

# ■ Topic 16: **IP Management and Patent Analysis**

Porto Alegre  
21 October 2016

Irene Kitsara

Project Officer, Patent Information Section, Access to Information  
and Knowledge Division

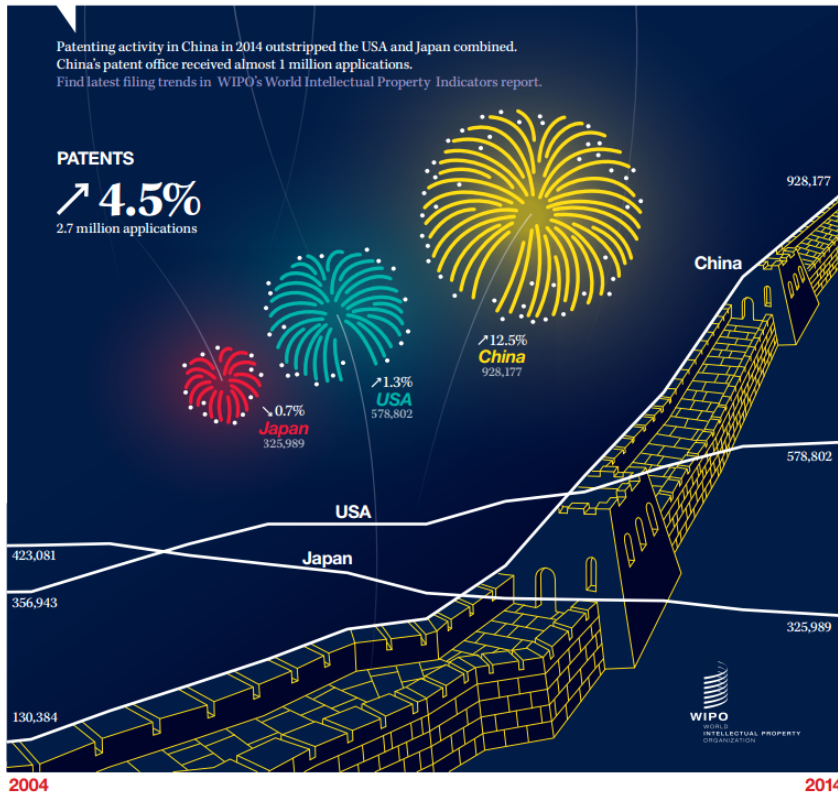
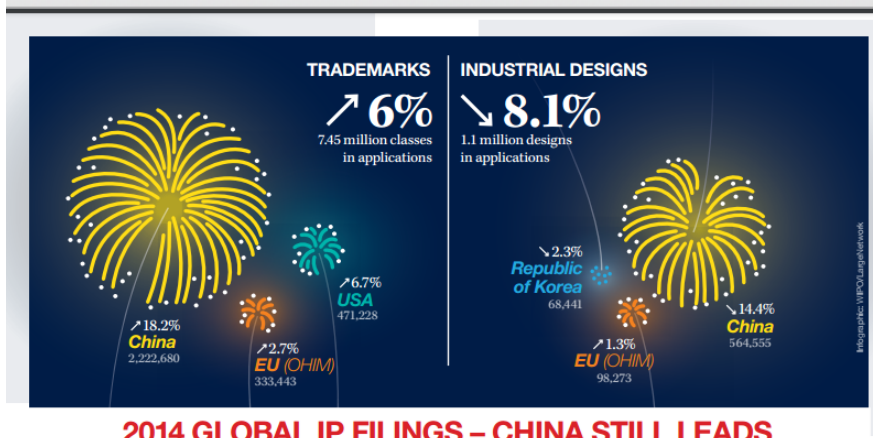
# After the business idea/invention what?



## What is the role of IP in a successful management of innovation?

## And how can patent analytics contribute to that?

# The use of the IP system



Source: World IP Indicators 2015

# Think of....

- Companies such as Apple, but also think of start-ups...
- How do they manage their innovation?
- Apple is a heavy user of the IP system (patents, trademarks, designs...). It appears as applicant on 24598 patent applications on PATENTSCOPE (July 20, 2016)

# Examples of Apple IP rights

WO 2009/032750 A1

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau

(43) International Publication Date  
12 March 2009 (12.03.2009)

(54) Title: **KEYING INTERFACE**

(57) Abstract: A portable electronic device displays icons (e.g., graphic symbols) in a row or column region of a user interface of a touch-sensitive display, and detects user input specifying an arrangement of positions of icons in the same row/column. In several examples, the respective position of one icon is a user interface cue to answer a corresponding question. In the case of other regions of the user interface, and one or both icons may change their visual appearance to indicate their selection status.

