PATENTS FOR ECONOMIC ADVANTAGE: “SHOW ME THE MONEY!”

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WHY PATENT?

- The value of technology has gone up as a driver of the economy

The United States of America

The Director of the United States Patent and Trademark Office

Has received an application for a patent for a new and useful invention. The title and description of the invention are enclosed. The requirements of law have been complied with, and it has been determined that a patent on the invention shall be granted under the law.

Therefore, this

United States Patent

Grants to the person(s) having title to this patent the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States of America or importing the invention into the United States of America for the term set forth below, subject to the payment of maintenance fees as provided by law.

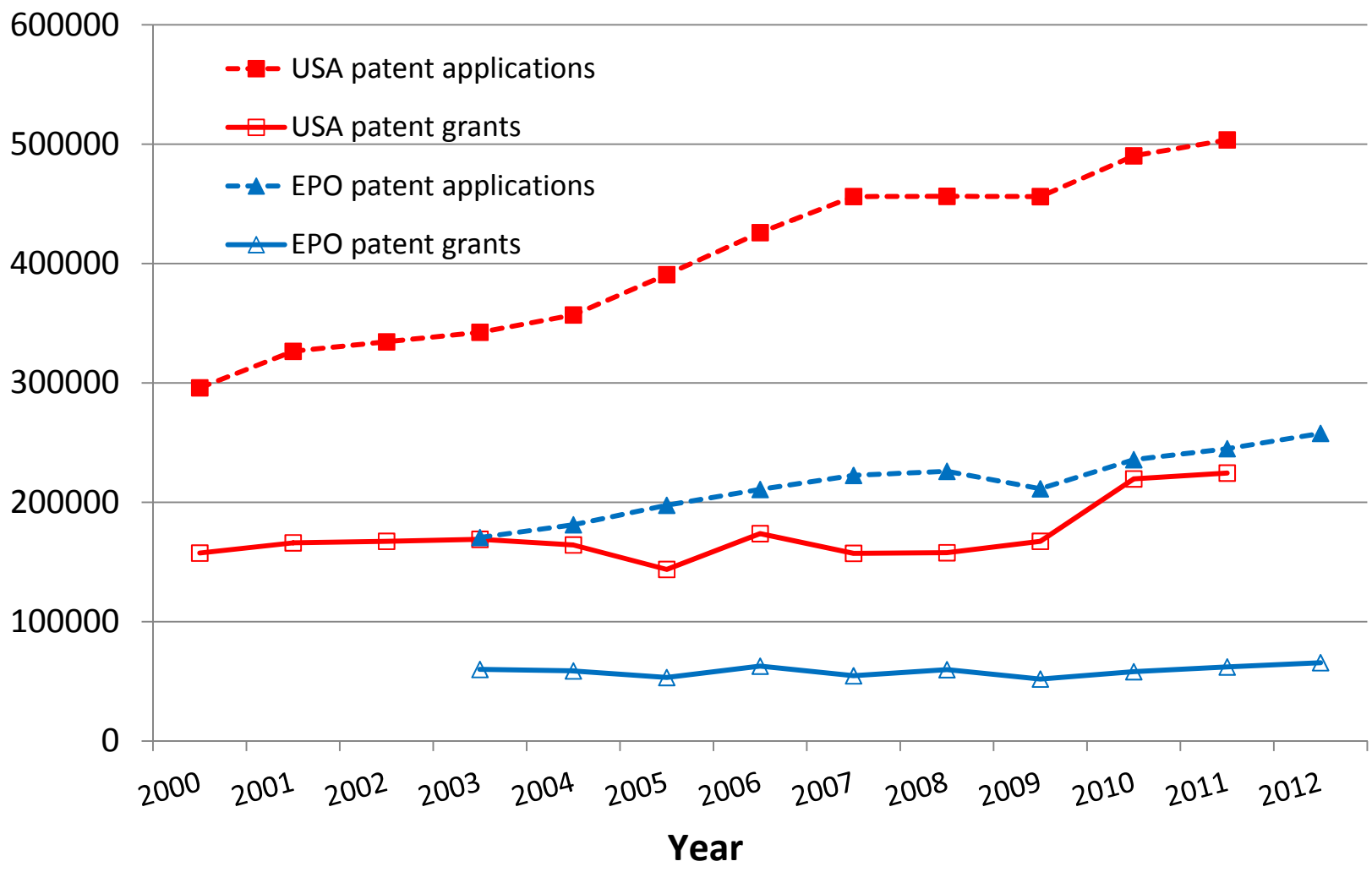
If this application was filed prior to June 8, 1995, the term of this patent is the longer of seventeen years from the date of grant of this patent or twenty years from the earliest effective U.S. filing date of the application, subject to any statutory extension.

If this application was filed on or after June 8, 1995, the term of this patent is twenty years from the U.S. filing date, subject to any statutory extension. If the application contains a specific reference to an earlier filed application or applications under 35 U.S.C. 120, 121 or 365(c), the term of the patent is twenty years from the date on which the earliest application was filed, subject to any statutory extensions.

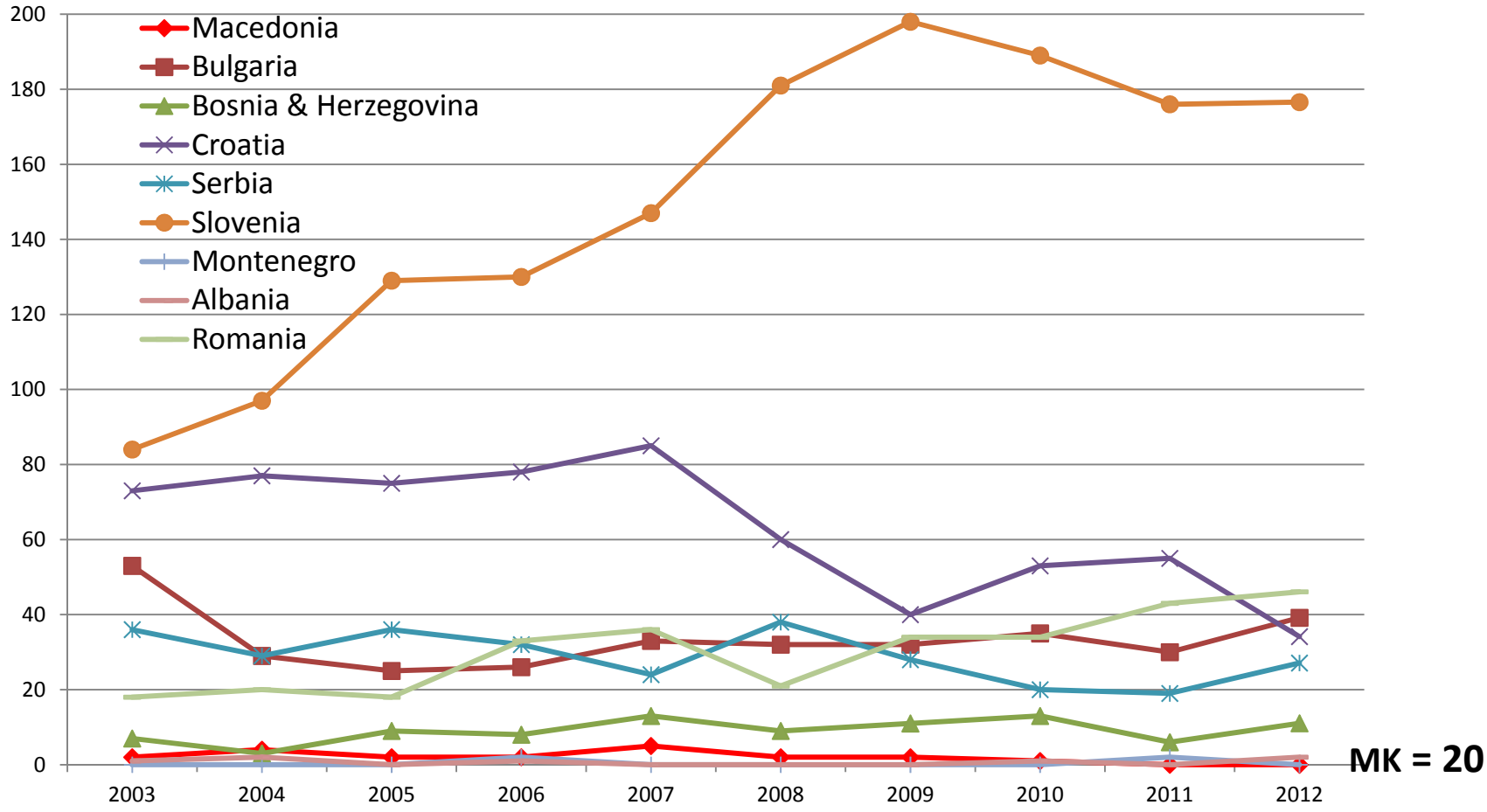
Jon W. Dudas

Director of the United States Patent and Trademark Office

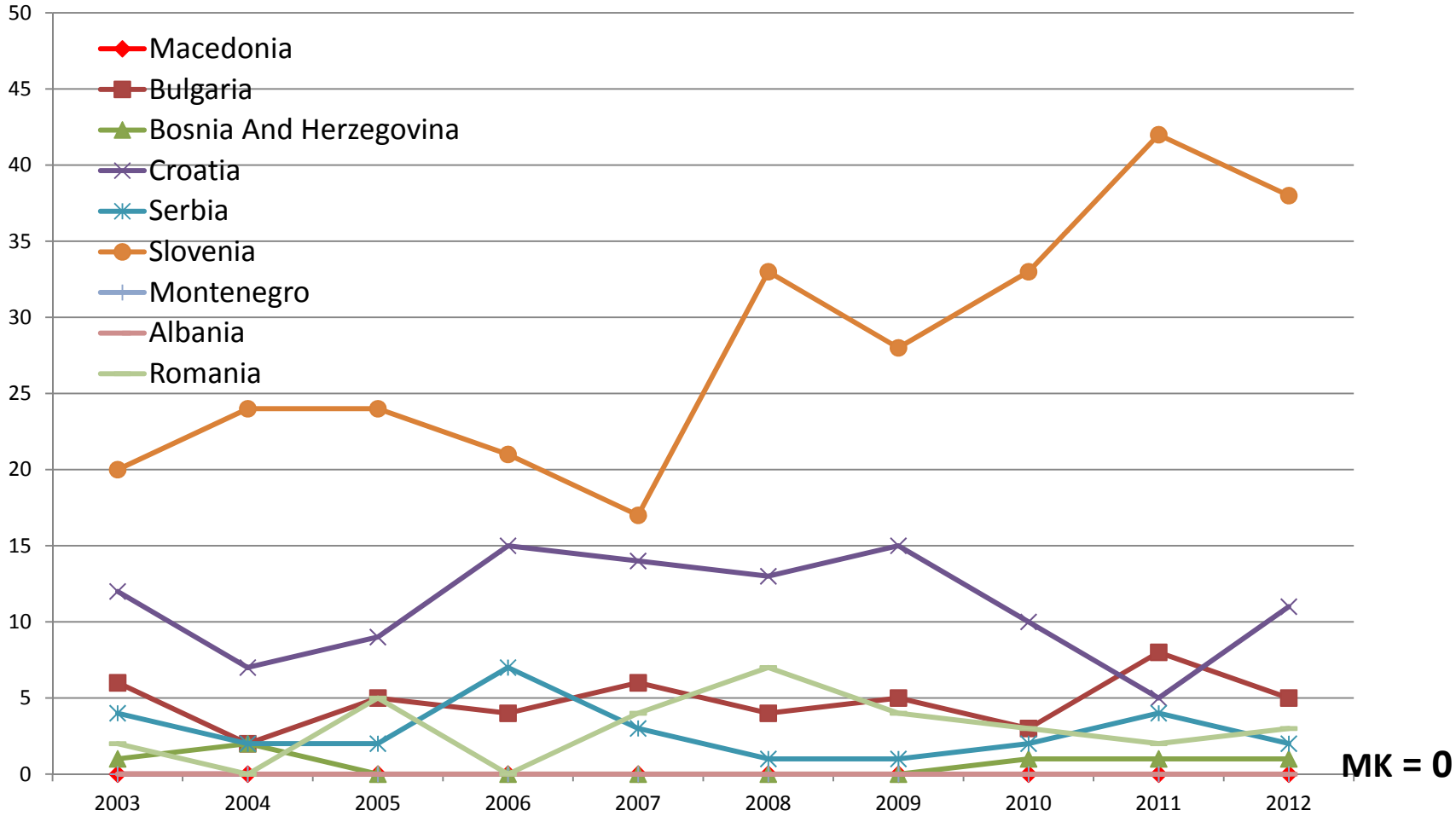
NUMBER OF USPTO AND EPO PATENT APPLICATIONS AND PATENT GRANTS



NUMBER OF EPO PATENT FILINGS 2003-2012, BY COUNTRY



NUMBER OF EPO GRANTED PATENTS 2003-2012, BY COUNTRY



NUMBER OF USA GRANTED PATENTS, BY COUNTRY

Origin	Pre 1998	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	All Years
BAHRAIN	2	0	1	1	0	0	0	0	0	0	0	0	0	1	0	5
COTE D'IVOIRE	4	0	0	0	0	0	0	1	0	0	0	0	0	0	0	5
ANGUILLA	0	1	0	0	0	0	0	0	0	1	0	0	1	0	1	4
BOSNIA AND HERZEGOVINA	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	4
GUYANA	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
KYRGYZSTAN	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0	4
LIBYA	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
MADAGASCAR	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	4
MYANMAR	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4
SEYCHELLES	0	0	0	0	0	0	0	0	0	2	0	1	0	0	1	4
BRUNEI DARUSSALAM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
DOMINICA	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	3
LIBERIA	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
MACEDONIA	0	0	0	0	0	0	1	0	0	0	0	1	0	0	1	3
MALAWI	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
MAURITANIA	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
PAPUA NEW GUINEA	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3
SURINAME	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	3
YEMEN	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3
BANGLADESH	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	2
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KOREA, NORTH	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
MARSHALL ISLANDS	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	2

