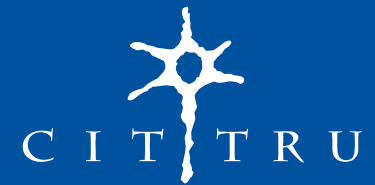




JAGIELLONIAN UNIVERSITY  
IN KRAKOW



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# Commercialization strategy at the Jagiellonian University

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***Gabriela Konopka-Cupiał, PhD***

*Centre for Innovation, Technology Transfer and University Development (CITTRU)*

*NITT SK 2011 Conference – Technology Transfer in Slovakia and Abroad  
Bratislava, 11<sup>th</sup> October 2011*



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2. Technology Transfer Regulations
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4. **Commercialization strategy implemented by  
CITTRU**
5. Examples – two inventions, two solutions



# Jagiellonian University in Kraków

## 15 Faculties

- Law and Administration
- Philosophy
- History
- Philology
- Polish Studies
- Management and Social Communication
- International and Political Studies
- Mathematics and Computer Science
- Health Science
- **Physics, Astronomy and Applied Computer Science**
- **Chemistry**
- **Biology and Earth Science**
- **Biochemistry, Biophysics and Biotechnology**
- **Medicine**
- **Pharmacy**



About **46 000 students**

Over **3 700 researchers**



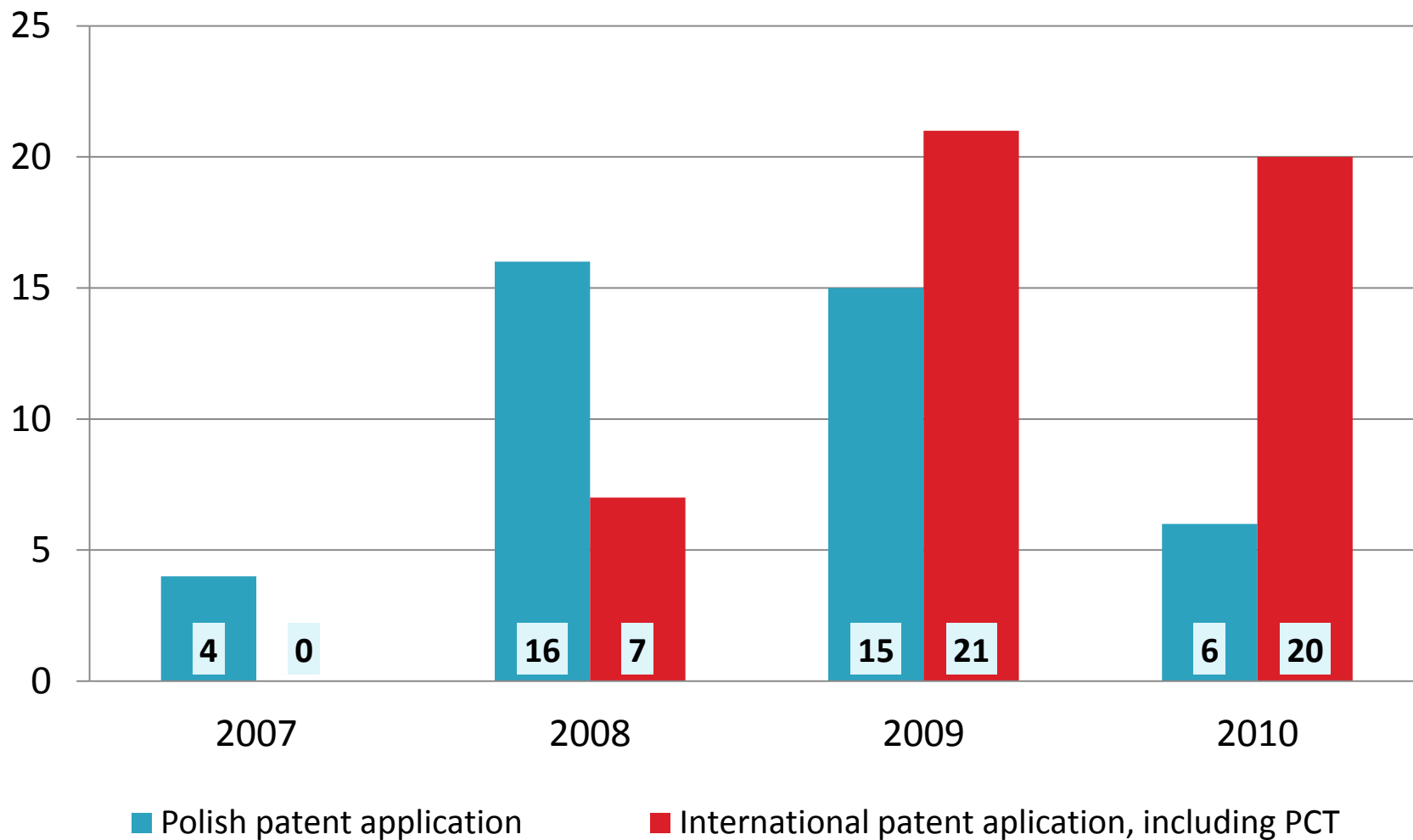
## Research at the Jagiellonian University

In 2009 **2884 research topics** have been studied, including grants of Polish Ministry of Science and Higher Education and international projects.





## Patent filings at the Jagiellonian University





## Technology Transfer Regulations

- **IP regulation** (since 2007)
- **Spin-off regulation** (since 2007)
- **Contract research procedure** (since 2009)





## IP regulations

- **IP rules are an integral part of contracts**
- **The owner of the property** developed by the employees, including:
  - experimental/test results,
  - prototypes,
  - inventions,

