

# Economic importance of IP



Bogusław Węgliński  
IP Management Poland



Wrocław, June 17-th 2010



# Economic importance of IPR?



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Joseph Alois Schumpeter (1883-1950):

*The question is not  
"how capitalism administers existing structures,  
but how it creates and destroys them."*

*This **creative destruction**, caused continuous progress  
and improved standards of living for everyone.*

*AD 1942*



**John Kenneth Galbraith**

wrote to Prof. Michal Kalecki in A.D. 1969:

„I wonder if you realise how much those  
of us the world around have owed to

**the intellectual capital**

you have provided over these last decades”



**Michal  
Kalecki**

# Intellectual Property → INTELLECTUAL CAPITAL

GNP as a function of knowledge and  
technology development

$$\Delta Y/Y = 1,0 * \Delta T/T + 0,7 * \Delta L/L + 0,3 * \Delta C/C$$

$\Delta Y/Y$  – production increase

$\Delta T/T$  – technology development

(defined by R&D and innovations)

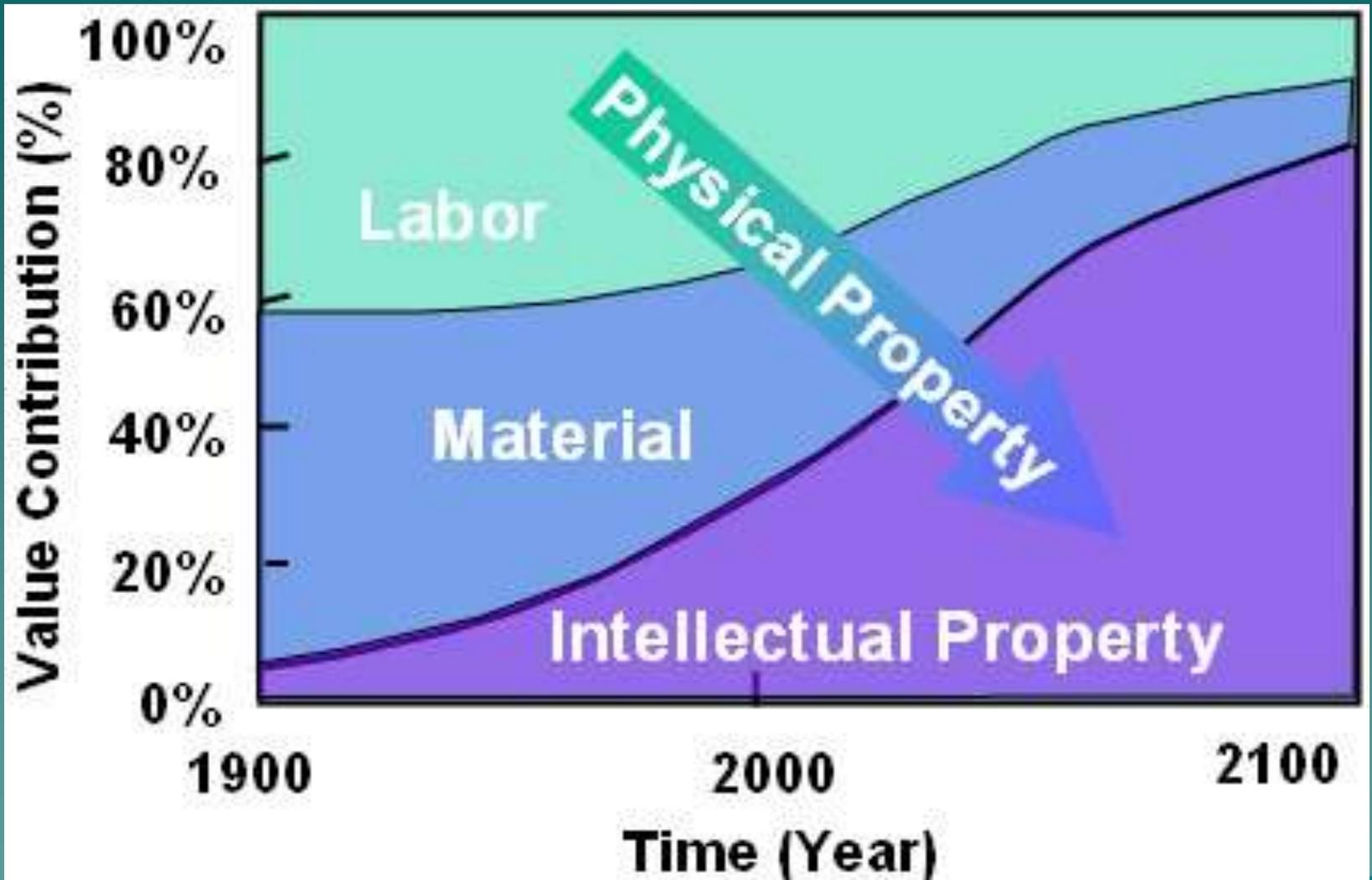
$\Delta L/L$  – labour intensity growth

$\Delta C/C$  – capital growth



Jan Tinberger, Robert Solow





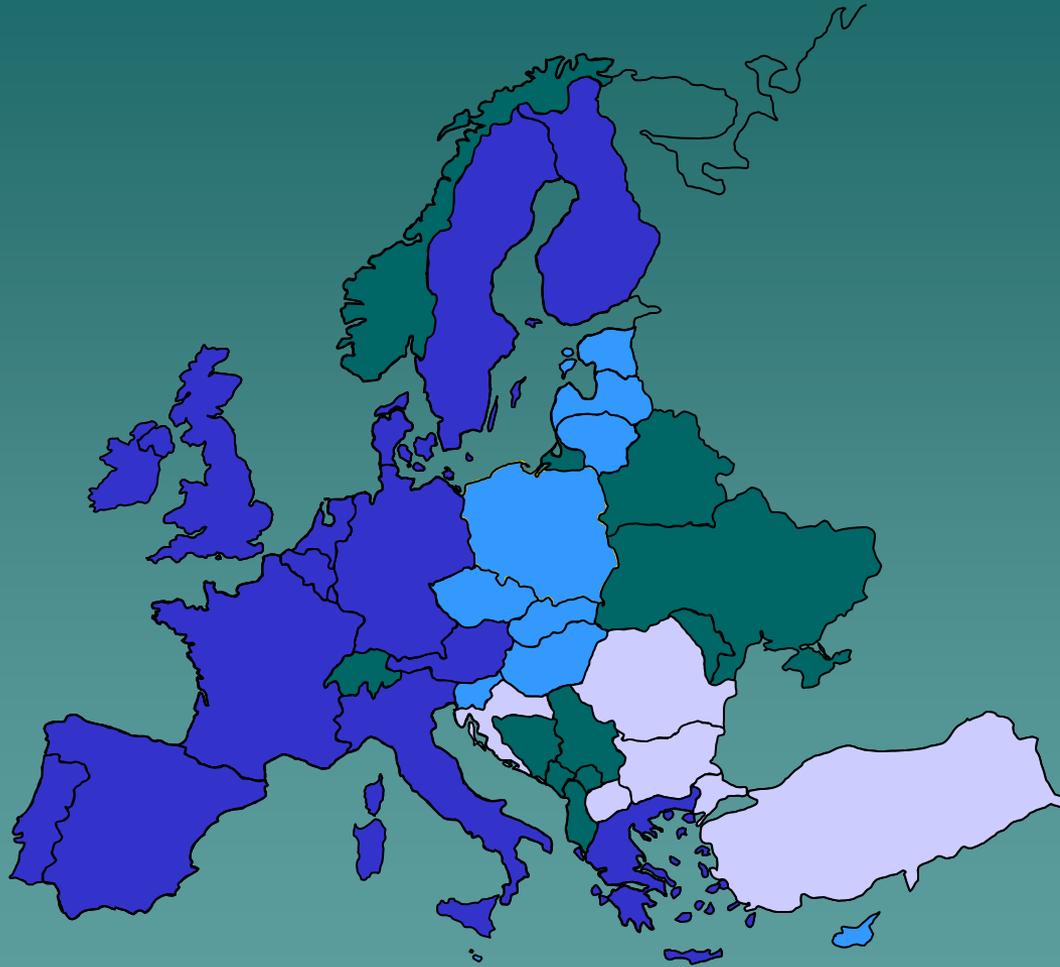
*Dr. Andrzej M. Pawlak, Delphi*

- The source of wealth is something specifically human: **Knowledge**
- Knowledge applied to tasks we already know how to do is **productivity**
- Knowledge applied to tasks that are new and different is **innovation**