(30) Priority Claims:  
US 11/868,288 A 4 September 2007 (09.09.2007) US

(51) Int. Cl. Class.: G06F 03/04 (2006.01)

(52) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(72) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(73) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(74) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(75) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(76) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(77) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(78) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(79) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(80) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(81) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(82) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(83) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(84) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(85) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(86) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(87) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(88) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(89) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(90) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(91) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(92) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(93) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(94) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(95) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(96) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(97) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(98) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(99) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

(100) Inventor and Applicant:  
JAMES A. SULLIVAN, JR. (US); ORPHEUS, Inc. (US); 300  
Newburg Street, San Francisco, California 94111 (US); JAMES  
SULLIVAN, JR. (US); 1125 University Avenue, Palo Alto, California  
94304 (US)

Page 6

[illegible]

|   |  |
|---|--|
| <p>(12) <b>United States Design Patent</b><br/>Akana et al.</p> | <p>(10) Patent No.: US D728,624 S<br/>(45) Date of Patent: May 5, 2015</p> |
|---|--|

D10/30, 31, 38, 128  
See application file for complete search history.

|  |   |
|--|---|
| <p>(54) <b>ELECTRONIC DEVICE</b><br/>(71) Applicant: <b>Apple Inc.</b>, Cupertino, CA (US)<br/>(72) Inventors: <b>Jody Akana</b>, San Francisco, CA (US);<br/><b>Bartley K. Andre</b>, Palo Alto, CA (US);<br/><b>Shota Aoyagi</b>, San Francisco, CA (US);<br/><b>Anthony Michael Ashcroft</b>, San Francisco, CA (US); <b>Jeremy Battallion</b>, San Francisco, CA (US); <b>Daniel J. Coder</b>, San Francisco, CA (US);<br/><b>Danielle De Telle</b>, San Francisco, CA (US);<br/><b>M. Evans Hanksy</b>, San Francisco, CA (US); <b>Julian Hoeng</b>, San Francisco, CA (US); <b>Richard P. Howarth</b>, San Francisco, CA (US); <b>Jonathan P. Ives</b>, San Francisco, CA (US); <b>Duncan Robert Kerr</b>, San Francisco, CA (US);<br/><b>Marc A. Newman</b>, London (GB);<br/><b>Matthew Dean Rohrbach</b>, San Francisco, CA (US); <b>Peter Russell-Clarke</b>, San Francisco, CA (US); <b>Benjamin Andrew Shaffer</b>, San Jose, CA (US); <b>Mikael Silvano</b>, San Francisco, CA (US); <b>Christopher J. Stringer</b>, Woodside, CA (US); <b>Eugene Antony Whang</b>, San Francisco, CA (US); <b>Rico Zierckner</b>, San Francisco, CA (US)</p> | <p>(56) <b>References Cited</b><br/>3,640,065 A 2/1972 Lederer et al. (Continued)<br/><br/><b>FOREIGN PATENT DOCUMENTS</b><br/>D102950 C1 6/2003 (Continued)<br/><br/><b>OTHER PUBLICATIONS</b><br/><br/>Avaraz, Edgar, "Basis Peak to get its smartwatch-like features in December", engadget.com &lt;<a href="http://www.engadget.com/2014/11/20/basis-peak-smart-watch/">http://www.engadget.com/2014/11/20/basis-peak-smart-watch/</a>&gt;, dated Nov. 20, 2014, accessed Dec. 15, 2014.<br/>(Continued)<br/><br/><b>Primary Examiner</b>—Pabbakar Dushmikh<br/>(74) Attorney, Agent, or Firm—Stearns, Keeler, Goldstein &amp; Fox P.L.L.C.<br/>(57) <b>CLAIM</b><br/>The ornamental design for an electronic device, as described and described.</p> |
|--|---|

|  |  |
|--|--|
| <p>(73) Assignee: <b>Apple Inc.</b>, Cupertino, CA (US)<br/>(**) Term: <b>14 Years</b><br/>(21) Appl. No.: <b>20/499,042</b><br/>(22) Filed: <b>Aug. 11, 2014</b><br/>(51) <b>LOC (09)</b> CL <b>_____</b> 14-03<br/><b>U.S. CL</b> <b>_____</b><br/><b>USPC</b> <b>_____</b> <b>D14/496</b></p> | <p>(58) <b>Field of Classification Search</b><br/>CPC <b>_____</b> H04 1100; H04J 1300; H04J 1400<br/>USPC <b>_____</b> D14/496, 401, 435, 474, 483, 217, 137,<br/>D14/138, 160, 166, 350, 351, 352, 353, 357,<br/>345/156, 169, 173, 179, 905,<br/>715/727, 729, 864; 7101, 5, 8, 7131;<br/>710/900, 4551.1, 1, 7, 73, 347, 9, 95,<br/>4555.01, 3, 60, 550.1, 573.1; 370/342, 344,<br/>369/1, 2, 6, 12, 463/43, 47, 273/148, B;</p> |
|--|--|