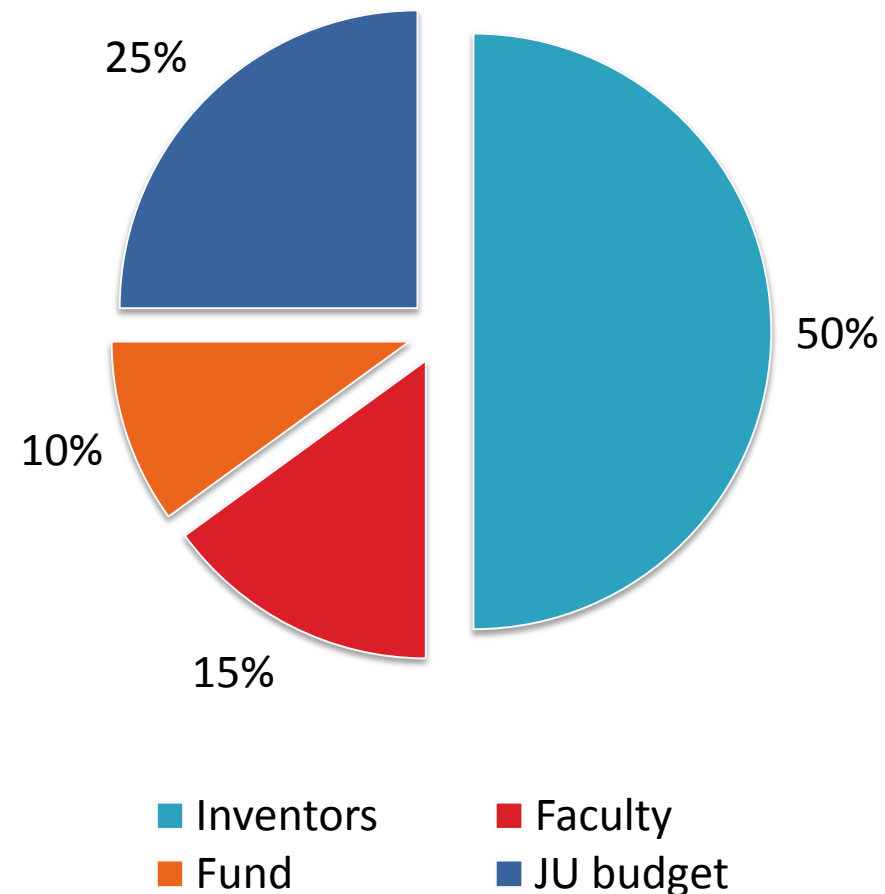
**is Jagiellonian University** (in accordance with the Law of Industrial Property).

- The **employee is obliged to report the intellectual property**, to which Jagiellonian University might be entitled.



## IP regulations

- **JU and inventors sign agreement** of the right to the inventive project **(only after signing the contract inventors are entitled to benefits)**
- **JU shares profits** from the commercialization **with the inventors** **(50% for university, 50% for inventors)**
- **Inventors inform the university** how the profits will be shared among them **(depending on individual**







## Spin-off regulations

- **Company formed by the Jagiellonian University and/or researchers**  
to commercialize the invention/intellectual property developed at JU.
- Also an **external investor may be shareholder** in the company.
- The employee/researcher might:
  - **have shares** (profits are converted into shares),
  - **participate in the bodies/board**,
  - **be a consultant.**





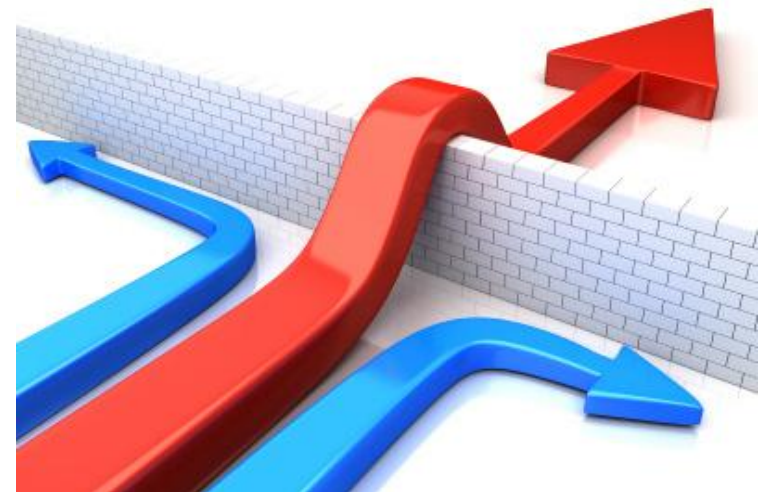
# Centre for Innovations, Technology Transfer and University Development (CITTRU)



CITTRU is a part of JU since  
2003

## The **MISSION** of **CITTRU** is:

- **promote** the University Knowledge,
- **support** Innovations,
- **create** cooperation with Business.



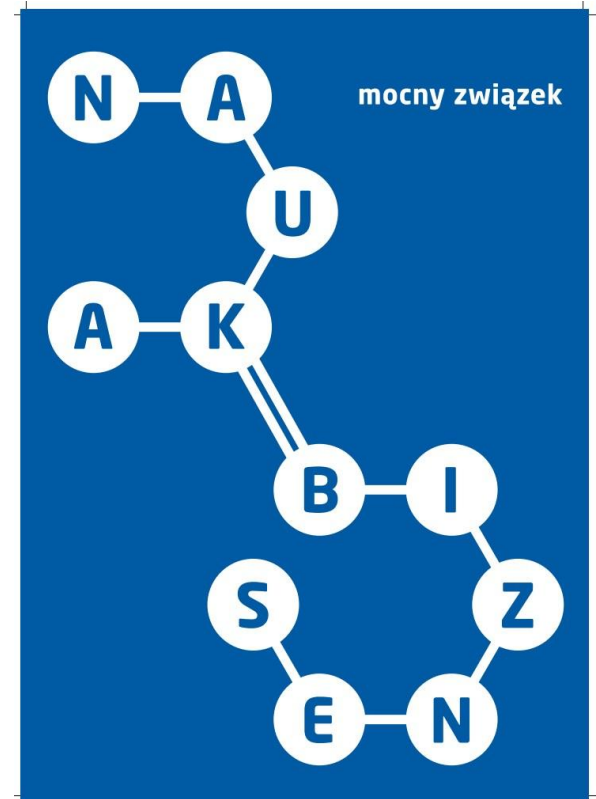


## CITTRU: KNOWLEDGE - INNOVATIONS – BUSINESS

**Knowledge** - since we make use of the intellectual resources of the Jagiellonian University

**Innovations** - because we put emphasis on development based on new technologies, research methods and market implementations

**Business** - since we know that science needs cooperation with companies and that the economy will grow faster when supported by science



Maciej Mytnik „strong relationship”,  
poster submitted to the competition  
„Science ↔ Business”, CITTRU



## CITTRU – teams

- [Innovation Team \(5\)](#)
- Promotion and Education Team (4)
- Structural Funds Team (5)
- Administration Team (6)

**CITTRU consists of competent staff with international experience and diverse educational background**

(legal, economic, sociological, technical, psychological and life sciences)



Andrzej Kotarba „innovation bridges”, poster submitted to the competition „Science ↔ Business”, CITTRU



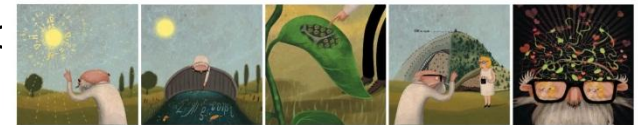
## CITTRU tasks – Promotion and Education Team

- **promotion of science and entrepreneurship** (inside and outside the JU),
  - contact with the media (TV, newspapers, radio)
  - business days
  - newsletter (NIMB)
  - other activities (e.g. competitions)

NAUKA | INNOWACJE | MARKETING | BIZNES

**odkryjPrzestrzenieNowejNauki**

# NIMB



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## CITTRU tasks – Promotion and Education Team

- **trainings and workshops for academic staff and students:**
  - IP - how to protect intellectual property
  - technology transfer - application of research results in practice
  - funds for research - where is the money? (e.g. structural funds)
  - principles of entrepreneurship.





