Key Success Factors in the Setup of Cutting-Edge Patent Intelligence Services

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Overview

- Syngenta at a glance
- Technology Mining in today's Information Research landscape
- Functional excellence and Innovation at scale
- People, Process & Technology
- Experiences & Lessons learned
- Built-in quality and KPIs

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Syngenta at a glance

- A uniquely broad product portfolio
  - A leader in crop protection
  - Third in high-value commercial seeds
- World-class science
  - $ 14 billion sales in 2012
  - $ 1.3 billion R&D investments in 2012
  - 5,000 people in R&D around the world
- Global reach and experience
  - Over 27,000 employees in more than 90 countries

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Global R&D capabilities

GOA
Chemistry

JEALOTT'S HILL
Chemical Discovery
Weed Control
Formulation
Bioscience
Environmental Science

GREENSBORO
Formulation
Environmental Science

BEIJING
Biotechnology
R&D

SBI
Biotechnology
R&D

STEIN
Fungicides, Insecticides &
Professional Products

Major R&D sites located on three continents

Other sites

- Marker-assisted and seed breeding capabilities
- Global field station network

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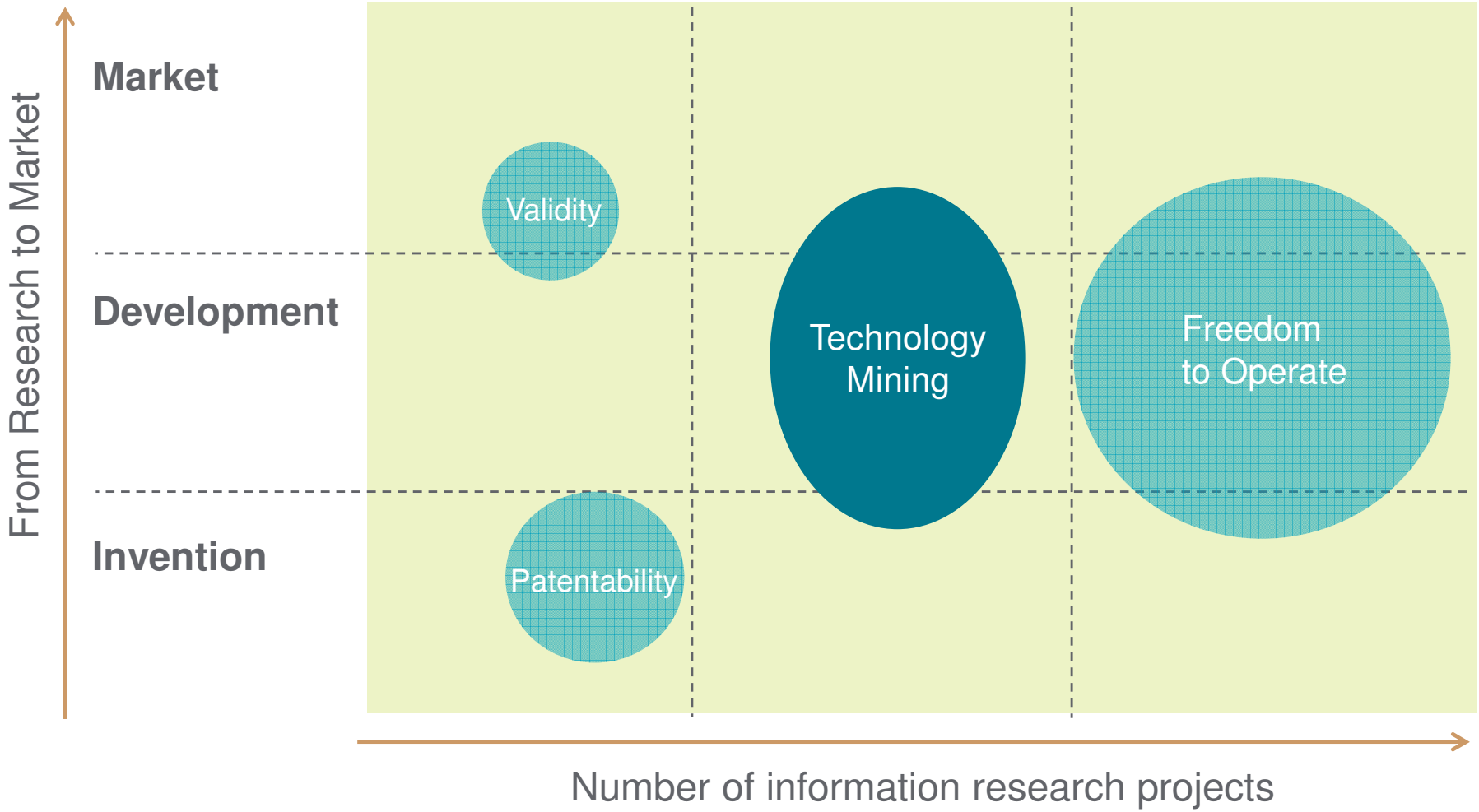
The today's Information Research landscape



