



W O R L D  
MATERIALS  
F O R U M  
23 & 24 June 2015 - Nancy, France

# Better access to R&D

Workshop #3 **Innovation & repositionning**

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Director Office of Tech Transfer AP-HP

June 24, 2015 – Museum of Fine arts, Nancy, France

# Value chain

From academic research



©Next Gen African Farmers

# Patients / Clinical research / Healthcare

Health care  
employees, nurses

Physicians, biologists,  
pharmacist

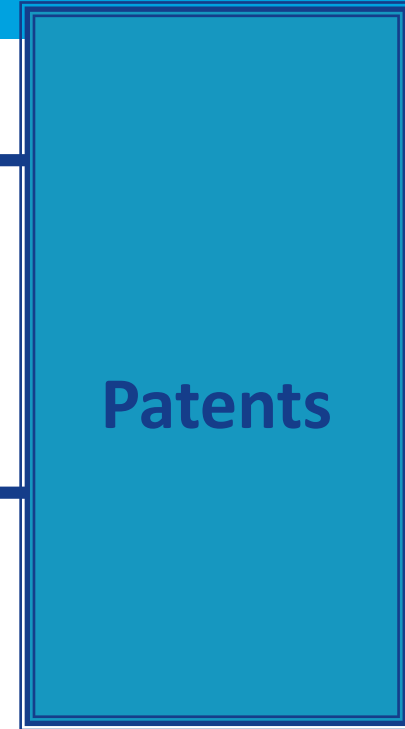
- Patients comfort optimization
- Modification of medical devices
- Innovative Rehabilitation tools
- Innovative logistic or technical

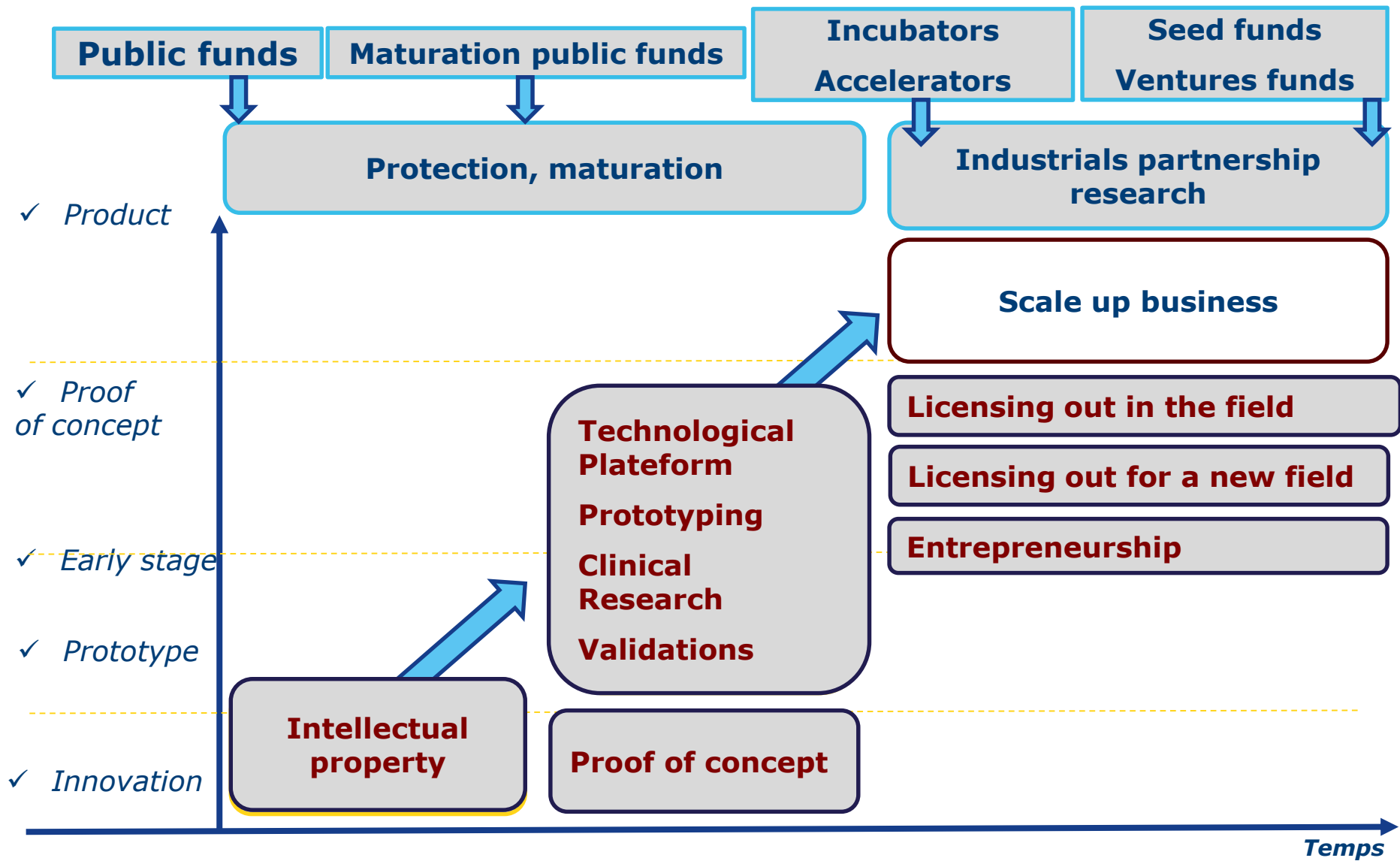
- Compassionate use
- Orphan uses, antidotes
- Cell & gene therapy
- Compounding pharmacy, specials
- Galenic innovation, Dose optimization