## CITTRU tasks – Structural Funds Team

- collaboration with scientists in the **preparation of project proposals**, in particular for projects derived from the structural funds

## CITTRU tasks – Administration Team

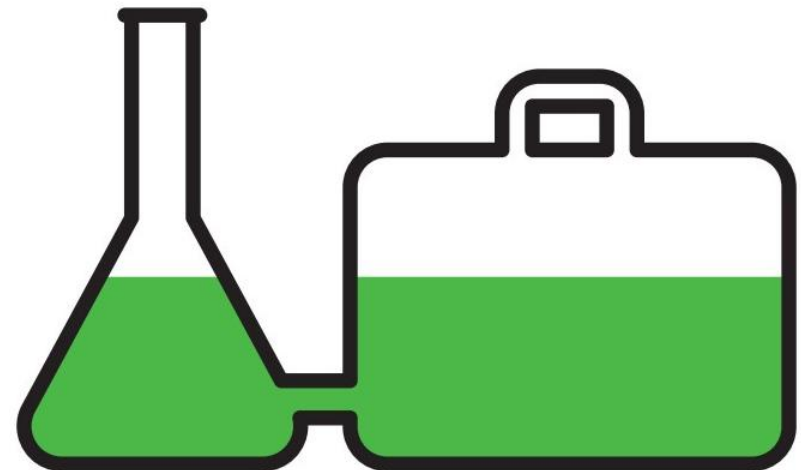
- **management and support of the major JU and CITTRU projects**





## CITTRU tasks – Innovation Team

- **identification of innovative** research/projects at JU,
- **IP protection**,
- **preparation of technology offers** for external entities  
(both for entrepreneurs and other scientific units)
- **promotion** of JU achievements
- **IP licensing or sale**
- **creation** of academic **business**







## Tasks of Innovation Team in details:

- **building relationships** with scientific groups whose research may be of application,
- **build partnerships** between the university and the business,
- **seeking** business partners,
- **exploration** and development of optimal ways to implement university inventions,
- **support** in establishing and negotiating the terms of business agreements.

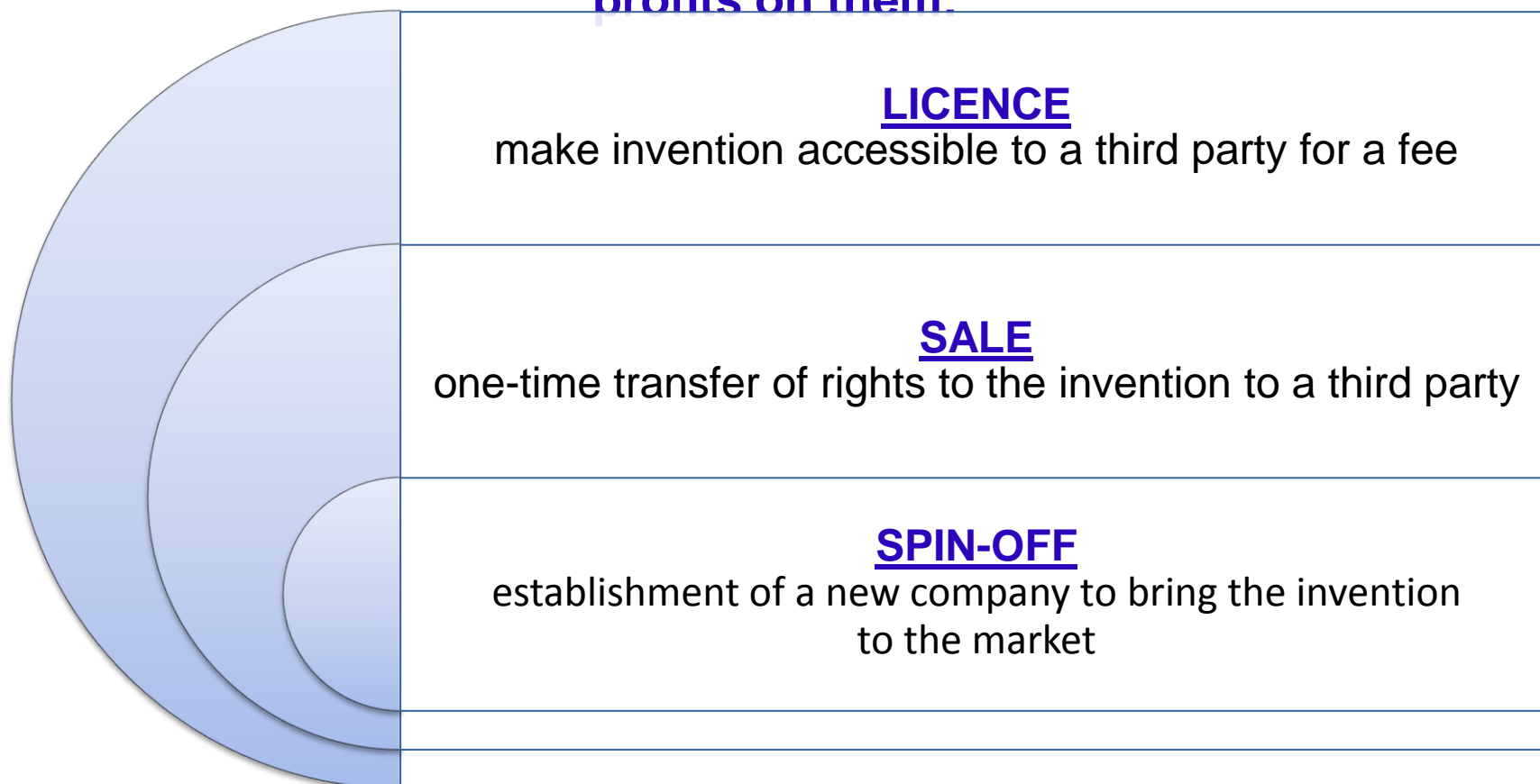


Katarzyna Ślebarska , „alliance”,  
poster submitted to the competition  
„Science ↔ Business”, CITTRU