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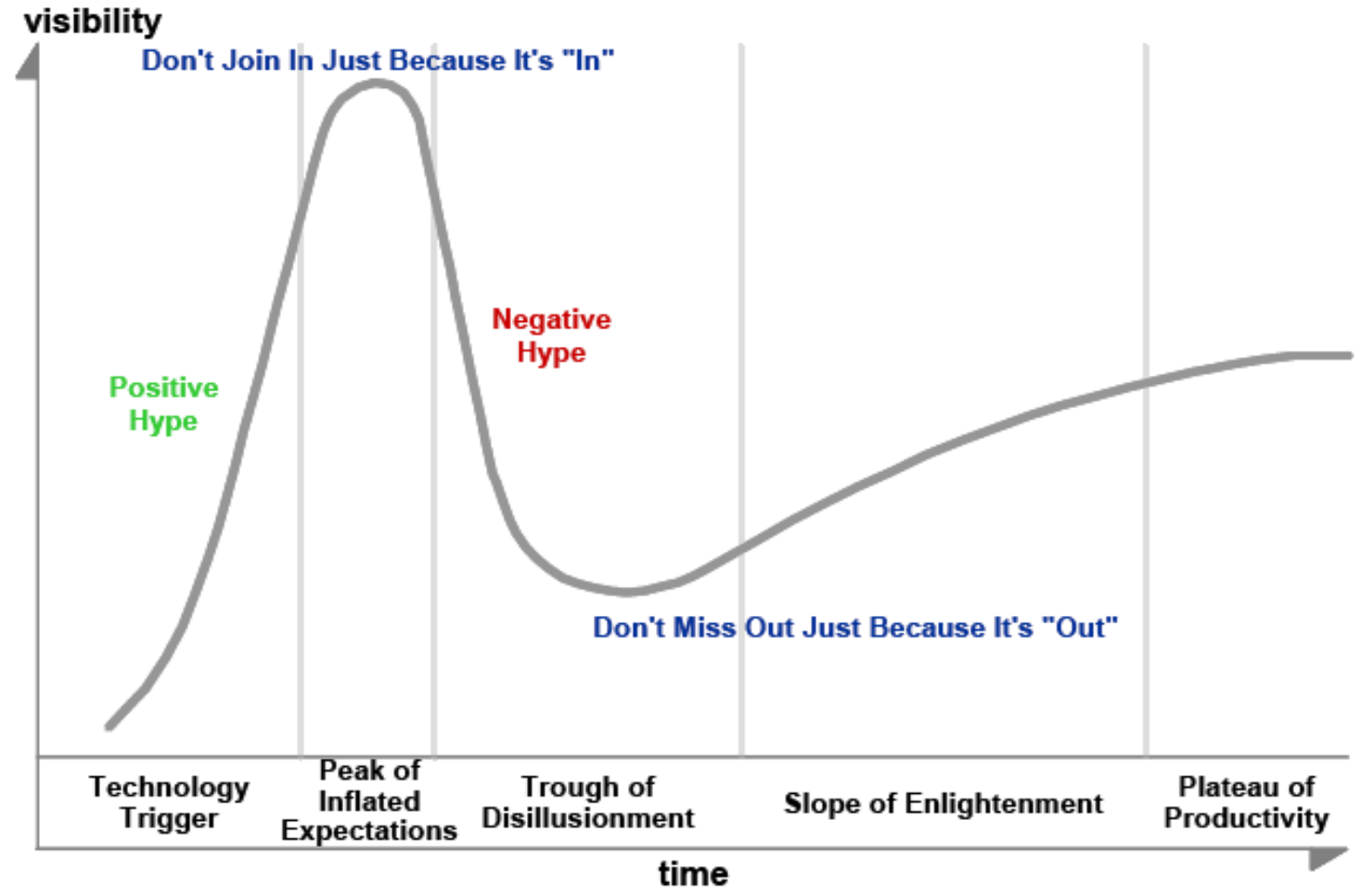
Technology Mining and the Gartner Hype Cycle