- Registers - Cohorts
- Data's bases, tumor banks
- Biological collections, banks
- Expertise, networks

- Diagnostic tests
- Biomarkers, genetic markers

- Targets identification
- Leads optimization





# Repositionning

## Strategy to new markets



Pharma (Compounds & Vaccines)



Diagnostic

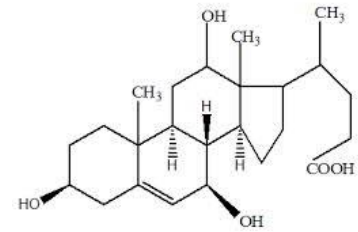


Medical device

# Acide cholique $C_{24}H_{40}O_5$

- **1992: Pr Jacquemin treated with Ac Cholique patients with rare disease**

*Deficit in hepatic enzymes (3beta-HSD & delta4-3 oxo-R)*



- **1993: Clinical trial sponsored by AP-HP with Ac Cholic prepared by Bicêtre pharmacy**
- **1997: Success of the treatment in 1 to 8 monthes**  
*Jacquemin E, Hermans E, Myara A, et al. Ursodeoxycholic acid therapy in pediatric patients with progressive familial intrahepatic cholestasis. **Hepatology** 1997 ; 25 : 519-23*
- **2002: Orphan Designation EMA by AP-HP (AGEPS)**
- **2007: Partnership with CTRS**  
**Clinical datas transfer and designation**
- **2013: Europe approval (European Medicine Agency)**
- **2014: ASMR 1, ANSM, Galien Prize, Golden Pill**

# Iron

- **3000 years ago, first therapeutic preparation based on iron**
- **Melampus cured the son of Argos king by making him drink a potion which had been plunged into his sword intent that it files its rust**
- **XVI century, Iron treatments used as purgatives, emetics, cauteries legs or bleeds**
- **1713, Louis Lemery & Etienne Francois Geoffroy discovered that iron is a component of blood**
- **1975, First specialty injectable iron (FER LUCIEN®<sup>®</sup>, IM)**
- **2004, Iron patented for ADHD**



# Ceramic for medical and optic use

## Specific properties

Chemical neutrality

Composition from those of neighboring bone tissue

Biological tolerance by the body

Torsional strength

Resistance to friction

Optical Properties

Hardness

Eye Surgery

Dental implants / Protheses

Bone prostheses / substitute

Orthodontie (barckets)

Surgical tools and Instrumentation

Medical instruments and analysis

Medical implants (Cochlear, pacemakers)

Lasers

Infrared detectors

## Application examples

# Concrete, plaster, brick for medical use

- **Development of a radiology facility**
- **Protection of walls of the room**
- **Ensure the protection of workers and the public**
- **Depends on the delimitation of controlled and supervised areas compared to adjoining areas**