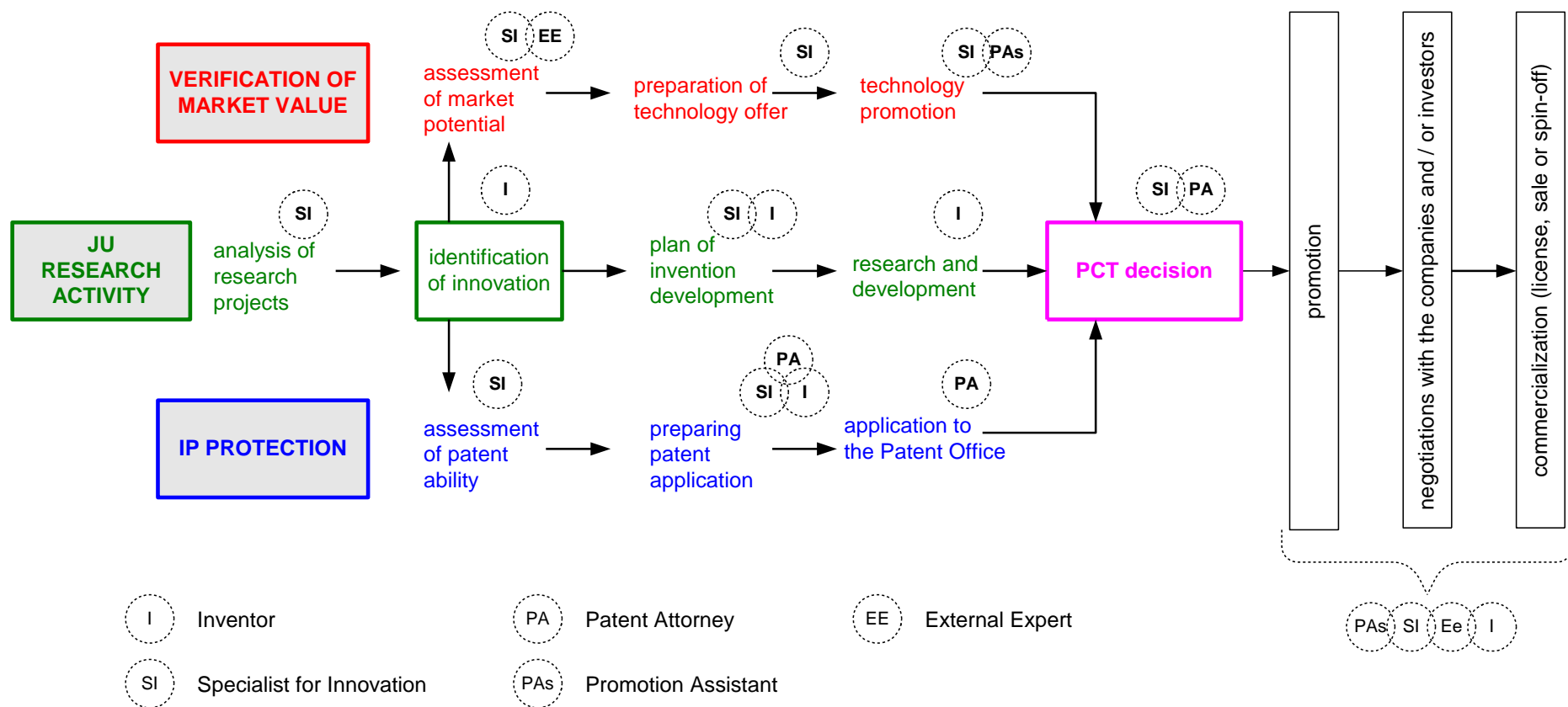
## Commercialization

**Three ways to transfer research results to market and make profits on them:**



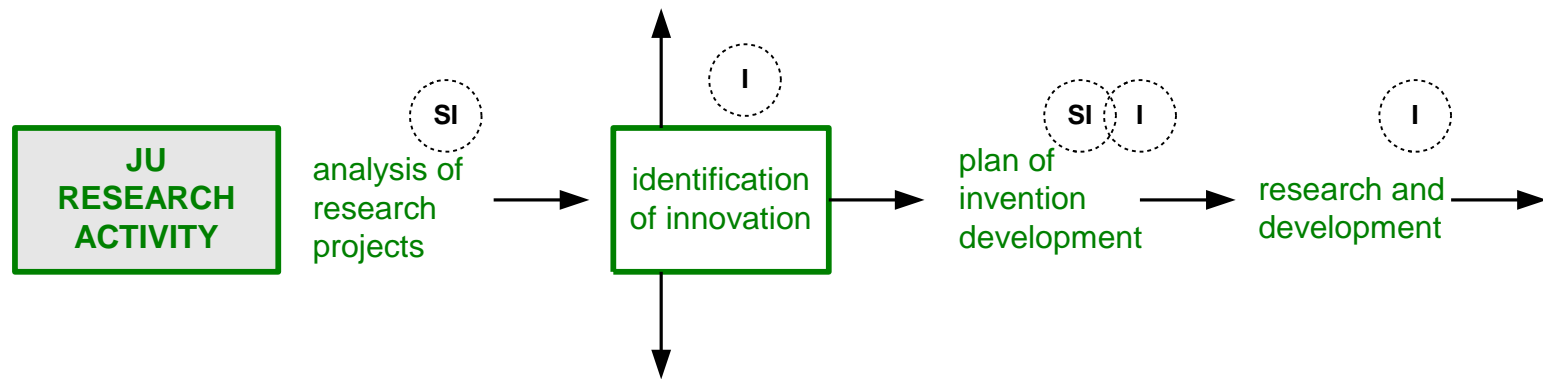


# Commercialization strategy implemented by CITTRU





# Commercialization strategy path "*JU research activity*"





## *”JU research activity”* – identification of innovation

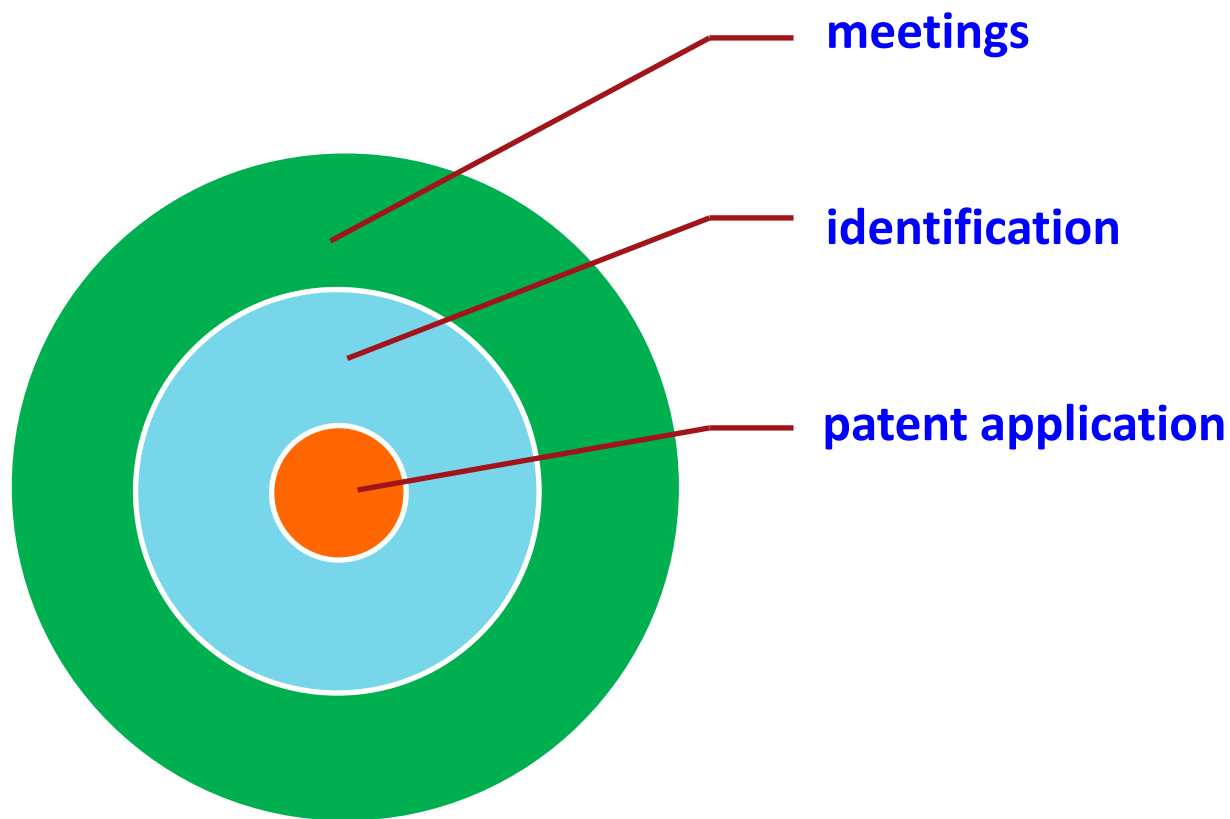
- **Individual meetings** with scientists
- **Searching** for promising research projects
- **Application form** for innovation



Emilia Szewczyk, „almost always scientific solution”,  
poster submitted to the competition  
„Science ↔ Business”, CITTRU



## *"JU research activity"* – identification of innovation





# Application Form for Innovation - optimal project description

- invention title
- inventor name
- source of research funding
- **publications**
- category and short description
- **novelty**
- **limitations**
- **experimental verification**
- implementation possibilities
- **plans/further development**
- **key words**

- P O U F N E -

Uniwersytet Jagielloński  
Centrum Innowacji, Transferu Technologii i Rozwoju Uniwersytetu  
**Fomularz Zgłoszenia Innowacji**

**1. Nazwa wynalazku:**

\_\_\_\_\_