Source: Gartner (June 2006)

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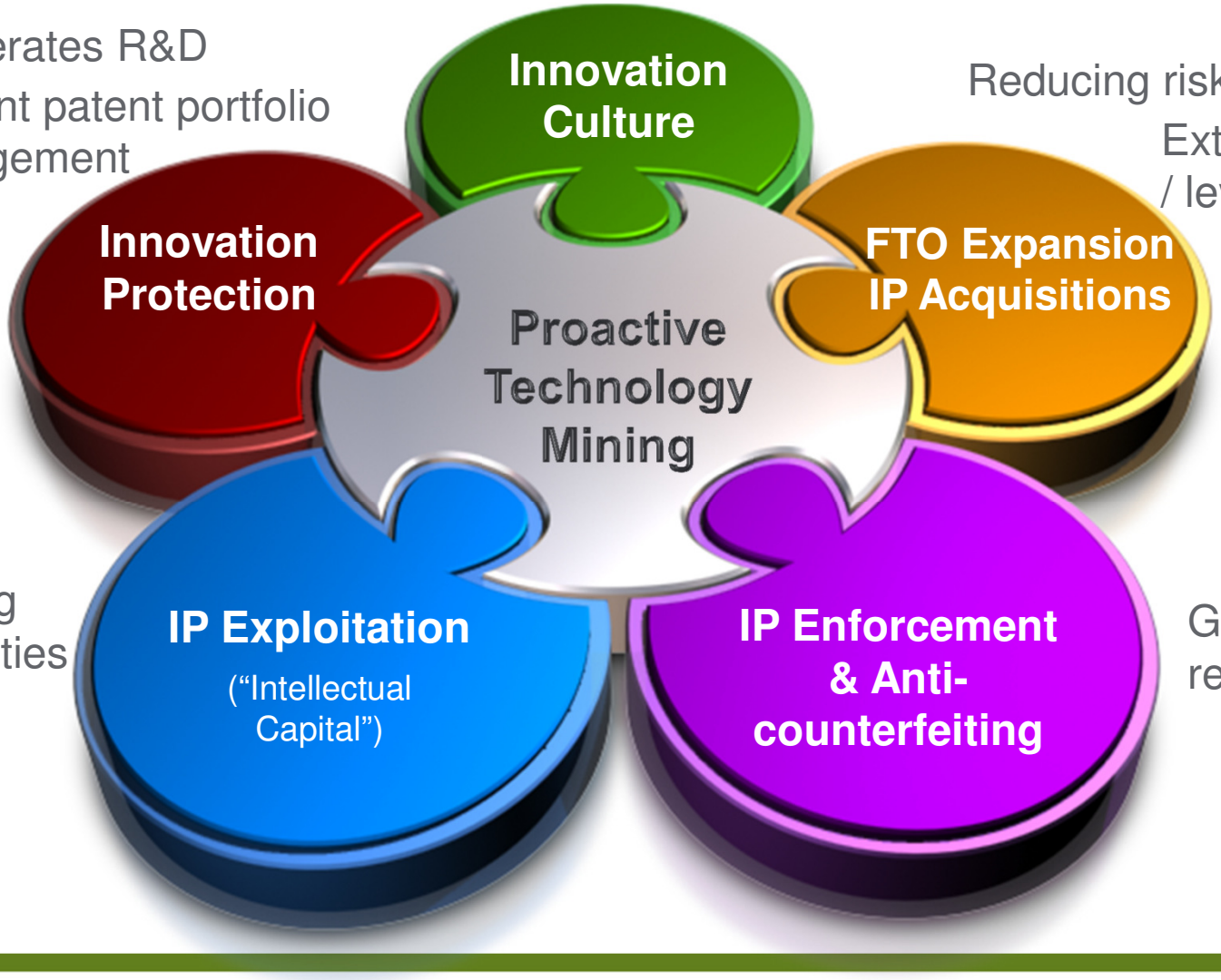
Technology Mining shapes and drives…..

Accelerates R&D

Efficient patent portfolio management



Reducing risk / exposure

External growth / leverage

Identifying opportunities

Generating revenue

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Information Research strategic direction

Innovation at scale

The Fundamentals

Functional Excellence

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Towards the implementation of new services

Drive Functional Excellence

- It is about creating a mindset and a team that is always looking for areas in which to further enhance capability.
- Functional excellence creates the foundation from which to explore and innovate.

