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**EI Taskforce on Business Process Management and  
Service Oriented Computing  
&  
e-Research Project: P2P Collaborative Network for Legal  
Information Sharing and Management**

**Yanchun Zhang  
Victoria University**

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# **1. EII Taskforce on Business Process Management and Service Oriented Computing**

Taskforce Coordinators:

— Marta Indulska, UQ

— Yanchun Zhang, VU

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# Taskforce Members

- Ms Wasana Bandara, Queensland University of Technology
- Dr Boualem Benatallah, UNSW
- Dr Mark Cameron, CSIRO ICT Centre
- Dr Sandy Chong, Curtin University
- Dr Leonid Churilov, Monash University
- Dr Marlon Dumas, Queensland University of Technology
- Prof Peter Green, University of Queensland
- Prof Jun Han, Swinburne University
- Prof Igor Hawryszkiewicz, University of Technology Sydney
- Dr Marta Indulska, University of Queensland
- Prof Ryszard Kowalczyk, Swinburne University
- Dr Shonali Krishnaswamy, Monash University
- A/Prof Xuemin Lin, University of New South Wales
- A/Prof Chengfei Liu, Swinburne University
- A/Prof Yuan Miao, Victoria University
- Dr Helen Paik, Queensland University of Technology
- Prof Michael Rosemann, Queensland University of Technology
- Dr Shazia Sadiq, University of Queensland
- Prof Graeme Shanks, Monash University
- Dr Kerry Taylor, CSIRO ICT Centre
- Dr Hua Wang, University of Southern Queensland
- A/Prof Jian Yang, Macquarie University
- Prof Yanchun Zhang, Victoria University

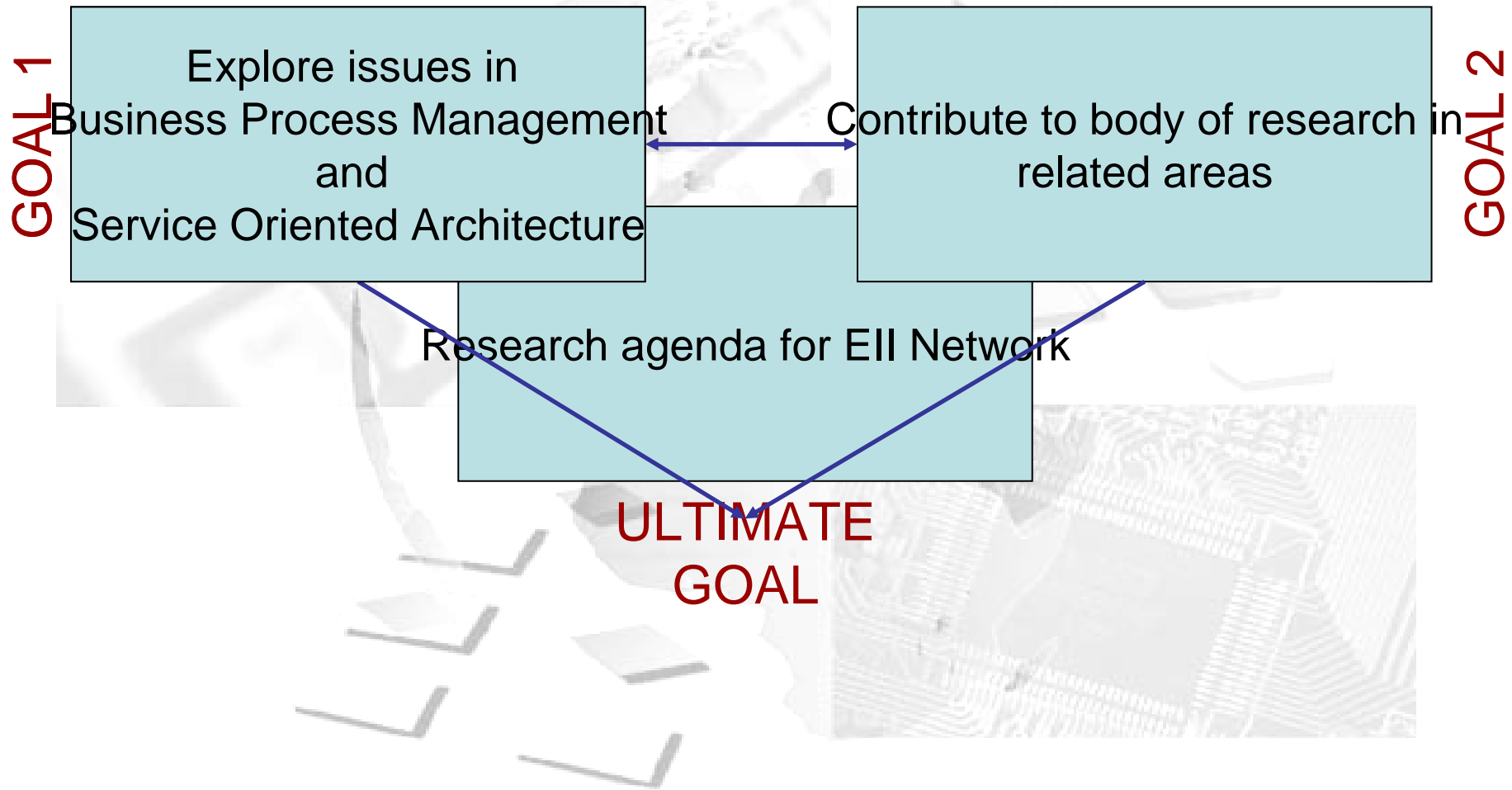
# Background

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## EII Taskforce Goals

- Undertake a comprehensive survey of an emerging field
  - Identify and investigate emerging research challenges and trends
  - Investigate how new research opportunities may be created for EII
  - Identify significant opportunities for Australian industry
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- The background of the slide features a faint, light-colored image. On the left side, there is a stylized map of the world (globe). On the right side, there is a detailed image of a printed circuit board (PCB) with various electronic components and traces.

