

Department of Data Analysis
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What is COMPAS



- An **on-line analysis service** to help users make informed decisions on their R&D-related tasks
 - Provides means to analyze the **competitive environment** (patents and journal articles) of a TOI (Technology of Interest)
 - Conducts in-depth analyses on the most frequently asked **MOT (Management of Technology) questions**
- ❖ **COMPAS is NOT to replace expert's opinion but to REINFORCE its credibility.**

Why COMPAS

Non-experts in informatics

No access to information sources or tools

Accessibility

All you need is a PC (Mac or PC) and a web browser (IE, Chrome, Safari)

Utility

Database + Analytical Models
+ Automatic Reports

Applicability

Researcher, technology, program, institution, or national level

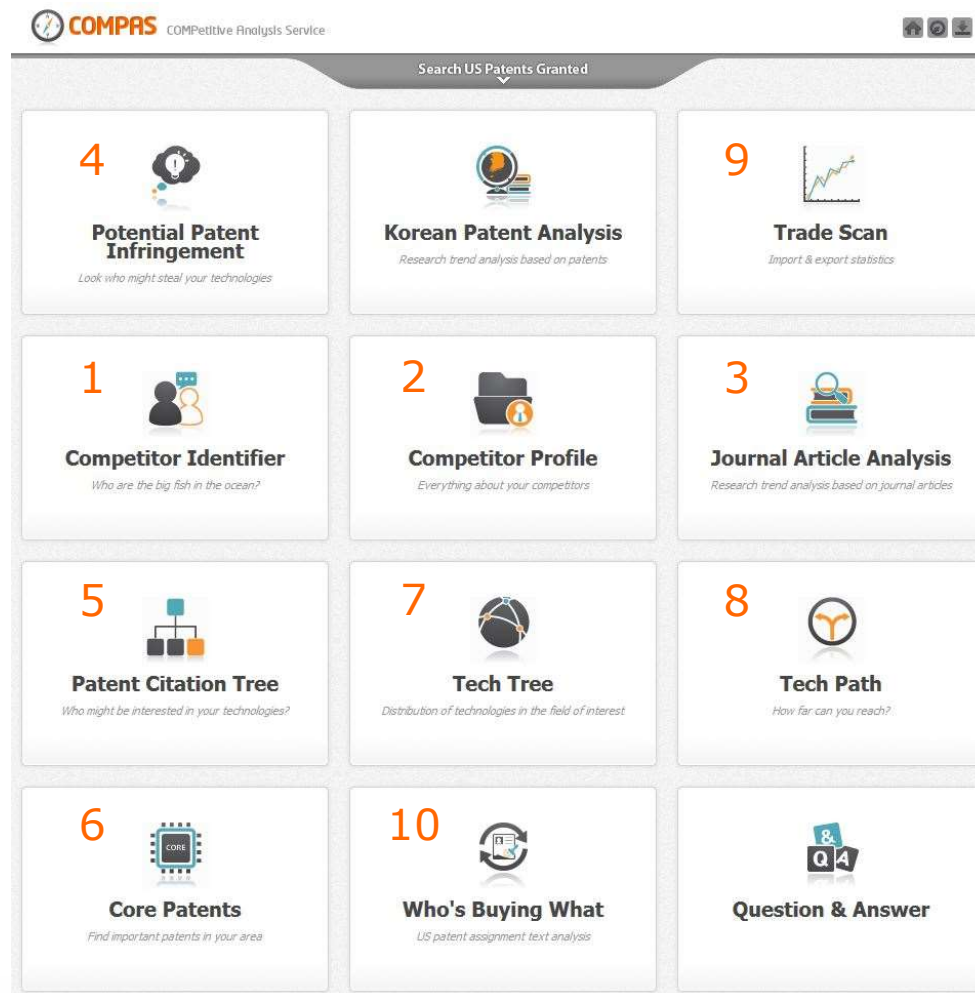


What people get from COMPAS



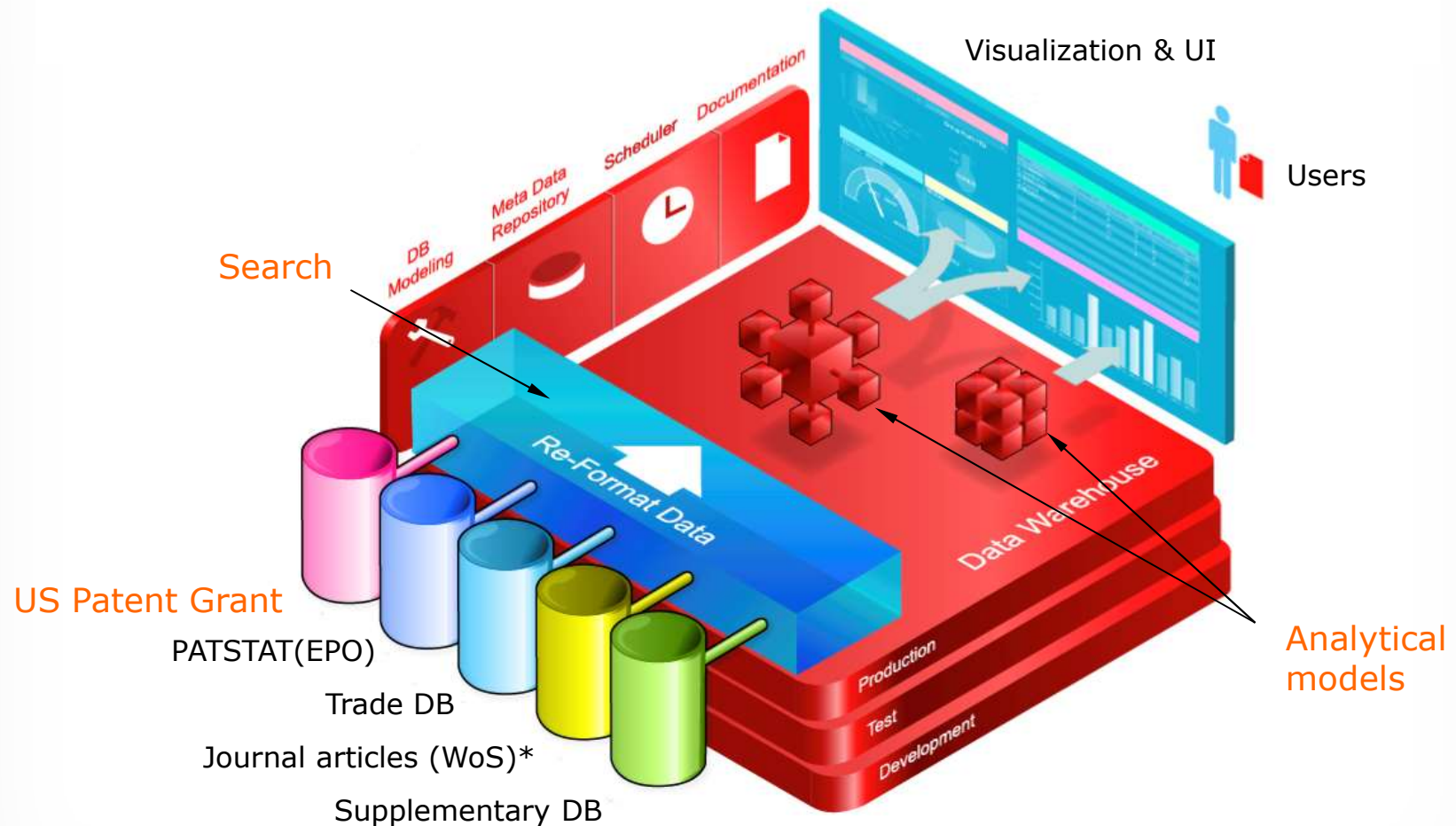
* **T**echnology **O**f **I**nterest

Analytical models of COMPAS (public service)



