

# Knowledge Worker Support by Task Management The Social Semantic Desktop



SYSTEMATIC THOUGHT LEADERSHIP FOR INNOVATIVE BUSINESS

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## Target Group: Knowledge Workers

- High degree of variability of work and handling of exceptions (**Personal character**)
- Strong communication (**Social character**)
- Networks, processes, and communities (**Network character**)

## What is the Social Semantic Desktop?

- **Desktop:** Unify information object management on the desktop as personal work environment via cross-application linking
- **Semantic:** Support the personal information handling via personal work-process management and efficient ontology-based knowledge representation
- **Social:** Enable knowledge sharing and structured communication within social networks

## Knowledge Management (KM) at the Core

- Central Goal: Make a better use of existing knowledge in an organization
- Technology-centric approaches to KM have mainly focused on the management of information objects such as documents
- However, knowledge is **more** than what we find in document
  - Knowledge is actualized in **work processes** on the basis of information as a **tool**
  - In KW the **separation** between information objects and work activities is artificial and generates barriers in KM

## Conclusions

- It is necessary to **combine** Information management with task management to overcome this separation
- Use semantic representations as the **common basis** for both
- This requires work activities to be formally described in a **task model**

## What is the Contradiction?

- Work activities are concrete actions based on interaction with the world
  - As such they are beyond representation
- Describing work activities requires additional efforts by the knowledge workers
  - It is far from trivial for the knowledge worker
  - It only yields approximate description real actions
  - It does not directly support action
- We find this in the distinction of **productive** and **supportive** activities

## Task Management Approach

### Observed Barriers

Isolation of formal task handling from actual objects of work

Additional metadata handling required

Task handling requires switching between applications

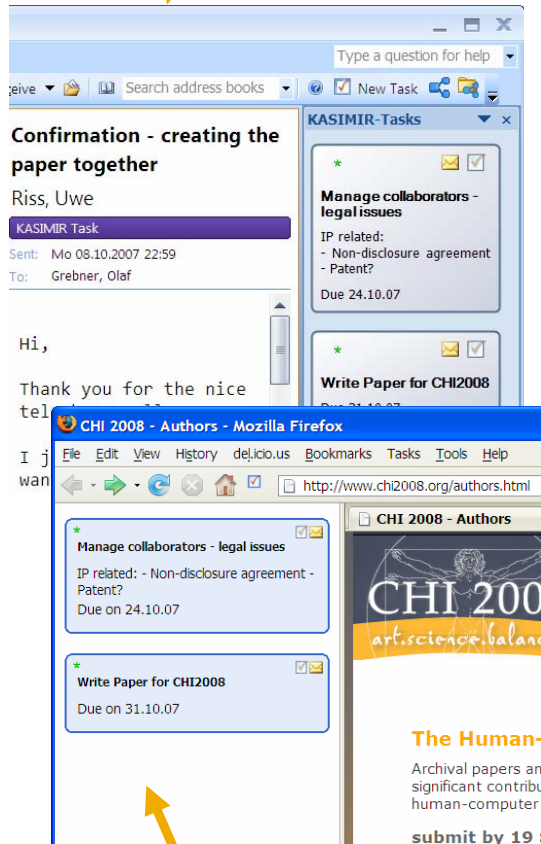
### Applied Approach

Use the NEPOMUK Infrastructure to offer tasks as information nodes in the semantic network

Generate metadata on the basis of user activities, e.g., task creation from an email

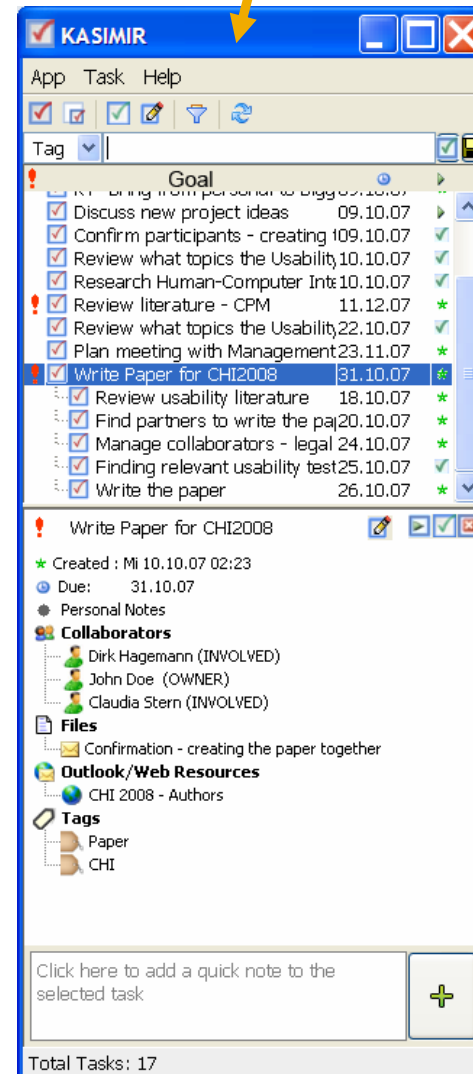
Bring the task management closer to the applications via plug-ins