# Serendipity

Learning { Insights,  
Experiences,  
Relationships,  
Networks }

Behavior { Curiosity,  
Commitment,  
Divergence,  
Generosity }

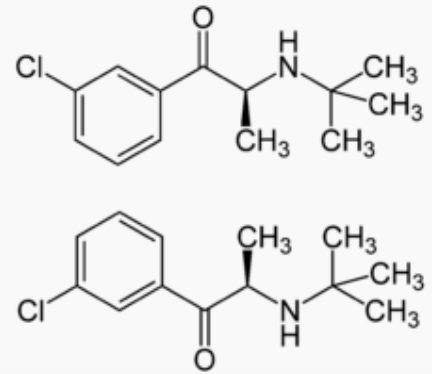
+ Stimulation { Events,  
Collisions,  
Reflection,  
Recombination }

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Conditions for  
Serendipity

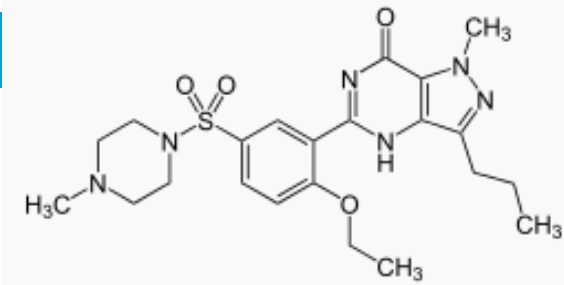
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# Bupropion, C<sub>13</sub>H<sub>18</sub>ClNO



- **1997, patented as a drug for depression (Wellbutrin)**
- **Several observations: depressed patients under bupropion stopped smoking**
- **Investigation showed that bupropion reduces the need for nicotine by acting on dopamine**
- **2002, bupropion was patented (Zyban new name) as a treatment to stop smoking**

# Sildenafil $C_{22}H_{30}N_6O_4S$



- **1996: Patented by Pfizer**  
**Dedicated to angora treatment (Cardiac disease)**
- **1997: First clinical trial shows no effect on angor but serious side effects on erection**
- **1998: US approval for drug on dyserectile troubles (FDA)**
- **1999: Europe approval (EMA)**
- **2011: Generic drugs arrival**

Know how,  
ultimate weapon

# Know how regulation?

**CEE n°4087/88 du 30/11/88 & CE n°2790/1999 22/12/99  
(Rgl't UE n°316/2014 23/03/14)**

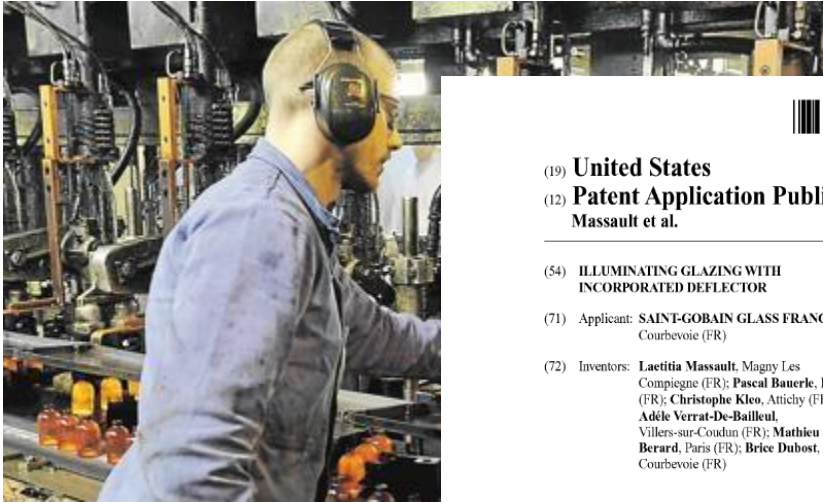
Practical information, resulting from experience and tested

- **Secret:** it is not generally known or easily accessible
- **Substantial:** significant and useful for the production of contract products (commercial value)
- **Identified:** described in a sufficiently complete manner to allow verification that it meets the conditions secret

# Murano (Venise, Italy)







@ Les Echos



US 20150160400A1

(19) **United States**  
 (12) **Patent Application Publication** (10) **Pub. No.:** US 2015/0160400 A1  
 Massault et al. (43) **Pub. Date:** Jun. 11, 2015

(54) **ILLUMINATING GLAZING WITH INCORPORATED DEFLECTOR**

(71) Applicant: SAINT-GOBAIN GLASS FRANCE, Courbevoie (FR)

(72) Inventors: Laetitia Massault, Magny Les Compiègne (FR); Pascal Bauerle, Roye (FR); Christophe Kleo, Attichy (FR); Adèle Verrat-De-Bailleul, Villers-sur-Coudun (FR); Mathieu Berard, Paris (FR); Brice Dubost, Courbevoie (FR)