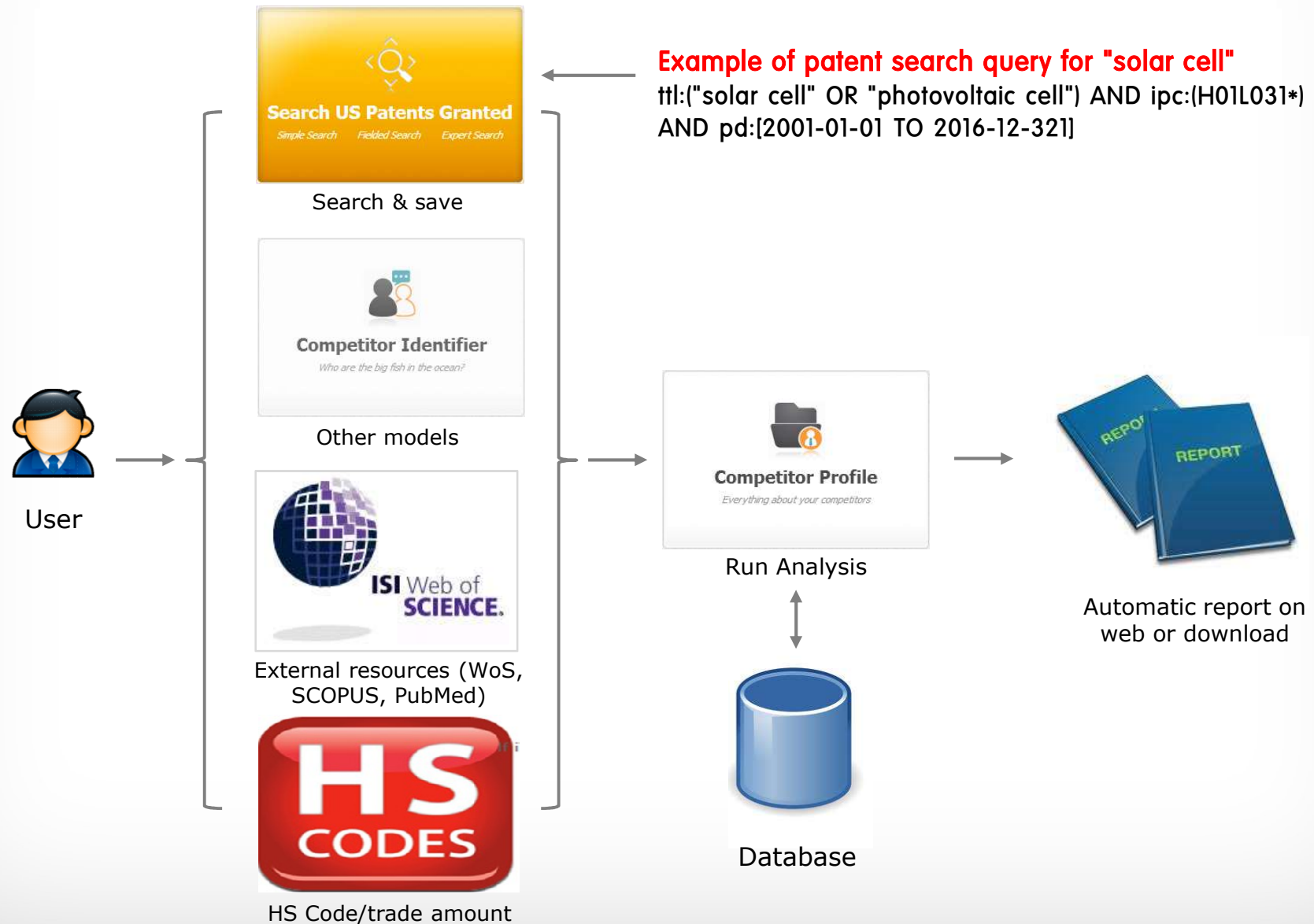
<http://compas.kisti.re.kr>

How COMPAS is made of

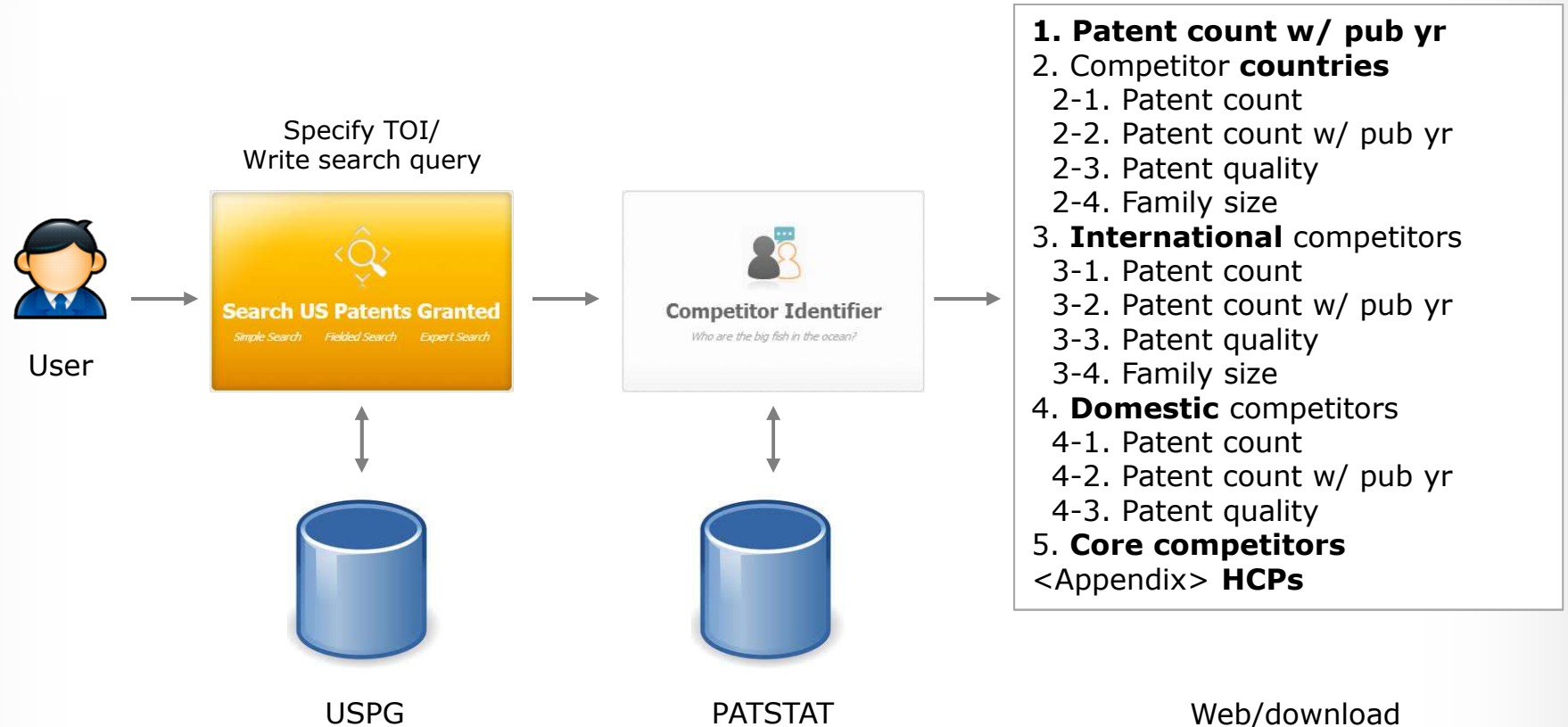


* From external resources; Not stored in COMPAS

How COMPAS works

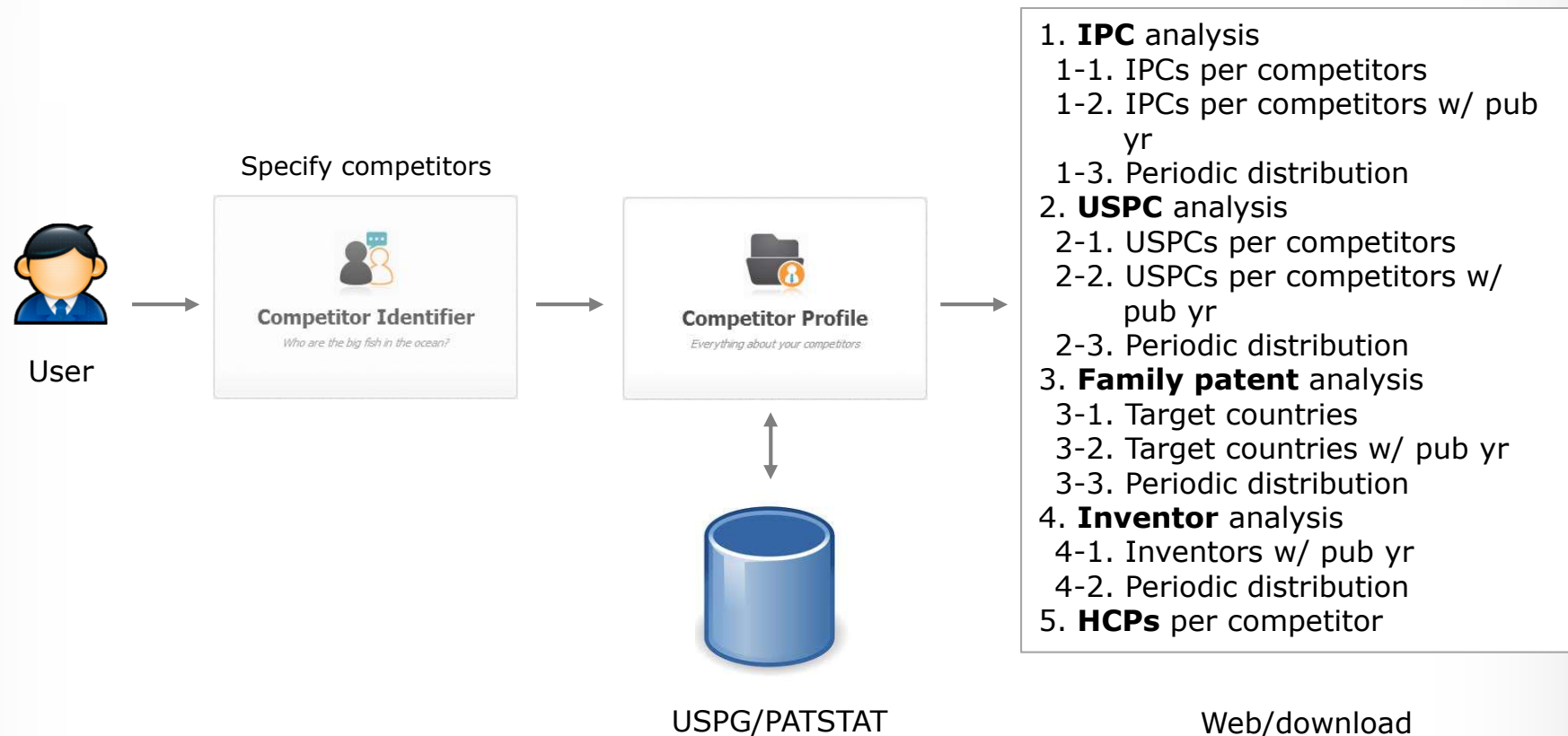