**1 Claim, 7 Drawing Sheets**

**PCT International Application Number:**  
PCT/US2008/074625 – Editing Interface  
**Applicant (for all designated states except US):**  
APPLE INC. **Inventors/Applicants (for US only):**  
Chaudhri, Imran, A.; Ording, Bas; Jobs, Steven

*Madrid Registration 1014459*  
*"Description of the mark: The mark consists of the design of an apple with a bite removed."*

- Success linked to innovation and the acquisition of IP rights:
- asset
  - great negotiation power
  - increased competitive advantage and chances of success

# Companies patent portfolio and how they influence their sector

Company by Pipeline Power

| Company/Organization            | Country of Headquarters | Pipeline Power |
|---------------------------------|-------------------------|----------------|
| Apple Inc.                      | United States           | 12,810         |
| Qualcomm Inc.                   | United States           | 7,022          |
| Canon Inc.                      | Japan                   | 2,811          |
| Sony Corp.                      | Japan                   | 2,594          |
| LG Electronics Inc.             | South Korea             | 1,755          |
| Cisco Systems Inc.              | United States           | 1,744          |
| Mellanox Technologies Ltd.      | Israel                  | 1,496          |
| Telefonaktiebolaget LM Ericsson | Sweden                  | 1,297          |
| Xerox Corp.                     | United States           | 1,135          |
| iRobot Corp.                    | United States           | 1,099          |
| Koninklijke Philips NV          | Netherlands             | 1,033          |
| Nokia Corp.                     | Finland                 | 1,018          |
| EchoStar Corp.                  | United States           | 970            |
| TCL Corp.                       | China                   | 959            |
| Hitachi Ltd.                    | Japan                   | 936            |
| Lighting Science Group Corp.    | United States           | 807            |
| Fujifilm Holdings Corp.         | Japan                   | 785            |
| Corning Inc.                    | United States           | 755            |

IEEE Spectrum Patent Power Scorecards 2015 Source, Electronics (brown) and Telecommunications (green) sectors: <http://spectrum.ieee.org/static/interactive-patent-power-2015>



# Decisions that lead to collaborations

## ALLIANCES IN SCIENCE: INNOVATION INDICATORS

### Resources from Industry

| Rank | Institution                              | Country   |
|------|--|-----------|
| 1    | Ludwig Maximilian University of Munich   | Germany   |
| 2    | Peking University                        | China     |
| 3    | Duke University                          | US        |
| 4    | Istanbul University                      | Turkey    |
| 5    | Tsinghua University                      | China     |
| 6    | Lomonosov Moscow State University        | Russia    |
| 7    | Nanyang Technological University         | Singapore |
| 8    | Sichuan University                       | China     |
| 9    | National Autonomous University of Mexico | Mexico    |
| 10   | Wuhan University                         | China     |
| 11   | Johns Hopkins University                 | US        |
| 12   | University of Minnesota                  | US        |
| 13   | National Cheng Kung University           | Taiwan    |
| 14   | Tianjin University                       | China     |
| 15   | Zhejiang University                      | China     |

This indicator is the quantity of research income that an institution receives from industry. This shows industry's confidence and expectations in an institution's research and innovation capabilities. All amounts have been converted to take into account the purchasing price parity based on the World Bank PPP Conversion Factor GDP.

### Industry collaboration

| Rank | Institution  | Country     |
|------|--|-------------|
| 1    | Southwest Petroleum University   | China       |
| 2    | China University of Petroleum  | China       |
| 3    | Universities Space Research Association  | US          |
| 4    | Wright-Patterson Air Force Base  | US          |
| 5    | École Centrale de Lyon   | France      |
| 6    | Jawaharlar Nehru Technological University Hyderabad                                  | India       |
| 7    | Eindhoven University of Technology   | Netherlands |
| 8    | Bundeswehr University Munich   | Germany     |
| 9    | Toyota Technological Institute   | Japan       |
| 10   | Musashi Institute of Technology  | Japan       |
| 11   | Tampere University of Technology   | Finland     |
| 12   | Aalto University   | Finland     |
| 13   | Daqing Petroleum Institute   | China       |
| 14   | Research Organization of Information and Systems (National Institute of Informatics) | Japan       |
| 15   | Mines ParisTech  | France      |

This indicator is the percentage of papers published by an institution that involve an element of working directly with industry, compared with those that do not. This provides an idea of how much companies are involved in and invest time in the active research area of the institution.

timeshighereducation.co.uk

THE

### Patent citations

| Rank | Institution  | Country     |
|------|--|-------------|
| 1    | Scripps Research Institute                           | US          |
| 1    | VIB  | Belgium     |
| 1    | Institute of Cancer Research                         | UK          |
| 4    | The Rockefeller University                           | US          |
| 5    | Pasteur Institute                                    | France      |
| 6    | University of Texas MD Anderson Cancer Center        | US          |
| 7    | QIMR Berghofer Medical Research Institute            | Australia   |
| 8    | Fred Hutchinson Cancer Research Center               | US          |
| 9    | Université Montpellier 1*                            | France      |
| 10   | Vita-Salute San Raffaele University                  | Italy       |
| 11   | Weizmann Institute of Science                        | Israel      |
| 12   | Robert Koch Institute                                | Germany     |
| 13   | Agency for Science, Technology and Research (A*STAR) | Singapore   |
| 14   | Danish Cancer Society                                | Denmark     |
| 15   | CHA University                                       | South Korea |

This indicator is the proportion of papers published by an institution that have been cited by patents, compared with those that have not.  
\* Université Montpellier 1 merged with Université Montpellier 2 in January 2015 to become Montpellier University. These data refer only to Université Montpellier 1.