(12) **United States Patent**
Ugarkovic

(10) **Patent No.: US 6,572,891 B1**
(45) **Date of Patent: Jun. 3, 2003**

(54) **SUBLINGUAL ORAL DOSAGE FORM**

(75) Inventor: **Sonja Jovan Ugarkovic**, Skopje (MK)

(73) Assignee: **Alkaloid Ad**, Skopje (MK)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/658,205**

(22) Filed: **Sep. 8, 2000**

Related U.S. Application Data

(63) Continuation-in-part of application No. 09/593,410, filed on Jun. 14, 2000, now abandoned, which is a continuation-in-part of application No. 09/489,430, filed on Jan. 21, 2000, now abandoned.

(51) **Int. Cl.**[7] **A61K 9/14**; A61K 31/44
(52) **U.S. Cl.** **424/489**; 514/282; 229/206
(58) **Field of Search** 424/489; 514/282; 229/206

(56) **References Cited**

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WO	WO 94/07761	4/1994	B65D/75/32
WO	WO 99/24023	5/1999	A61K/31/00

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Primary Examiner—Michael G. Hartley
Assistant Examiner—Robert M DeWitty
(74) *Attorney, Agent, or Firm*—Darby & Darby

(57) **ABSTRACT**

A pharmaceutical sublingual solid dosage form comprising a morphine salt together with excipients including a saccharide, a binder and a disintegrant. A method of manufacturing the dosage form is also described, together with packaging suitable for long term storage of the dosage form.

17 Claims, No Drawings

(12) **United States Patent**
Mitrev

(10) **Patent No.: US 7,462,156 B2**
(45) **Date of Patent: Dec. 9, 2008**

(54) **REPLACEMENT AORTIC VALVE LEAFLETS AND RELATED TECHNOLOGY**

(76) Inventor: **Zan Mitrev**, Special Hospital For Cardiosurgery, Filip, 11 Ilindeska b.b., Skopje (MK)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 627 days.

(21) Appl. No.: **11/192,098**

(22) Filed: **Jul. 29, 2005**

(65) **Prior Publication Data**

US 2006/0229716 A1 Oct. 12, 2006

Related U.S. Application Data

(60) Provisional application No. 60/670,019, filed on Apr. 11, 2005.

(51) **Int. Cl.**
A61B 5/103 (2006.01)
A61B 1/00 (2006.01)
A61F 2/24 (2006.01)

(52) **U.S. Cl.** **600/587**; 623/2.11; 33/512

(58) **Field of Classification Search** 600/587; 623/2.11, 912–913; 33/511–512
See application file for complete search history.

(56) **References Cited**

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Primary Examiner—Suzette J Gherbi
(74) *Attorney, Agent, or Firm*—Christopher Wood; Wood & Eisenberg, PLLC

(57) **ABSTRACT**

Replacement aortic heart leaflets and method of making the same. The replacement aortic heart leaflets of the present invention include first and second segments. The second segment is integral with, and extends from, the first segment. A virtual line L having a predetermined length corresponding to the distance between two known aortic commissures separates the first and second segments. In another aspect of the invention, the first segment has a virtual line AM of predetermined length. In another aspect of the present invention, a leaflet-measuring device is described. In another aspect of the invention, a standard set of replacement aortic leaflets is described. Methods are provided to provide replacement aortic leaflets based on traced outlines obtained from a surgically opened aortic ring.

9 Claims, 39 Drawing Sheets

(12) **United States Patent**
Gligoroski et al.

(10) **Patent No.: US 8,041,031 B2**
(45) **Date of Patent: Oct. 18, 2011**

(54) **CRYPTOGRAPHIC PRIMITIVES, ERROR CODING, AND PSEUDO-RANDOM NUMBER IMPROVEMENT METHODS USING QUASIGROUPS**

(75) Inventors: **Danilo Gligoroski**, Skopie (MK); **Smile Markovski**, Skopie (MK); **Ljupco Kocarev**, San Diego, CA (US)

(73) Assignee: **The Regents of the University of California**, Oakland, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1030 days.

(21) Appl. No.: **11/665,085**

(22) PCT Filed: **Oct. 13, 2005**

(86) PCT No.: **PCT/US2005/038245**

§ 371 (c)(1), (2), (4) Date: **Oct. 4, 2007**

(87) PCT Pub. No.: **WO2006/045114**

PCT Pub. Date: **Apr. 27, 2006**

(65) **Prior Publication Data**

US 2009/0041236 A1 Feb. 12, 2009

Related U.S. Application Data

(60) Provisional application No. 60/618,173, filed on Oct. 13, 2004.

(51) **Int. Cl.**
H04L 9/18 (2006.01)

(52) **U.S. Cl.** **380/28**; 380/37; 380/42

(58) **Field of Classification Search** 380/28, 380/37, 42

See application file for complete search history.

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Primary Examiner — Eleni A Shiferaw
Assistant Examiner — Tamara Teslovich
(74) *Attorney, Agent, or Firm* — Greer, Burns & Crain Ltd.

(57) **ABSTRACT**

Stream ciphers, including synchronous stream ciphers, self-synchronizing stream ciphers, and totally asynchronous stream ciphers, employ a working key and a quasigroup transformation, where the quasigroup used is based on an initial secret key. Error-correction and pseudo-random number generation improver methods also employ quasigroup transformations.

22 Claims, 1 Drawing Sheet

US PATENT RECIPIENTS, TOP 10 IN PRIVATE SECTOR, 2011

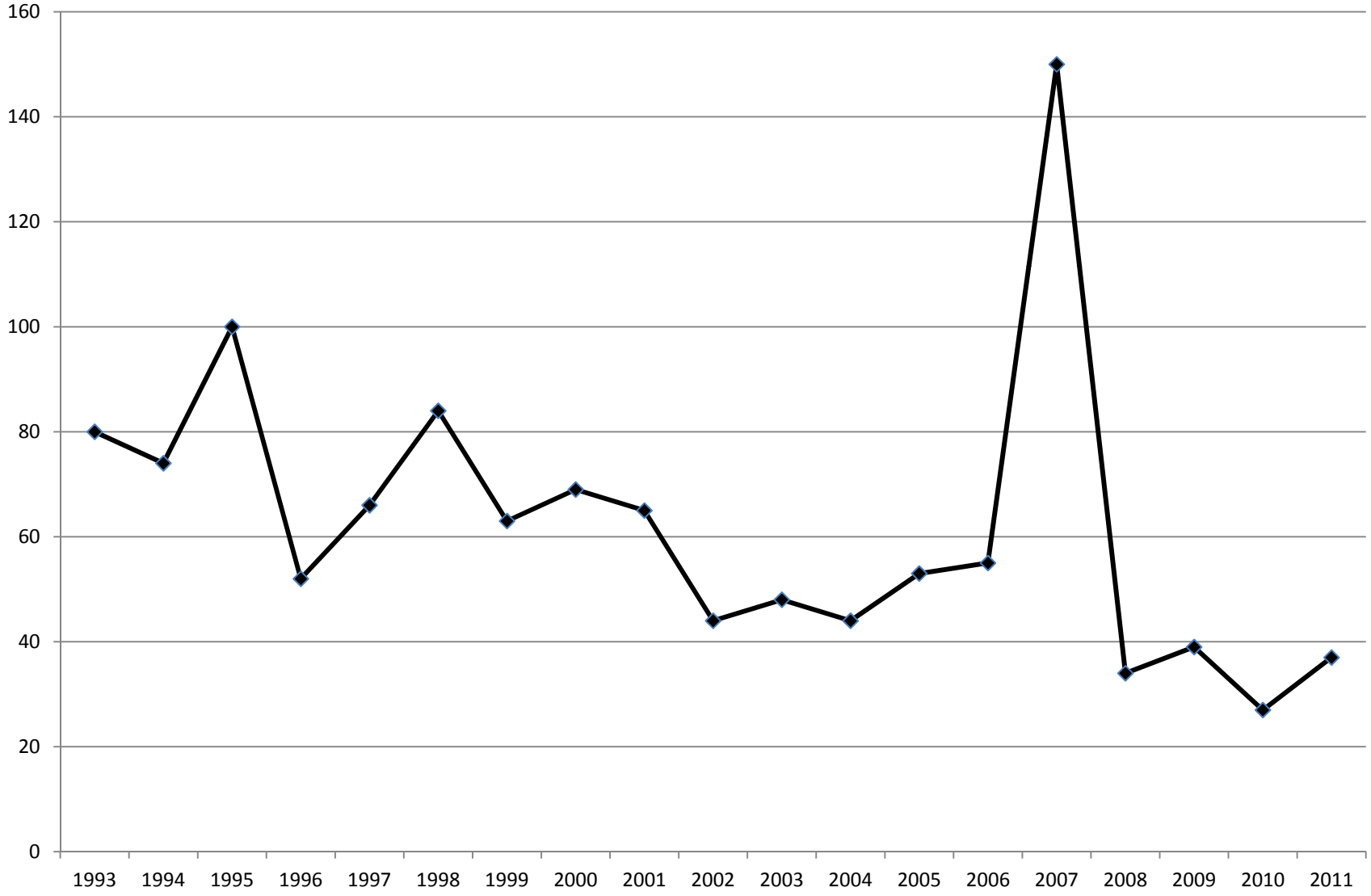
COMPANY	Number of granted patents
1. International Business Machines Corporation (IBM)	6,148
2. Samsung Electronics Co. Ltd.	4,968
3. Canon Kabushiki Kaisha	2,818
4. Matsushita Electric Industrial Co.	2,533
5. Toshiba Corporation	2,451
6. Microsoft Corporation	2,309
7. Sony Corporation	2,265
8. Seiko Epson Corporation	1,525
9. Hitachi, Ltd.	1,455
10. General Electric Co.	1,444

US PATENT RECIPIENTS, TOP UNIVERSITIES, 2011

- **IN TOP 300 RECIPIENTS OVERALL**

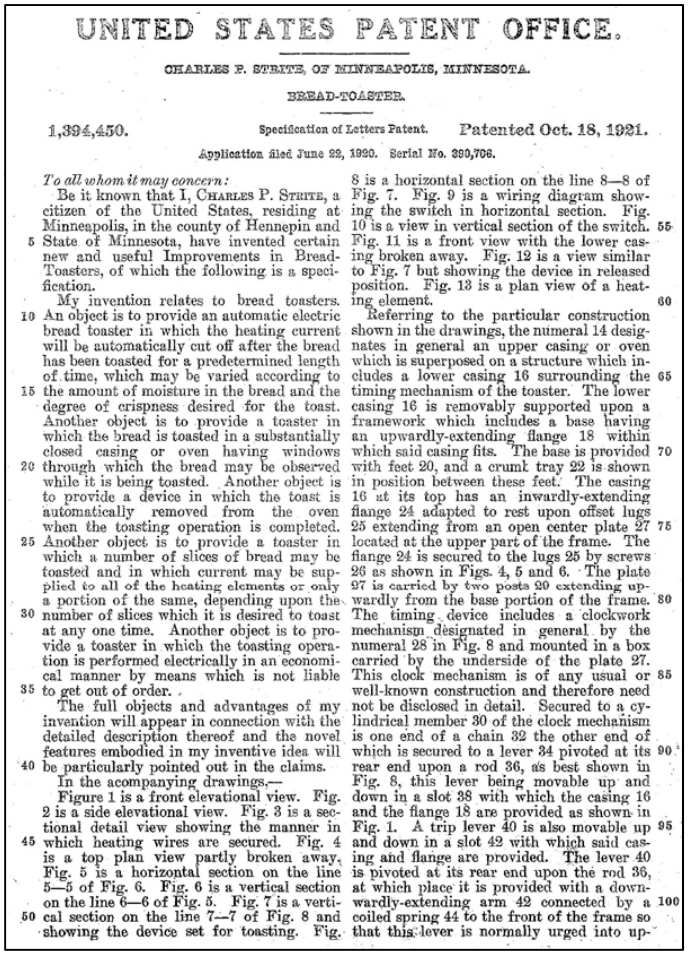
RANKING, UNIVERSITY	Number of granted patents
91. University of California System (10-campus)	323
164. Massachusetts Institute of Technology	160
171. Stanford University	153
178. WARF, University of Wisconsin-Madison	144
209. University of Texas	125
226. California Institute of Technology	111
274. University of Illinois	90
289. University of South Florida	86

NATIONAL PATENT APPLICATIONS IN MACEDONIA



INVENTION OF THE TOASTER

- During World War I, Charles Strite, a master mechanic in Stillwater, MN
- U.S. Patent No. 1,394,450 for “Bread Toaster” issued in 1921.