Continue to deliver the fundamentals

- Cost efficiency and optimized processes are enablers to reinvest in new services.
- Reliability and responsiveness: a lean and agile service

Innovation at scale

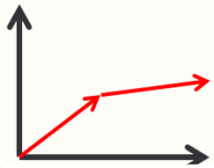
- Making the time to explore, discover and create.
- Proactive partnering and integrated ways of working
- Managing dilemmas and tensions as a source of insight, innovation and energy.

Threshold vs distinctive capabilities

- **What do we need to be efficient, effective and able to expand services?**
- **What is needed to reliably and sustainably deliver the fundamentals?**

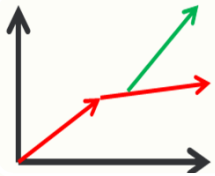
THRESHOLD CAPABILITIES

- What are the minimum functional deliverables?
- What improvements are necessary to keep pace with advances in information research?



DISTINCTIVE CAPABILITIES

- What would give us a competitive advantage?
- What innovations would add significant value?



Functional Excellence and the delivery of the Fundamentals are the foundations which enables shape and explore innovation at scale.

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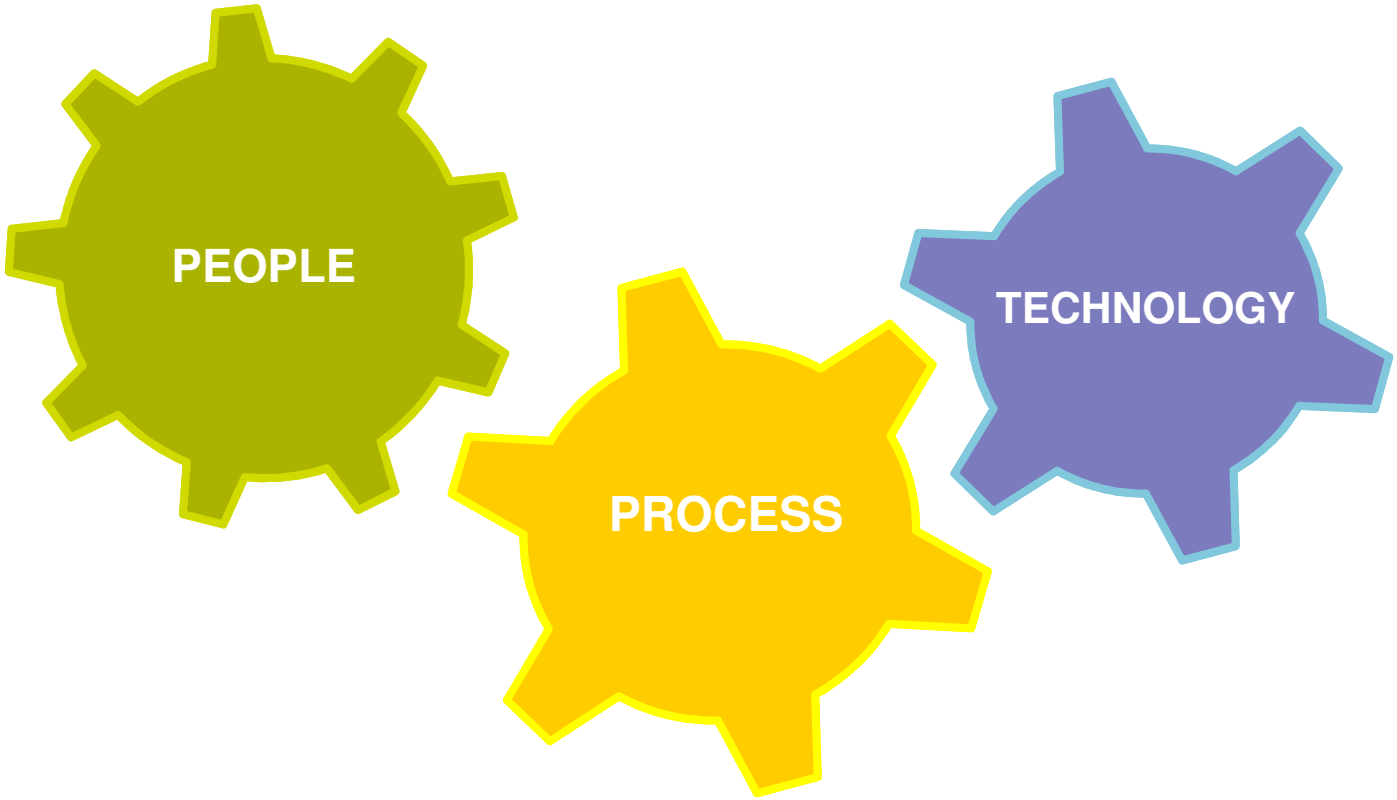
Elements in the implementation of Technology Mining service