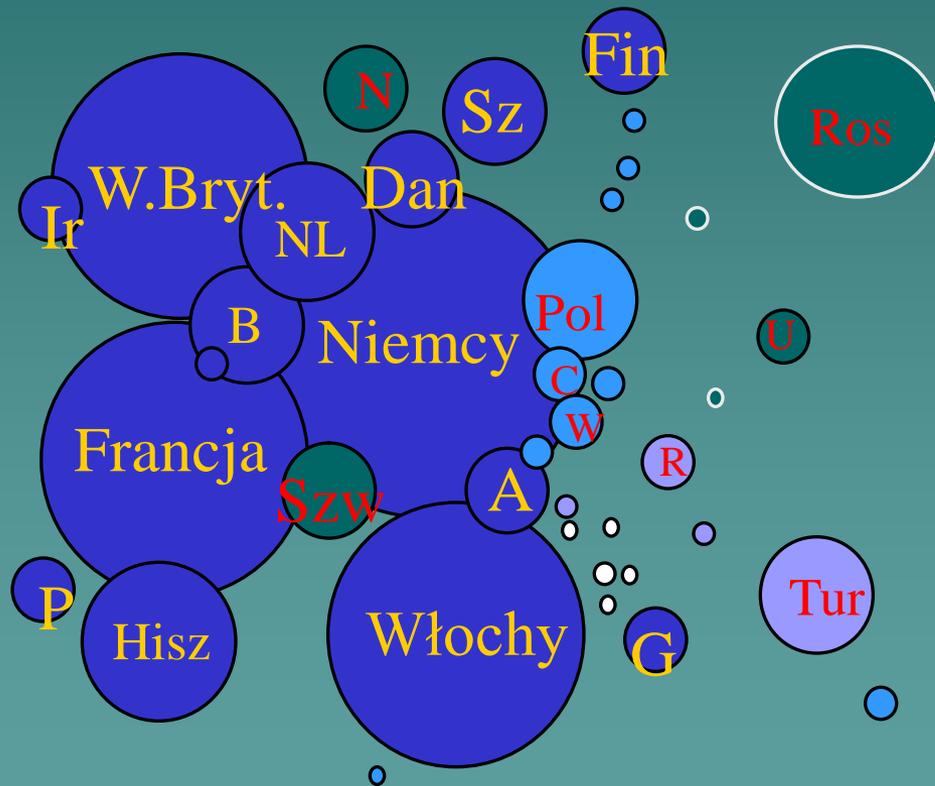


Peter F. Drucker  
(1909-2005)

# Geographic map of Europe...



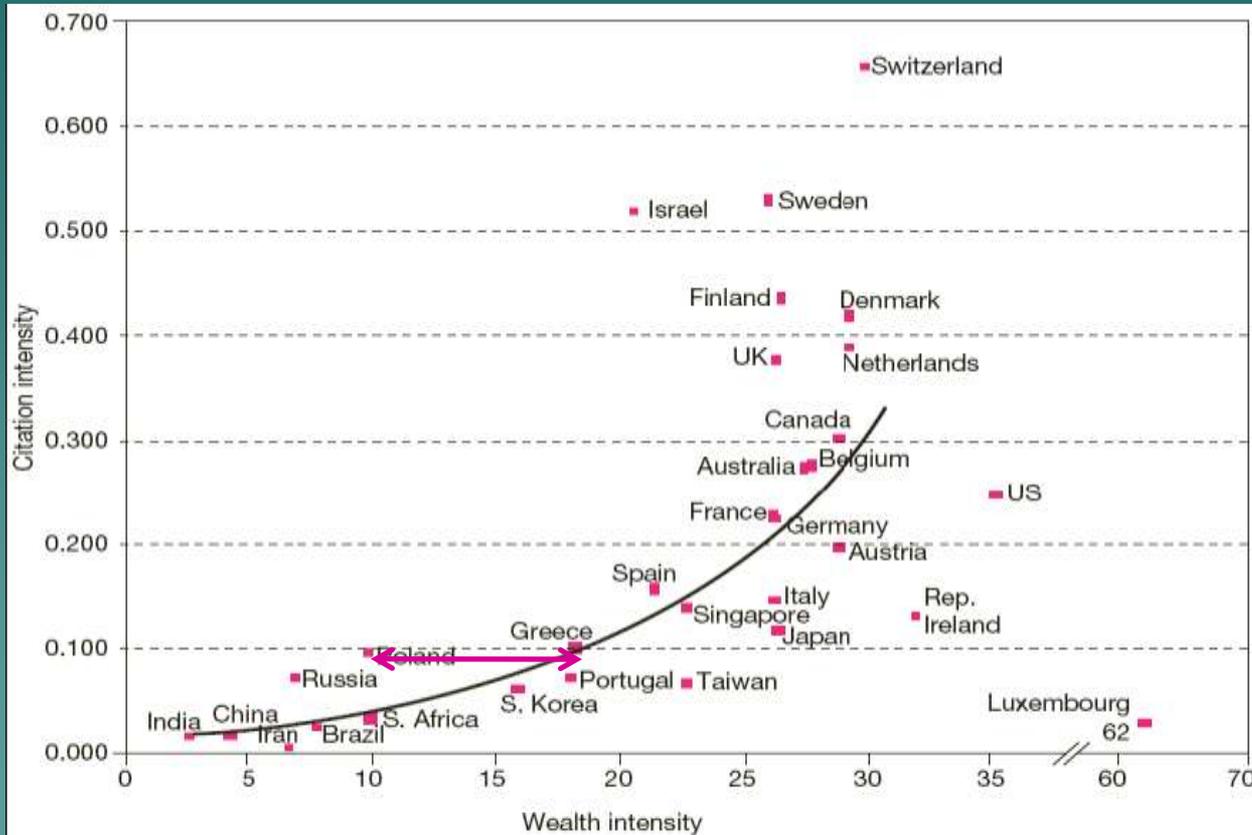
Economic „map” of Europe is quite different  
(GDP size)