UNITED STATES PATENT OFFICE.

CHARLES P. STRITE, OF MINNEAPOLIS, MINNESOTA.

BREAD-TOASTER.

1,394,450. Specification of Letters Patent. Patented Oct. 18, 1921.

Application filed June 22, 1920. Serial No. 390,706.

To all whom it may concern:

Be it known that I, CHARLES P. STRITE, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Bread-Toasters, of which the following is a specification.

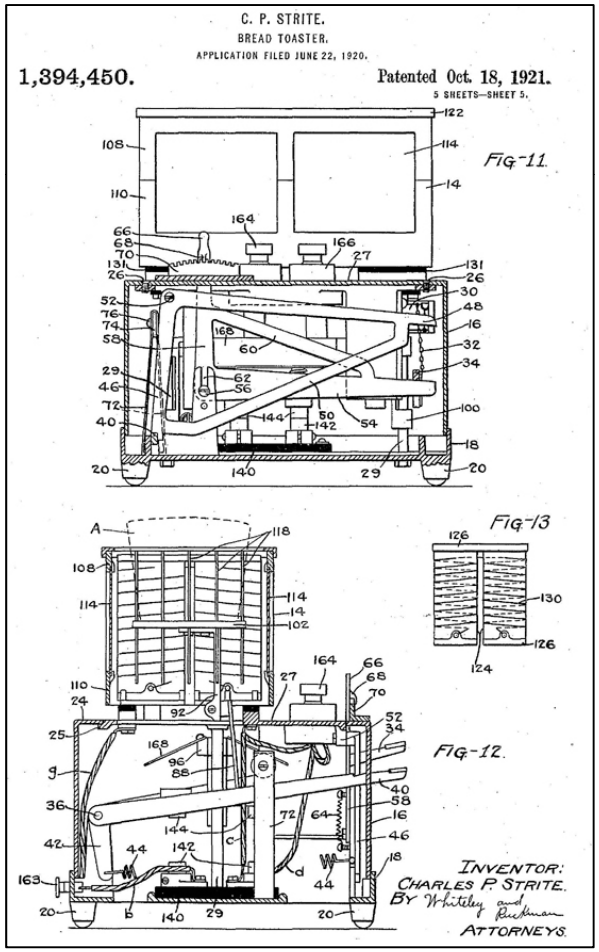
My invention relates to bread toasters. An object is to provide an automatic electric bread toaster in which the heating current will be automatically cut off after the bread has been toasted for a predetermined length of time, which may be varied according to the amount of moisture in the bread and the degree of crispness desired for the toast. Another object is to provide a toaster in which the bread is toasted in a substantially closed casing or oven having windows through which the bread may be observed while it is being toasted. Another object is to provide a device in which the toast is automatically removed from the oven when the toasting operation is completed. Another object is to provide a toaster in which a number of slices of bread may be toasted and in which current may be supplied to all of the heating elements or only a portion of the same, depending upon the number of slices which it is desired to toast at any one time. Another object is to provide a toaster in which the toasting operation is performed electrically in an economical manner by means which is not liable to get out of order.

The full objects and advantages of my invention will appear in connection with the detailed description thereof and the novel features embodied in my inventive idea will be particularly pointed out in the claims.

In the acompanying drawings.—

Figure 1 is a front elevational view. Fig. 2 is a side elevational view. Fig. 3 is a sectional detail view showing the manner in which heating wires are secured. Fig. 4 is a top plan view partly broken away. Fig. 5 is a horizontal section on the line 5—5 of Fig. 6. Fig. 6 is a vertical section on the line 6—6 of Fig. 5. Fig. 7 is a vertical section on the line 7—7 of Fig. 8 and showing the device set for toasting. Fig. 8 is a horizontal section on the line 8—8 of Fig. 7. Fig. 9 is a wiring diagram showing the switch in horizontal section. Fig. 10 is a view in vertical section of the switch. Fig. 11 is a front view with the lower casing broken away. Fig. 12 is a view similar to Fig. 7 but showing the device in released position. Fig. 13 is a plan view of a heating element.

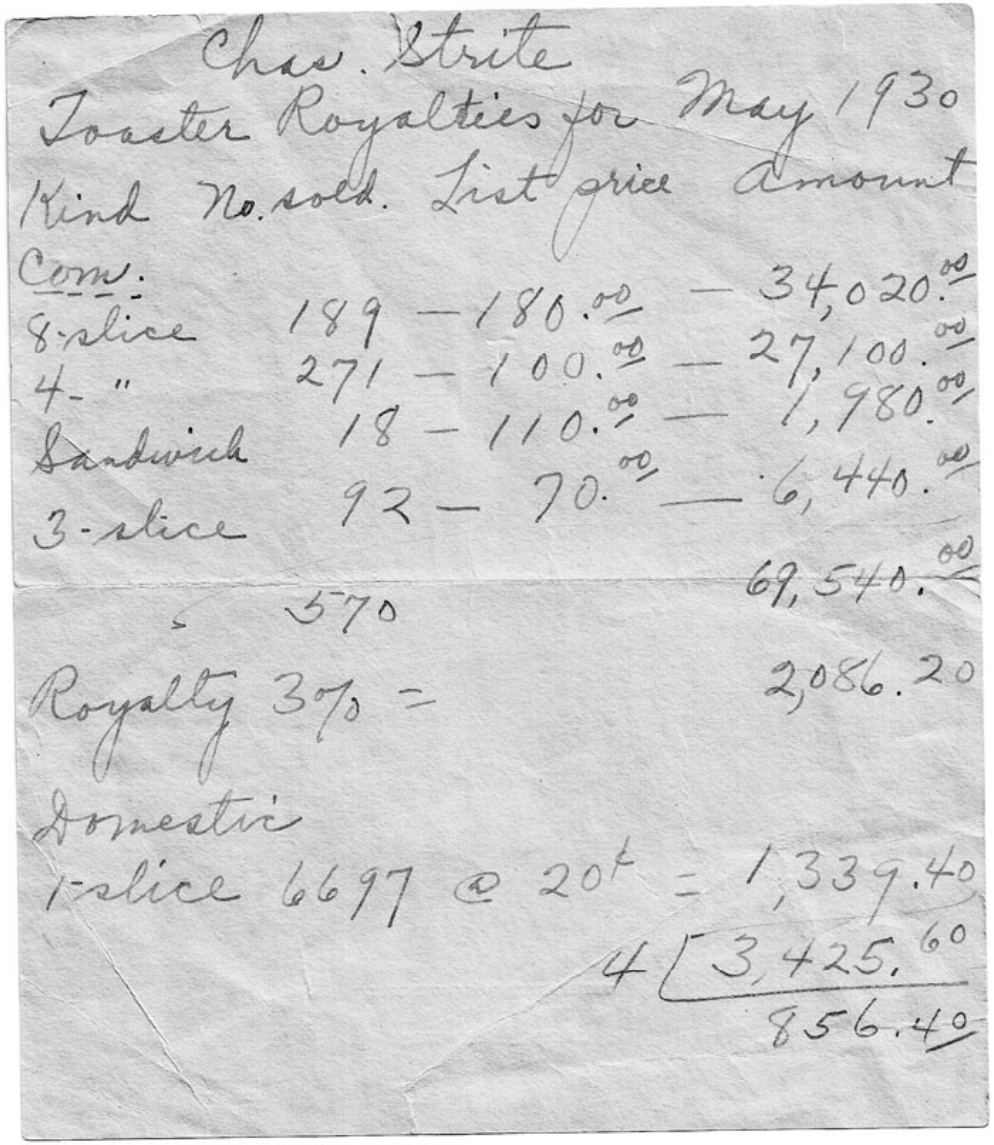
Referring to the particular construction shown in the drawings, the numeral 14 designates in general an upper casing or oven which is superposed on a structure which includes a lower casing 16 surrounding the timing mechanism of the toaster. The lower casing 16 is removably supported upon a framework which includes a base having an upwardly-extending flange 18 within which said casing fits. The base is provided with feet 20, and a crumb tray 22 is shown in position between these feet. The casing 16 at its top has an inwardly-extending flange 24 adapted to rest upon offset lugs 25 extending from an open center plate 27 located at the upper part of the frame. The flange 24 is secured to the lugs 25 by screws 26 as shown in Figs. 4, 5 and 6. The plate 27 is carried by two posts 29 extending upwardly from the base portion of the frame. The timing device includes a clockwork mechanism designated in general by the numeral 28 in Fig. 8 and mounted in a box carried by the underside of the plate 27. This clock mechanism is of any usual or well-known construction and therefore need not be disclosed in detail. Secured to a cylindrical member 30 of the clock mechanism is one end of a chain 32 the other end of which is secured to a lever 34 pivoted at its rear end upon a rod 36, as best shown in Fig. 8, this lever being movable up and down in a slot 38 with which the casing 16 and the flange 18 are provided as shown in Fig. 1. A trip lever 40 is also movable up and down in a slot 42 with which said casing and flange are provided. The lever 40 is pivoted at its rear end upon the rod 36, at which place it is provided with a downwardly-extending arm 42 connected by a coiled spring 44 to the front of the frame so that this lever is normally urged into up-



TOASTER ROYALTIES FOR MAY 1930

- Charles Strite royalties notes:

  $856.40
  [royalty rate = 3%]



Chas. Strite
Toaster Royalties for May 1930

Kind	No. sold.	List price	Amount
Com:			
8-slice	189	180.00	34,020.00
4- "	271	100.00	27,100.00
Sandwich	18	110.00	1,980.00
3-slice	92	70.00	6,440.00
	570		69,540.00
Royalty 3% =			2,086.20
Domestic			
1-slice	6697	@ 20¢ =	1,339.40
		4	3,425.60
			856.40

T-FAL
Avanté Deluxe

(12) **United States Patent**
Christoffel

(10) **Patent No.: US 7,047,871 B1**
(45) **Date of Patent: May 23, 2006**

(54) **ELECTRIC TOASTER WITH EXPANDING TRAY WALLS**

(76) Inventor: **Brett M Christoffel**, 3540 Leathertop Dr., Plano, TX (US) 75075

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **10/972,927**

(22) Filed: **Oct. 25, 2004**

(51) **Int. Cl.**
A47J 37/08 (2006.01)

(52) **U.S. Cl.** ..... **99/327**; 99/329 RT; 99/331; 99/385; 99/389; 99/391

(58) **Field of Classification Search** 99/326–333, 99/339, 340, 341, 385, 386, 388, 389–391, 99/392, 393; 219/521–525, 492, 400, 494, 219/386; 426/523
See application file for complete search history.