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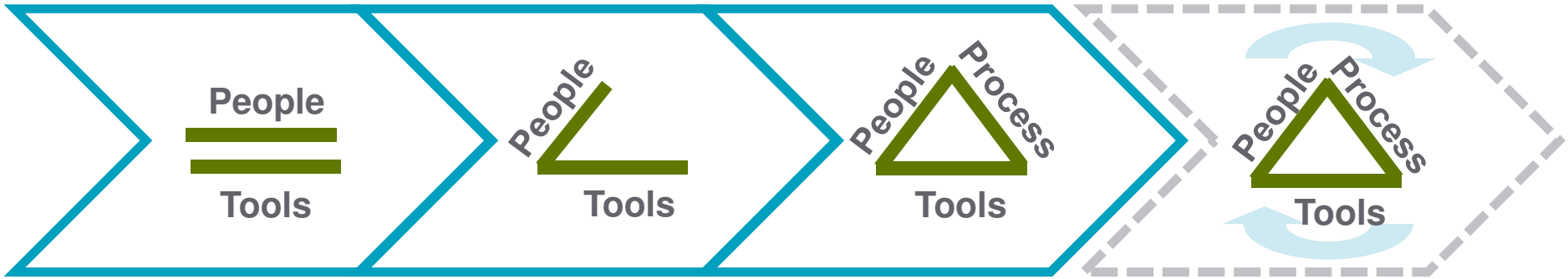
Phased approach in the setup of professional Technology Mining services



PHASE 1

- People capabilities people
- Evaluation and selection of tools
- Limitation is the budget

PHASE 2

- Link people and tools
- Training

PHASE 3

- Develop best processes
- Link people, tools and processes

Target

Forefront Technology Mining

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Required competencies

Common for all Information Research

General Capabilities

- Communication and people skills
- Ability to interpret information requirements and analyze data

Core Skills

- Excellent scientific background (ability to fully understand the subject matter)
- Proficiency with professional information resources and retrieval technologies

Specific for Technology Mining

Technical Skills

- Natural adaption to IT
- Expert knowledge of Technology Mining tools

Knowledge

- Fully understands the Technology Mining process and concepts
- Ability to 'sell' Technology Mining work products

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The process

Search Strategy & Retrieval

- Understand the question & translate into search strategies
- Chose appropriate data resources with analytic tools in mind
- Interactive retrieval, ”Piece meal” approach

Normalization/ Cleaning

- Remove irrelevant documents (Garbage-in/Garbage-out)
- Application of thesauri (company and inventor)
- One document per patent family

Visualization & Analysis

- Man-made abstracts preferred over original abstracts
- No ”one tool fits all” approach
- Collaborate and communicate

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Customer expectations drive data and visualization analysis

Business Development

- 80:20 retrieval and quality of data sufficient
- Use of Patent Classifications and database specific codes for retrieval

Research

- Medium-range complete retrieval and quality of data
- Use of classifications, keywords for retrieval; removal of obvious false drops

Intellectual Property

- Comprehensive and high quality data set
- Retrieval includes generic query expansion
- Manual categorization of documents

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Tools

Pivot table analysis

- Import of bibliographic data into MS Excel or other visualization tools
- “Drag and drop” creation of pivot tables and related charts

Data source integrated

- Built-in analysis tools
- Convenient for occasional users
- Drilling down option

Data Mining

- Specialized on statistics; data is imported from various resources
- Provides a plethora of analysis and visualization functionalities

Text Mining

- Import of data and text via various filters
- Focused on text mining, black box

Host integrated Technology Mining

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The technology life cycle

Establish budget

Work on best processes

Maximize usage

Tool evaluation & selection

Establish confidence

Re-evaluation (& Exit)

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Technology Mining agenda

The deliverables

Innovation Culture

- White space analysis
  → redesign of patent portfolio by filing in identified gaps
- Open Innovation
  → external sourcing of inventions/know-how/skills
  → acceleration of R&D

Innovation Protection

- Patent valuation
- Patent portfolio management
  → where to create IP barriers
  → licensing-out vs. licensing-in
- Tracking fundamental inventions vis-a-vis incremental innovations
- Life-cycle management