## Microsoft Outlook Task Plug-In



## Mozilla Firefox Task Plug-In

## Task sidebar



Experience Management

## Extracting work experience

- Collect user experience
- Provide abstraction mechanisms

## Guidance for task execution

- Reuse of collected work experience as User Guidance via **Task Patterns**

yields support

is the basis for

Enhanced Task Management

## Simplify and enhance task management experience

Support for Knowledge Workers' Personal Task Management

- Manage (i.e. create, delete, ...) tasks
- Task Planning – task decomposition – define sub-tasks
- Time Management – efficient prioritization of tasks
- Task Tracking of e.g. (delegated) task threads

## Explicit Information

- Initial semi-automatic creation of a **pattern of execution** (subtasks, guidelines, templates etc.) based in individual execution
- Provide these patterns to consumers/learners as **general guidance** and let/make them **improve** them

## Beyond Explicit Information

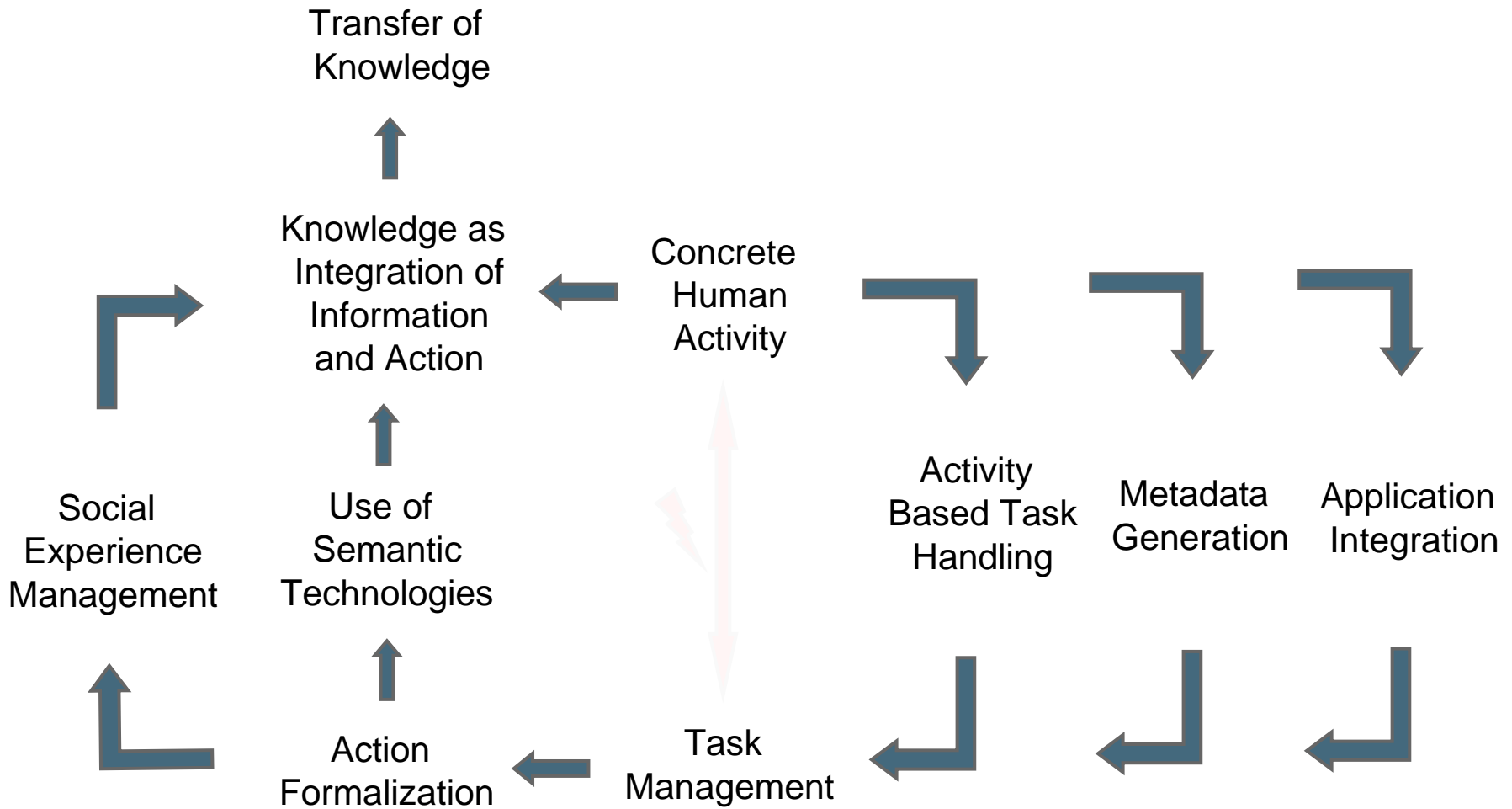
- Provide **context information** from real cases: situation description, problems, decisions, „sideways“
- Give the learner access to this context on a **person-2-person** basis to get details