(73) Assignee: SAINT-GOBAIN GLASS FRANCE, Courbevoie (FR)

(21) Appl. No.: 14/399,826

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(86) PCT No.: PCT/FR2013/050990

§ 371 (c)(1),

(2) Date: Nov. 7, 2014

(30) Foreign Application Priority Data

May 10, 2012 (FR) ..... 1254297

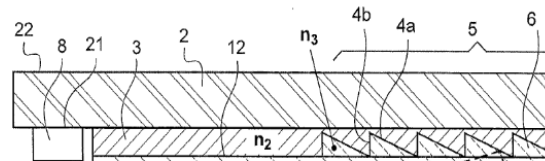
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 CPC ..... *G02B 6/0038* (2013.01); *G02B 6/0073* (2013.01); *B60Q 3/0203* (2013.01); *B60Q 3/004* (2013.01)

(57) **ABSTRACT**

A lighting glazing includes a first sheet of glass of refractive index  $n_1$  with a first main face, a second main face and a rim; a transparent polymer film in adhesive contact with the second main face of the first sheet, the film having a refractive index  $n_2 < n_1$ ; a light source positioned facing the rim of the first sheet of glass, wherein an area of the second main face of the first sheet of glass is provided with a reflecting relief or else is covered with a transparent flat structure, of refractive index  $n_3$  greater than or equal to  $n_1$ , provided with a reflecting relief.



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Know how

Patents

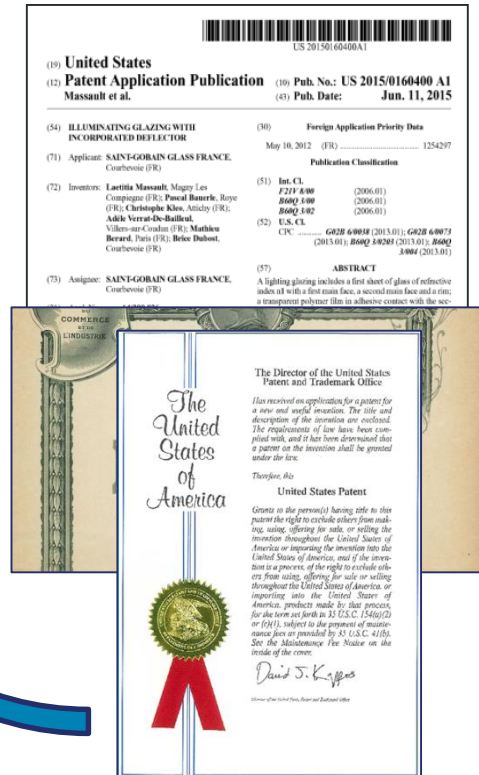
Education

Processes

Family - culture

Secrets

Traditions



# Disadvantages Secret / Patent

- **Disadvantages Protection by Secret**
  - Difficulty and cost maintain secrecy
  - Disclosure by others
  - No exclusive right operating
  - Limited Legal protection
  - Random Life
- **Disadvantages Protection by Patent**
  - Cost and quality if strategy random
  - Disclosure
  - Access to the third 18 months the filing of the application patent

# Benefits Secret / Patent

## ■ Benefits of protection secret

- No limitation in time, except for disclosure
- No limitation geographical
- No court fees
- No criterion patentability
- Immediate effect

## ■ Benefits of protection patent

- 20 years of exclusivity
- Power to International development
- Competitive & heritage Advantage
- Source of income by structuring Agreements partnership
- Visibility

