



Topic 1: **Patent landscaping, mapping & analytics**

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Overview

- Outline of the Workshop
 - From data of individual patents
 - To patent landscapes
- WIPO activities regarding patent landscaping

Patent analytics is big business



Status quo in industrialized countries:

- Many commercial firms offer patent analytics/landscaping services since there is a wide range of business use of patent information
- Many companies exploit patent information and utilize patent analytics

→ Topic 12

What is WIPO's role in this?

What is the role of other public institutions?

What is the utility for developing countries?

→ Topics 5, 6, 8 -11

Treasures of patent Information

■ **Technical information**

- because of disclosure requirement
- Patent publications are at forefront of emerging technologies
- Patent publications are sometimes first publication of new technologies

■ **Business / economic information**

- derived from patenting activity of innovators; analysis of bibliographic data
- Patents are related to technologies with commercial potential
- Investment in global protection as indicator for potential patent value

■ **Legal information**

- Status in particular jurisdictions (freedom-to-operate)
- Claims granted in particular jurisdictions

Aggregations of patent information

Individual application (its bibliographic, technical, legal data)



Patent family(ies) (domestic, simple, extended; technical)



Patent data collections (e.g. search results)



Collective patent information (Patent landscape reports, FTOs,)

▶ “Discovering knowledge in patent databases”

▶ Each subsequent level creates new patent information that is derived by processing the previous aggregation

Aggregations of patent information

Various products, diverse and fuzzy terminology

→ Topic 2

- Patent landscape reports
- State of the art, infringement, patentability, novelty, validity reports
- Technology watch (bulletins)
- Annual statistical reports
- Freedom-to-operate, clearance reports
- Valuation of portfolios
- Product to patent maps
- Litigation analysis

→ Topic 22

Patent Landscaping/Mapping ?

- **Patent search and preparation** of a **Collection of patents**, e.g.
 - patents claiming inventions related to biofuel
 - patents filed by company X
 - patents filed in Brazil in 2012
- +
- **Ordering and Analysis** of collection
- +
- **Visualization** ("patent mapping")
- (+
- Deriving conclusions, recommendations*) → Topic 20

*delicate task !

Preparing a collection

- Selecting proper database(s)
- Developing and refining search query

No Topic

■ Size of collection

- Macro level >10 000
- Meso level 1000 – 10 000
- Micro level <1000

<> patentability search: 1-20

■ Data cleaning

- Family reduction
- Assignee grouping
- Manual noise reduction

→ Topic 14


Patent information analyses

- Patent information is available as
 - **structured data**: bibliographic data (metadata)
 - **unstructured data**: description, claims, sequence listings
 - **(image data**: drawings, chemical formula)
- **Data mining**: structured data enable an easy
 - statistical analysis → Topic 13
 - network analysis → Topic 14
- **Text mining** of unstructured descriptions/claims/abstracts
 - Determining linguistic content/meaning/concepts
 - Similarity between documents

→ Topic 15

Structured/fielded data

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

(19) World **Classifications** 

(43) International Publication Date **PCT** (10) International Publication Number **WO 2007/076115 A2**

5 July 2007 (05.07.2007)

(51) International Patent Classification: 5727-107th Street, Edmonton, Alberta, T6G 2E9 (CA).
A01H 5/00 (2006.01) CI2N 15/82 (2006.01) **THEODORIS, George** [US/US]
CI2N 9/10 (2006.01) CI2N 5/04 (2006.01) Vallejo, CA 94591 (US).

(21) International Application Number: PCT/US2006/049241 (74) Agents: AMIL, Lisa, A. et al.; M...
425 Market Street, San Francisco, CA 94105-2482 (US).

(22) International Filing Date: 21 December 2006 (21.12.2006) (81) De... for every
AL, AM,
AT,
CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB,
JP,
LI,
MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RU, RS,
RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN,
TR

(25) Filing Language: English

(26) Publication Language: English

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(71) Applicant (for all designated States except US): **ARCADIA BIOSCIENCES, INC.** [US/US]; 202 Cousteau Place, Suite 200, Davis, CA 95616 (US).