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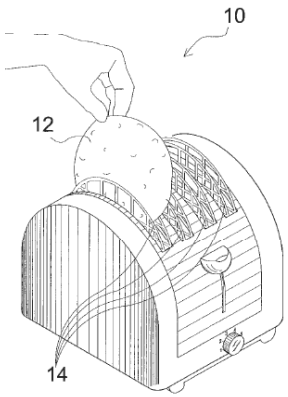
Primary Examiner—Timothy F. Simone
(74) *Attorney, Agent, or Firm*—Michael I. Kroll

(57) **ABSTRACT**

Apparatus **10** for a toaster appliance having at least one circular-like carriage **14** forming a support element for food articles **12** such as tortillas, pita, naan and other flatbreads during a warming/toasting session. The support walls **16**, **20** are comprised of wire mesh **18** with one side having a partial lower peripheral rim or lip **38** positioned flange extending thereinbetween acting as a carriage for the food article. Diametrically opposed is the other support wall that is spaced over the depending flange **38** extending from the other wall. Adjacent coplanar posts or pins **36** extend from the mesh-walls **16**, **20** traveling in and through guide tracks **40** located at each end of the interior housing **24** with tensioning members **34** fastened to the post distal ends keeping the support walls compressed. One of the tracks **40** is of greater width thereby providing for variable thickness of the food article, which is held by the tensioned mesh walls **16**, **20**. One rail of the interiorly positioned track **40** is substantially vertical while the other is angularly divergent so that when the tray is in the food article receiving position, the walls **16**, **20** are spaced apart providing means for inserting and removing food articles **12** without engaging the mesh-like walls.

10 Claims, 9 Drawing Sheets



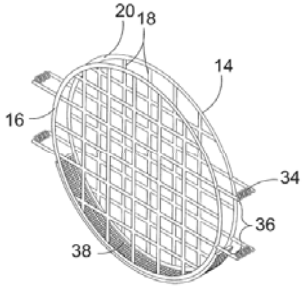


FIG. 4

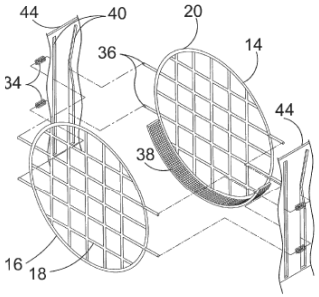
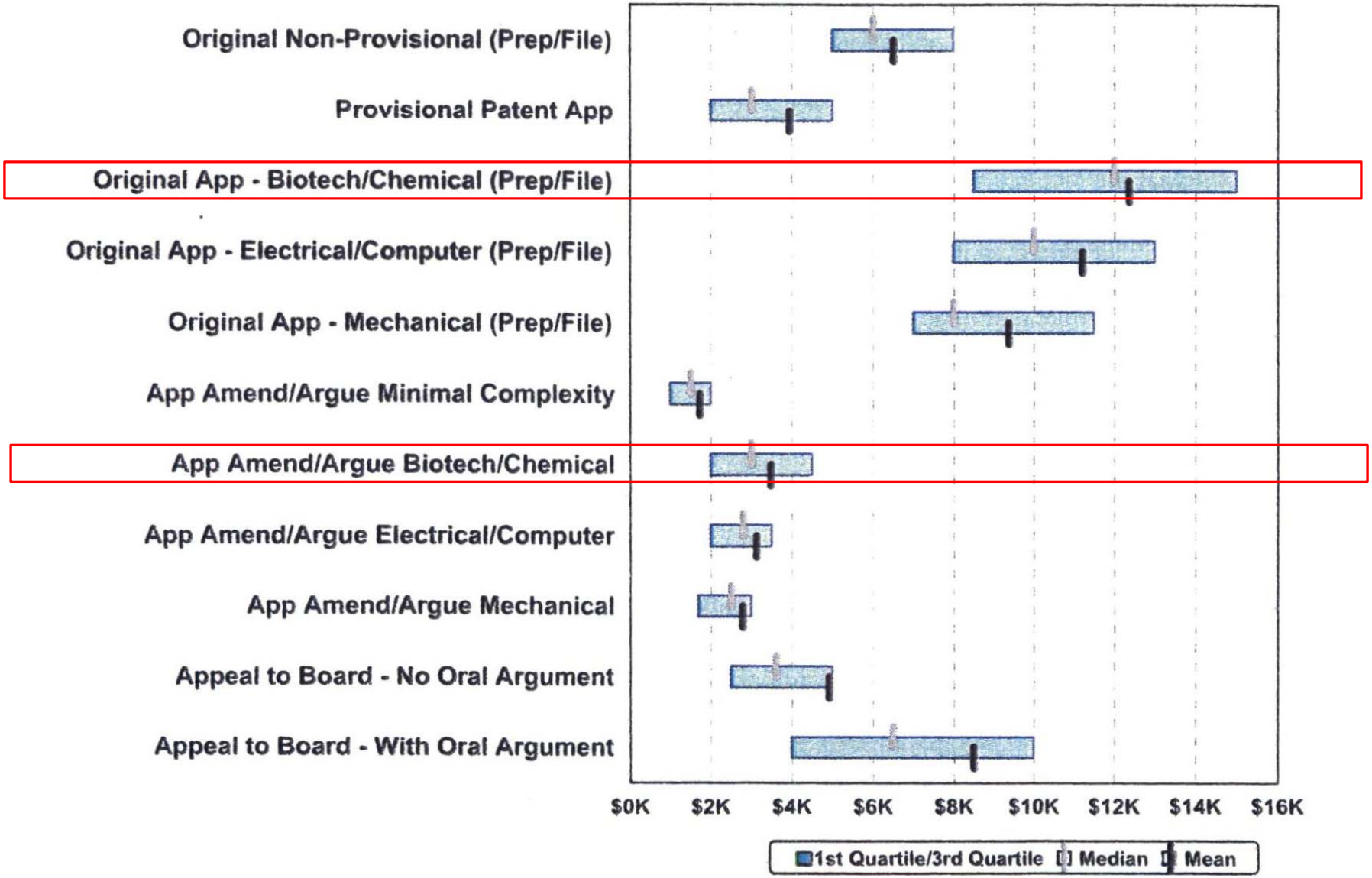


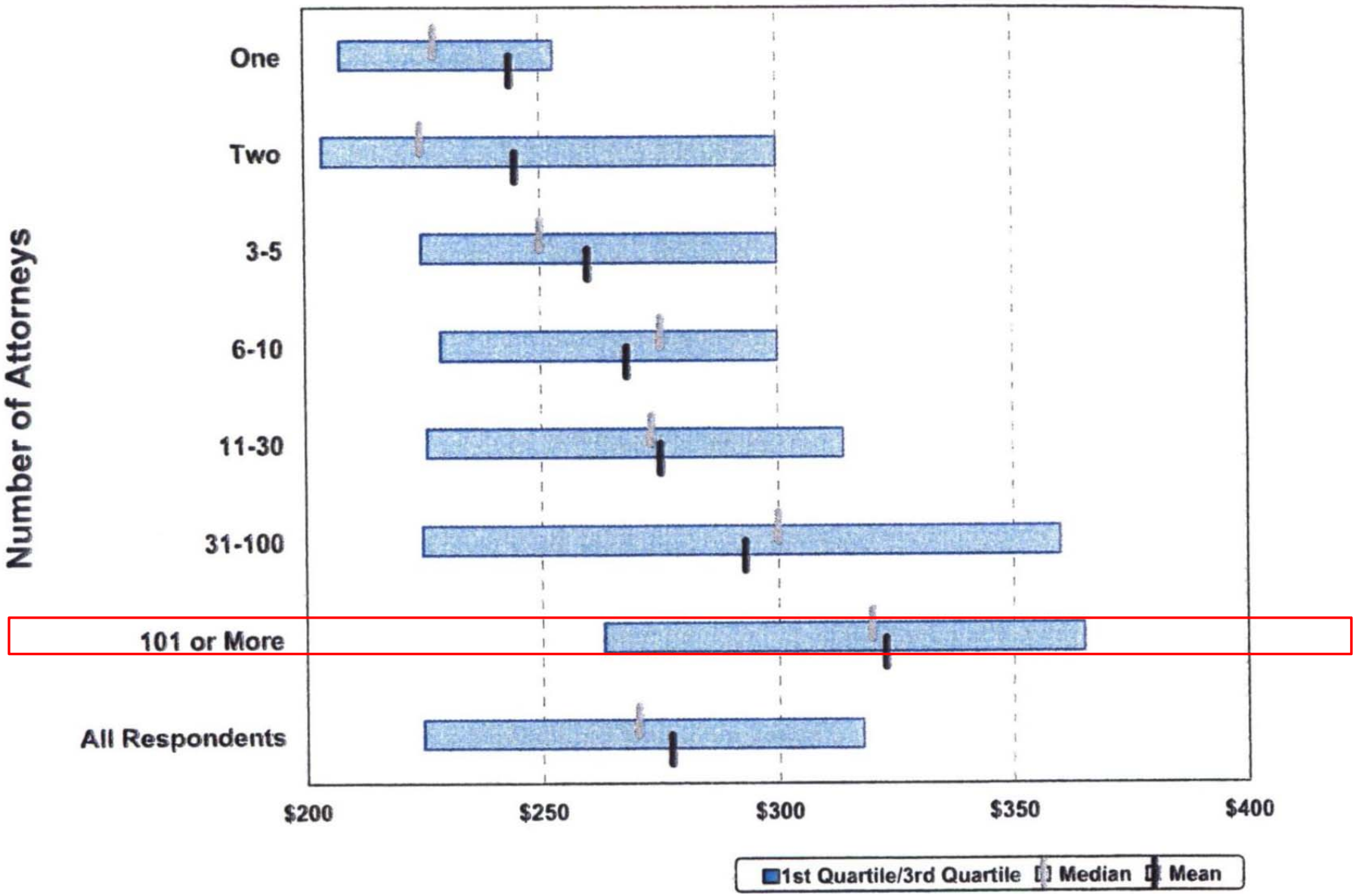
FIG. 5

TYPICAL CHARGES AND COSTS FOR US UTILITY PATENTS (P. I-93 to I-98, Q39a-Q39k)

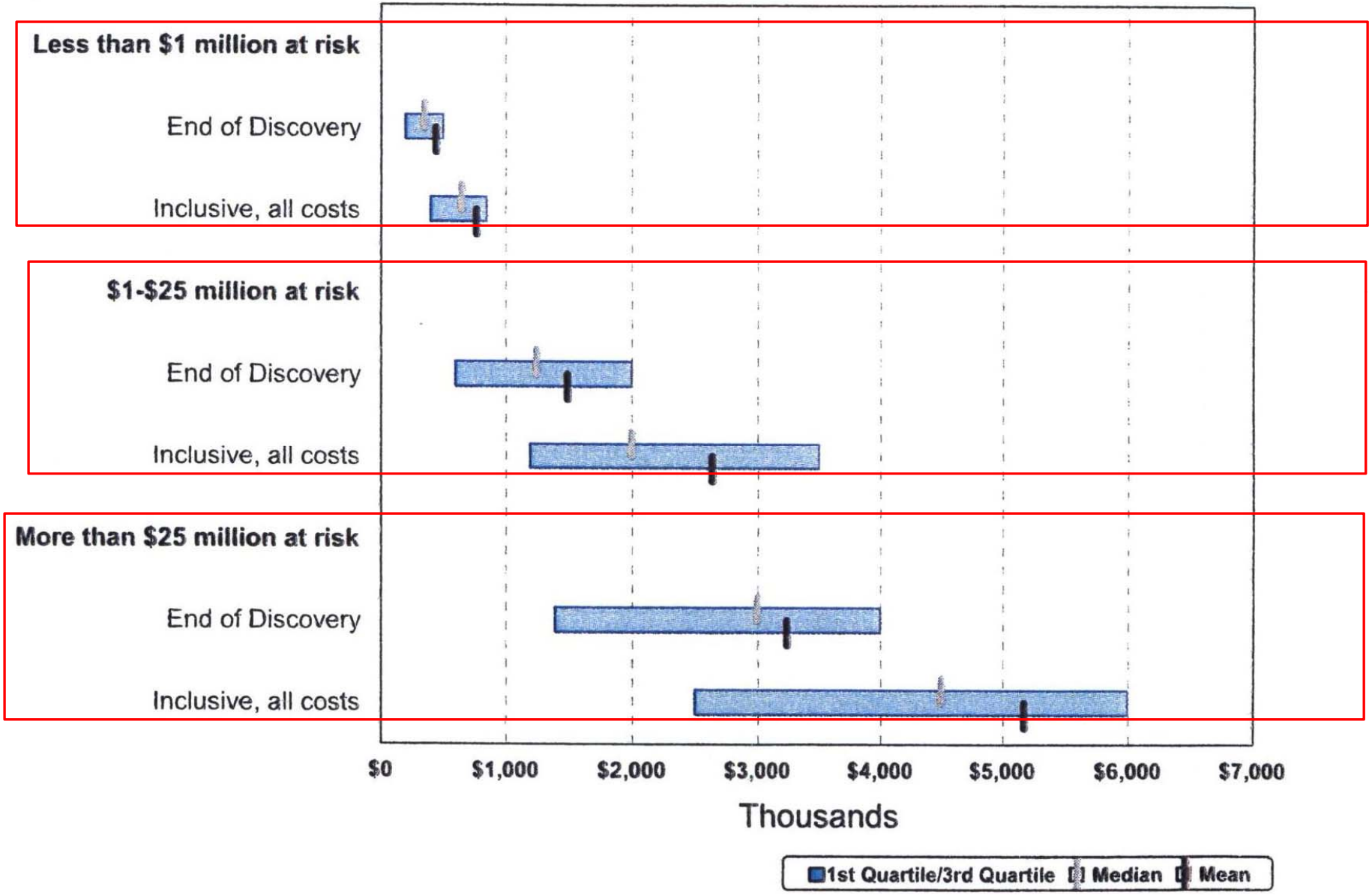


AVERAGE BILLING RATE FOR IP WORK (P. F-21, Q32c)