# Scientific Impact and Wealth Intensity of Nations

D.A. King, "The Scientific Impact of Nations", Nature, July 2004

## Comparing economic and scientific wealth:



For Poland

= distance to...

*but also could mean*

= opportunity

Comparing economic and scientific wealth. National science citation intensity, measured as the ratio of the citations to all papers to the national GDP, shown as a function of the national wealth intensity, or GDP per person, for the 31 nations in the comparator group. GDP and wealth intensity are given in thousands of US dollars at 1995 purchasing-power parity. Sources: Thomson ISI, OECD and the World Bank.

# Science and technology commercialization:

**data → information → knowledge → wealth  
(wisdom)**



# Driving Force: Economic (or Customer) Value

Definition of the Economic (or Customer) Value:

**Customer Value = Customer Benefits / Customer Costs**

*C. R. Carlson and W. W. Wilmot,*

*"Innovation – The Five Disciplines for Creating What Customers Want",  
SRI International Inc., Menlo Park, CA.*

*Crown Business, New York, 2006*

# COMPETITIVE = INNOVATIVE

- ◆ Foundation of ALL competitive advantage comes from **satysfying** CUSTOMERS` NEEDS better than the competition



Frank H. Knight  
(1885-1972)

## The paradigm of risk vs uncertainty

- an important Frank H. Knight's distinction (1921):

☯ "risk" refers to situations where the decision-maker can assign mathematical probabilities to the randomness which he is faced with. Conversely,

☹ "uncertainty" refers to situations when randomness "cannot" be expressed in terms of specific mathematical probabilities.

the former can be priced by financial markets while the latter cannot, financial markets trade risks

knowing which is which can allow the investor to earn good return

The contemporary patenting was introduced by the **Paris Convention for the Protection of Industrial Property**, signed in Paris, France, on March 20, 1883.

After the **Franco-Prussian War** (19 July 1870 – 10 May 1871) world economy was looking for means and tools to recover

and after a diplomatic conference in Paris in 1880, the Convention was signed in 1883 by 11 countries: Belgium, Brazil, France, Guatemala, Italy, the Netherlands, Portugal, El Salvador, Serbia, Spain and Switzerland.