# Taskforce Goals

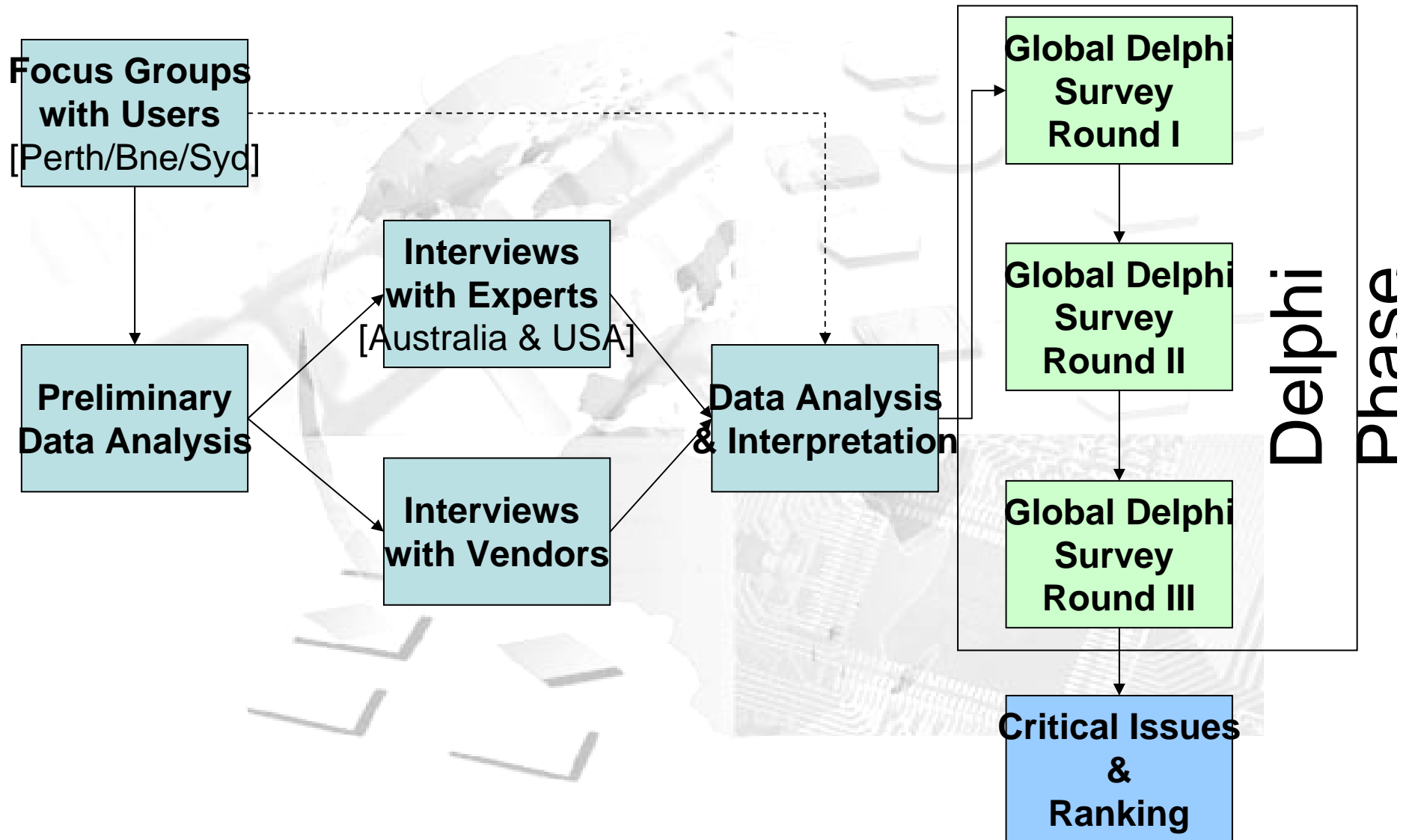


# Exploring Issues in BPM/SOA

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- Research Questions:
  - What are the major issues in BPM and SOA?
  - What are the most important issues?
  - What are the challenges related to these issues?
- Is there any alignment between current research and perceived issues by industry?
- Research Approaches:
  - Focus Groups, Interviews, Survey, Delphi Study

# Approach & Current Status



# Issues Identified by Users

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- **Resistance to Change**, Issues with Change Management & Corp Culture
- Lack of **Expertise, Skills & Capabilities** to Implement BPM
- Lack of **Measurable, Financial Returns**
- Limited **Knowledge** of BPM and lack of **Technical Know-How**
- Lack of **Suitable Tools** for holistic BPM
- **Breaking silos**, Lack of Multiplicity of Views
- **Lack of Integration** with Financial Mgmt
- Issues with **Process Maturity**
- Lack of **Top Management Support**
- Lack of **Governance** and redefining accountability

# Issues Identified by Experts

- **Lack of integration and connectivity** between business processes, rules and data objects
- Lack of and **slow adoption of standards** – in terms of process modeling and process integration (e.g. BPMN and BPEL)
- **Lack of mindshare and tools** to analyze the status quo of a company's processes
- Lack of **emphasis on process analysis**
- Need for **Tools that can provide more than simulation** and statistical testing (i.e. automatic syntax and semantic checking of the models)
- Need to manage **interfaces in complex processes** (i.e. in terms of data relationships and other semantics)
- Need for **procedural guidelines** to assist the decisions of when to use what process technology
- Need for **tools that can automatically generate maps** of the processes followed
- **Too much hype about BPM tools**