Imię i nazwisko wynalazcy*	Adres na Uniwersytecie Jagiellońskim	Nr telefonu kontaktowego oraz adres e-mail	Adres domowy
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

\* CITTRU skontaktuje się z pierwszym z wyżej wymienionej grupy wynalazców, aby przedyskutować sprawy ochrony i wykorzystania innowacji.

**2. Finansowanie.** Czy praca prowadząca do innowacji była finansowana z jakich zewnętrznych źródeł (np. granty, sponsorzy, itd.)? Jeśli tak to proszę wymienić wszystkich poniżej:

Lp.	Sponsor	Numer przyznanego dofinansowania lub rachunek bankowy
a)	_____	_____
b)	_____	_____

**3. Publikacje, ustne prezentacje, sesje plakatowe (posterowe), publikacje na stronie internetowej.**

A) Czy kiedykolwiek opisywałeś(-łaś) wynalazek w publikacji, ustnej prezentacji, sesji plakatowej lub w wywiadzie dla pracy lub mediów? Czy informacje na jego temat były publikowane na stronie internetowej? Kiedy była wydana publikacja, przedstawiana prezentacja lub publikacja na stronie internetowej? Czy był on opisywany w sposób szczegółowy czy ogólny? Proszę dołączyć kopie wszystkich publikacji oznaczając je wspólnie jako Załącznik A.

\_\_\_\_\_

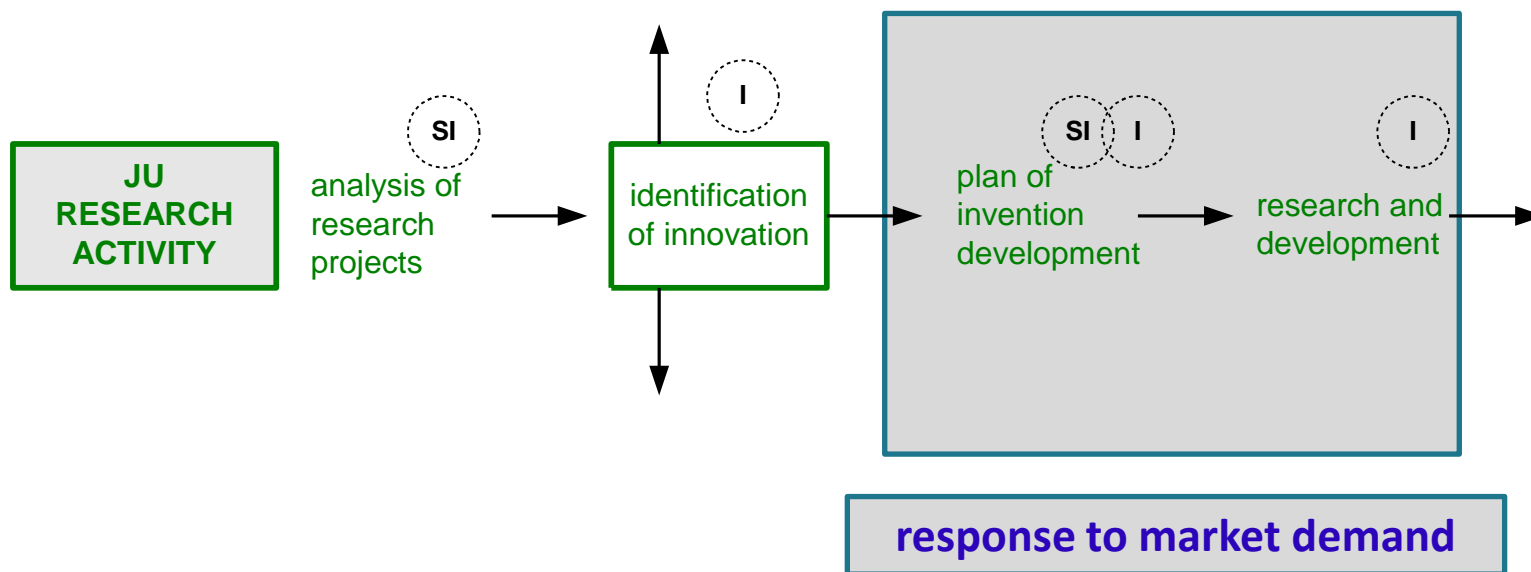
B) Czy są planowane przyszłe publikacje lub publiczne wystąpienia na temat wynalazku?  
TAK  NIE