# Myths about Intellectual Property Rights:

- It gives us the right to make the product
- It gives us world-wide rights
- It will keep everyone else from competing with us
- The government will give us money as a reward
- Competitors will come to us to get a licence
- We MUST have it



# Truths about Intellectual Property Rights:

- It does NOT give the right to make the product
- It does NOT give world-wide rights
- It will NOT keep everyone else from competing
- The government will NOT give money as a reward
- Competitors will (probably) NOT come to get a licence
- You do NOT necessarily have to have it



# What is a Patent Monopoly?

- **The right to exclude** everyone else from utilising what is covered by the patent
- NOT the right to commercialise the invention oneself

# How to Use a Patent Monopoly?

## **OFFENSIVELY:**

### MARKET PROTECTION:

Prevent others from making, using or selling

### REVENUE SOURCE:

Collect royalties for the right to make, use or sell

## **DEFENSIVELY:**

### MARKET ACCESS:

Leverage into market otherwise foreclosed

### MARKET ACCESS:

Cross-license the patents to get rights under other`s patents

### FREEDOM OF ACTION:

Prevent others from obtaining patent

# Patent market value, e.g. pharmaceutical industry

Drug Name	2007 Sales	Patent Expiry
Enbrel	\$5.3bn	2009
Adavir	\$7.1bn	2010
Seroquel	\$4.6bn	2011
Zyprexa	\$5.0bn	2011
Plavix	\$7.3bn	2011
Lipitor	\$13.5bn	2011
Singulair	\$4.5bn	2012
Aranesp	\$4.4bn	2014
Nexium	\$7.2bn	2014

The pharmaceutical industry will continue to see over 63 billion USD of annual income washed away due to patent erosion by 2014.

Is patenting underestimated ?

and/or

Is patenting overrated ???



Is patenting underestimated ?

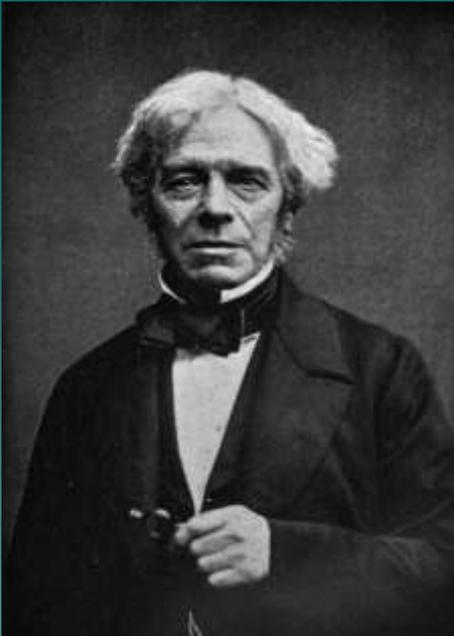
and/or

Is patenting overrated ???

Keeping a patent alive generates **costs**.

Does a patent generate an **income**?





*One day sir, you may tax it.*

- Faraday's reply to William Gladstone, then British Minister of Finance, when asked of the practical value of electricity.

# Maryland Industrial Partnerships

- MIPS is a **\$1.675 M** fund for academic-industrial R&D
- Projects are carried out at the university by faculty and students for companies
- Projects are jointly funded by companies and MIPS
- Disciplines: Engineering, and computer, physical, life and environmental sciences
- Scientific/technical evaluation
- Business/economic review

# MIPS Return on Investment: a self funded program

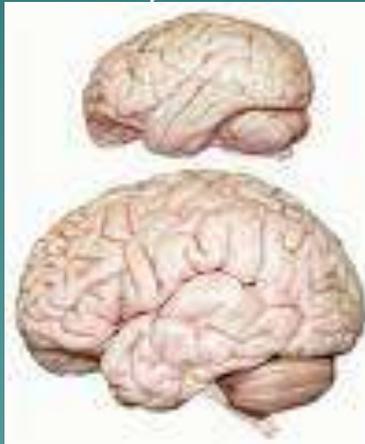
- Income Tax Estimates: 2009
  - Projected number of jobs created/yr = 684
  - Average salary = \$75,000/yr
  - State income tax rate = 0.0475
  - Estimated income tax/yr generated: **\$2,436,750**  
**(MIPS is self-funding!)**

# MIPS Cumulative ROI

- \$16.9 B sales of products whose initial development was supported by MIPS
- **\$34 M** total state funding for MIPS projects through Round 44
- Total Maryland Tax Revenues:  
$$\text{\$16.9 B} \times 0.05 = \text{\$845 M}$$
- **MIPS ROI:  $\text{\$845 M} / \text{\$34 M} = 25 \text{ to } 1$**

*I wish you every SUCCESSES  
in creative destructions!*

**1<sup>st</sup> M\$ !!!**



**brains**



**and / or**



**bricks**



*Thank you  
for your kind attention*



more info:

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[www.FabrykaWynalazkow.pl](http://www.FabrykaWynalazkow.pl)