IP Exploitation

- 2nd uses of technologies
  → adjacent technologies
- Identify new value capture models
- Niche market identification
- Discover new technologies and processes and their use for product development

FTO Expansion & IP Acquisition

- Understand potential risks and benefits of new approaches or entering new markets
- Identify acquisition targets
- Competitor patent profiling
  → understand strategies of competitors

IP Enforcement & Anticounter-feiting

- Infringement detection
- Understand potential risks and benefits of new approaches or entering new markets
- Identify activities of real and potential competitors

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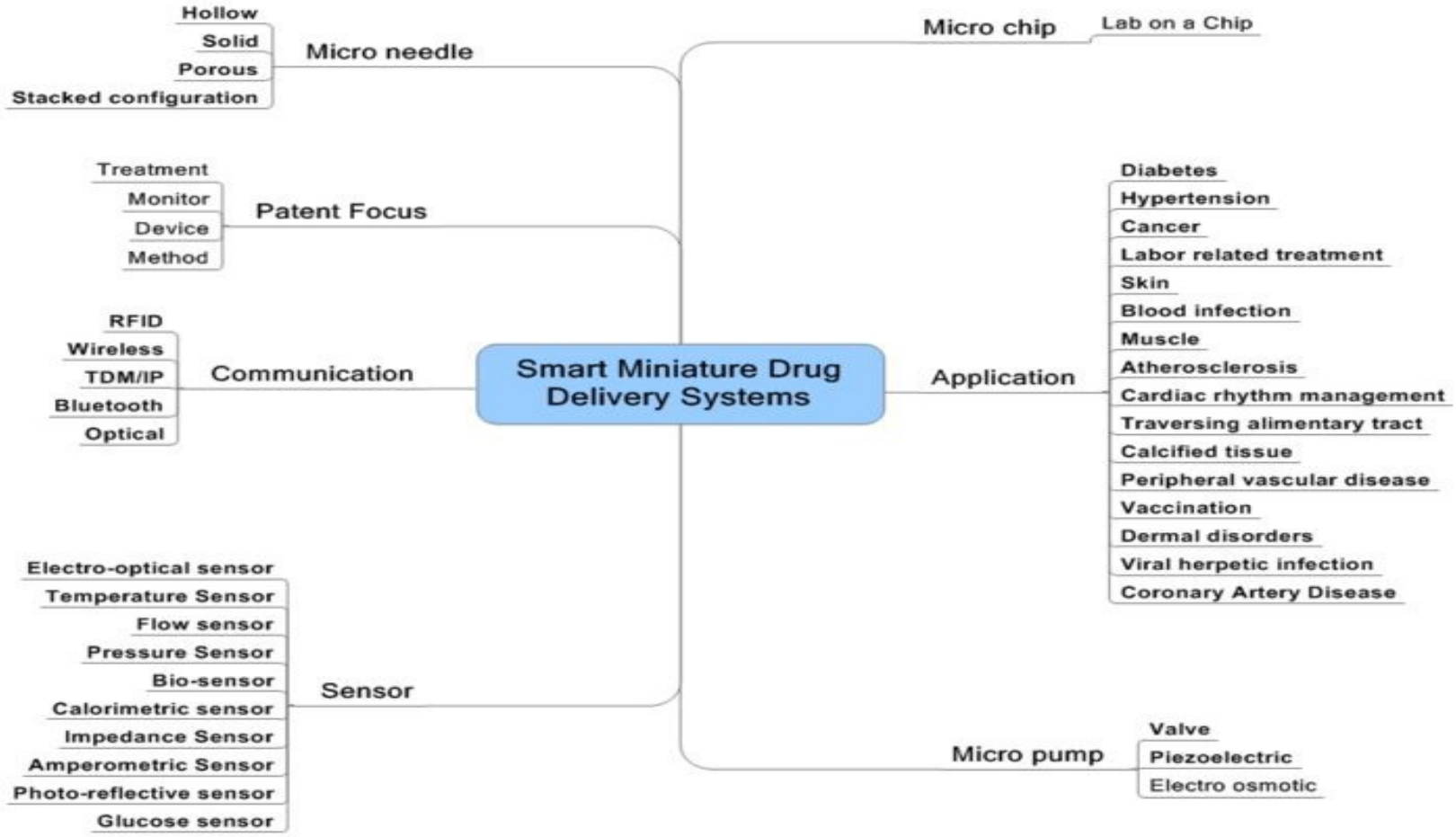
(Semi-)intellectual Text Mining