Competitor Identifier



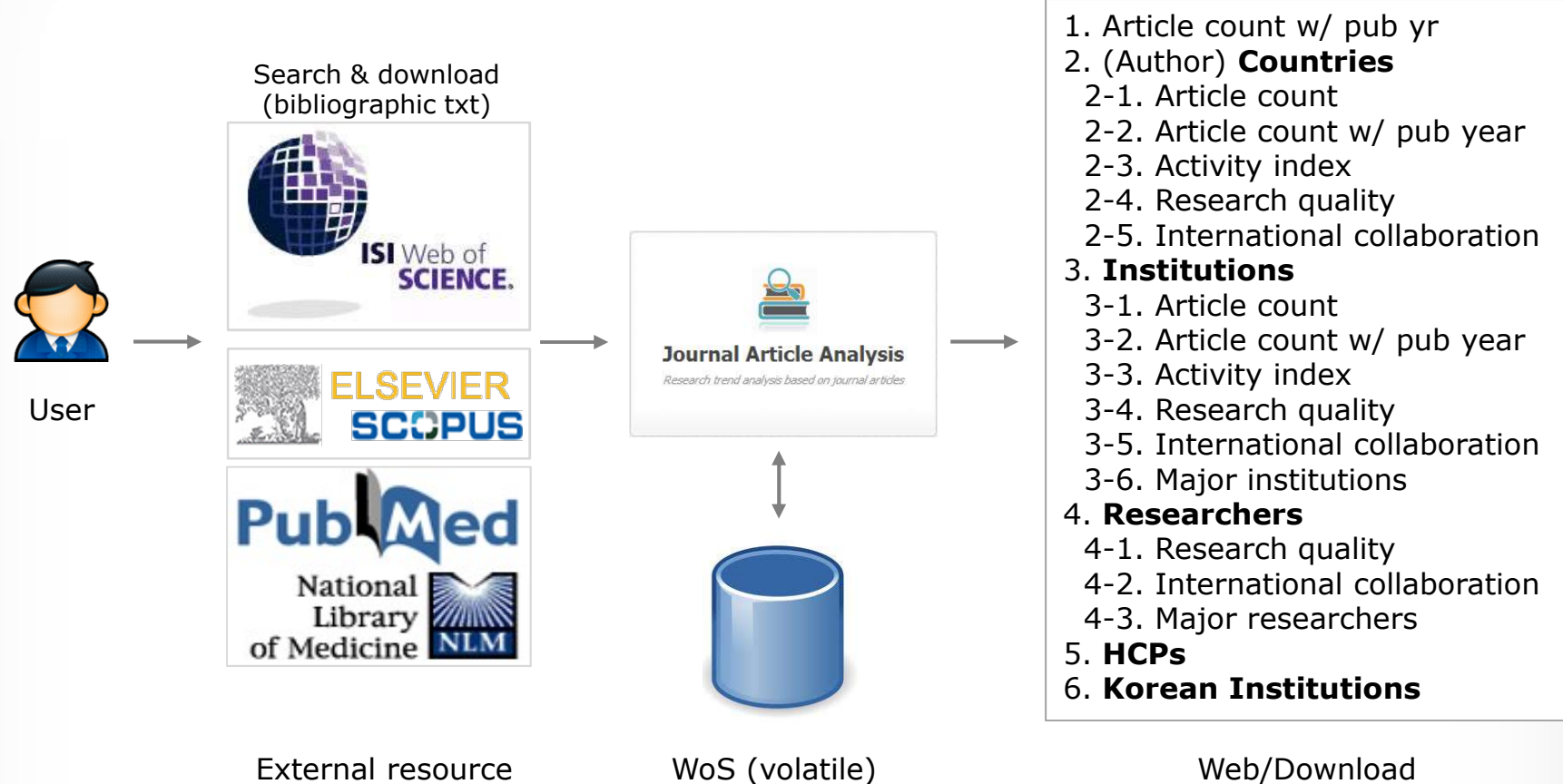
- To get an overall 'landscape' of a TOI to **identify major competitors** in it
- By analyzing patent count (w/ publication year), patent quality, family size WRT competitor country and assignee (international and Korean)