## The key ideas

- Separate **public abstract pattern** and **private context information actions**
- Pattern maintenance is mainly based on **user actions**
- **Reduce public data availability** get details by establishing trusted communication



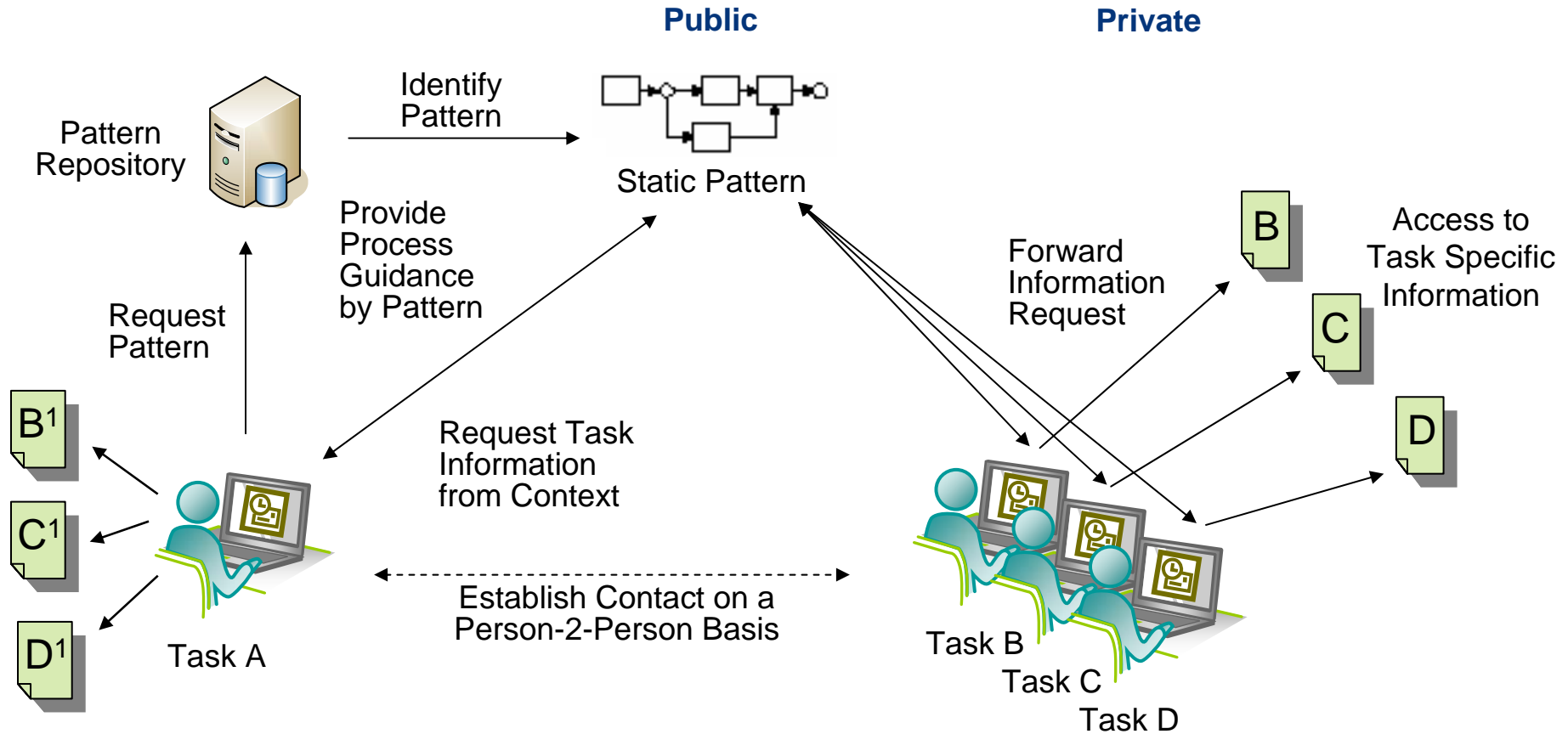
# Summary - Action focused User Model



Thank you

# Backup

# How to Work with Task Patterns



## Application

iMapping

Specialised applications

Desktop widget  
- Kasimir, plug-ins (KAR)