[www.InventionsFactory.eu](http://www.InventionsFactory.eu)

[www.InnovationsMill.com](http://www.InnovationsMill.com)

skype ID: fabrykawynalazkow.pl

**Looking forward  
to seeing  
ALL of YOU at:**

**4th IP Management Forum  
March 9-11, 2011**

**Innovative Entrepreneurship**



Formal foundation of  
IP Management Polska  
as a registered association  
November 04, 2008

## IP Management Poland

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1078 1582  
correspondance address: PL-02-008 Warszawa,  
80 Koszykowa street unit 10  
phone.: +48 22 234 70 52, +48 698 094 902, fax.: +48  
22 234 71 64  
e-mail: [ipmpoland@gmail.com](mailto:ipmpoland@gmail.com),  
[www.InventionFactory.eu](http://www.InventionFactory.eu)







**Invention supply**

**versus**

**Innovation demand**

**TT  $\neq$  departament**

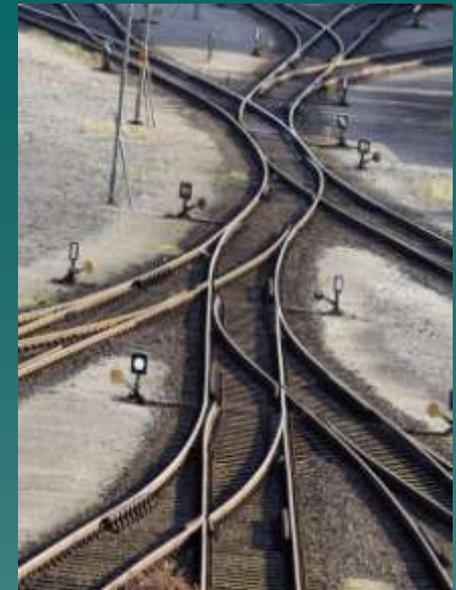
**TT = culture**



# Theory and practice +

## Academics and Entrepreneurs:

- ◆ value evaluation of IP and IPR,
- ◆ legal protection (defensive and offensive),
  - ◆ IP management (strategic decision making),
  - ◆ business administration vs PM...



# Invention supply

versus

# Innovation demand

## TT $\neq$ departament

## TT = ?



**TT ≠ department**

**TT / IP Brokerage =**

**(Loyalty**

**+ Confidence**

**+ Trust)**

TT / IP Brokerage =

IP → IPR - ?

IP → Intellectual Capital - Yes, yes, yes !!!



# Theory and practice +

## Academics ↔ Entrepreneurs:

- ◆ value evaluation of IP and IPR,
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      - ◆ business administration vs PM...



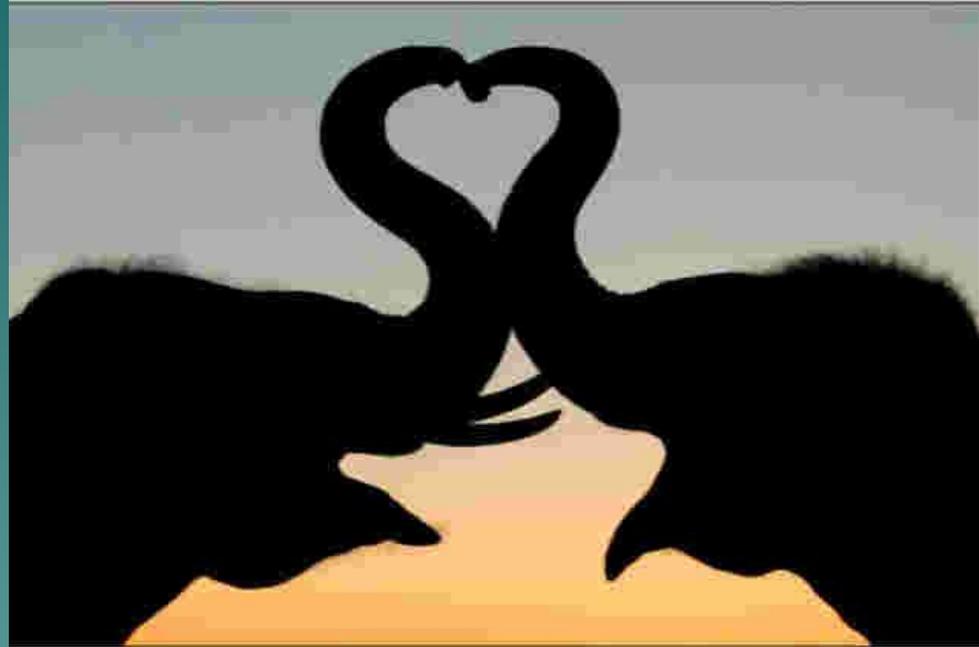
# Traditional / conservative approach...