Jeżeli tak to proszę napisać kiedy publikacja zostanie wysłana pocztą w celu dystrybucji wśród czytelników oraz datę jakiegokolwiek publicznego wystąpienia na temat

CITTRU Do użytku wewnętrznego Strona 2 z 4



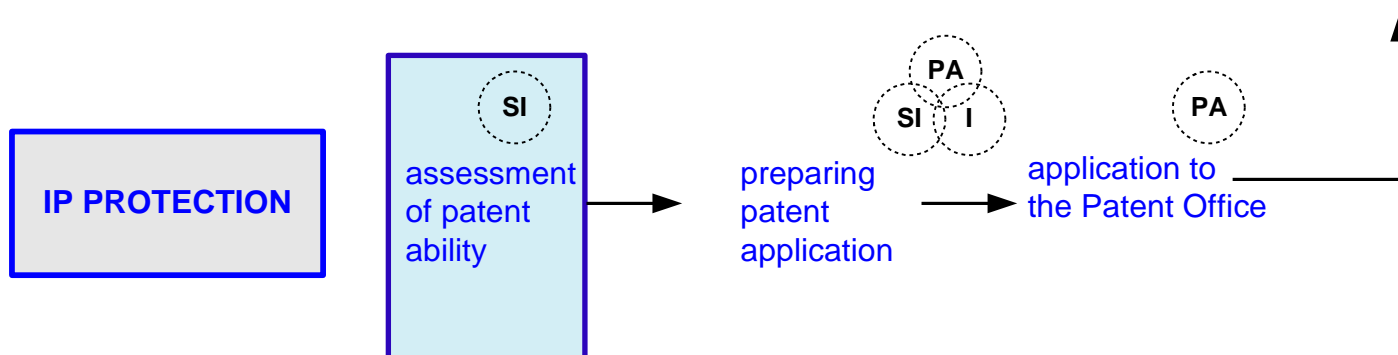
## Commercialization strategy path "*JU research activity*"







## Commercialization strategy path "*IP protection*"



**Assessment of novelty, inventive step and practicality**



## Commercialization strategy path "*IP protection*"

**national  
patent  
application**

**12 months**  
→

**PCT  
procedure**

**18 months**  
→

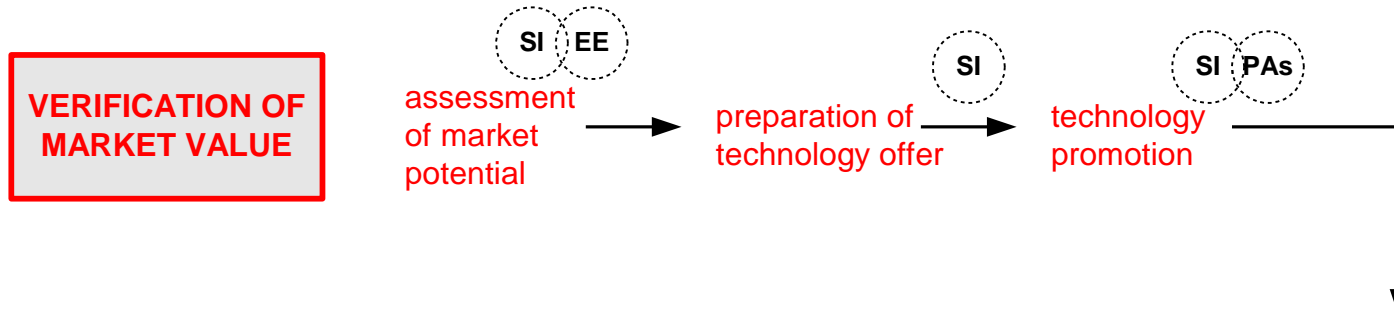
**EPO, USTPO,  
and other  
applications**

**30 months  
to find a business partner**

**Costs are covered by JU (CITTRU projects)**



# Commercialization strategy path "*Verification of market value*"





## “*Verification of market value*” – assessment of market potential

- Database
- Expert opinion
- Industry reports
- Internet
- Feedback from trade fairs  
and partnering conferences



Tomasz Gancarzyk, „the scientist – a specialist in multiplication”, poster submitted to the competition „Science ⇔ Business”, CITTRU



## "Verification of market value" – technology offers

MATERIAŁY NA BAZIE  
NANOKRYSTALICZNEGO DWUTLENKU  
TYTANU FOTOAKTYWOWANE  
ŚWIATŁEM WIDZIALNYM DO  
DEZYNFEKCYJ I STERYLIZACJI

(OFERTA TECHNOLOGICZNA P-108)



*Przedmiotem oferty są nowe materiały uzyskane poprzez modyfikację nanokrystalicznego dwutlenku tytanu, które mogą znaleźć zastosowanie w procesach bardzo efektywnego fotokatalitycznego niszczenia komórek mikroorganizmów oraz degradacji związków organicznych w warunkach naświetlania światłem widzialnym.*

Materiały na bazie dwutlenku tytanu (TiO<sub>2</sub>) znane są jako materiały o właściwościach fotokatalitycznych, do zastosowań zarówno środowiskowych, jak i biomedycznych. TiO<sub>2</sub>, naświetlany światłem ultrafioletowym dzięki swojej aktywności fotokatalitycznej wykazuje bowiem własności bakterioobójcze, grzybobójcze, dezynfekujące oraz neutralizujące zapach. Z materiałów tych wykonuje się zarówno powłoki samoczyszczące, jak i środki do dezynfekcji, sterylizacji oraz preparaty dezodorujące.