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(54) Title: NITROGEN-EFFICIENT MONOCOT PLANTS **Title**

[Continued on next page]



Structured/fielded data

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↑

1. (WO2007076115) NITROGEN-EFFICIENT MONOCOT PLANTS

[PCT Biblio. Data](#) | [Description](#) | [Claims](#) | [National Phase](#) | [Notices](#) | [Documents](#)

Latest bibliographic data on file with the International Bureau

Pub. No.: WO/2007/076115 **International Application No.:** PCT/US2006/049241
Publication Date: 05.07.2007 **International Filing Date:** 21.12.2006

IPC: *A01H 5/00* (2006.01), *C12N 5/04* (2006.01), *C12N 9/10* (2006.01)

Applicants: **ARCADIA BIOSCIENCES, INC.** [US/US]; 202 Cousteau Place, Suite 200, Davis, CA 95616 (US) *(For All Designated States Except US)*.
KRIDL, Jean [US/US]; (US) *(For US Only)*.
DEPAUW, Mary [CA/CA]; (CA) *(For US Only)*.
SHRAWAT, Ashok, K. [IN/CA]; (CA) *(For US Only)*.
GOOD, Allen, G. [CA/CA]; (CA) *(For US Only)*.
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Inventors: **KRIDL, Jean**; (US).
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THEODORIS, George; (US)

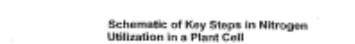
Agent: **WARD, Michael, R.**; Morrison & Foerster LLP, 425 Market Street, San Francisco, CA 94105-2482 (US)

Priority Data: 60/753,818 23.12.2005 US

Title **(EN)** NITROGEN-EFFICIENT MONOCOT PLANTS
(FR) PLANTES MONOCOTYLEDONES AYANT UN RENDEMENT EFFICACE EN AZOTE

Abstract: **(EN)** Methods of increasing nitrogen utilization efficiency in monocot plants through genetic modification to increase the levels of alanine aminotransferase expression and plants

Schematic of Key Steps in Nitrogen Utilization in a Plant Cell



Output of analysis

Figure 15. Priority Country Information

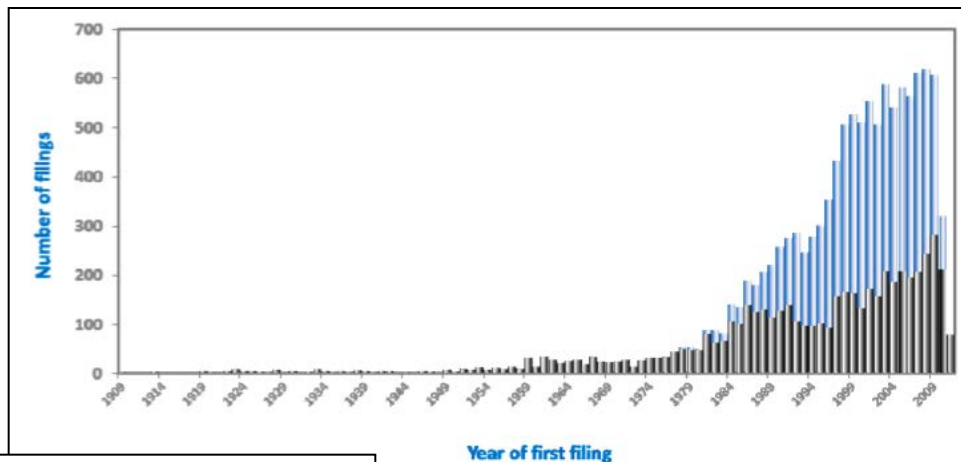
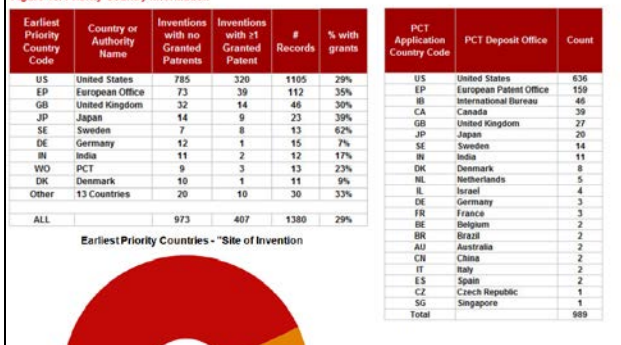
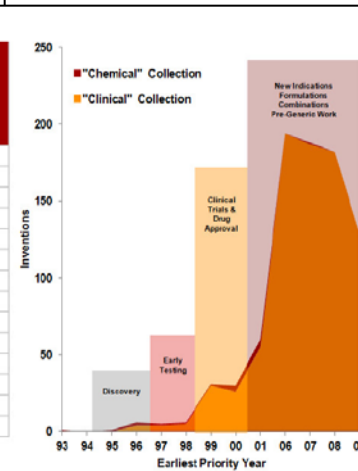