Competitor Profile



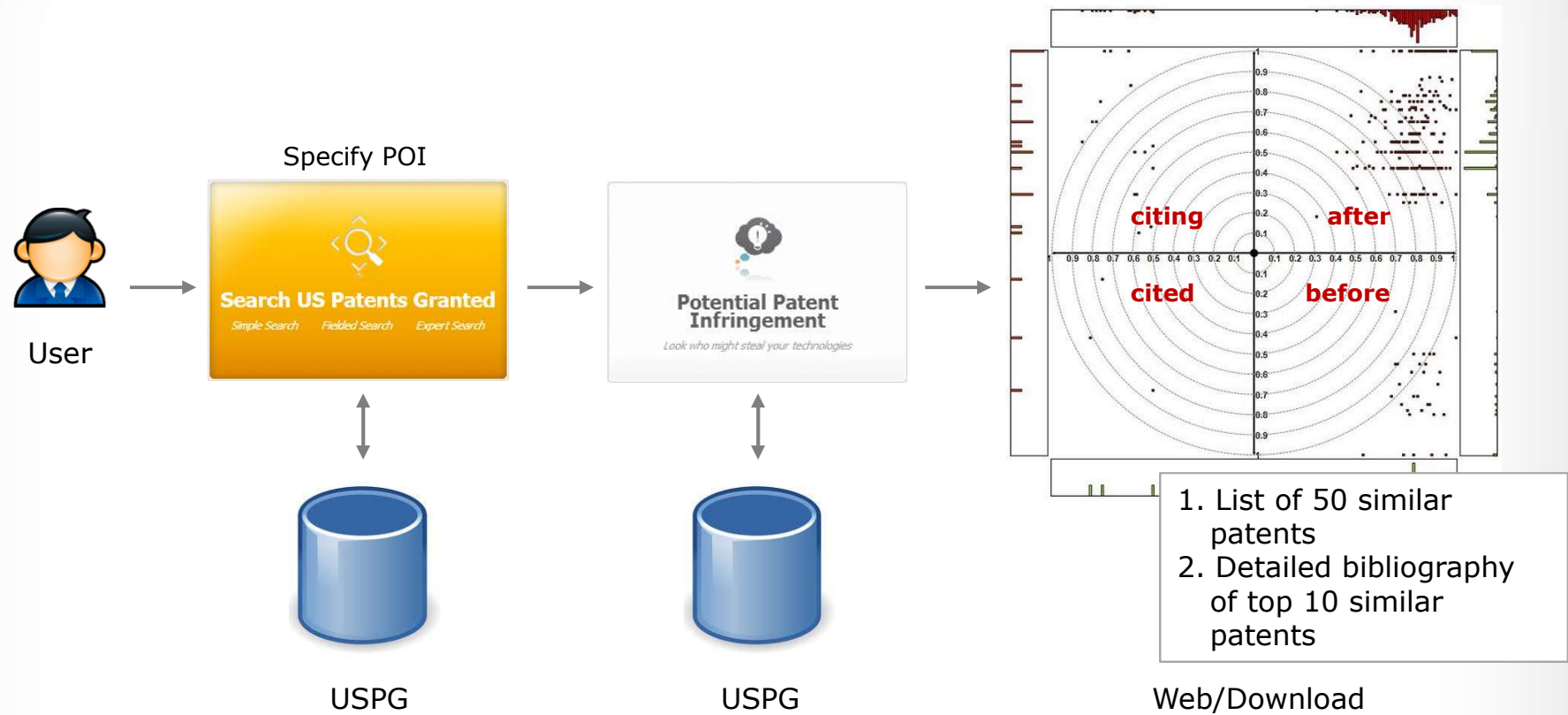
- To profile each of the **selected competitor's activity**
- By analyzing the distribution of IPCs, USPCs, target countries and inventors of each competitor

