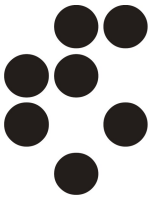
Modeling Knowledge Worker Activity



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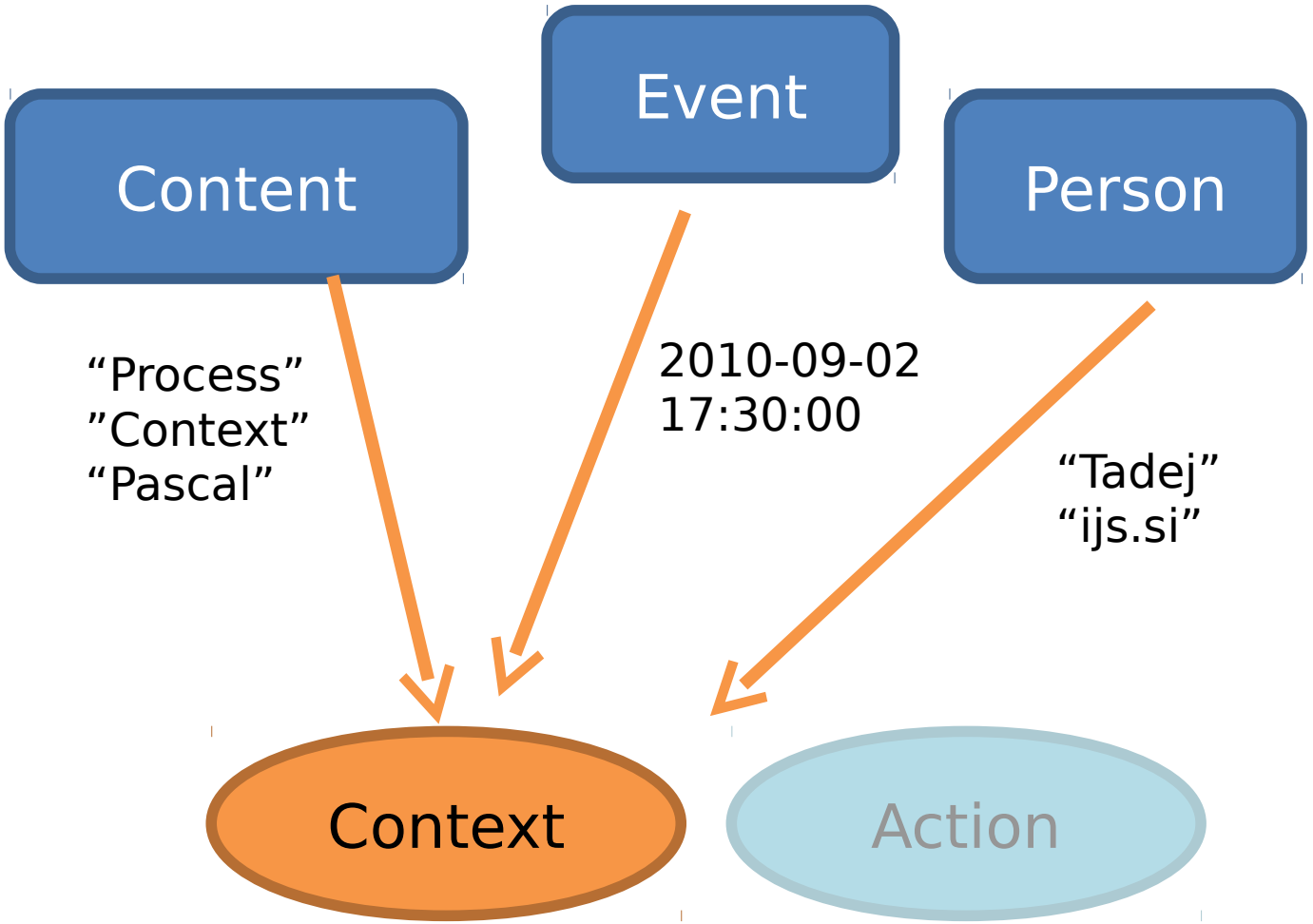
Motivation

- A knowledge worker performing tasks accross projects
  - In our case, the work consists of reading and writing e-mail, browsing web pages, reading and authoring documents
- How to represent and understand the underlying process?
  - ... to optimize the process
  - ... to help the knowledge worker perform better