By Number of Attorneys in Firm



ESTIMATED TOTAL COST OF A PATENT INFRINGEMENT SUIT (P. I-108 to I-110, Q42a-Q42f)



PATENT LITIGATION IS COMPLICATED AND EXPENSIVE

- Pleadings
- Initial disclosures
- Discovery
- Pretrial
- Trial

- "American lawyers…have never been accused of asking for too little. Like the Rolling Stones, they hope that if they ask for what they want, they will get what they need." *McPeak v. Aschroft*, 202 F.R.D. 31, 34 (D.D.C. 2001).

- Percentage of patent cases that settle: ~ 86%
-
- Factors to consider: attorney fees; willful infringement; laches & estoppel…

TECHNOLOGY TRANSFER

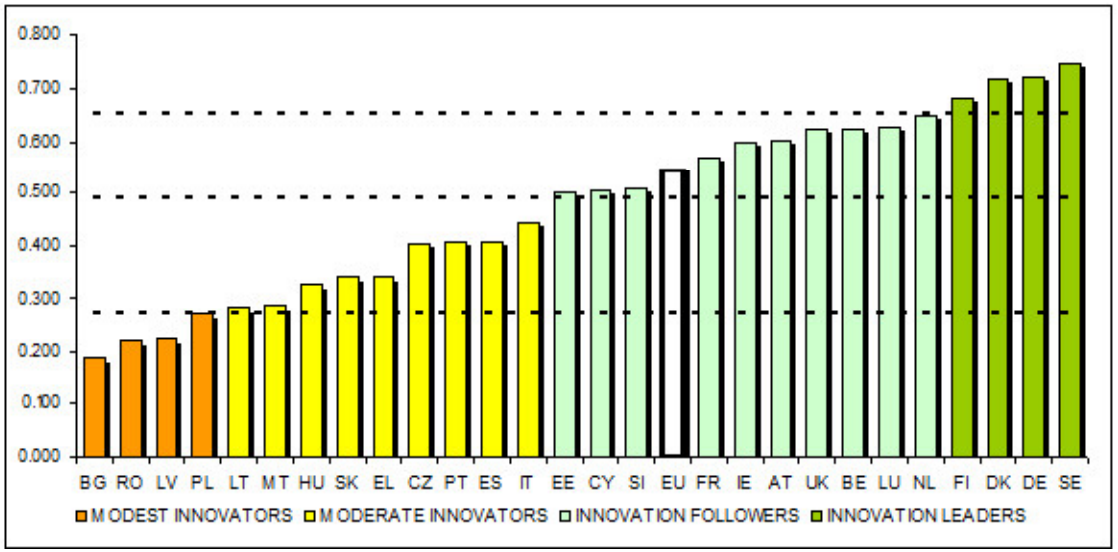
- Moving innovations to the marketplace
- University tech transfer centers [Bayh-Dole Act, 1980]

- Case study: WARF Wisconsin Alumni Research Foundation
- Founded in 1925 to manage a vitamin D discovery
- The foundation has developed a model of technology transfer based upon true partnership with the University of Wisconsin-Madison and industry
- To date, > $300 million revenue from vitamin D royalties
- WARF contributes ~$40 million annually to UW-Madison

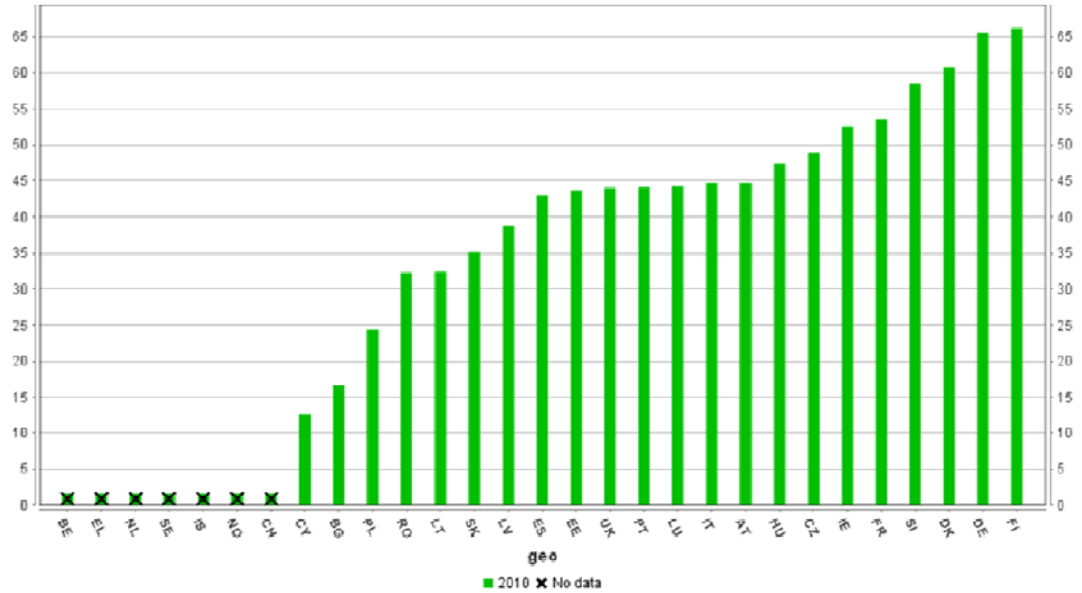
DO MACEDONIAN SMEs PARTICIPATE IN TRIPLE HELIX INNOVATION?