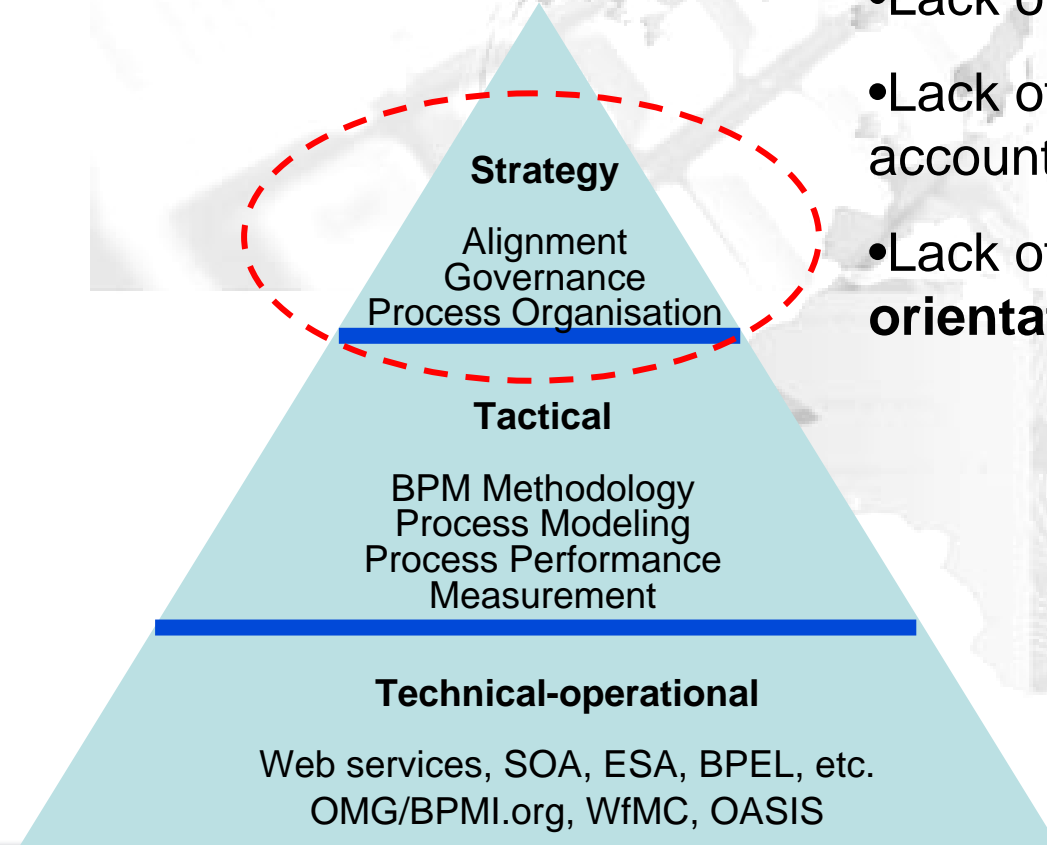
# Issues Identified by Vendors

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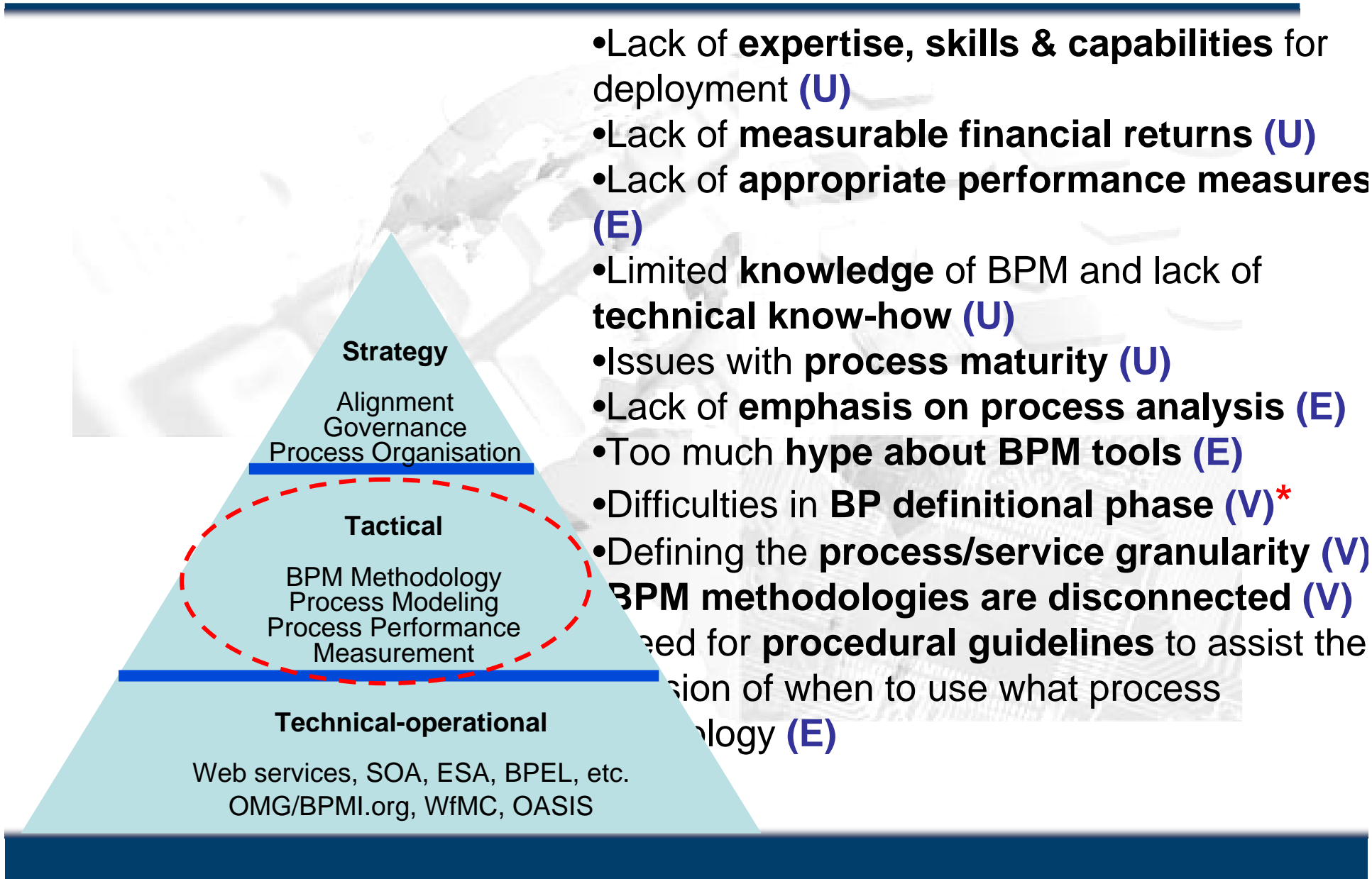
- Lack of common **mindset on process-orientation**
- Difficulties in **BP definitional phase**
- Defining the **process/service granularity**
- Misconception by customers – **hype**, yet another integration investment
- **Integrating new technologies** (wireless networks, handhelds, RFIDs etc) within business processes
- Resistance to **BPM related change**
- **BPM methodologies are disconnected** or at least weak in capturing context
- Delivering on promise of **dynamic process adaptation**