Figure 13. Invention Timelines vs Developmental Stages

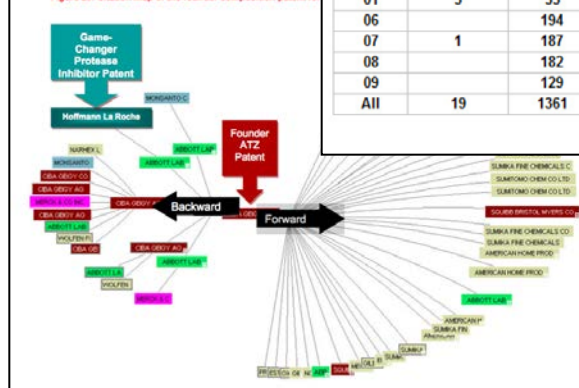
Earliest Priority Year	"Chemical" Collection	"Clinical" Collection	Invention Families
93	1		1
94			
95	1		1
96	2	4	6
97	1	4	5
98	1	5	6
99	1	30	31
00	4	26	30
01	5	55	60
06	1	187	188
08		182	182
09		129	129
All	19	1361	1380



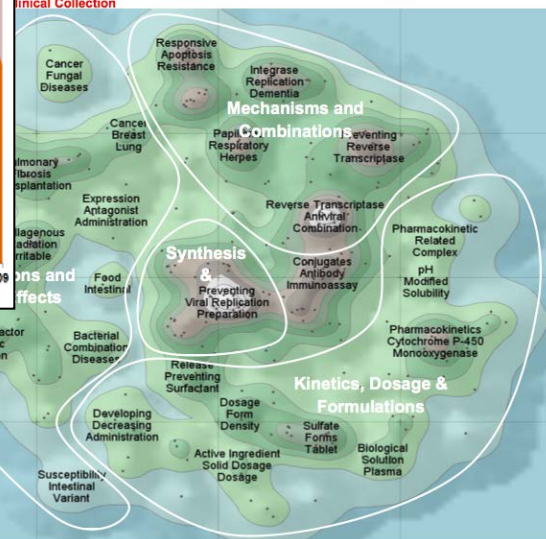
a PCT application

■ patent families with a PCT application

Figure 29. Citation map of the founder composition patent for



Clinical Collection



Visualization

- Facilitates the comprehension and the communication of the results of analysis
 - E.g. Tables can be illustrated by pie, bar, line charts → Topic 13
- Some output of analyses can hardly be separated from visualization
 - Network graphs → Topic 14
 - Concept maps → Topic 15
- Static visualizations (e.g. in PDF of report)
- Dynamic/interactive visualizations (e.g. on website)
- Various applications/tools → Topic 18

Stages of PLR preparation

- Planning
- Tendering (if to be outsourced)
- Delivery/preparation
- Dissemination
- (use)
- Evaluation

→ Topic 13

WIPO Patent Landscape project

- PLRs perceived as important tool for access to and exploitation of patent information
 - Business use
 - Factual evidence for policy discussions and strategic planning
 - Technology transfer (FTO, public domain; eg extensions)
- WIPO Committee on Development and Intellectual Property (CDIP) created project DA_19_30_31 as part of WIPO's Development Agenda
 - Bridging the [knowledge gap](#)
 - Promoting the use of patent information as a freely accessible (on copyright protection) and globally available resource for technology information

WIPO Patent Landscape project

Phase I (2010-11)

- Budget for 12 PLRs
- Diverse areas of technology to be covered
 - Health, food security, green technologies,.....
- PLR should be "demand driven", addressing needs of developing countries
 - Need for competent cooperation partners
 - NGOs and IGOs as initial partners
- Developing a procedure for the preparation of PLRs → Topic 13
- Website for publishing PLRs and related information → Topic 3