Pre-categorization of documents into an ontology with a text mining tool followed by manual adjustments



Source: Dolcera (2012)

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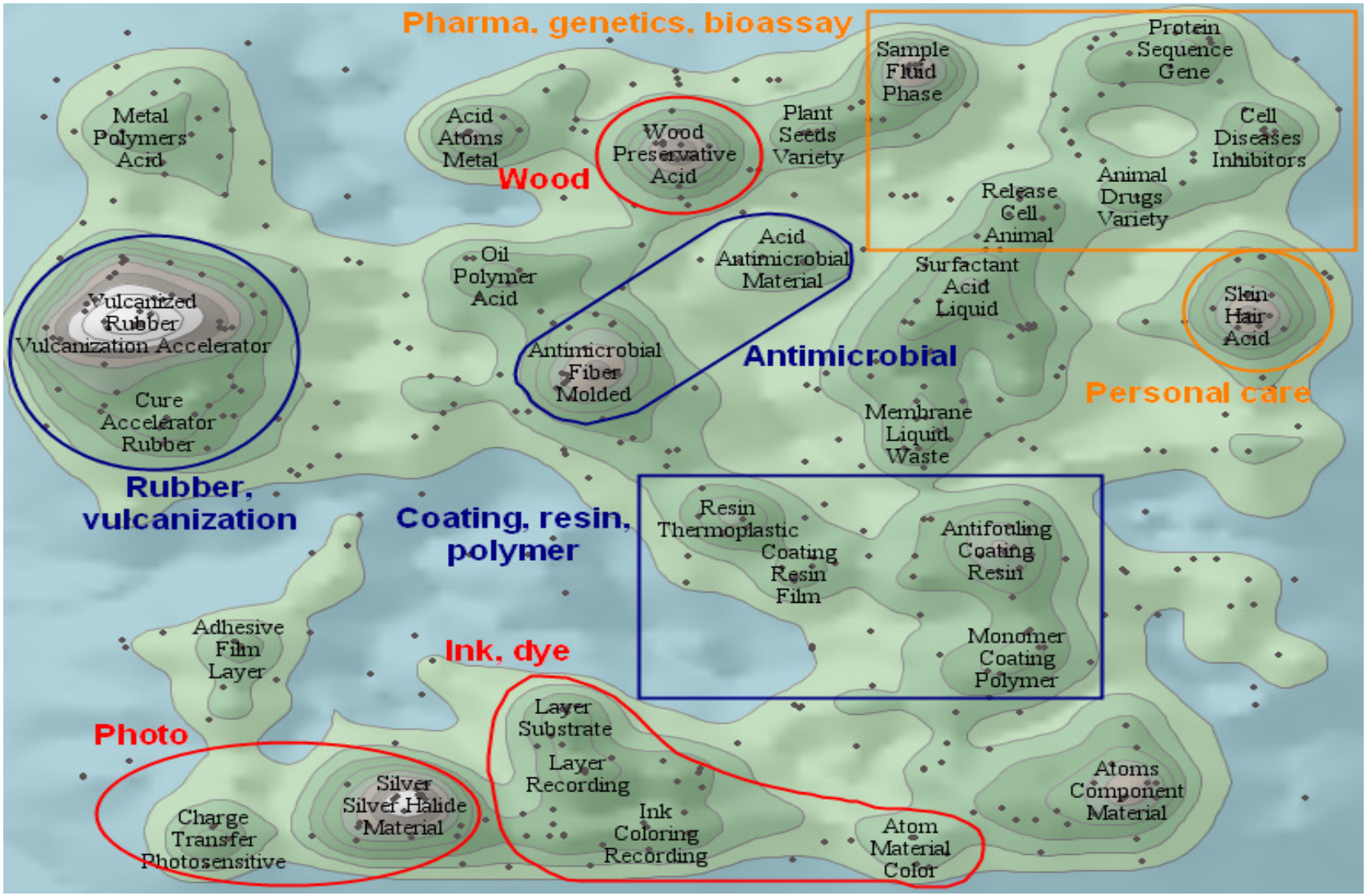
Getting the data set right: Example non-agri use of fungicides

- Compiling a comprehensive list of fungicides
- Search fungicides compounds in database covering all technologies
- Identify typical database and patent classifications for use as fungicides in the agrochemical field
- Exclude agrochemical use patents via identified database and patent classifications
- Text mining of the remaining document set