R&D AND INNOVATION

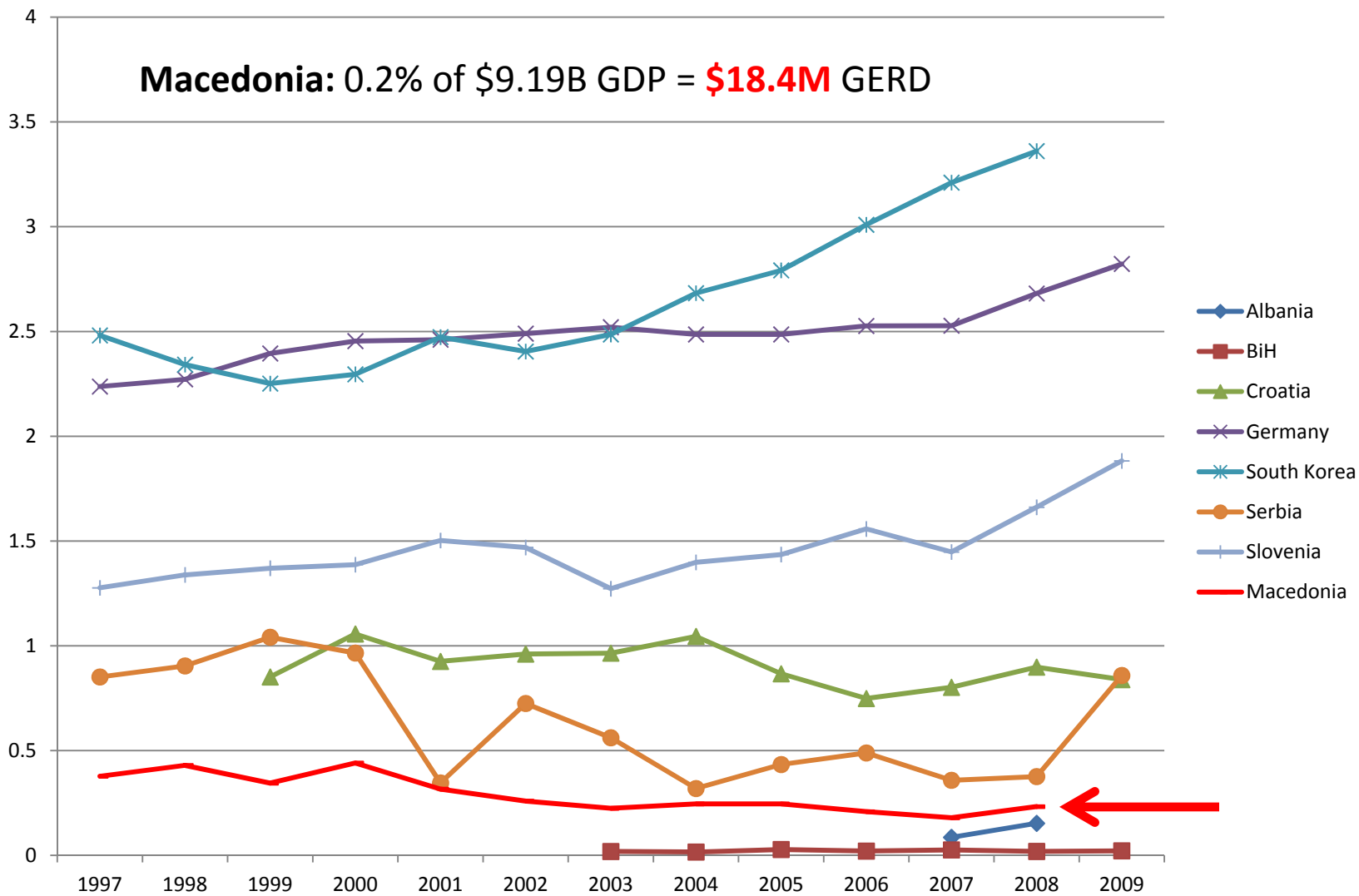
- Innovation performance



- R&D expenditure in the business sector as % of GDP

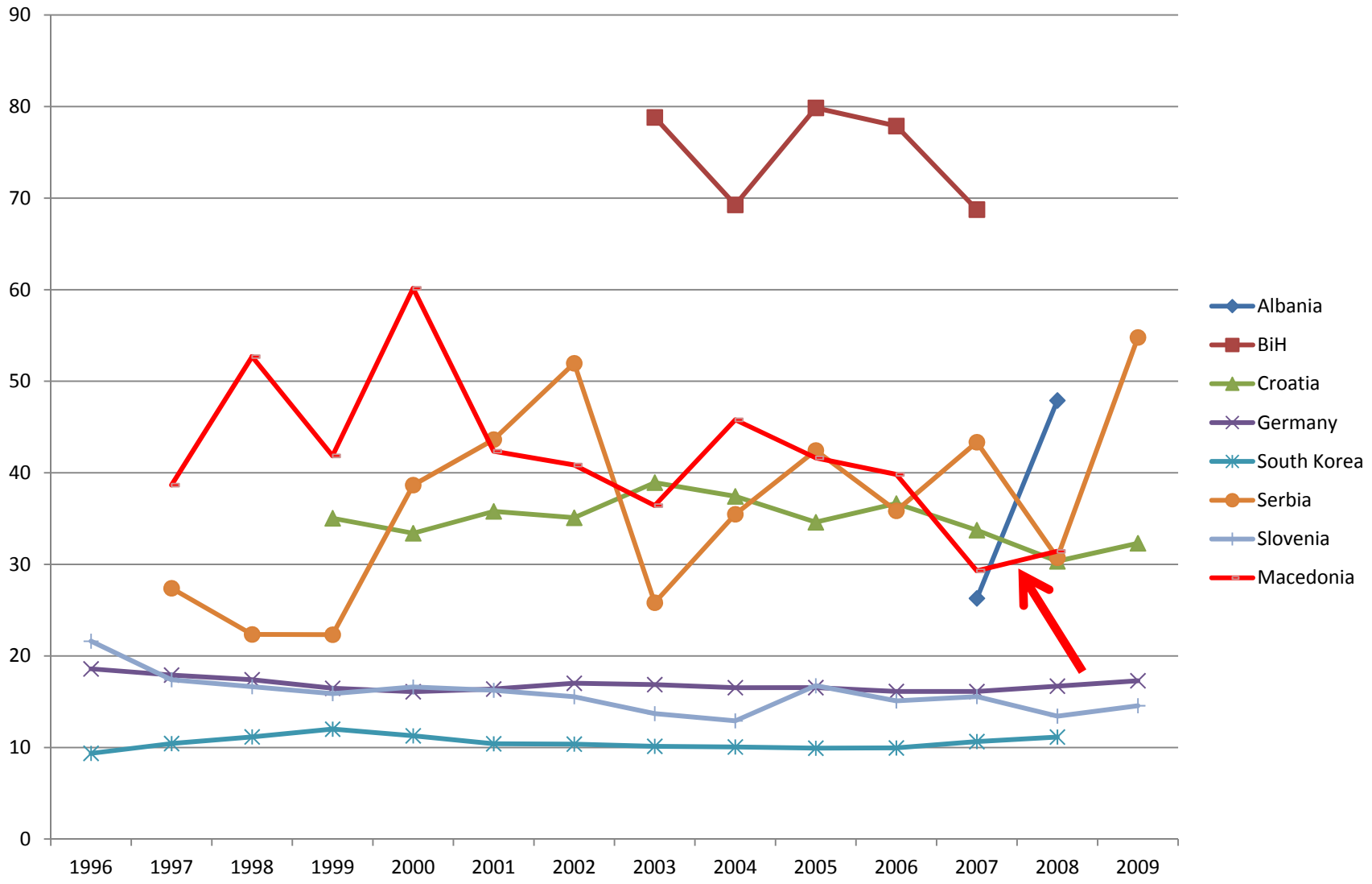


GROSS EXPENDITURE ON R &D (GERD) AS % OF GDP



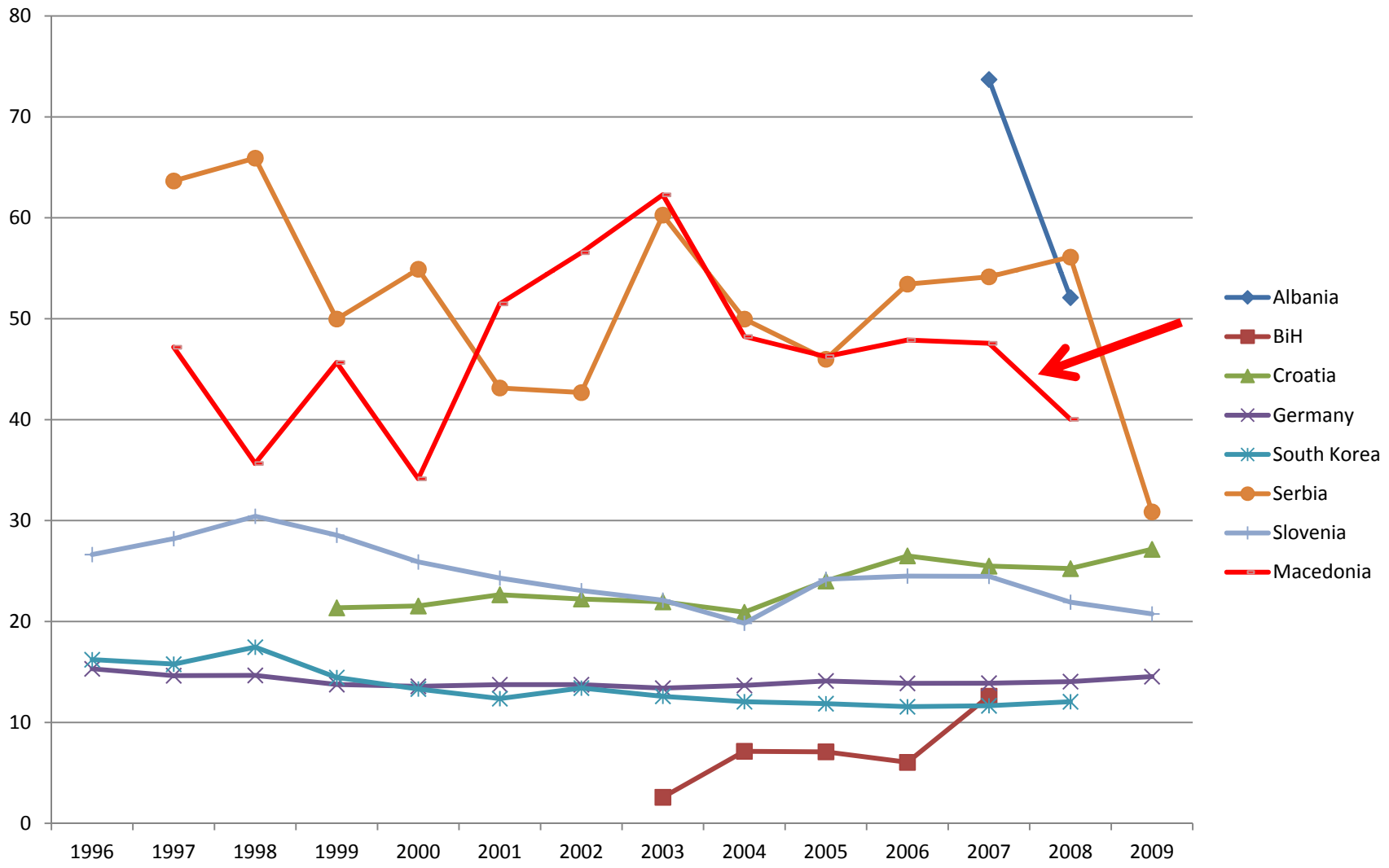
Source: UNESCOstat 2011

GERD – % BY HIGHER EDUCATION



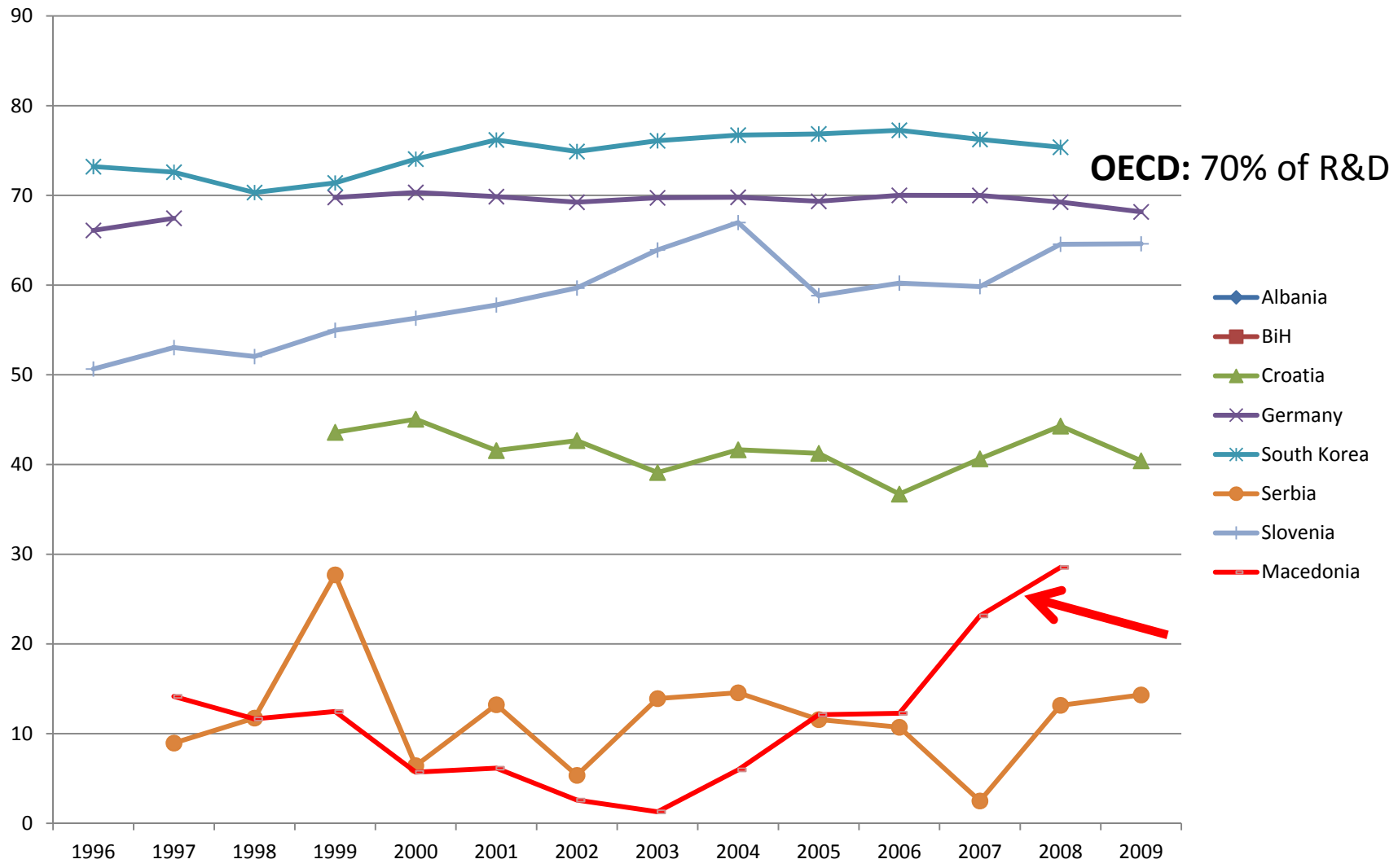
Source: UNESCOstat 2011

GERD – % BY GOVERNMENT



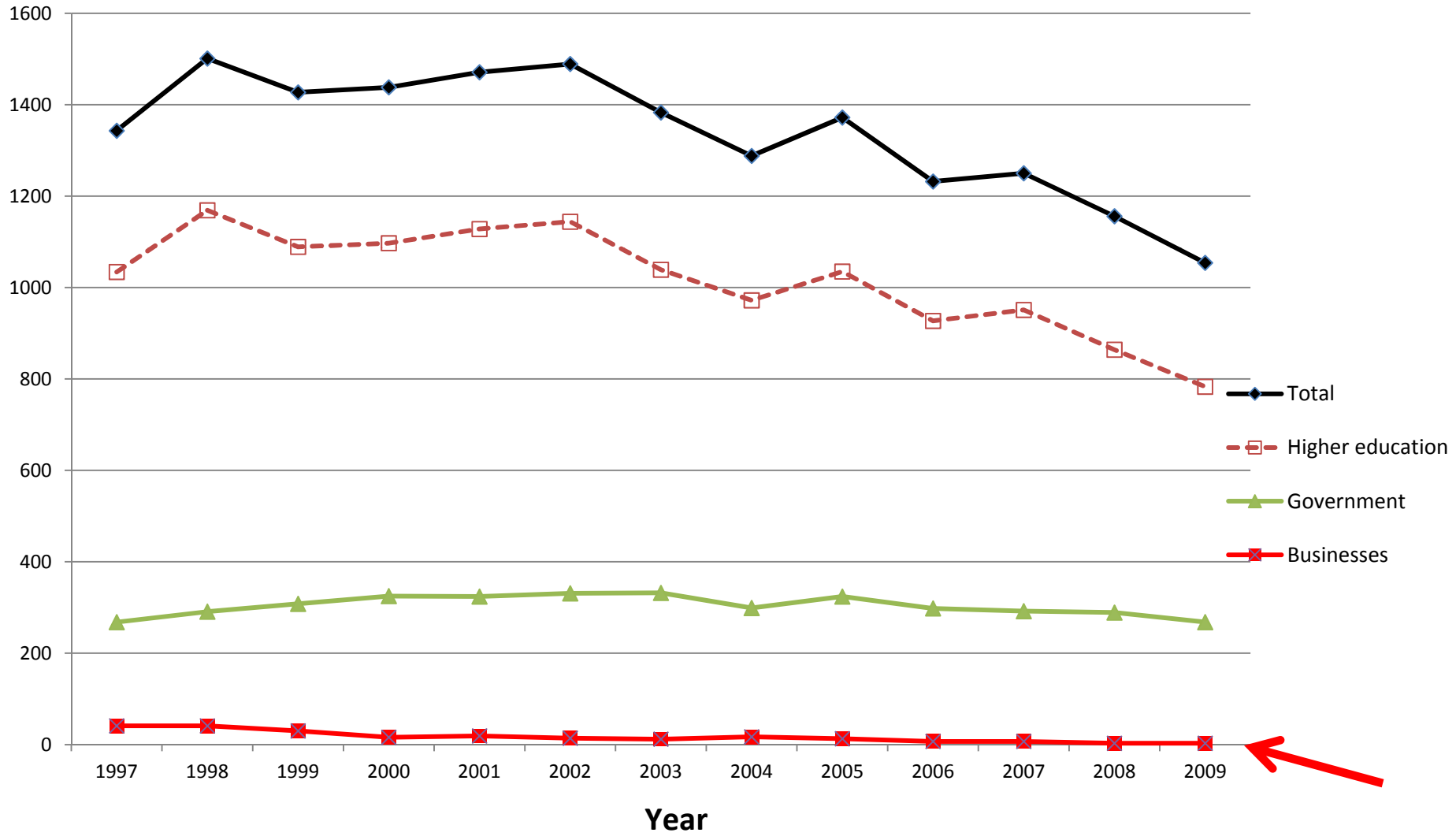
Source: UNESCOstat 2011