# Some recurring issues...

- Resistance to change (U, E, V)
- Breaking silos (U)
- Lack of top management support (U)
- Lack of **governance** and redefining accountability (U, E)
- Lack of common **mindset on process-orientation** (V)

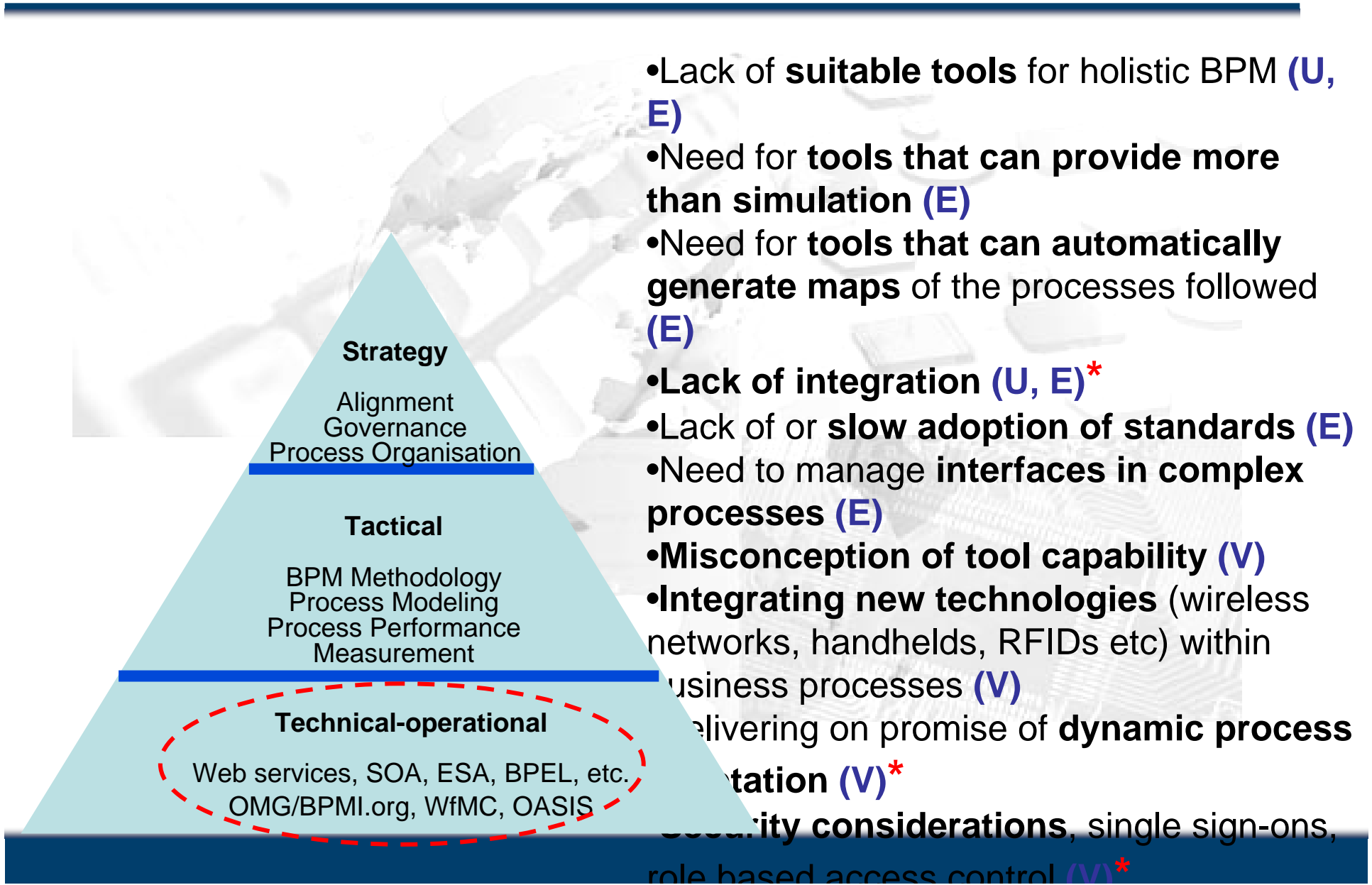


# Some recurring issues...

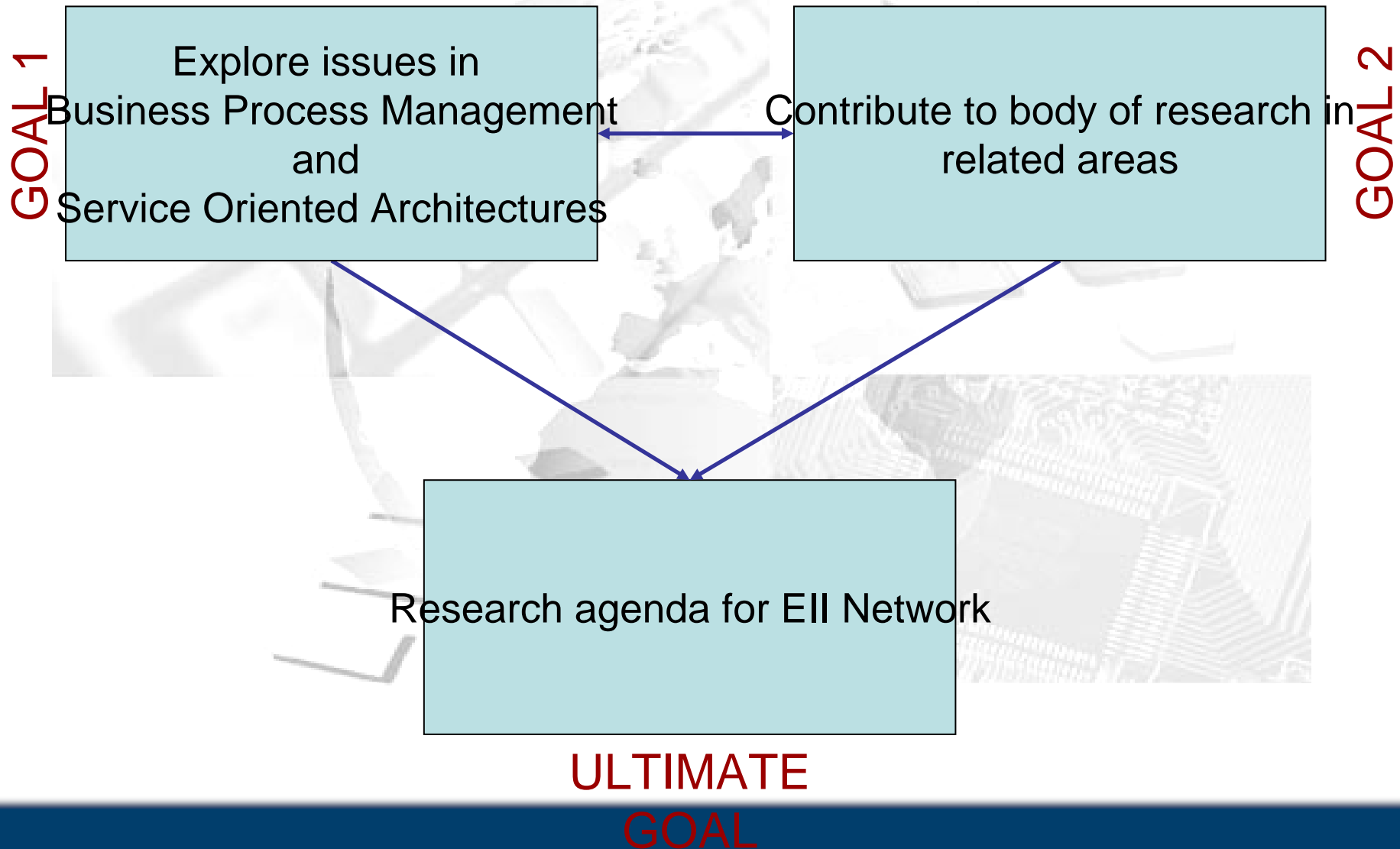


- Lack of **expertise, skills & capabilities** for deployment **(U)**
- Lack of **measurable financial returns** **(U)**
- Lack of **appropriate performance measures** **(E)**
- Limited **knowledge** of BPM and lack of **technical know-how** **(U)**
- Issues with **process maturity** **(U)**
- Lack of **emphasis on process analysis** **(E)**
- Too much **hype about BPM tools** **(E)**
- Difficulties in **BP definitional phase** **(V)\***
- Defining the **process/service granularity** **(V)**
- BPM methodologies are disconnected** **(V)**
- Need for **procedural guidelines** to assist the selection of when to use what process technology **(E)**

# Some recurring issues...



# Taskforce Goals



# Contributions to Related Body of Research (1/3)

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- **Task 1:** Identify issues in user requirement analysis and web service modelling & composition
- **Task 2:** Investigation of issues relating to reliability and consistency of services and service transactions
  - Requirements for managing business transactions have been identified
  - A framework for supporting requirements is under development
  - Papers have been published on a flexible compensation mechanism and its implementation in

# Contributions to Related Body of Research (2/3)

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- **Task 3:** Investigation of techniques for adaptive service agreements and process management
  - A framework for adaptive service agreement and process management of QoS-aware service compositions has been developed
- **Task 4:** Investigation of service grid computing and peer-to-peer services
  - collaborative network using Peer to Peer (P2P) technology for open exchange of digital legal information.

# Contributions to Related Body of Research (3/3)

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- **Task 5:** Investigation of service security and access control management
  - A new rule-based framework to identify and address issues of sharing access to information has been developed (using role-based access control management).
  - Fundamental techniques for characterising security properties of services and analysing the security compatibility of interacting services have been developed.
- **Task 6:** Investigation of integration of collaborative, team-based and predefined workflow aspects.
  - An organisation oriented framework for collaborative business processes.