### Industry contribution

| Rank | Institution   | Country     |
|------|---|-------------|
| 1    | Siberian State University of Geosystems and Technologies              | Russia      |
| 2    | Pontifical Catholic University of Rio de Janeiro (PUC - Rio)          | Brazil      |
| 3    | Mines ParisTech   | France      |
| 4    | National Cheng Kung University  | Taiwan      |
| 5    | Ludwig Maximilian University of Munich                                | Germany     |
| 6    | Tilburg University  | Netherlands |
| 7    | University of Genoa   | Italy       |
| 8    | Istanbul University   | Turkey      |
| 9    | National Technical University of Ukraine - Kyiv Polytechnic Institute | Ukraine     |
| 10   | National Research Nuclear University MePhI                            | Russia      |
| 11   | Swedish University of Agricultural Sciences                           | Sweden      |
| 12   | Mohammed V University of Rabat  | Morocco     |
| 13   | University of Freiburg  | Germany     |
| 14   | Jiangsu University  | China       |
| 15   | National Taipei University of Technology                              | Taiwan      |

This indicator is the proportion of research income that an institution receives from industry sources, as a percentage of their total institutional income.

### NOTES AND BOLTS: THE METHODOLOGY EXPLAINED

Indicators on industry collaboration and patent citations are sourced from Elsevier's Scopus database. Indicators on resources from industry

and industry contribution are sourced from the institutions themselves, with data collected by Times Higher Education through the World University Rankings portal.

This means that an institution must be within the data collection scope of the World University Rankings to be

included in these two tables.

The subjects included in the analysis are the STEMM fields of science, technology, engineering,

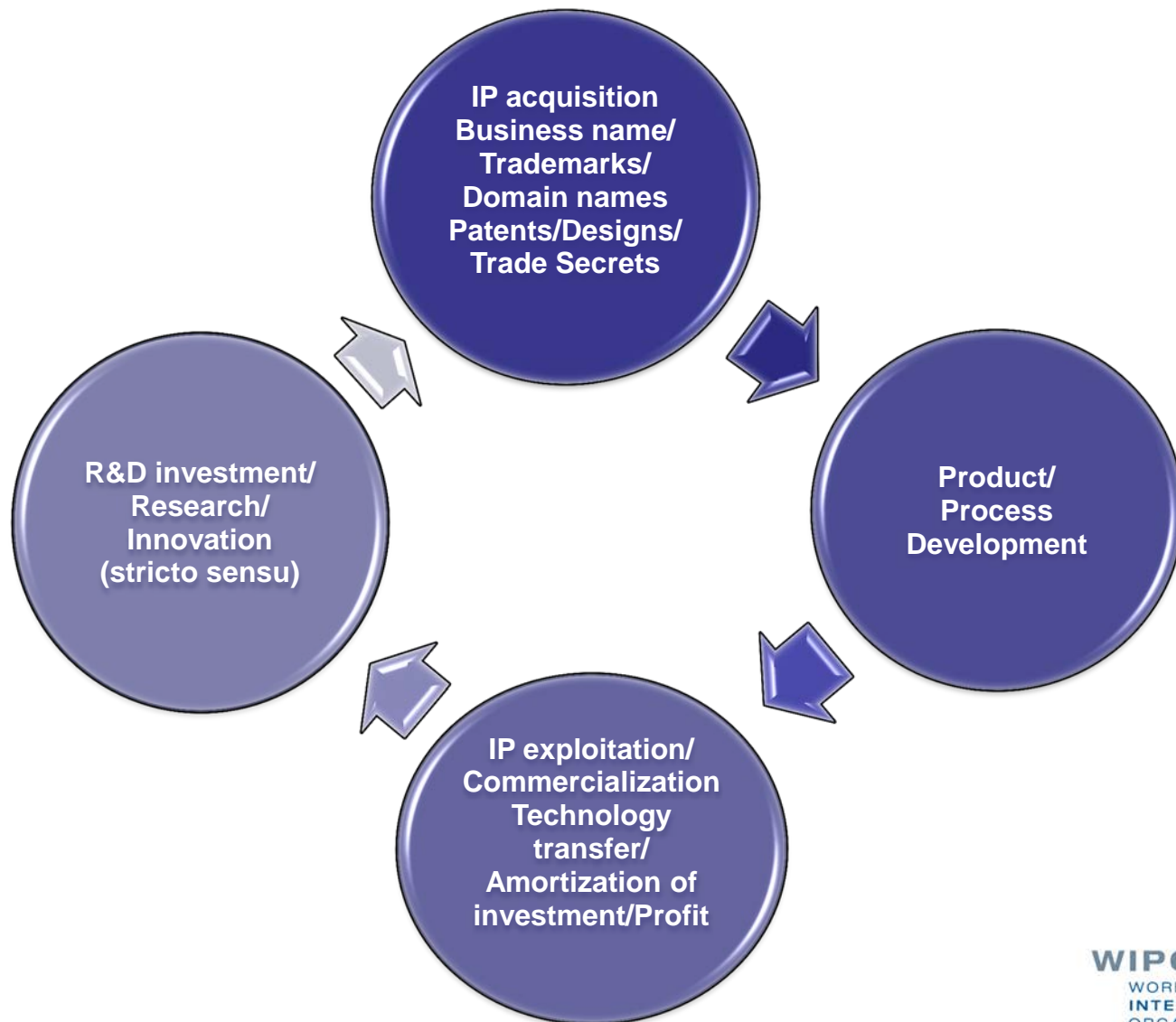
medicine and mathematics. All institutions included have produced more than 1,000 papers in these fields over the period 2009-2013.