GERD – % BY BUSINESS ENTERPRISES



Source: UNESCOstat 2011

POSTGRADUATES (PhD, MSc) EMPLOYED IN R&D INSTITUTIONS



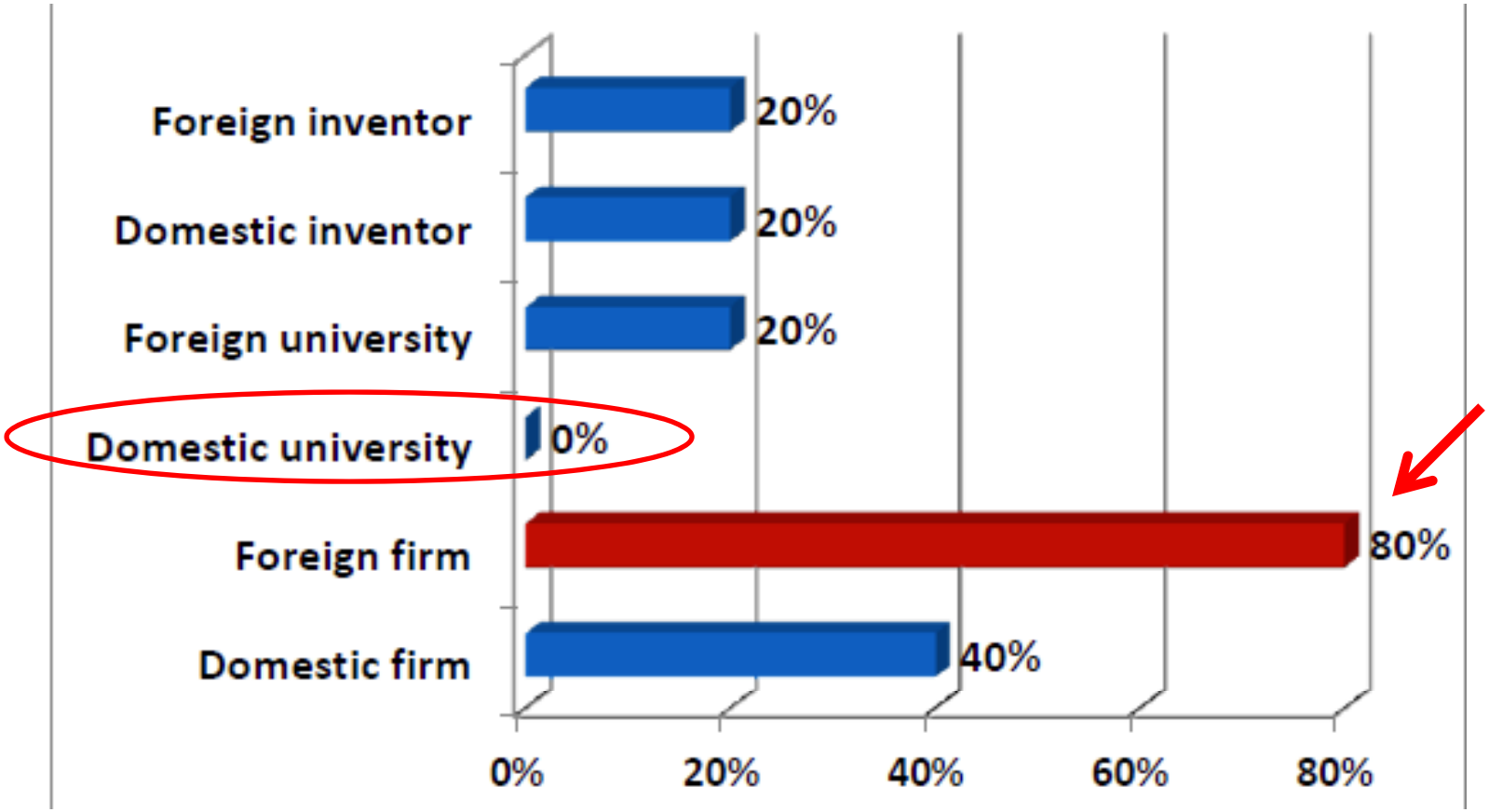
Source: MK State Statistical Office

SURVEY “TECHNOLOGY TRANSFER IN MACEDONIA”

- 51 [200] high tech firms surveyed

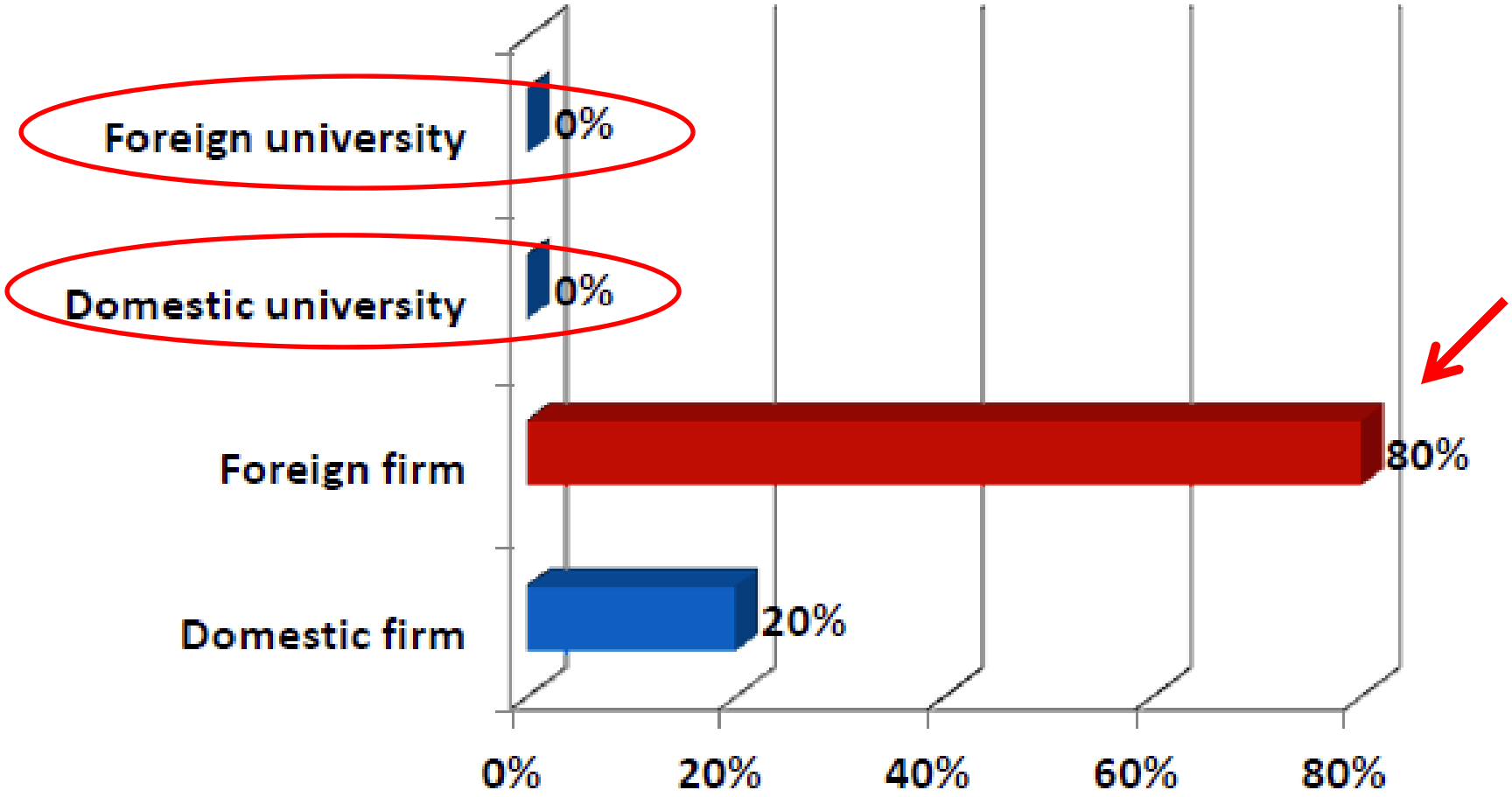
TRANSFER OF OWN TECHNOLOGY?

- **Q6: YOU DEVELOPED THE NEW TECHNOLOGY WITH (MULTIPLE ANSWERS ARE POSSIBLE):**



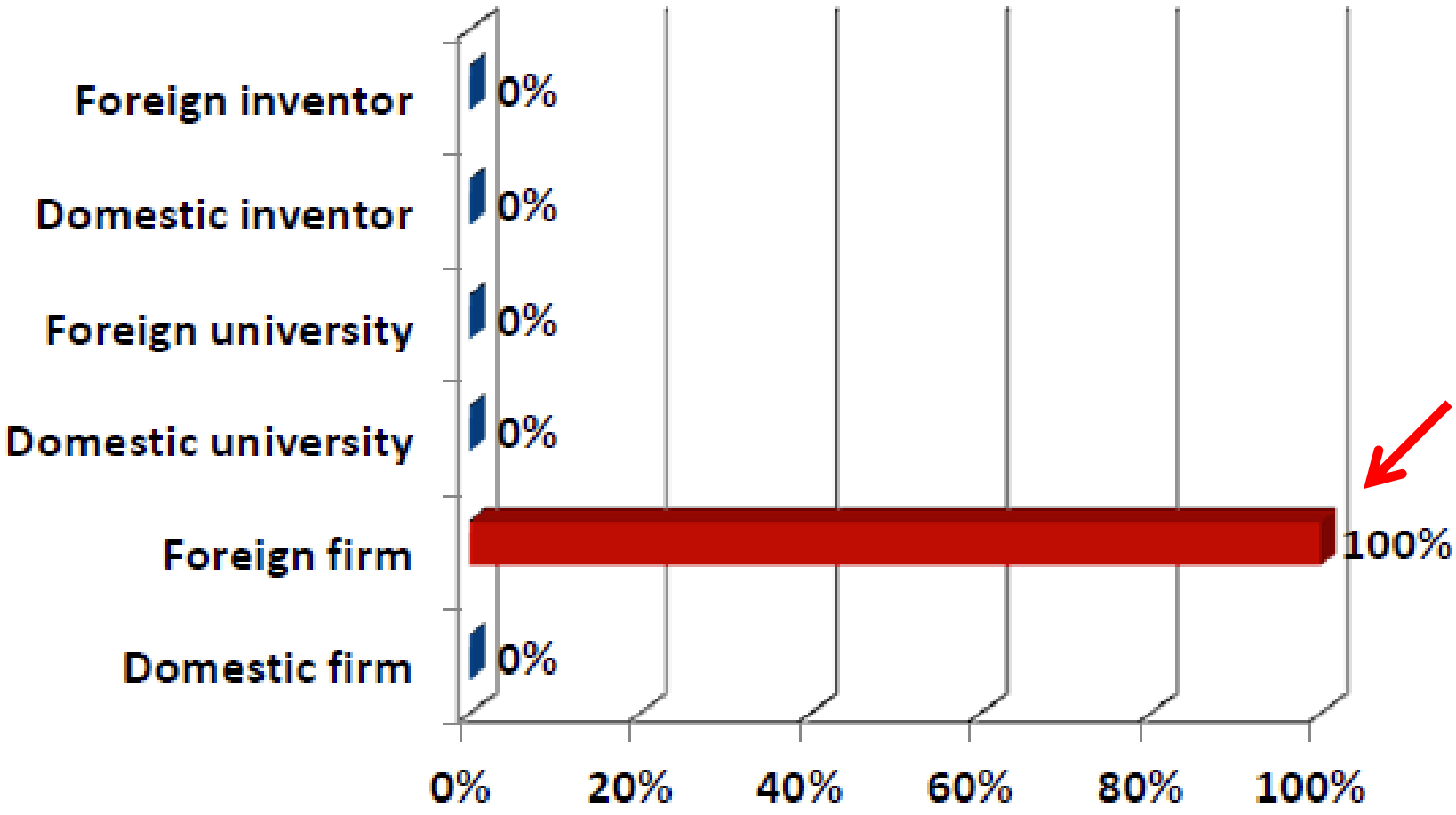
TECHNOLOGY TRANSFER TO?