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## **2. E-Research Project: P2P Collaborative Network for Legal Information Sharing and Management**

- Y. Zhang, H. Shi, Victoria Univ
- E. Beal, Communications Law Centre

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## **P2P Network for Legal Information Sharing and Management**

- **Collaborative Levels  
Description**
  - **Abstraction Levels Analysis**
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# Collaboration Levels

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- **Strategic Level:**  
Legal Documents Sharing
- **Organisational:**  
Project Coordination for Collaborative Partners including legal partners.
- **Transactional:**  
Web Services Composition Support.
- **Operational:**  
P2P Network (JXTA).

# Collaboration Levels

➤ Organisational:

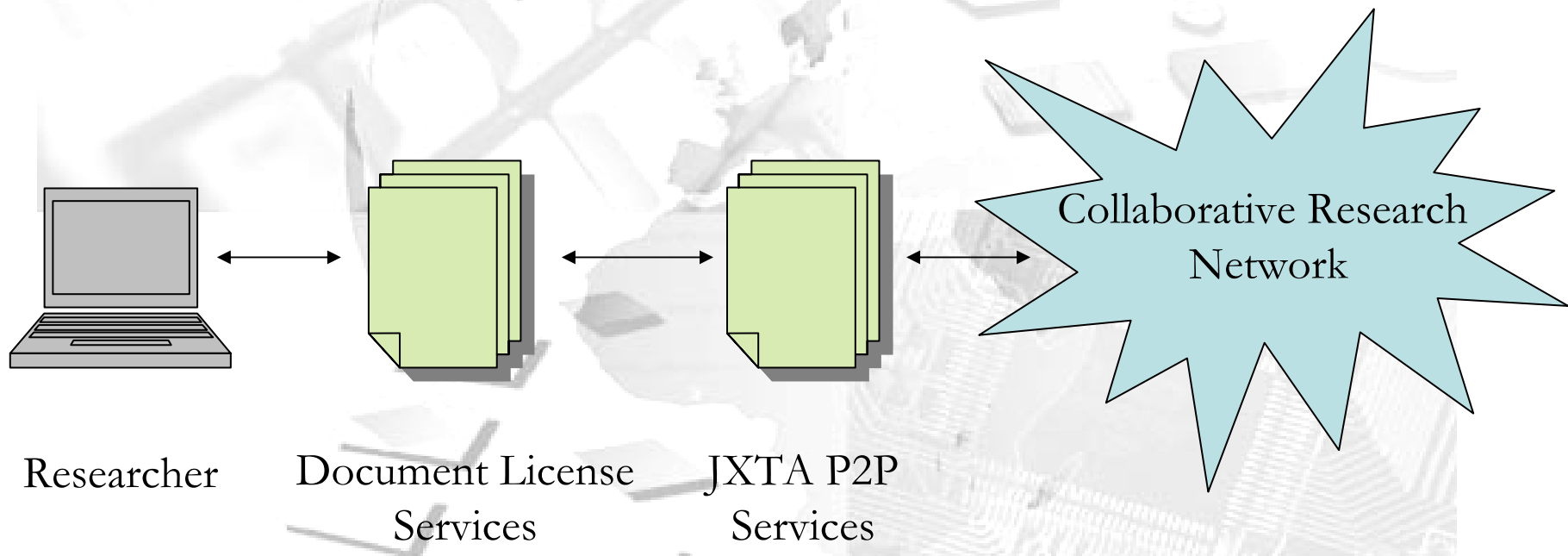
Project Coordination for Collaborative Partners.

Documents are licensed and legally shared among the network.



# Collaboration Levels

- Transactional:  
Web Services Composition Support.



# Abstraction Levels

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- Ontological Level
- Conceptual Level
- Functional Level

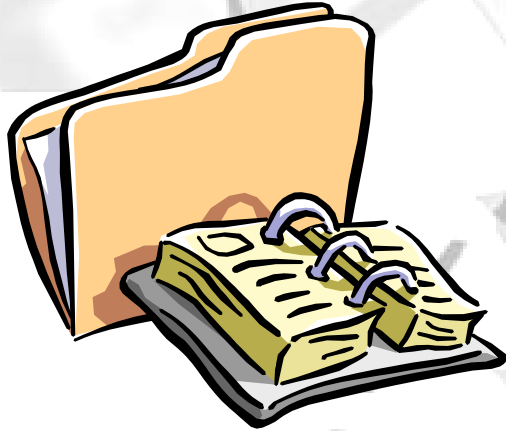


# Abstraction Levels

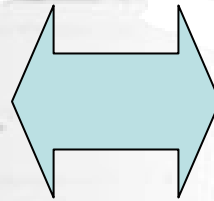
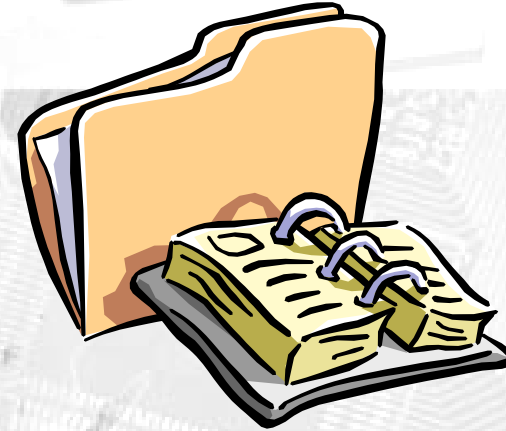
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## ➤ Ontological Level