Przedmiotem oferty technologicznej są materiały o właściwościach fotokatalitycznych stworzone na bazie nanokrystalicznego dwutlenku tytanu zmodyfikowanego w sposób umożliwiający wykorzystanie światła widzialnego. Materiały te bardzo efektywnie fotokatalizują degradację związków organicznych oraz fotoinaktywują komórki bakterii.

Zalety materiałów na bazie modyfikowanego nanokrystalicznego TiO<sub>2</sub> to:

- brak toksyczności w ciemności, zarówno gotowego materiału, jak i substratów wykorzystywanych do jego syntezy;



HYBRID  
PHOTOCATALYSTS BASED  
ON NANOCILAYS FOR  
WATER PURIFICATION

(TECHNOLOGY OFFER P-101)



*The subject of the offer covers hybrid photocatalysts based on nanoclays and their application to photocatalytic reactions, in particular in environment-friendly method of water purification.*

Water contamination becomes a problem which may limit civilization progress. The development of a universal and inexpensive method of water purification is very difficult, because it may contain pollutants of different nature, e.g. heavy metals, organic compounds (pesticides, chlorinated aromatic compounds, antibiotics and surfactants) as well as bacteria. The water purification methods currently in use are based on osmosis, ion-exchange, adsorption, ultrafiltration, distillation and photooxidation. Although quite varied, they have limitations, mainly connected with their high power consumption and low efficiency.

The offered method of water purification is based on the photocatalytic degradation of contaminations. Photocatalysts are received as a results of the modification of layered nanoclays by polymers that can absorb both visible and ultraviolet light. Experimental tests have shown that hybrid photocatalysts may efficiently degrade water pollutants as a result of oxidation by singlet oxygen, energy or electron transfer. Moreover, it has been proved that hybrid photocatalysts have the ability to adsorb hydrophobic compounds thereby additionally improving the water purification process. Hybrid photocatalysts are especially well-suited for the photodegradation of pesticides, aromatic compounds (e.g. chlorinated aromatic compounds), phenols and cyanides.





## *“Verification of market value”* – technology promotion

Meetings with industry:

- **individual meetings** – one company and one research team
- **branch meetings** – a few companies and a few research teams





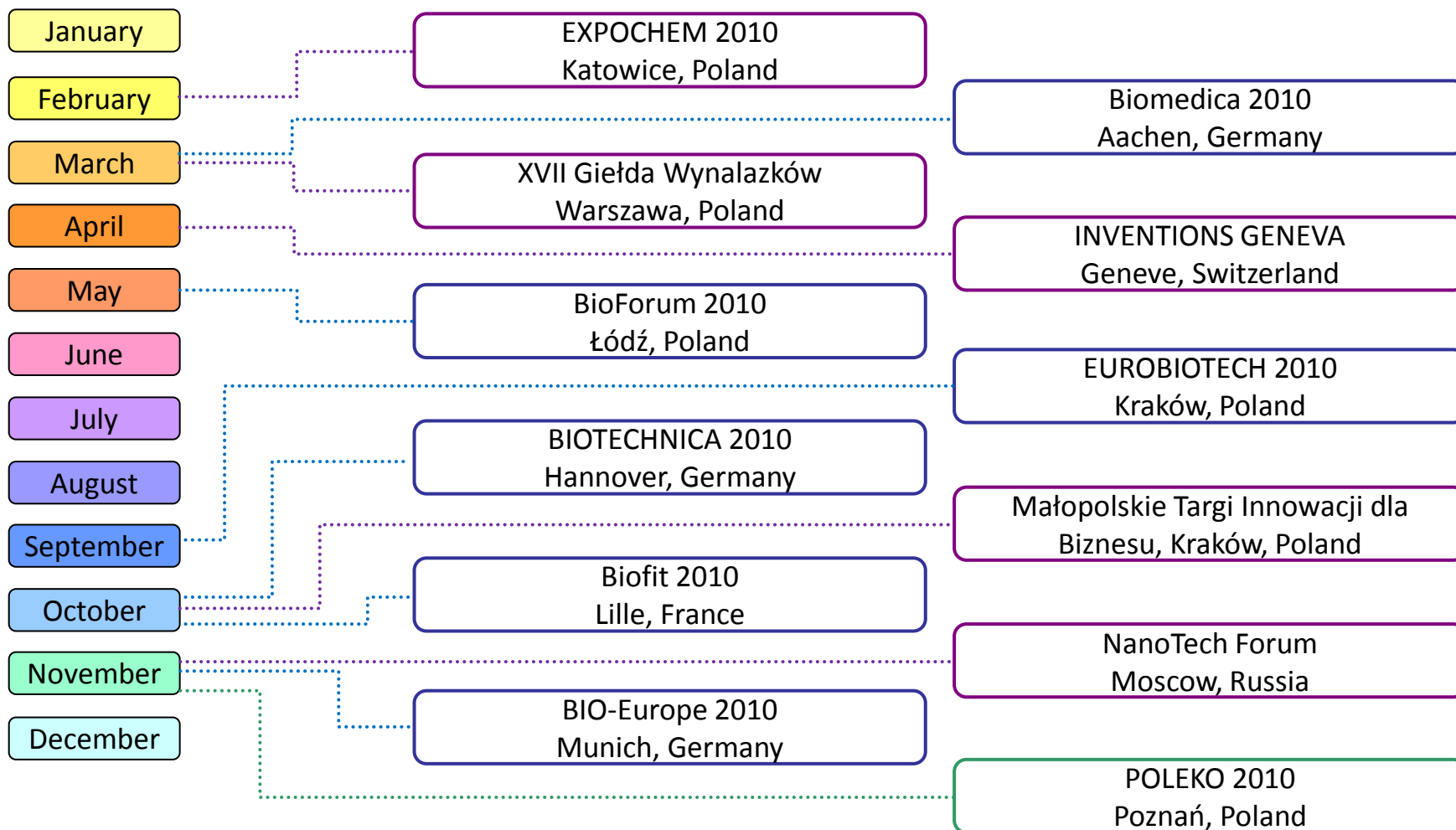
## “Verification of market value” – technology promotion

- international and national exhibitions, trade fairs, conferences
- radio, TV, innovation portals