Themescape® map for non-agri use of fungicides



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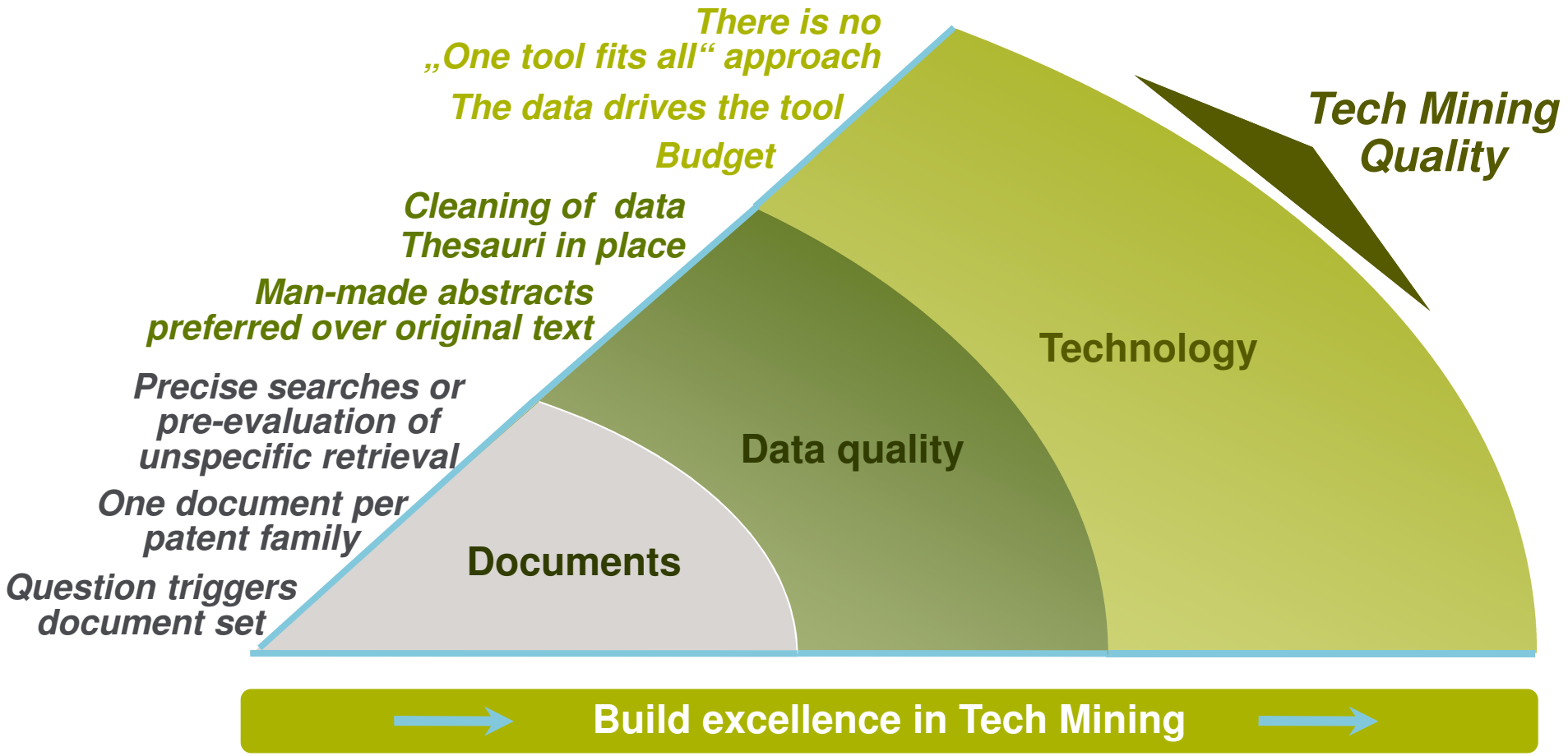
Towards Technology Mining quality



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Key Performance Indicators (KPIs) and Metrics
Driving value

Business Impact	Business Partnering (Shape & Drive)
• Sustainable innovation protection • Effective IP exploitation • Open Innovation • Efficient IP portfolio management • FTO Expansion & IP Acquisition	• Technology Mining as part of business strategy • Effective processes & feedback • No. of iterations to agree • No. of impact / total time in meeting
Value Creation	**Operations & Costs**
• % Technology Mining reports effectively used • Value add analysis • Value capture beyond traditional business models	• Costs per project and overall • No “one tool fits all” • Time to deliver • Balance in-house vs outsourcing

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Bringing plant potential to life