Journal Article Analysis



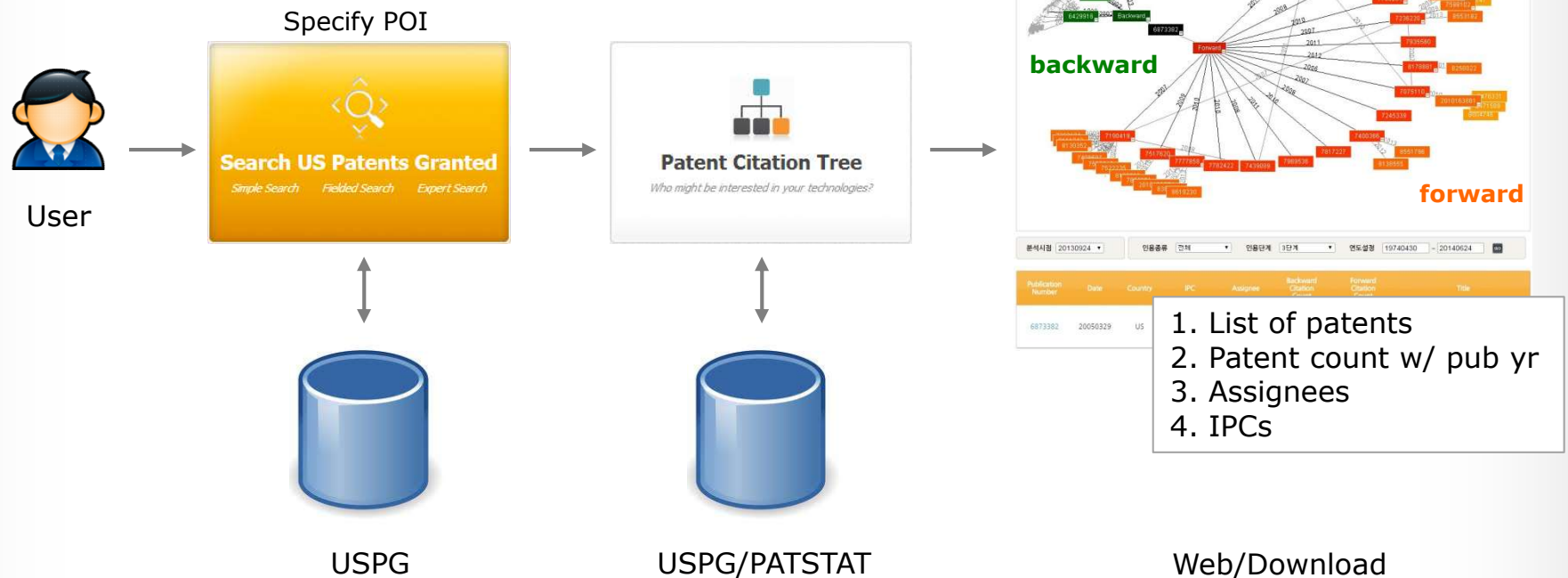
- To get an overall 'landscape' of a TOI to **identify major competitors** in '**science domain**'
- By analyzing the article count (w/ publication year), research quality, activity index WRT country, institution (international and Korean), and researcher

Potential Patent Infringement



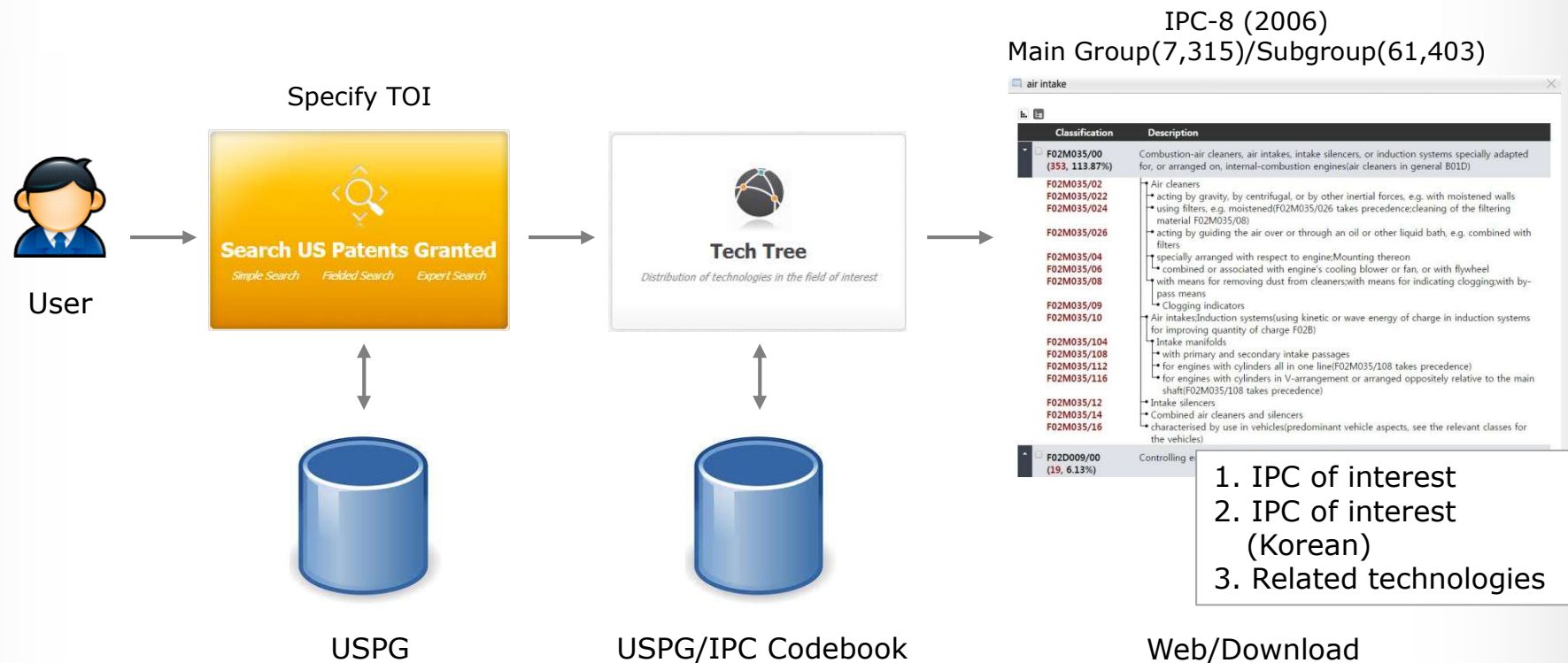
- To **identify potential competitors** (or partners) to prepare future threat (or opportunity)
- By comparing a POI (Patent of Interest) with a set of patents in terms of the matching of claims and patent classifications