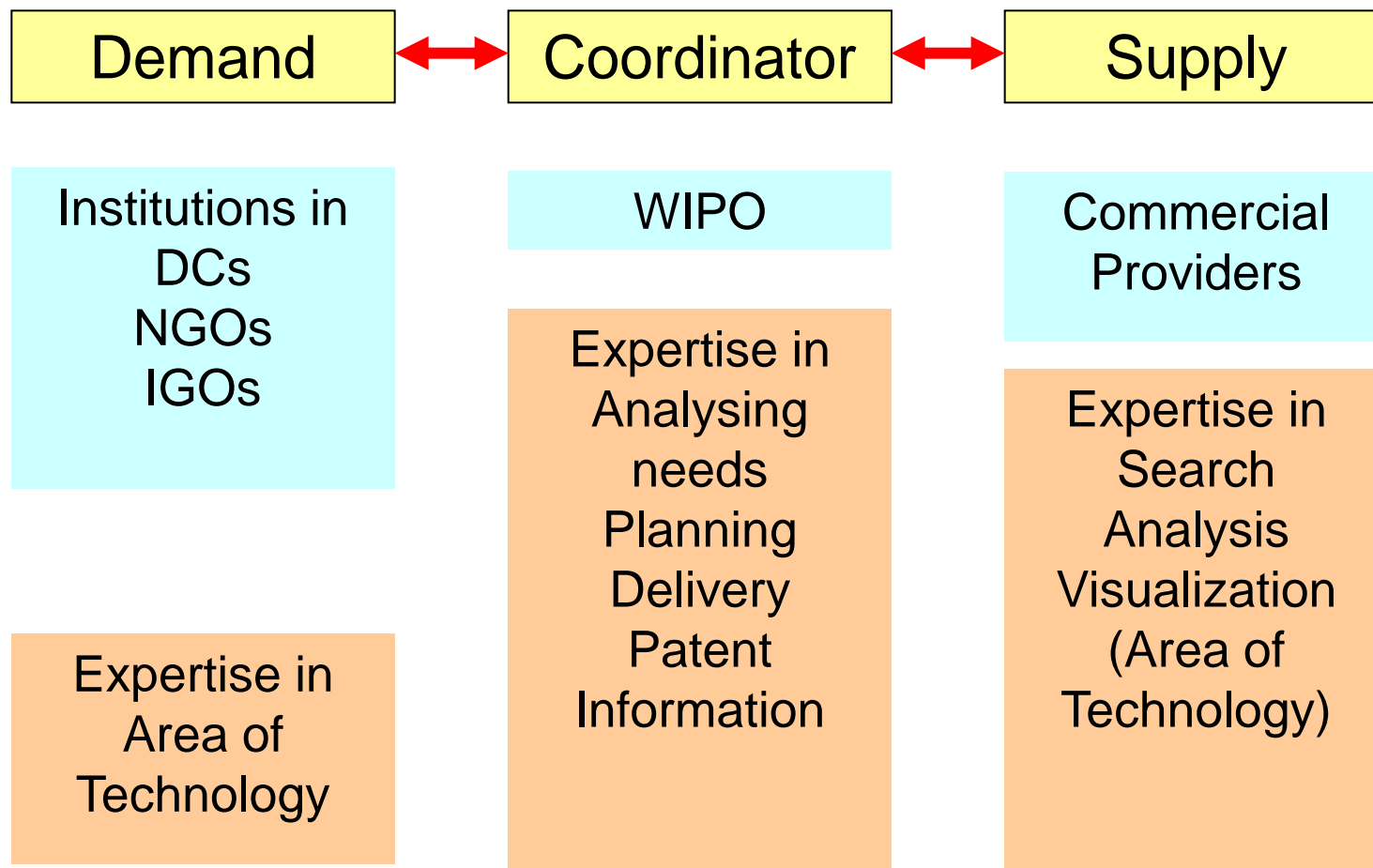
Collaboration with users

- WIPO has usually limited technical expertise in areas of technology
- Partners having needs and expertise are valuable for assuring
 - relevance of each report
 - efficiency of preparation
 - sufficient utilization of completed report (impact)
- Each collaboration serves for partners as vehicle/means to familiarize themselves with patent information, analytics, patent system
- Collaboration covers several phases: drafting TOR, delivery phase, dissemination, evaluation of PLR