# Facts of life...

- IP rights are an asset which:
  - Improves the position of the inventor/creator and his negotiation power
  - Attracts more investors
  - Helps in the company's valorization
  - Helps in the participation in or the creation of a market
  - Facilitates the competition management
  - Avoids problems linked to trade secrets



# Innovation cycle and IP management



# Decisions during the innovation cycle

## Decision types

- Area of research
- R&D investment
- Research collaborations
- Acquisition of IP Rights?  
Publication? Trade secrets?
- Commercialization?
- Management of  
IP/innovation

## Decision-makers profiles

- Government
- R&D
- Universities
- Start-ups/spin-offs
- SMEs
- (IP) managers in the private  
sector
- Inventors
- Investors

# A decision which can make a difference

1. (WO2011088053) INTELLIGENT AUTOMATED ASSISTANT

| PCT Biblio. Data  | Description  | Claims | National Phase  | Notices | Documents |
|---|--|--------|---|---------|-----------|
| Latest bibliographic data on file with the International Bureau |  |        |   |         |           |
| <b>Pub. No.:</b>  | WO/2011/088053   |        | <b>International Application No.:</b> PCT/US2011/020861 |         |           |
| <b>Publication Date:</b>  | 21.07.2011   |        | <b>International Filing Date:</b> 11.01.2011            |         |           |
| <b>IPC:</b>   | G06Q 10/00 (2006.01)   |        |   |         |           |
| <b>Applicants:</b>  | <b>APPLE II C.</b> [USA/US]; 1 Infinite Loop Cupertino, California 95014 (US) <i>(For All Designated States Except US).</i><br><b>GRUBER, Thomas Robert</b> [USA/US]; (US) <i>(For US Only).</i><br><b>CHEYER, Adam John</b> [USA/US]; (US) <i>(For US Only).</i><br><b>KITTLAUS, Dag</b> [USA/US]; (US) <i>(For US Only).</i><br><b>GUZZONI, Didier Rene</b> [CH/CH]; (CH) <i>(For US Only).</i><br><b>BRIGHAM, Christopher Dean</b> [USA/US]; (US) <i>(For US Only).</i><br><b>GIULI, Richard Donald</b> [USA/US]; (US) <i>(For US Only).</i><br><b>BASTEA-FORTE, Marcello</b> [USA/US]; (US) <i>(For US Only).</i><br><b>SADDLER, Harry Joseph</b> [USA/US]; (US) <i>(For US Only).</i> |        |   |         |           |
| <b>Inventors:</b>   | <b>GRUBER, Thomas Robert;</b> (US).<br><b>CHEYER, Adam John;</b> (US).<br><b>KITTLAUS, Dag;</b> (US).<br><b>GUZZONI, Didier Rene;</b> (CH).<br><b>BRIGHAM, Christopher Dean;</b> (US).<br><b>GIULI, Richard Donald;</b> (US).<br><b>BASTEA-FORTE, Marcello;</b> (US).<br><b>SADDLER, Harry Joseph;</b> (US)  |        |   |         |           |
| <b>Agent:</b>   | <b>RAUBVOGEL, Amir H.;</b> Raubvogel Law Office 820 Lakeview Way Redwood City, California 94062 (US)   |        |   |         |           |
| <b>Priority Data:</b>   | 61/295,774 18.01.2010 US<br>12/087,382 10.01.2011 US   |        |   |         |           |
| <b>Title</b>  | <b>(EN) INTELLIGENT AUTOMATED ASSISTANT</b><br><b>(FR) ASSISTANT AUTOMATISÉ INTELLIGENT</b>  |        |   |         |           |
| <b>Abstract:</b>  | <b>(EN)</b> An intelligent automated assistant system engages with the user in an integrated, conversational manner using natural language dialog, and invokes external services when appropriate to obtain information or perform various actions. The system can be implemented using any of a number of different platforms, such as the web, email, smartphone, and the like, or any combination thereof. In one embodiment, the system is based on code   |        |   |         |           |