# Business models



**Pharmacy**

**B to B**

**B to C**

**Diagnostic**

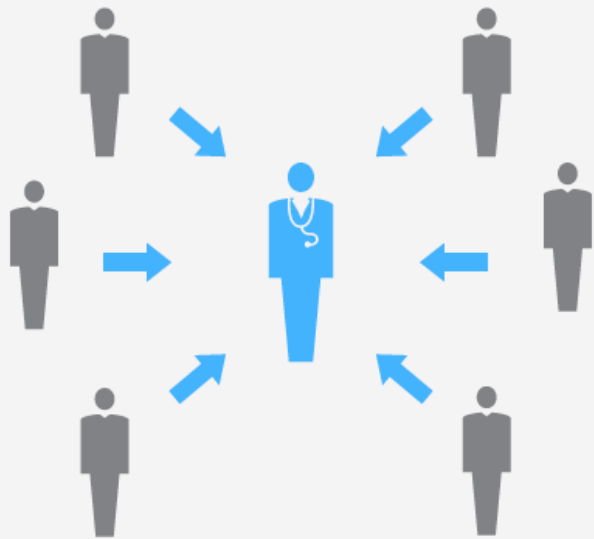
**Platforms**

**Point of  
care**

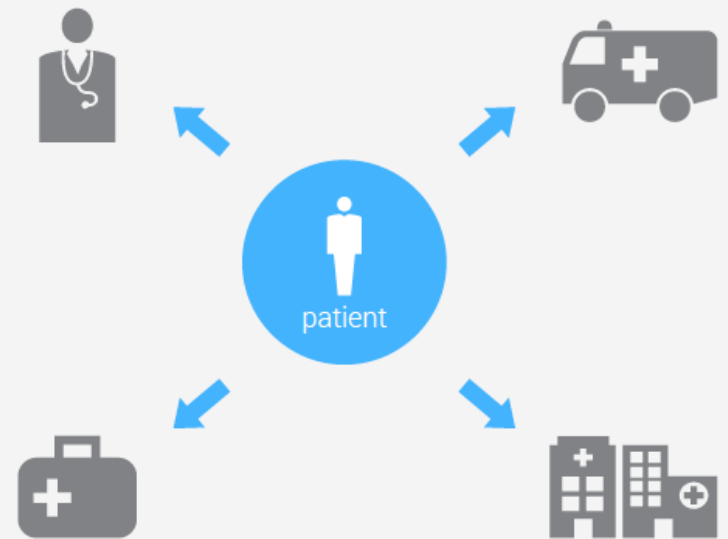
**Med tech**

**Hospital  
centred**

**Patient  
centred**



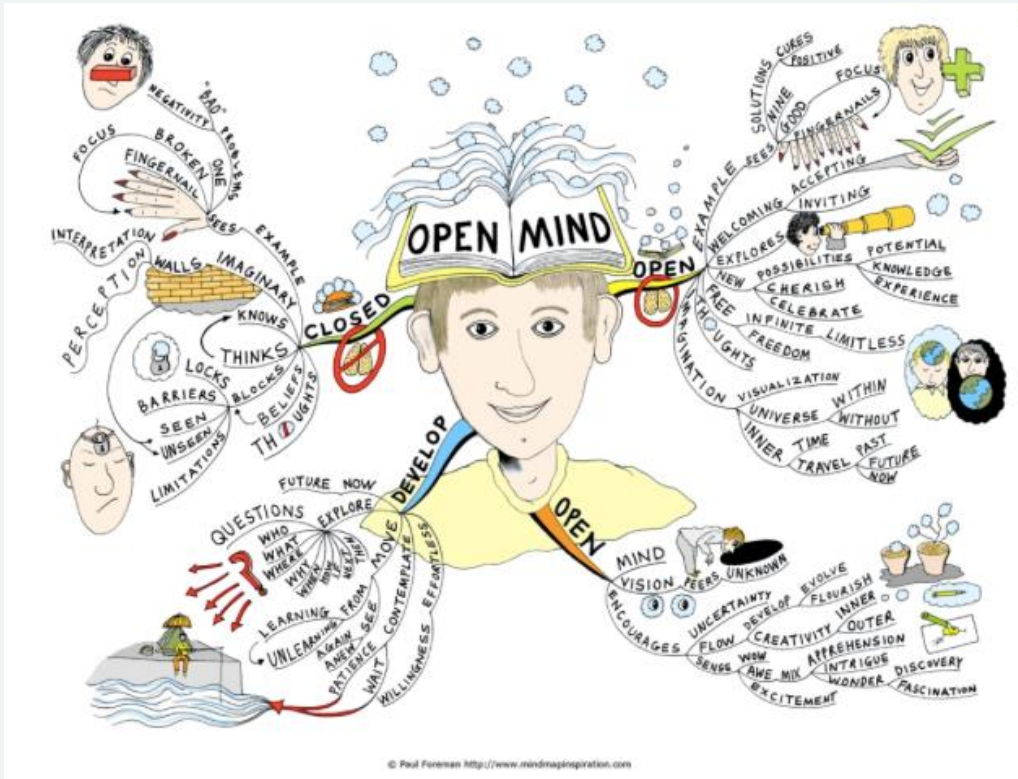
From a passive and **limited data collection**