Outsourcing to providers

- WIPO has limited technical expertise in searching, analysis and visualization; and limited access to professional databases and tools
- PLRs were contracted out after tendering procedure according to WIPO's procurement rules

Matching needs



WIPO's patent landscape project

The screenshot shows the WIPO IP Services website. The header includes the WIPO logo and 'IP SERVICES' in blue. A navigation bar contains 'ABOUT WIPO', 'IP SERVICES', 'PROGRAM ACTIVITIES', 'RESOURCES', and 'NEWS & EVENTS'. The breadcrumb trail reads 'Home > IP Services > Patents > Patent Landscapes'. On the left, there are sections for 'PATENTS' (Publications, Patent Law), 'RELATED LINKS' (WIPO GOLD, PCT Resources, Patent Classification: IPC, Statistics, Global Challenges, WIPO Standards), and 'E-NEWSLETTERS' (Subscription). The main content area features a red heading 'Patent Landscape Reports' followed by a paragraph explaining that these reports describe patent situations for specific technologies, regions, or globally, starting with state-of-the-art searches and analyzing results to answer questions like 'Who is doing what?' and 'What is filed where?'. A second paragraph notes their utility for policy discussions and strategic planning. A third paragraph states that the reports are based on the CDIP/4/6 project from 2009. Below this is a section 'On-going Work at WIPO' which mentions mandates for reports in public health, food security, climate change, and environment. A 'Published Patent Landscape Reports' section follows. On the right, a 'FEATURE' box highlights a 'Patent Landscape Report on Vaccines for Selected Diseases'. A yellow box on the right side of the page points to 'Topic 3, 20'. A large green box at the bottom right contains the text 'Dedicated website' and a list of features: 'Links to published reports', 'Links to groups/institutions active in the field', and 'General background/information'. At the bottom of this green box is the URL: http://www.wipo.int/patentscope/en/programs/patent_landscapes/index.html. The 'LATEST NEWS' section at the bottom left lists several reports, including 'Patent Landscape Report on Vaccines for Selected Infectious Diseases' and 'Patent Landscape Report on Atazanavir (S...)'.

→ Topic 3, 20

Dedicated website

- Links to published reports
- Links to groups/institutions active in the field
- General background/information

http://www.wipo.int/patentscope/en/programs/patent_landscapes/index.html

Phase I work and collaborations

- **UNITAID/Medicines Patent Pool (MPP):**

 - Ritonavir (Landon IP)

 - Atazanavir (Thomson)

→ Topic 4

- WHO: Vaccine manufacturing (FIST)

- DNDI: Patents related to 5 neglected diseases

- FAO:

 - Adaptation technologies for improving plant salinity tolerance (PIIPA)

- IRENA, GIWEH:

 - Desalination technologies, and use of renewable energies for desalination (CambridgeIP)

 - Water purification (CambridgeIP)

- (no partner):

 - Solar cooling (IP Search); Solar cooking (Scope)

WIPO Patent Landscape project

- Evaluation after Phase I
- **Phase II** (2012-13)
 - Budget for 6 further PLRs
 - Enhancing capacity building
 - **Manual/Guidelines for best practices**
 - **Regional Workshops for exchange of best practices**
 - Refining standardized tools/procedures of Phase I and developing into future standard service

Phase 2 work and collaborations

■ CERN

Industrial applications of accelerator technologies

■ UNEP/Basel Convention:

Electronic waste management (Thomson)

■ FAO:

- Abiotic stress tolerance of plants, as extension of the plant salinity tolerance PLR (PIIPA)
- Animal genetic resources (Paul Oldham)

■ WHO

- non-communicable diseases
- update of Ritonavir PLR (Landon IP)

Utility of a WIPO PLR

- Thematic dimension:
 - Factual evidence: raw and analyzed data
 - Enables/provides conclusions, recommendations, answers specific business questions
 - Visualization facilitates comprehension
- Training dimension:
 - Develops and describes search methodology in particular area of technology