- 2007 → EPFL alumni Dag Kittlaus founded Siri (spin-out of the Int. Artificial Intelligence Center)
- 2010: Siri acquired by Apple

# Open innovation and crowdfunding



- Collaboration of Artificial Lab of ETH Zuerich and 10 different institutes and companies to develop one of the most modern robots
- Based on open source research and crowdfunding

# The success effect of RoBoy

<https://www.humanbrainproject.eu>



Human Brain Project



European  
Commission

HBP Sign In ▾

Search



[ABOUT](#) [RESEARCH](#) [PARTICIPATE](#) [EDUCATION](#) [CONSORTIUM](#) [GENERAL INFO](#) [HBP CONNECT](#) [NEWS DISPLAY](#)

2015 HBP SUMMIT

COLLABORATE  
BUILD  
SHARE

ICOMEM, MADRID SPA

AN OVERVIEW to a  
dense and dynamic



Myorobotics

A framework for musculoskeletal robot development

Search...

[HOME](#)

[LOG IN / OUT](#)

[ADMIN](#)

You are here: [Home](#) ► [About](#) ► Concept and state of the art

**N Magazine releases V1.  
Summit Edition**

## Latest News

- [Youtube channel](#)
- [MyoCheetah development](#)
- [MYOROBOTICS Winter School and Workshop](#)
- [Myorobotics in Greece and Cyprus](#)
- [Myorobotics at CeBit](#)

## Menu

- [Winter School and Workshop 2014](#)
- [News](#)

## Concept and state of the art



The goal of this project is to develop the **Myorobotics toolkit**, a commercial, modular and reconfigurable system for developing musculoskeletal robotic platforms. It is designed for use by experimenters of different disciplines and aims to allow them to create, configure and operate their experimental setups based on their individual needs. In addition to academic settings, the toolkit also targets the industrial sector for applications that require the capability to mimic biological structures while maintaining high flexibility and reasonable costs.

We believe that currently there are no available systems in the market that fulfill all the requirements we've set for the project. Nevertheless, there exist solutions that are very close to certain aspects of our vision that are presented below.



# Options to get ideas – crowdstorming



- In 2014 Victorinox used Crowdstorming and [www.jovoto.com](http://www.jovoto.com) for the design of its „limited edition“ Swiss knives



# The „open access/source“ choice as part of innovation strategy

- ETH Zurich developed a software simulating explosions
- „technical Oscar“ in special effects
- No IP protection
- Choice linked to the particularity of the domain and the need for a quick adoption of the technology by the film sector
- Cooperation of ETH Zurich with Disney Research Zurich
- Cooperation model: ETH Zurich and Disney Share IP whenever they decide to go for IP protection



Scene from film « Battleship » using the software Wavelet Turbulence (Universal Pictures)

# Trade secrets vs. patents

- Longer protection
- Reverse engineering should be difficult
- High copy/reproduction costs
- Secret guaranty (non-disclosure/, confidentiality, non-competition agreements)
- Coca-Cola example:
  - 2006: effort to sell the trade secret to Pepsi



Photo by Visions of America/ UIG via Getty Images

# IP bundle – the example of Rolex

## Trademarks

## Patents

## Industrial designs



| No | Ctr | Title   | PubDate    | Int.Class  | Appl.No  | Applicant  | Inventor            | Image |
|----|-----|---|------------|------------|----------|------------|---------------------|-------|
| 1. | US  | 20140247704 - OSCILLATOR FOR A CLOCK MOVEMENT | 04.09.2014 | G04B 17/06 | 14353065 | ROLEX S.A. | Bertrand Jean-Louis |       |

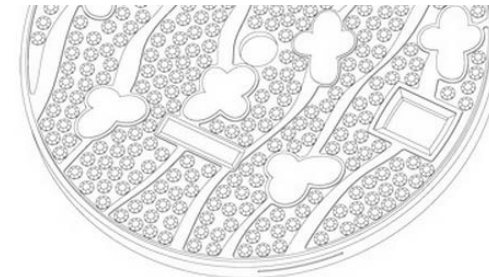
An oscillator (10) comprising a spiral spring (11) made from a paramagnetic or diamagnetic material and an assembled balance wheel (12) comprising a shaft (13) on which the following elements are fitted: a balance wheel (14), a plate (15) and a collet (16) rigidly connected with said spiral spring (11), characterised in that the maximum diameter (Dmax) of the shaft is less than 3.5, or even 2.5, or even 2 times the minimum diameter (D1) of the shaft on which one of the elements is fitted or in that the maximum diameter (Dmax) of the shaft is less than 1.6, or even 1.3 times the maximum diameter (D2) of the shaft on which one of the elements is fitted.