...to a **continue monitoring patient centred**

© Withings

# Open up barriers

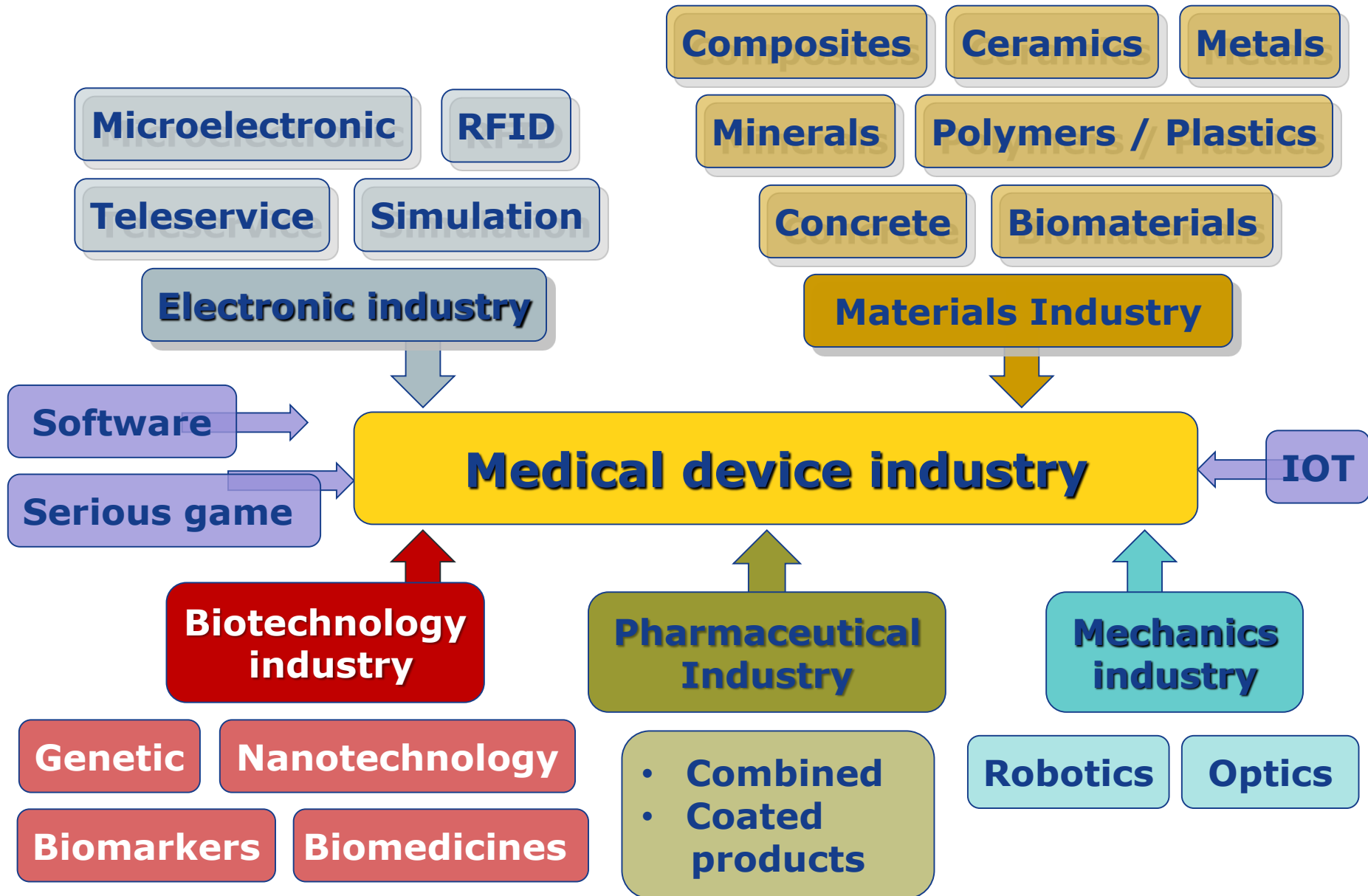




# Building bridges and breaking barriers

- **Working with a broad spectrum of industries**
- **Combined with a wide academic network**
- **Opportunity to bring knowledge from one industry or application to another.**
- **Knowledge transfer**
- **Open up for new innovations**
- **More innovative product development.**

# Crossing skills to innovate



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*@valorisation*

*Thank you !*