Patent Citation Tree



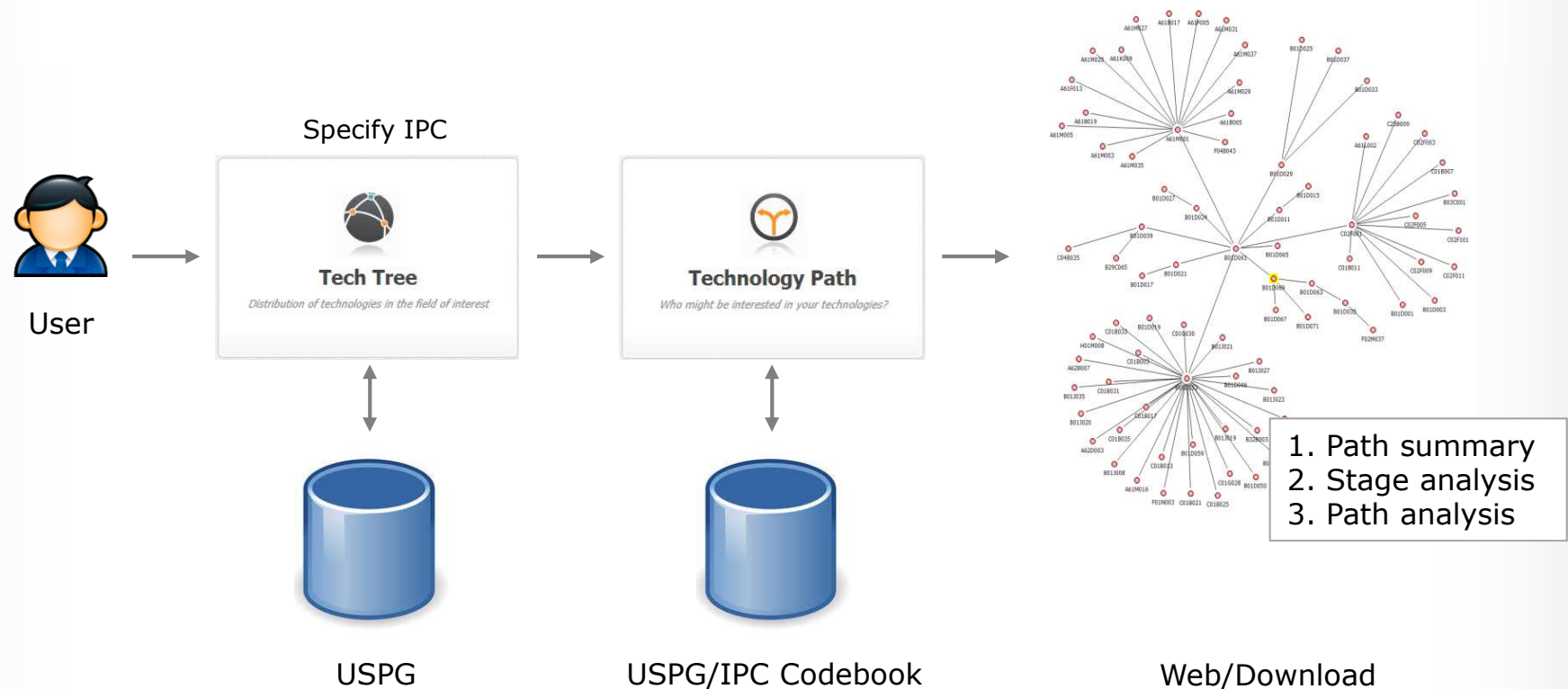
- To **trace the prior-art** of an invention or to **explore the attention** paid by the followers (competitor/collaborator)
- By navigating the citation tree both in backward and forward direction on a dynamic visualization page with control options

TechTree



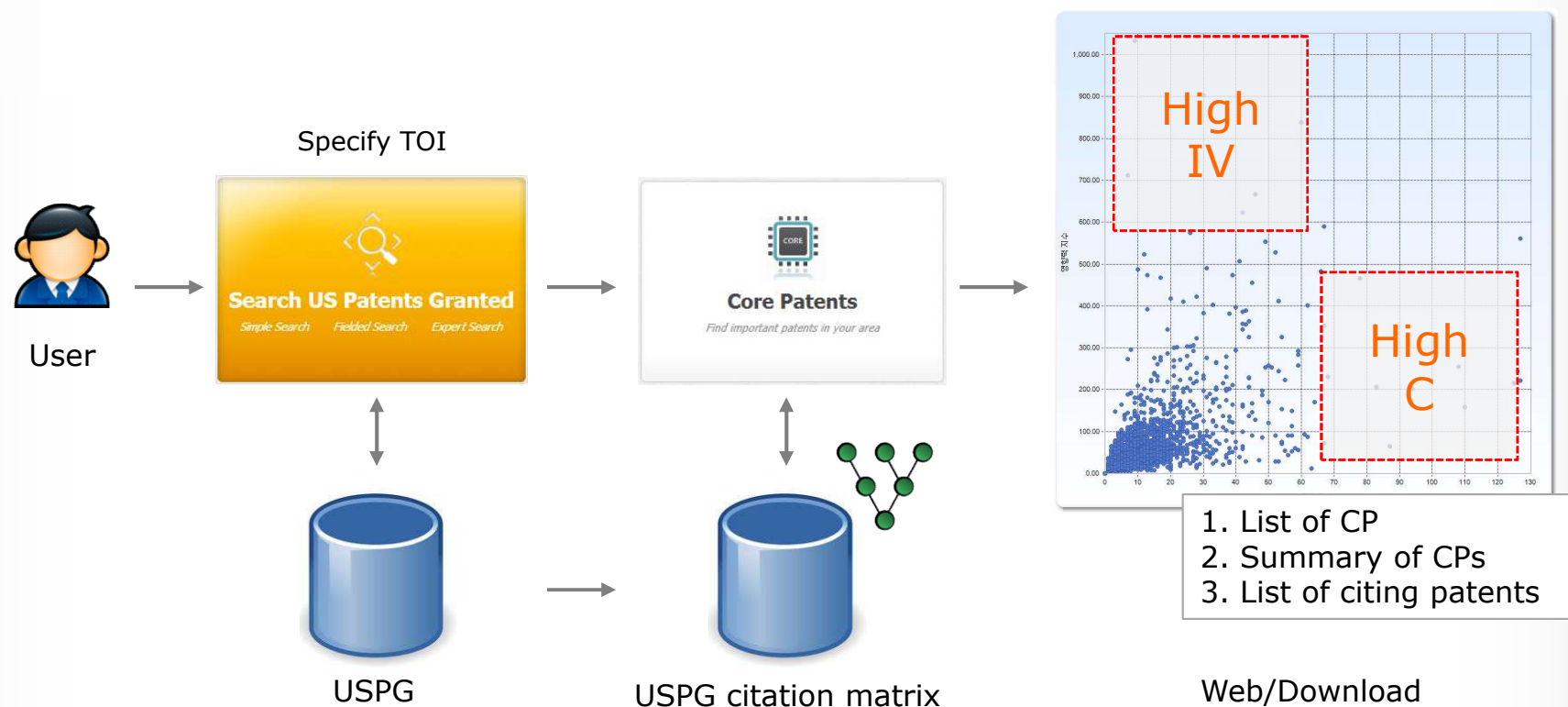
- To **identify subsidiary technologies** consisting a TOI in terms of patent classification (IPC)
- By creating a 'tree' based on the IPCs extracted from all the patents consisting a TOI reflecting the hierarchy of IPCs