|    |    |  |            |           |                   |          |               |  |
|----|----|--|------------|-----------|-------------------|----------|---------------|--|
| 2. | WO | WO/2014/122233 - PIÈCE D'HORLOGERIE EN ALLIAGE D'OR ROSE | 14.08.2014 | C22C 5/02 | PCT/EP2014/052371 | ROLEX SA | DUBOS, Pascal |  |
|----|----|--|------------|-----------|-------------------|----------|---------------|--|

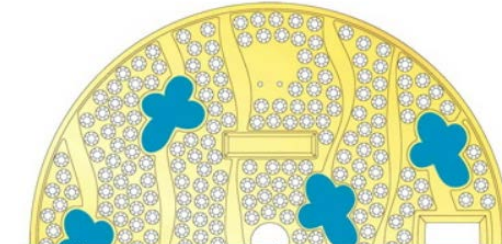
Pièce d'horlogerie, de bijouterie ou de joaillerie comprenant un alliage comprenant en poids au moins 750‰ d'or, caractérisée en ce que l'alliage comprend également du cuivre, du palladium et de l'indium, la somme des taux de palladium et d'indium étant inférieure ou égale à 35%, voire inférieure ou égale à 30%, voire inférieure ou égale à 25%, et/ou la somme des taux de palladium et d'indium étant comprise entre 15% et 35%, voire entre 20% et 35%, voire 25% et 33%.



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



5.1



# The criteria of selection of IPR

- Key considerations:
  - Technology domain
  - Preliminary protection of research results
  - Ease of commercialization
  - Market definition (existence/potential)
  - Level of competition – market position
  - Holistic approach for commercialization
  - Costs and funding
  - Risks

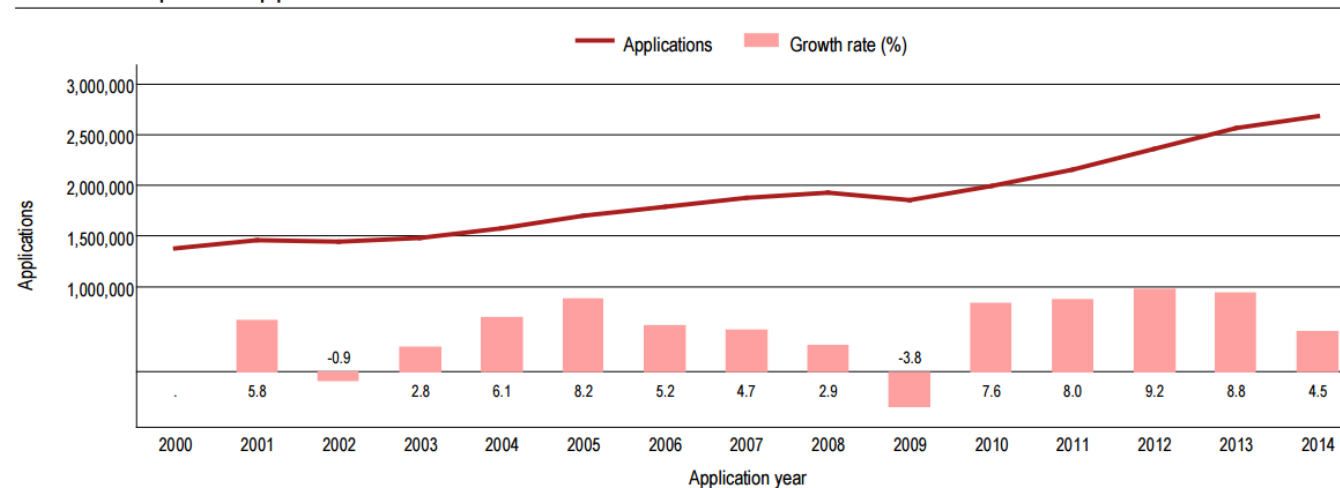


# Other important aspects

- Confidentiality agreements
- Non-disclosure agreements
- Joint research agreements
- Licensing agreements (exclusive-non exclusive)
- Framework – university/research facility/private sector
- Particularities of national/relevant jurisdiction
- Valuation of the invention/creation
- IP rights bundle to introduce a product in the market