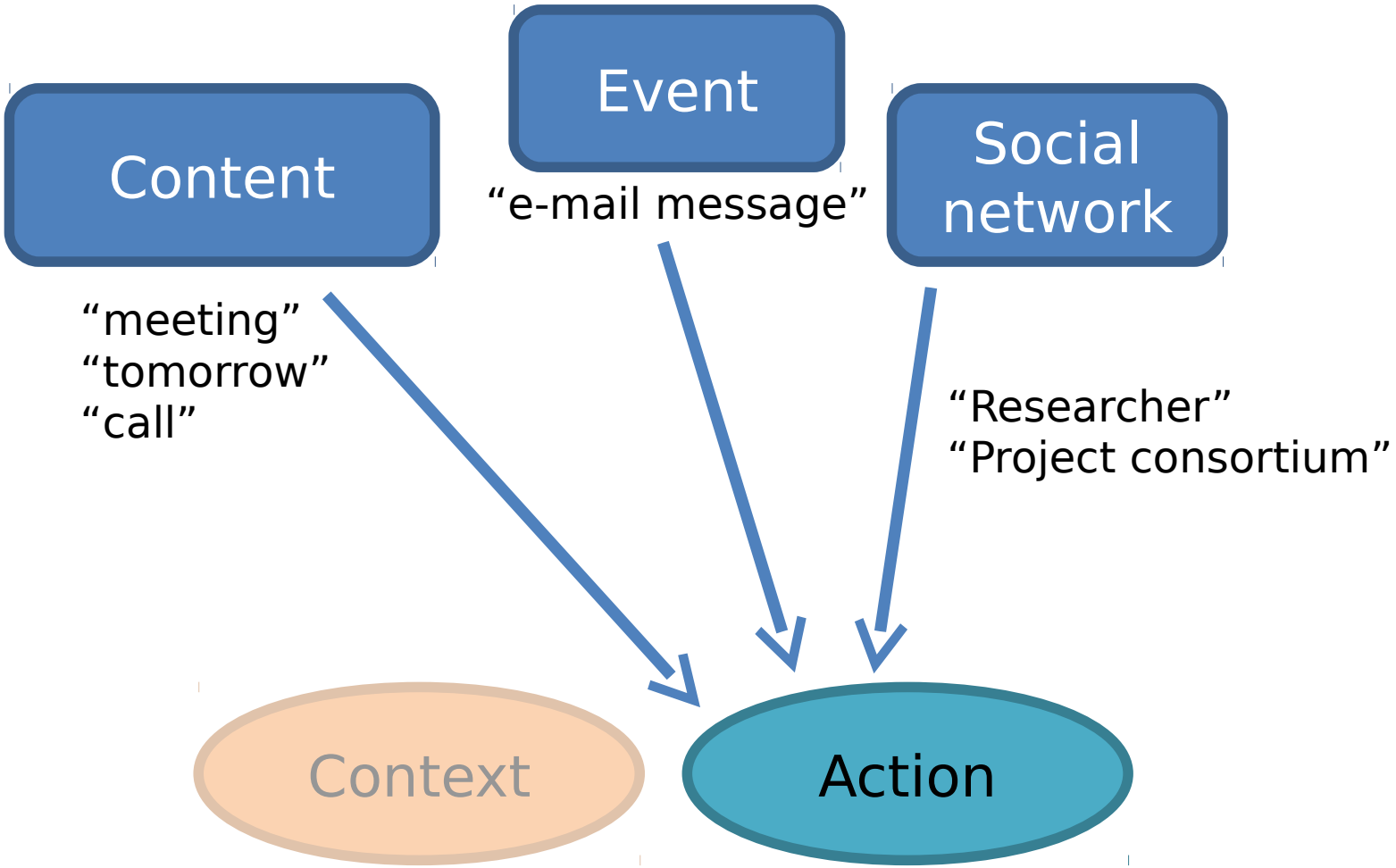
Problem formulation

- A knowledge worker in different **contexts,** where each context is an instantiation of a **process**, which is described by action patterns
- Requires solving the following:
  - What are the contexts?
  - What are the actions?
  - How to represent a process and construct a probabilistic process model?

Features for context clustering



Features for action clustering



Conclusions

- Preliminary evaluation shows that obtained process models have some predictive power
- Future work will focus on end-user applications for making life easier for knowledge workers by proactively suggesting resources

Process mining

- Step 1: discover the contexts and actions
- Step 2: partition the events (e-mail messages, document accesses..) by context
- Step 3: for each context, take all events and the actions they represent and construct a probabilistic deterministic finite automaton using transitions from one action to another
- Step 4: prune the obtained PDFA to contain only statistically significant transitions

Process model