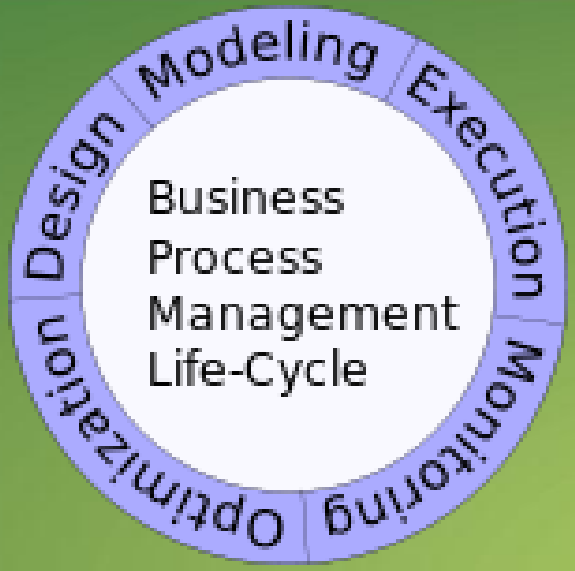
AIT Technology Event



Cloud-Enabled Collaboration for the Enterprise?

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Outline

- Introduction: trends in enterprise architecture (EA)
- Business process management (BPM)
- Cloud computing and platform as a service (PaaS)
- Prospects

Enterprise Architecture (EA)

- EA: a systematic approach to transforming business strategies into a change management process.
- EA decomposes and optimizes the structure and purpose of an enterprise.
- EA practices begin with vision and strategy, identify as-is architectures, analyze gaps, and plan change.
- Some of the facets of an EA:
  - Business architecture
  - Data architecture
  - Application architecture
  - Technology architecture

Trends in EA

- EA as a formal business function began to emerge in the 1990s and matured in the 2000s.
- Initially IT-centric.
- Now the scope is broader
  - An enterprise without electricity still has an architecture!
- Today I'll briefly discuss two complementary aspects of EA, from business centric and IT centric perspectives:
  - Business centric: business process management (BPM)
  - IT centric: cloud computing and platform as a service (PaaS)

Business Process Management (BPM)

- BPM's origins are in business process automation (BPA) software in the 1980s.
- The 1990s saw widespread adoption of business process reengineering (BPR) as a methodology to scrutinize workflows with a goal to obliterate rather than automate non-productive work.
- The 2000s saw the emergence of business process management (BPM) as a more iterative and business centric approach.