# Growing importance of patent information and need for patent analysis

A1 Trend in patent applications worldwide



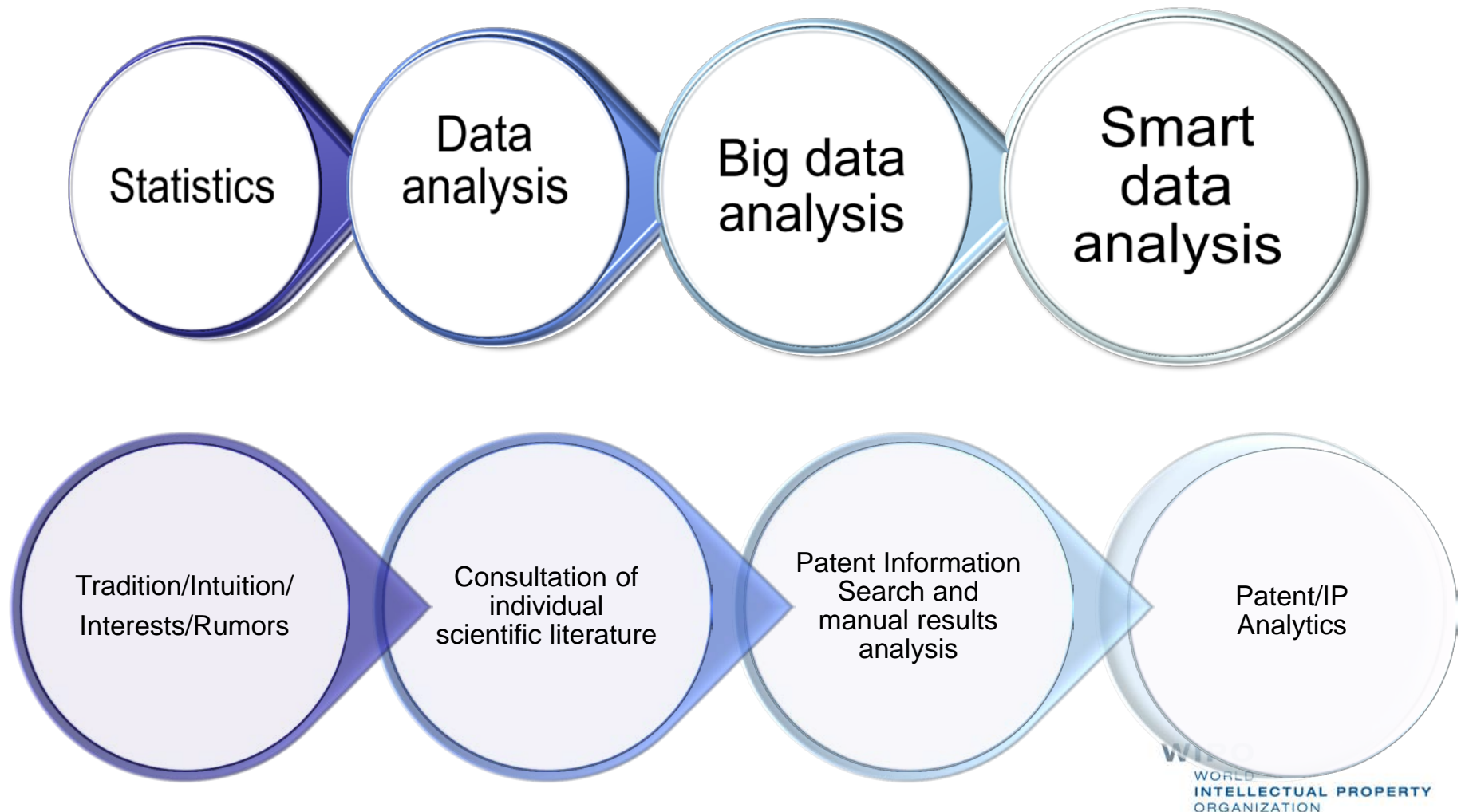
Note: WIPO estimates cover 147 patent offices and include direct applications and Patent Cooperation Treaty national phase entry data (where applicable).

Source: WIPO Statistics Database, October 2015.

*Source: World IP Indicators - 2015 Edition - WIPO*

- Growth in patent filings worldwide
- Growth in volume of patent information (PATENTSCOPE 57 mio patent documents – July 2016)
- Increased interest and challenges in retrieval
- Increased need to manage and understand this amount of information

# Evolution of analytics to support decision-making and IP management



# Importance of patent analytics

- A powerful tool allowing for:
  - **Structured presentation** of patent search results
  - **Meaningful interpretation** of the results
  - **User-friendly illustration** of the **information** with support of statistics, visualizations and narrative
  - **Facilitation of interdisciplinary dialogue** among various stakeholders
  - **Informed decisions** about R&D prioritization and investment, technology and know-how transfer, local manufacturing

# What are the risks of patent analysis?

- Insufficient data leading to wrong results – importance of **good data and adequate databases**
- Wrong results and assumptions – importance of a **good methodology**
- Irrelevant data and analysis to the important questions/decisions to be taken – importance of **good** and relevant **questions**, and **choice of data** to analyze
- Poor or misleading visualizations – the importance of **adequate and meaningful visualizations**
- Lost in data! Not clearly communicated findings and messages – importance of **good communication** skills
- Data as such have no value if not contextualized and interpreted correctly – the importance of a **good patent analyst**



*Thank you!*