- Q7: YOU TRANSFERRED YOUR OWN TECHNOLOGY TO:

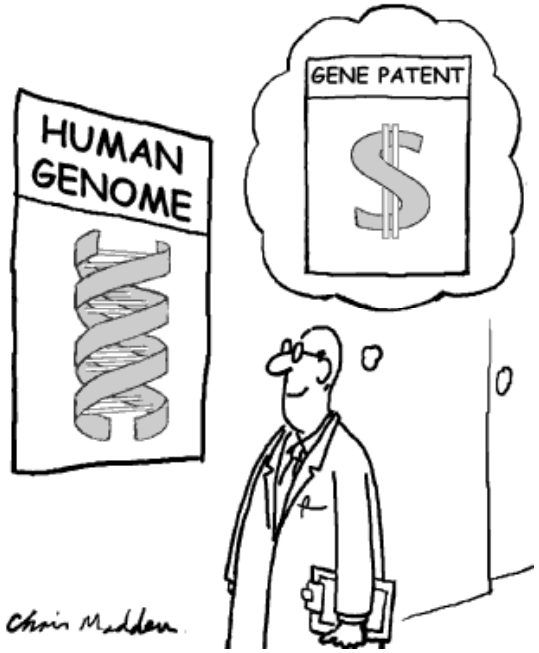


RECEIPT OF TECHNOLOGY FROM?

- Q8: YOU RECEIVED TECHNOLOGY FROM:



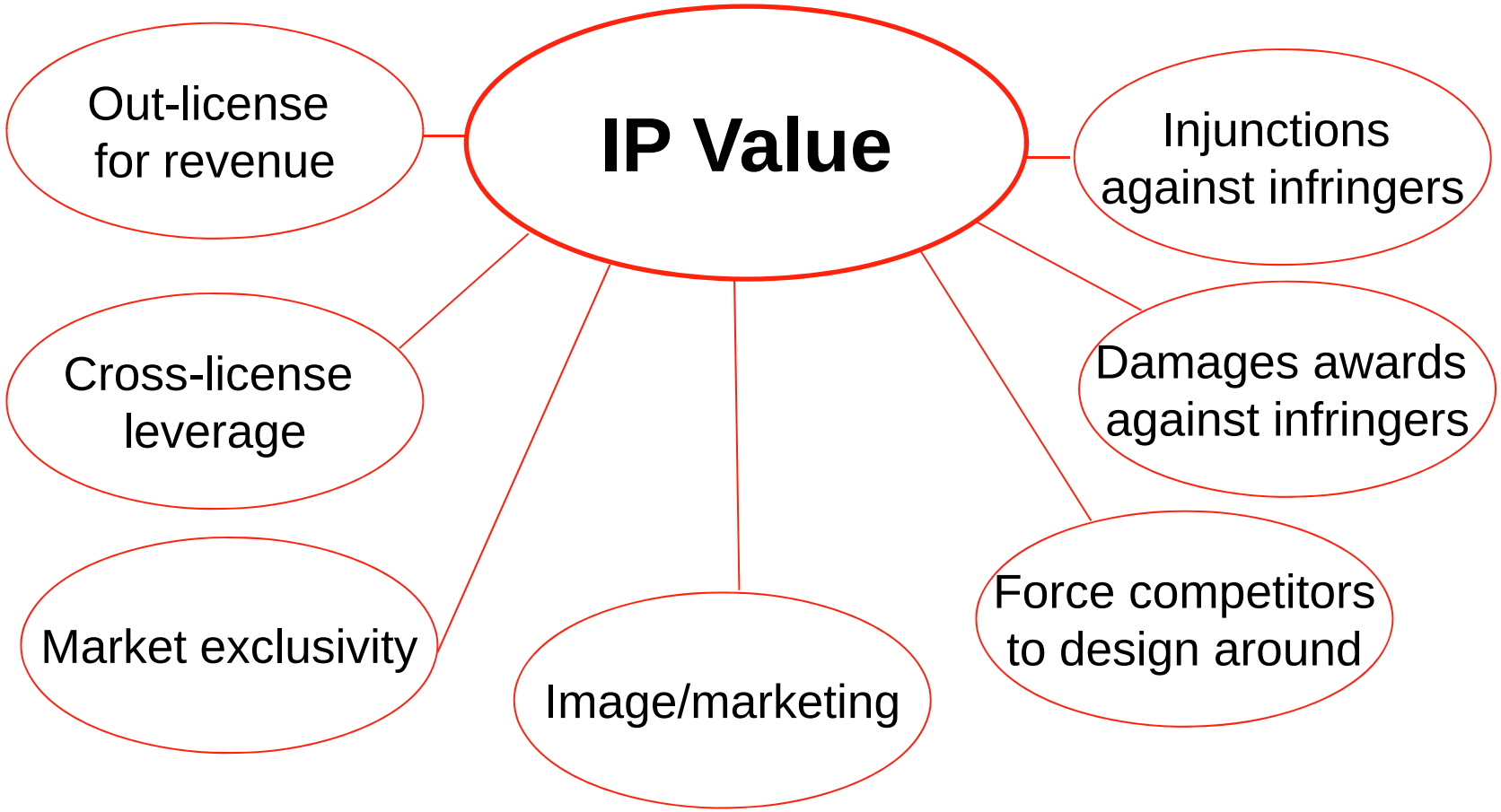
WHY PATENT?



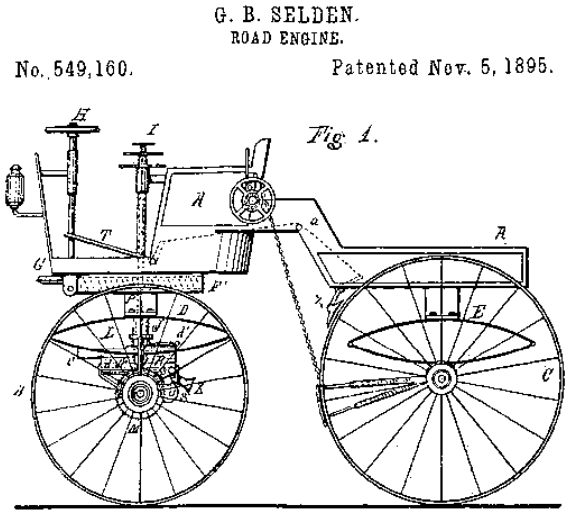
- Right to exclude others from:
  - making the invention
  - using the invention
  - offering for sale
  - selling the invention
  - importing the invention

- Method of publication
- Translates inventor's work into a product that will benefit society
- Prevent abuse or misuse of their inventions and research
- Inventors, their labs and departments benefit from licensed inventions

THE UTILIZATION OF A PATENT'S ECONOMIC POWER



THE SELDEN ROAD-ENGINE



- Patent attorney George Selden had a patent on automobile [US **549,160**]
- Application filed in 1879
- Amendments filed to delay issuance of the patent until 1895, by which time the automobile industry was growing
- No interest in manufacturing

- Manufacturers took out licenses from Selden or from the Association of Licensed Automobile Manufacturers (ALAM), to whom he sold the patent [0.75% royalty on all cars sold]. Received several hundred thousand dollars in royalties.
- Legal fight with Henry Ford, lasted 8 years; case record of 14,000 p.
- The patent was declared invalid 1 year before it was set to end

PATENT ROYALTIES

- Scope of claims; type of patent (research tools; up- or down-stream; fundamental or improvement patent); whether other patents need to be licensed in order to practice it
- Computed as % of the value of the product made by using the patent

- Typical rates for gross sales within the **U.S. pharmaceutical industry**:
  - a pending patent on a strong business plan, 1%
  - issued patent, 1% –2%
  - pharmaceutical with pre-clinical testing, 2–3%
  - with clinical trials, 3–4%
  - proven drug with US FDA approval, 5–7%
  - drug with market share, 8–10%

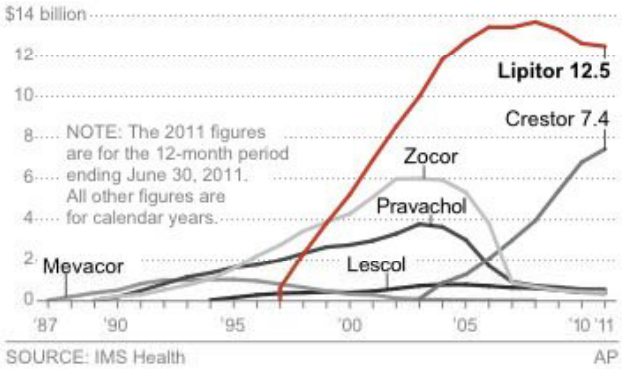
- Rates of royalty payments: over a 16-year period, for 458 license agreements, an average royalty rate of 7.0% (range 0% - 50%)

$ VALUE OF PATENTS

- Royalty and licensing fee revenue hit $200 billion globally in 2011

- US universities reported $1.8 billion in earnings on inventions in 2011
- IBM earns about $1 billion in licensing revenue annually
- Qualcomm collects almost all its revenue—$10.4 billion in 2009—from selling licenses for its patented 3G mobile-phone technology
- Nokia earned $650 million in patent royalties in 2011

- Pfizer earns ¼ of its sales from a single set of patents covering cholesterol drug Lipitor



- Large companies increasingly "monetizing" their portfolios in market segments where they are no longer active

WHO ARE THE INFRINGERS AND WHERE IS THE MONEY?

CASE	Technology	Award/ settlement ($)
Michelson v. Medtronic	spinal fusion implant	1,350,000,000
Carnegie Mellon Univ. v. Marvell Tech	integrated circuits	1,170,000,000
Apple v. Samsung	smart phone	1,050,000,000
Monsanto v. DuPont	GM soybeans	1,000,000,000
Polaroid v. Kodak	instant photography	925,000,000
Medinol v. Boston Scientific	stents	750,000,000
RIM v. NTP, Inc.	wireless e-mail	612,500,000
Litton Systems v. Honeywell	gyroscopes	400,000,000
EMC Corp. v. Hewlett Packard	server storage	325,000,000
Hoffman-La Roche. v. Cetus Corp	PCR	300,000,000

- Patent awards kept rising in 2012, with 7 topping $100 million, 3 of ≥$1 billion

PATENT TROLLS

- "Patent Troll", a neologism:
  - "A patent troll is somebody who tries to make a lot of money from a patent that they are not practicing and have no intention of practicing and in most cases have never practiced."

    - *The Recorder*, Trolling for Dollars

- Patent trolls buy patents cheaply from entities not actively seeking to enforce them. May purchase hundreds of patents from a technology company forced by bankruptcy to auction its patents.

- Nathan Myhrvold's Intellectual Ventures posted $700 million in licensing revenue in 2010 ($2 billion to date)

INTELLECTUAL VENTURES®
INVESTING IN INVENTION™

PATENT RIGHTS AND ECONOMIC VALUES

- No piece of intellectual property is inherently valuable, nor does it give anyone a ticket to print money
- A patent right is only valuable if it fits into the context of a good business plan that enables it to create value. Develop corporate patent strategy.
- Patents that are being drafted today will have effect for the next 20 years; diversity in claiming
- A patent right is a means to an end, not an end in itself
- Many patents and hundreds of claims; only need one claim to win infringement lawsuit
- Patent auctions

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