**COULD be**

**creative / INNOVATIVE...**

# Traditional / conservative approach...



COULD be  
creative / INNOVATIVE...



## *M.Sc. in IP (Magister Własności Intelektualnej) - curriculum*

Uniwersytet Jagielloński w Krakowie – *zarządzanie* – prof. Ewa Okoń-Horodyńska

Uniwersytet Warszawski – *prawo* – prof. Jan Bleszyński i prof. Krystyna Szczepanowska-Kozłowska

Szkoła Główna Handlowa w Warszawie – *ekonomia* – prof. Marzenna Anna Weresa

Szkoła Główna Gospodarstwa Wiejskiego – *technologie* – prof. Irena Ozimek i prof. Danuta Kołożyn-Krajewska

Uniwersytet Medyczny w Łodzi – *technologie* – prof. Tadeusz Pietrucha i dr Maciej Godycki-Ćwirko

Naczelna Organizacja Techniczna – *case studies*

Regionalny Związek Pracodawców w Łodzi – członek Konfederacji Pracodawców Polskich – *case studies*

Politechnika Warszawska jako lider – *technologie* – prof. Roman Domański, doc. Tomasz Kosilo, prof. Józef

Modelski, dr Elżbieta Naumowicz, prof. Mariusz Olszewski oraz *strategiczne decyzje inwestycyjne (semestr dyplomowy)* – dr Zbigniew Turowski, dr Daria Gołębiowska-Tataj

oraz

Polska Izba Gospodarcza Zaawansowanych Technologii

Związek Banków Polskich i

US-Polish Trade Council

# M.Sc. in IP:

- ◆ economy
- ◆ law
- ◆ management
- ◆ technology:
  - agriculture and live sciences
  - medicine and pharmacy
  - ICT, civil eng., nanotechnology...
- ◆ case studies / good practices seen from their point of view of inventors, researches, designers, authors, employees
- ◆ case studies / good practices seen from their point of view of investors, entrepreneurs, employers
- ◆ investments (strategic decision making)





## Online Survey:

### • Interest:

- Between 37% and 52% of respondents would be interested to receive training on at least one skill
- 83% said their organization would like to receive training on at least one skill

### • Market Size and Fee:

- 22.700 Technology Transfer Professionals in Europe
- 18.880 are interested in participating in such a training
- Average tuition fee: 1800 Euros

### • Certification:

- 73% indicated that it is important to receive a European-wide recognized certification

# Business administration vs PM (MBA vs M.Sc.)

## ◆ Company

- operations / processes
- on-going / day to day
- repetitive
- business administration
- planning ex post
- change? ....→ **PM**

## ◆ Project

- project
- temporary
- unique, particular
- business development
- planning ex ante
- constant change
- adept at change

*Change is the only obvious parameter !*

# Unique in Europe Master`s degree in IP

## **M.Sc. in *Intellectual Property***

### **1st semester – *Economy***

**Warsaw School of Economics – head prof. Marzenna Anna Weresa, Ph.D.**

Basic courses – 105h (3x30 + 1x15) - ECTS 9,5 (4x2 + 1x1,5)

Faculty courses – 75h (2x30 + 1x15) - ECTS 7,5 (2x2 + 1x1,5)

Specialisation courses (chosed of 45 h of 90) – ECTS 4,5 (5,5)

### **2nd semester – *Law***

**Warsaw University – head prof. Krystyna Szczepanowska-Kozłowska, Ph.D.**

Basic courses – 60h – ECTS 90 (2x30)

Faculty courses – 90h – ECTS 135 (3x30 + 3x15)

Specialisation courses (chosed of 90h) - ECTS 90 (3x30)

### **3rd semester – *Management***

**Jagiellonian University in Cracow – head prof. Ewa Okoń-Horodyńska, Ph.D.**

Basic courses - 90h (2x30 + 30) - ECTS 6

Faculty courses – 135h (3x30 + 3x15) - ECTS 10,5

Specialisation courses (chosed of 90h - 3x30) - ECTS 6

### **During all 3 semesters students could choose technology courses in:**

*biotechnology* – Medical University of Lodz – head: prof. Tadeusz Pietrucha and Maciej Godycki-Ćwirko, Ph.D.;

*agriculture nad life sciences* – Warsaw University of Life Sciences – head: prof. Irena Ozimek, Ph.D.