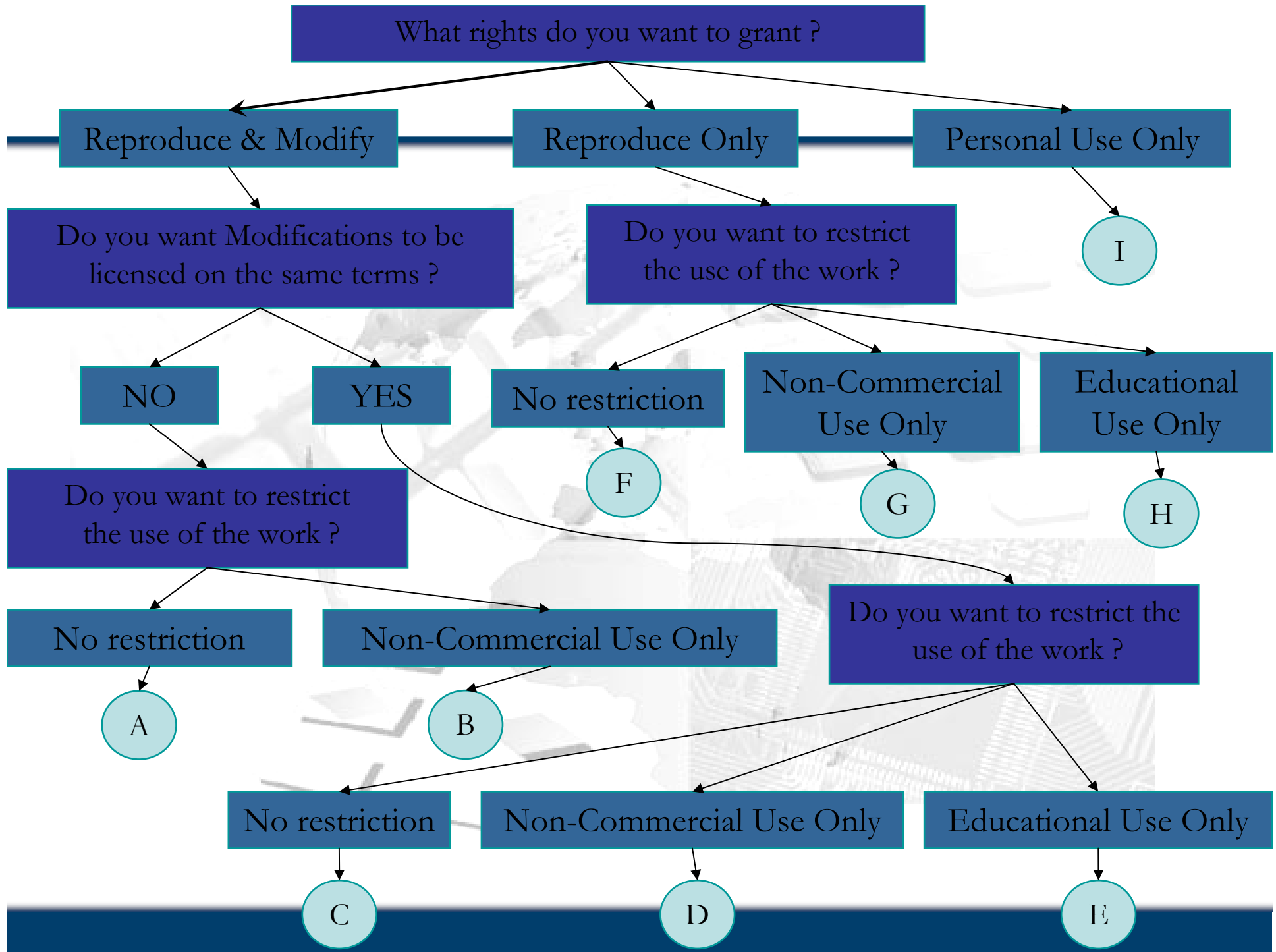
Terms Used By  
The Legal Discipline



Terms Used By  
The IT Discipline

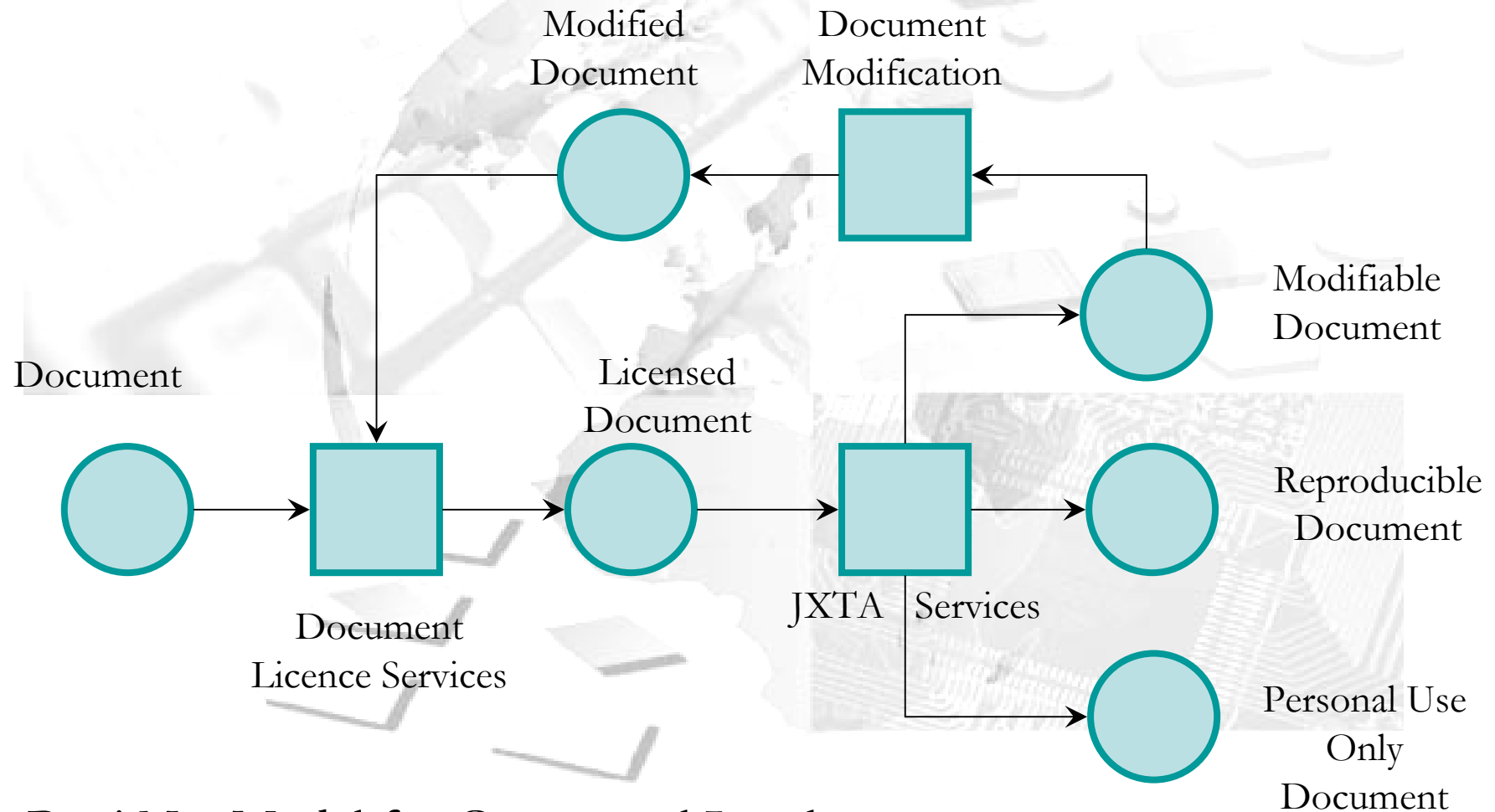


Mapping



# Abstraction Levels

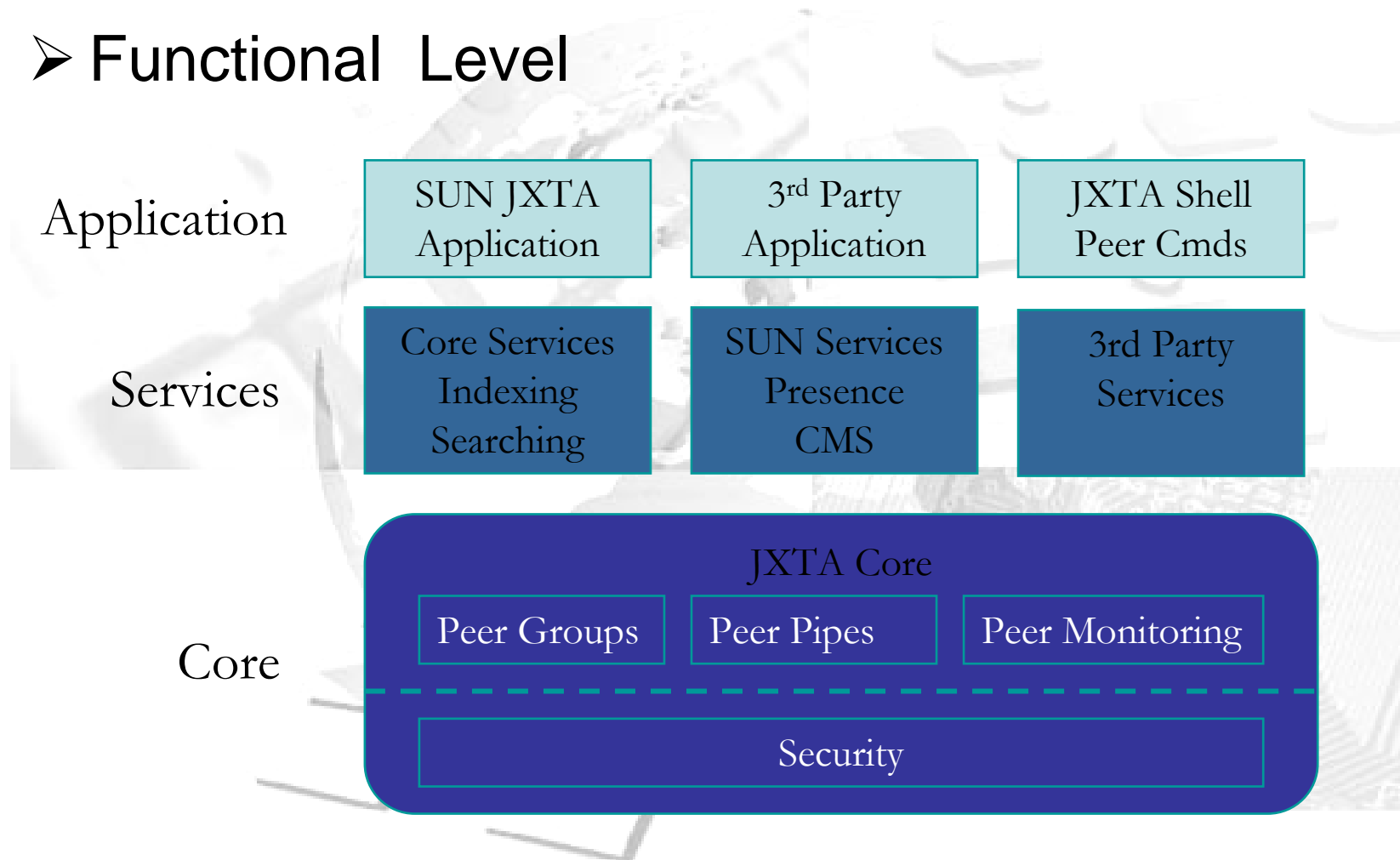
## ➤ Conceptual Level



Petri Net Model for Conceptual Level

# Abstraction Levels

## ➤ Functional Level



Source: <http://www.jxta.org/>

# Summary

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- EII Taskforce on Business Process Management and Service Oriented Computing
- E-Research Project: P2P Collaborative Network for Legal Information Sharing and Management