Productivity suites

Desktop integration

## Task Management Framework

### Social Task Management

Task delegation & transfer

Collaborative Tasks

Task Synchronisation

### Task Pattern Management

Task pattern abstraction

Similarity measures

Contextual information

Pattern lifecycle integration

### Personal Task Management

Core task management

Task enrichment

Task log and history

Domain ontologies

Time management

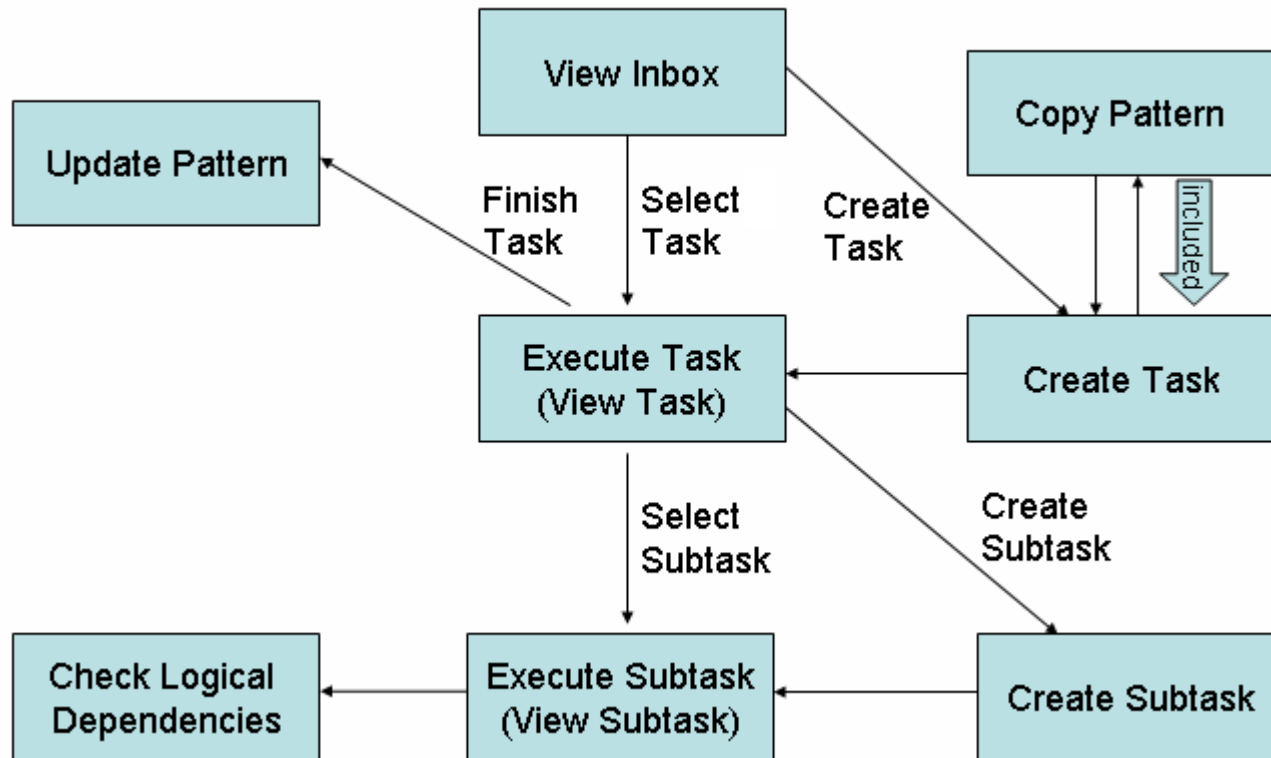
Task monitoring

Task resources & relations

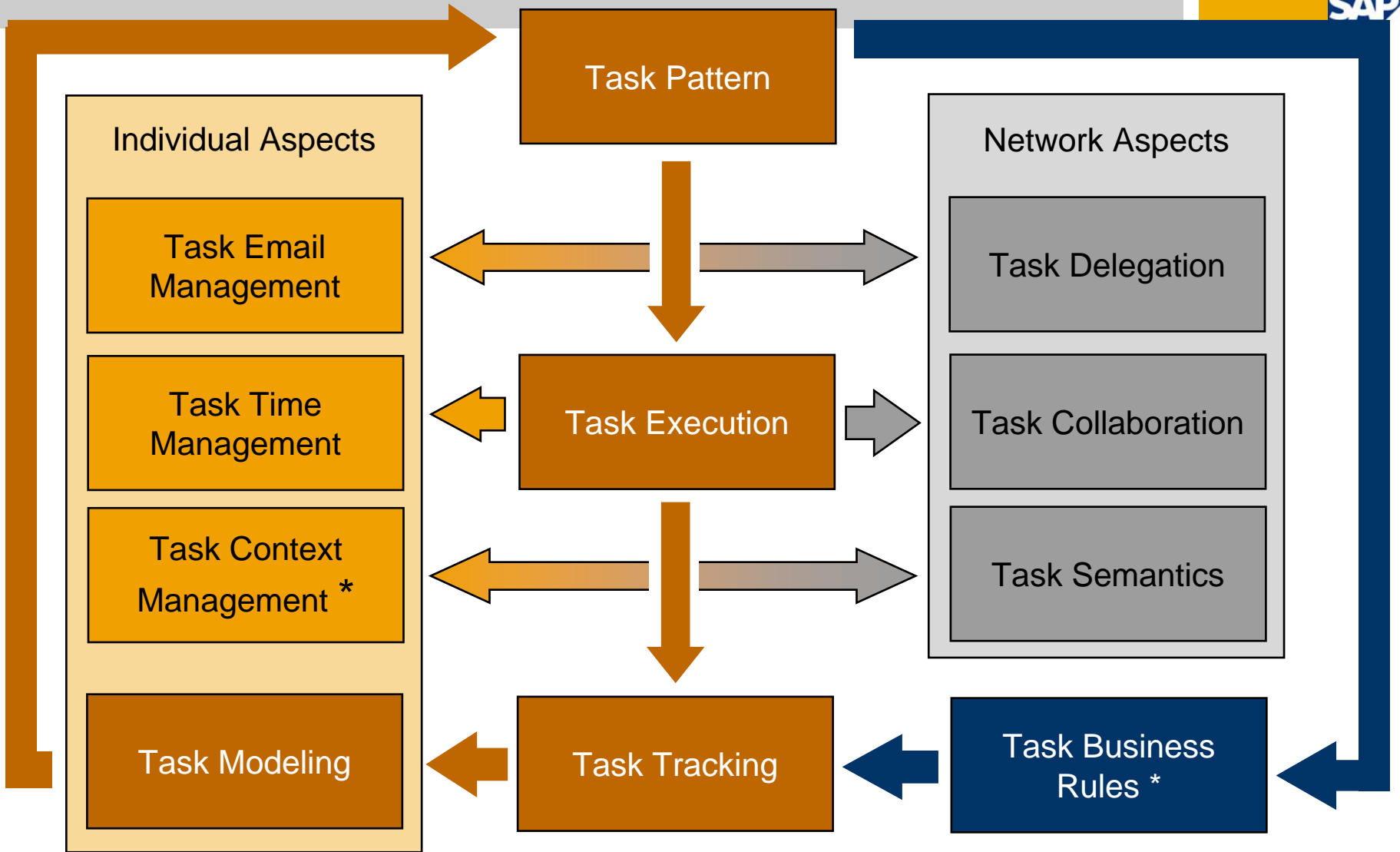
## Nepomuk Services

- ▶ RDF repository, PIMO service, Local / Distributed search, User context, Data crawler, Community mgmt, Recommender

## User Functionality for Task and Task Pattern Handling



# General Task Management Conception



## Requirements for Task Management

Central Access to all kinds of tasks (+)

Support for the identification of executors (+)

Integration of email, telephony, chat (+)

Provision of task related information (+)

Bringing tasks to mobile devices (-)

Rule based task handling (-)

Monitoring and tracking of tasks (-)

(+) will be supported by NEPOMUK; (-) will not





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