TechPath



- To find out **where a firm's R&D activity can be extended to** in terms of patent classification (IPC)
- By navigating the co-occurrence matrices of IPCs for pre-defined time periods (1/3/5 years)

CorePatents



- To find out '**core patents (patents of high impact)**' from a large set of patents
- By considering two citation-based indicators: simple citation count and impact value (IV), the latter of which reflects the importance and age of citing patents

Trade Scan

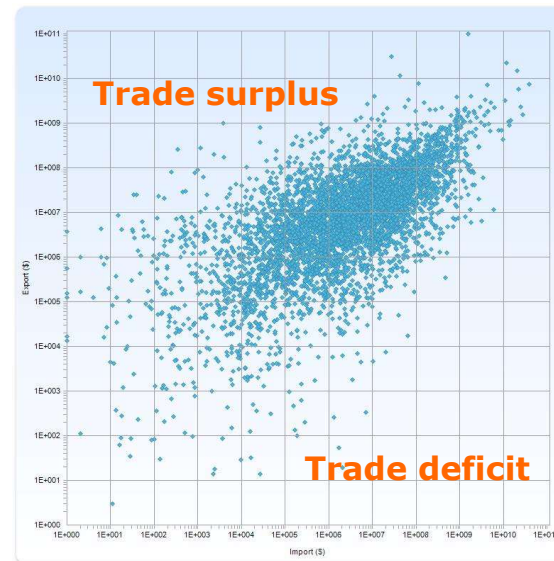


User

Specify HS code or
trade amount



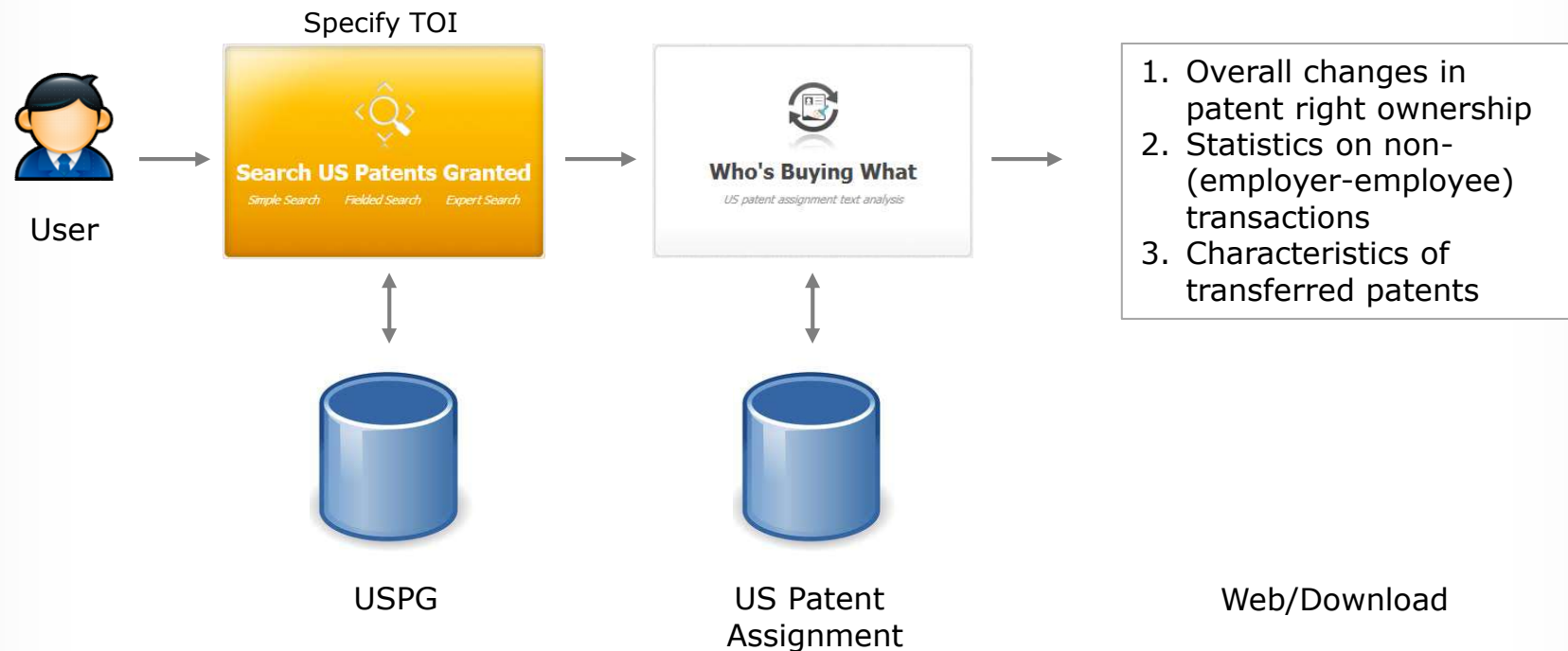
Trade DB
(KCTDI)



Web/Download

- To find **new market opportunities in terms of trade imbalance** (different from conventional market analysis)
- By analyzing trade statistical data to examine the trade surplus/deficit condition of the goods which Korea has been involved in