*engineering* – Warsaw University of Technology - prof. Roman Domański, doc. Tomasz Kosio, prof. Józef Modelski

### ***Student will also work on case studies elaborated by:***

Polish Federation of Engineering Associations – head: Krzysztof Lebkowski

Konfederacja of Polish Employers – Regional Federation of Employers in Lodz – head: Janusz Golygowski

## **4th semester – Investment**

### **Warsaw University of Technology Business School**

IP Lab – 45h + 15h = 60h – 4 ECTS (5,0)

Diploma seminar – 2x30h = 60 h – 4 ECTS

Praca magisterska – 20 ECTS

# COMPETITIVE = INNOVATIVE

Foundation of ALL competitive advantage comes from satisfying CUSTOMERS` NEEDS better than the competition



ange:

rice, delivery, service, ....

customer`s point of view:

“leaking brakes are unsafe”

or more customer needs,  
arketing maneuvering,  
*chairs on the Titanic*

ugh, must excel at  
eeds

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# DEKLARACJA GALBRAITHA-KALECKIEGO

w uznaniu roli kapitału intelektualnego  
w tworzeniu narodowego dobrobytu

ADDRESSING SOCIAL DECLARATIONS  
ON RECOGNITION OF THE ROLE OF INTELLECTUAL CAPITAL  
IN CREATING NATIONAL PROSPERITY

DEKLARACJA GALBRAITHA-KALECKIEGO  
W UZNANIU ROLI KAPITAŁU INTELLEKTUALNEGO  
W TWORZENIU NARODOWEGO DOBROBYTU

WE, THE UNDERSIGNED,  
are prepared to support the idea of creation of an

“Intellectual Property Institute”,

as a non-governmental professional organization,  
which will

- ✓ collaborate with international and national bodies and
- ✓ set, develop, disseminate and promote the highest standards of performance in creating, using and benefiting from clearly defined and
- ✓ enforced Intellectual Property Rights engendered by the best sources of Intellectual Capital.

WE HEREBY SET OUR NAMES this 13 March 2009,  
40 years after John Kenneth Galbraith introduced  
the term "Intellectual Capital" in his letter  
addressed to Michael Kalecki  
praising the contribution of Kalecki's intellectual capital  
to the discourse of world experts on economic matters.

# DEKLARACJA GALBRAITHA-KALECKIEGO

w uznaniu roli kapitału intelektualnego  
w tworzeniu narodowego dobrobytu

DECLARATION OF THE CONSORTIUM  
ON RECOGNITION OF THE ROLE OF INTELLECTUAL CAPITAL  
IN CONTRIBUTING TO NATIONAL PROSPERITY

DEKLARACJA GALBRAITHA-KALECKIEGO  
W UZNANIU ROLI KAPITAŁU INTELLEKTUALNEGO  
W TWORZENIU NARODOWEGO DOBROBYTU

## Galbraith-Kalecki Declaration in Recognition of the Role of Intellectual Capital in Contributing to National Prosperity

Gathering at the Warsaw Stock Exchange on the conclusion of the International Forum in Warsaw, the undersigned in recognition of the historic significance of their Warsaw meeting in promoting the development of Intellectual Capital and its attendant contribution to national wealth, social welfare and ultimate prosperity, do hereby declare:

✓ WHEREAS, the first public use of the term "Intellectual Capital" has been tracked to G.R. Feiwel in *"The Intellectual Capital of Michael Kalecki: A Study in Economic Theory and Policy"* (1975);

✓ WHEREAS, G.R. Feiwel attributes introduction of the term "Intellectual Capital" to John Kenneth Galbraith, who in a 1969 letter to economist Michael Kalecki wrote: *"I wonder if you realize how much those of us in the world around have owed to the intellectual capital you have provided over these last decades."*

✓ WHEREAS, the consortium's initiative on intellectual property management in Poland was conceived to maximize the value of intellectual capital and the advancement of scientific and commercial technology development for the benefit of the creative innovator scientists and entrepreneurs and society at-large.