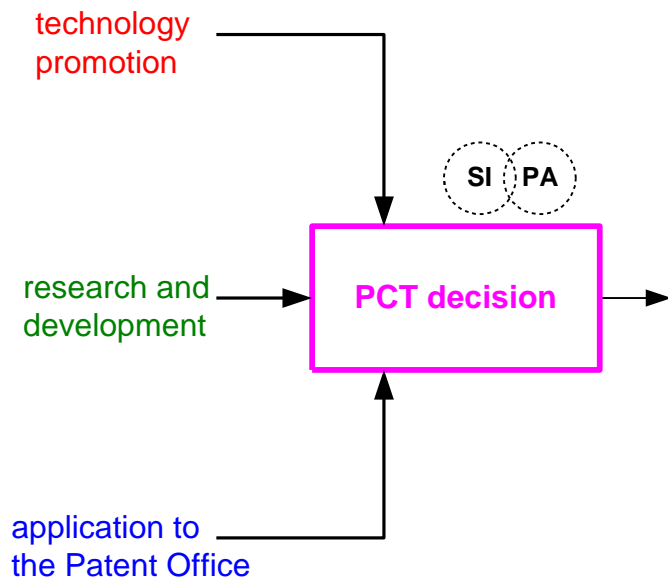
## Event calendar - 2010







## Where the path leads



We determine the **optimal plan** for  
invention development and  
commercialization

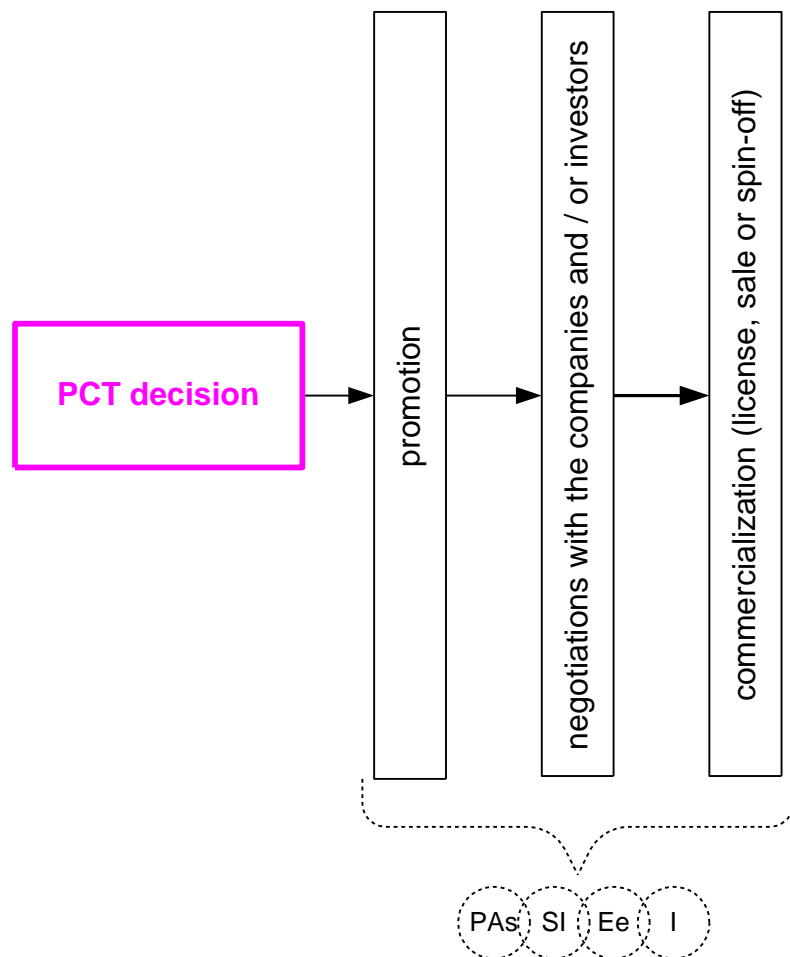


*znajdź swoją, własną, drogę*

Magda Tajber, „find your own way”,  
poster submitted to the competition  
„Science ↔ Business”, CITTRU



## What next



Michał Parczewski, „Map of business bonding”,  
poster submitted to the competition  
„Science ↔ Business”, CITTRU



## Example – two inventions, two solutions

The **global system for monitoring and forecasting storm activity in real time** based on propagation of electromagnetic field signals of extremely low frequency (ELF, 3-3000 Hz).

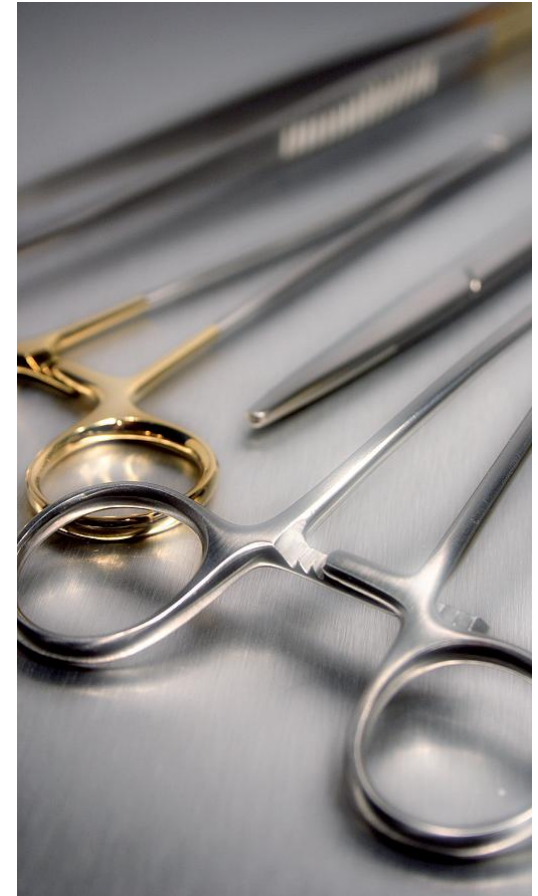
Data on storm activity are significant for early warning in case of the lightning hazard.





## Example – two inventions, two solutions

**Materials based on modified nanocrystalline titanium dioxide** that can be applied for **efficient photocatalytic microorganisms inactivation** or organic pollutants degradation under visible light irradiation.





## Example – two inventions, two solutions

<b>System for storm activity detection</b>	<b>Materials based on titanium dioxide</b>
<b>Physics</b>	<b>Chemistry</b>
<b>Several years</b> of research and <b>several grants</b>	<b>One research grant</b>
<b>Spin-off</b> (JU as shareholder)	<b>Licence</b> (limited involvement of JU)
<b>Active participation of inventors needed</b>	<b>Inventor participation not required</b>
Cost of commercialization: ~ <b>3 millions PLN</b>	Cost of commercialization: ~ <b>0.5 million PLN</b>
Funding: <b>Venture Capital</b>	Funding: <b>Private Polish company</b>
Time to revenues: For company – 2 years <b>For JU – about 4-5 years</b>	Time to revenues: For licensee – about 1 year <b>For JU - 1 month</b>



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Thank you for your attention

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*Posters and comics used in the presentation were submitted for the contests organized by  
CITTRU.*