was approved in 2005 with N1142.52million. 2006 already has a figure of N1,031.42 million, with the prospect of having the highest by the end of the year. Again, as in the IT sector, 2000 had the least approved fee, with N271.02million.

It is pertinent to note that twelve out of the fifteen banks that registered technology transfer agreements with NOTAP met the CBN consolidation requirements.

- **SOURCES OF TECHNOLOGY FOR BANKING SECTOR**

In the banking sector, India was the major source of technology with a value of N2666.43 million out of the total of N4455.70million. Most of the technology transfer fees were for software licenses. United Kingdom came second with N465.16million. These figures are shown in the Table.

The figures in the Table show some trends including:

- i. The declining importance of USA as a source country;
- ii. The increasing reliance on India for technology;
- iii. The growing importance of south Africa
- iv. The major countries included under 'others' are UAE and Mauritius.

§ SOURCE OF TECHNOLOGY FOR INFORMATION TECHNOLOGY COMPANIES

Table 4 shows the sources of technology for Information Technology companies. The major source is 'other' countries including Mauritius, UAE, Egypt and South-East Asia. European Union (EU) countries, excluding UK came second. UK and USA came third and fourth respectively. Interestingly, India which is the major source for banks is the least technology source country for IT companies. This might be explained by the fact that most of the technologies needed by the banking sector are software, in which India has become the global leader. This is in contrast to IT companies where technical assistance and management services are the main components of foreign technologies.

APPROVED TECHNOLOGY TRANSFER FEES (JANUARY 2000 – SEPTEMBER 2006) FOR BANKS MAJOR SOURCES FOR BANKING SECTOR

		Amount Approved (Nm)							Total in N	%
S/N	Source Country/ Religion	2000	2001	2002	2003	2004	2005	2006		
1.	USA	49.68	49.68	-	40.12	8.38	23.44	1.60	172.90	3.88
2.	UK	66.14	66.14	66.14	32.93	10.31	111.32	112.18	465.16	10.44
3.	Other EU	16.15	9.83	33.33	23.95	19.49	41.84	271.49	416.08	9.34
4.	India	138.60	192.68	445.80	545.18	456.57	471.42	416.18	2666.43	59.84
5.	South Africa	-	-	-	11.11	140.45	-	10.23	161.79	3.63
6.	Others	-	54.00	123.39	123.39	119.47	94.75	58.34	573.34	12.87
	Total	270.57	372.33	668.66	776.68	754.67	742.77	870.02	4455.70	100.00

- **INDIA AS A TECHNOLOGY SUPPLIER**

India has emerged as a major software technology source for Nigeria, especially in the banking sector from 2000 to June 2006, a total of N2,666.43million was approved for technology transfer fees for software from India. These figure for information technology companies is N49.72million from the figures available, India has become the major source of software for the banking sector in Nigeria.

**APPROVED TECHNOLOGY TRANSFER FEES (JANUARY 2000 – SEPTEMBER 2006)
MAJOR SOURCES FOR SOFTWARE LICENSE FOR INFORMATION TECHNOLOGY COMPANIES**

		Amount Approved (Nm)							Total in N	%
S/N	Name of Country	2000	2001	2002	2003	2004	2005	2006		
1.	USA	9.80	202.95	369.17	355.17	1441.49	1327.65	-	3706.23	9.90
2.	UK	137.39	150.64	282.04	1361.69	1075.23	915.58	278.24	4200.81	11.22
3.	Other EU	-	-	-	283.17	1624.00	1693.39	1428.03	5028.59	13.43
4.	India	-	-	-	34.27	6.55	8.90	-	49.72	0.13
5.	South Africa	-	-	80.00	143.43	1046.03	10.51	58.49	1338.46	3.58
6.	Others	70.22	8.00	963.73	1096.33	1096.33	9868.13	10015.65	23118.39	61.77
	Total	217.41	361.59	1694.94	3274.06	6289.63	13824.16	11780.41	37442.20	100

RESULTS OF NOTAP'S INTERVENTION

- (1) Improvement in Quality of Technology Transfer Agreements
- (2) substantial savings in cost of Technology more equitable fees/royalties (see tables)
- (3) more effective rate of assimilation/adaptation of foreign tech, timely management succession for top technical/management personnel.
- (4) increased LVA, e.g (i) gypsum (cement) (ii) sorghum/corn (beverages industries), (iii) foundry parts (machinery components).
- (5) increased patent culture, numbers are coming in
- (6) more indigenous trademarks
- (7) linkage between research institutes and industries
- (8) use of indigenous consultants on big projects – oil 7 gas, etc
- (9) emphasis on commercialisation of technology
- (10) better support for researchers tech-based SMEs; Patent Support (PIDC) through use of patents in public domain
- (11) India has become a major source of IT.

THANK YOU