Who's Buying What



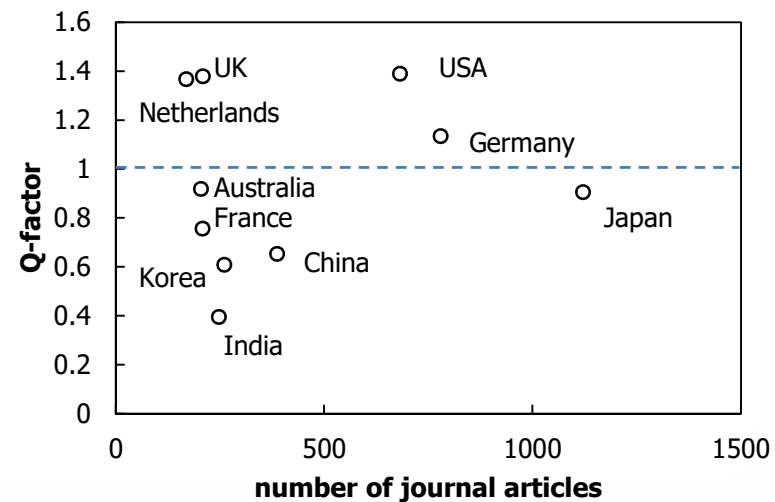
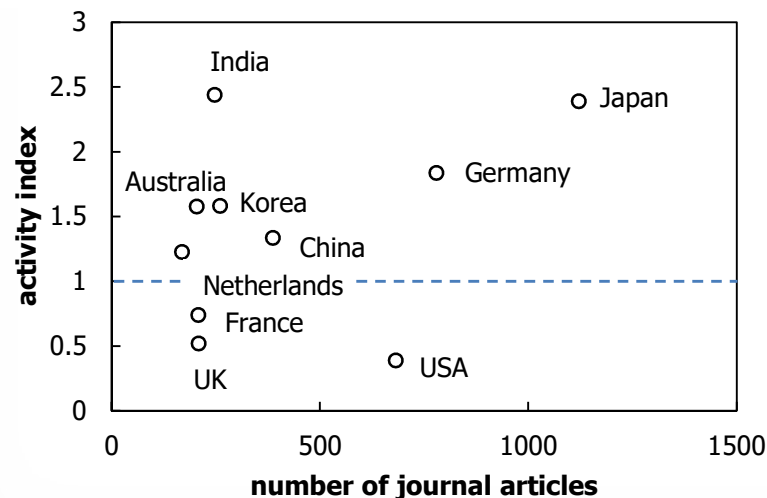
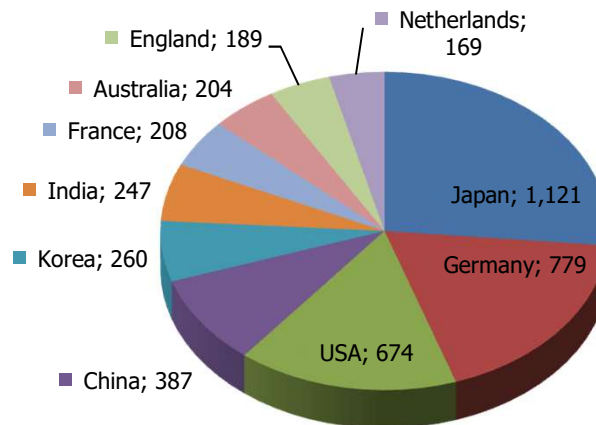
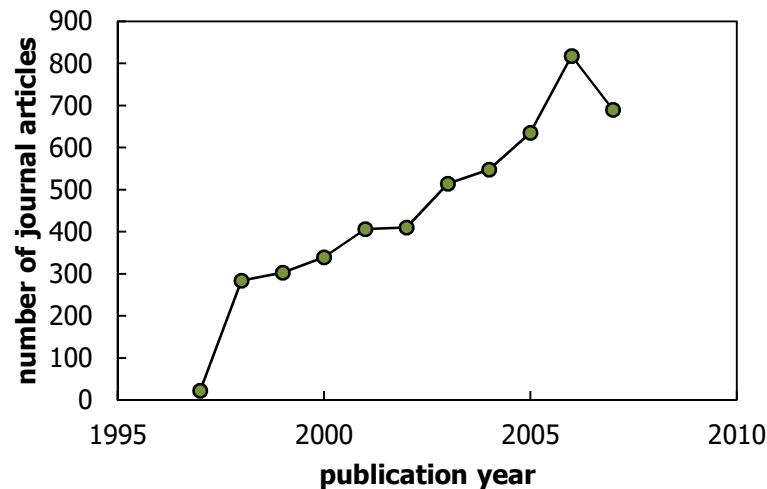
- To find out **how the IP ownerships have been changed in a TOI**
- By analyzing the assignor and assignee names, execution and recorded dates, and the reason of assignment

Application in researcher/institution level*

Identification	Planning	R&D	Evaluation
• Identification of thrust area	• Analysis on environment (internal & external)	• Monitor competitive environment	• Research evaluation • Dissemination of R&D products
• Most appealing technology areas • Areas showing trade deficit	• Identify competitors • Research quality • Competitor's activity • Core technologies • Subsidiary technologies	• Similar R&D • Potential collaborator or competitor	• Quantitative evaluation of R&D • Exploring extendable areas
• Appealing technology • TradeScan	• Competitor identifier • Competitor profile • Journal article analysis • Core patents • TechTree	• Potential patent infringement • Patent citation tree	• Competitor identifier • Journal article analysis • TechPath

* Mandatory guideline for research proposal
by Korea Research Council of Fundamental Science and Technology
(former name of National Research Council of Science & Technology)

Application example – technology level (solar energy)*



* Provided to the respondents (field experts) of the survey for "Evaluation of national science and technology thrust areas", National Science and Technology Council, 2008.

Application in national level*

10 technology sectors

- 1 ICT
- 2 Health care; Medical
- 3 Biotechnology
- 4 Machinery; Manufacturing
- 5 **Energy; Resources**
- 6 Aerospace science
- 7 Environment; Meteorology
- 8 Nano, material science
- 9 Construction; Transportation
- 10 Risk, disaster management

90 thrust areas

- Next generation cells
- Renewable energy**
- Hydrogen energy
- Nuclear fusion

364 technologies

- Solar energy**
- Wind energy
- Bio energy
- Synthetic fuels



Competitor Identifier

Who are the big fish in the ocean?



Journal Article Analysis

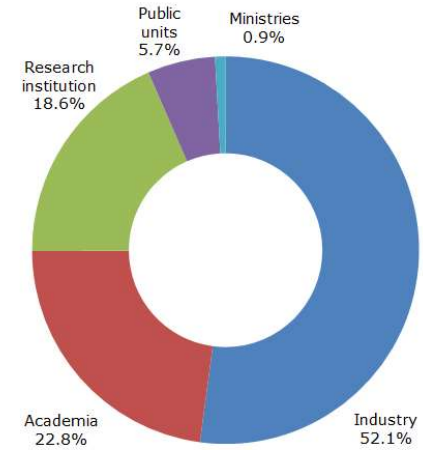
Research trend analysis based on journal articles

* Evaluation of national science and technology thrust areas, National Science and Technology Council, 2008.

Applications – institution/program level

- ❖ COMPAS has been applied to many **government-funded institutions/R&D programs, by KISTI**, such as:
 - Government research institutions under **National Research Council**
 - Planning of Collaborative Allied Projects (5/6 cases; 5 Mil USD/yr) and National Agenda Projects (5/10 cases; 11.3 Mil USD/yr)
 - **Korea Technology and Information Promotion Agency for SMEs**
 - Identifying promising items for SMEs (62 cases)
 - **Association of Science and Technology Information**
 - Planning R&D projects (47 cases)

Service statistics of public COMPAS



User characteristics

2016 User Survey

Service satisfaction : 9.1 ± 0.5

Willing to recommend: 8.5 ± 0.1

Thank you for your attention.

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