BPM Goals

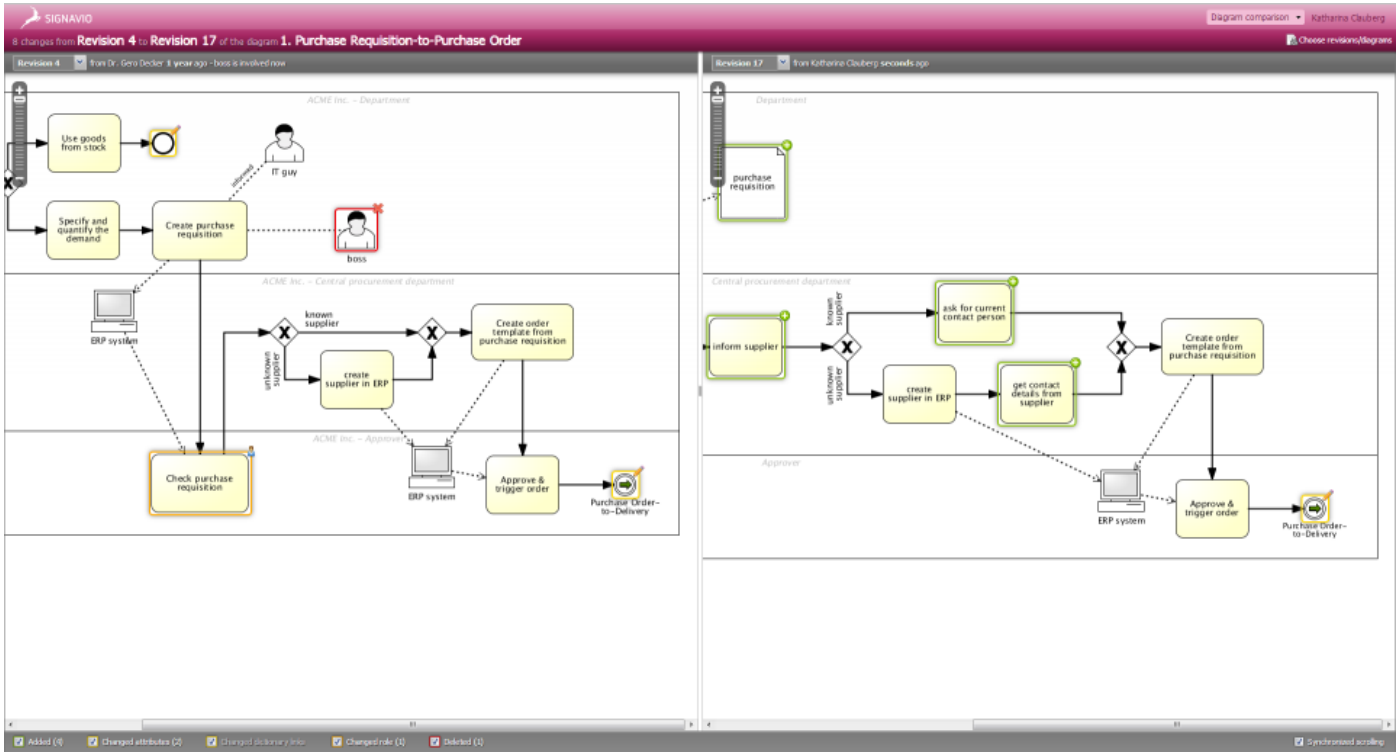
- BPM's goals:
  - Use technology to help humans focus on decision making and let systems do the tedious work.
  - Allow rapid change in the business process in response to customer needs, regulatory constraints, business opportunities.
  - Enable monitoring for bottlenecks and compliance.
- The focus is on partly or wholly automated processes, but can also be applied to purely human processes.

BPM Tools

- BPM tools fall into a few categories:
  - Process design
  - Process mining
  - Process execution and monitoring

BPM: Process Design Tools

- Process design tools allow specification of a process using a standardized notation.

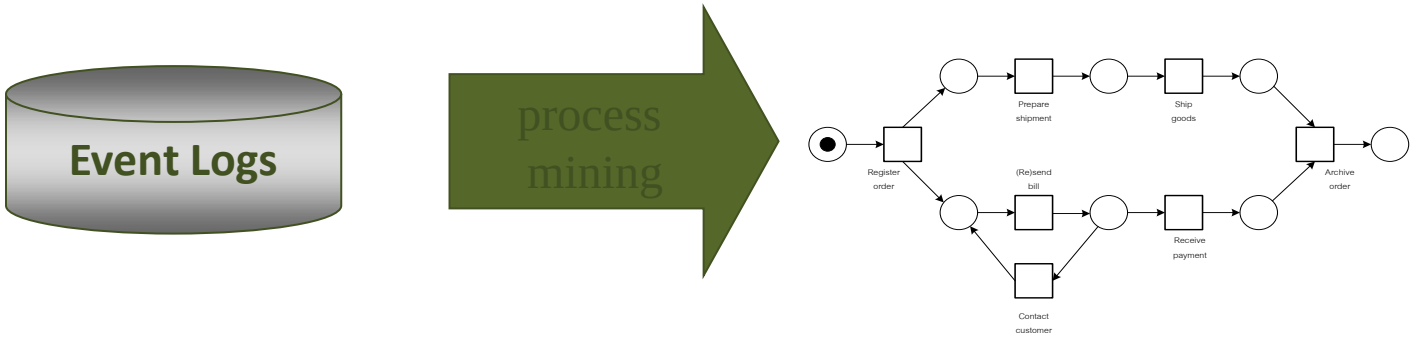


BPM: Process Design Tools

- Most process design tools use open standards for definition of business processes.
- The Business Process Model and Notation 2.0 (2011) is one of the most promising.
- Many commercial and open source tools support the design of BPMN 2.0 processes with capabilities to integrate user-centric tasks.

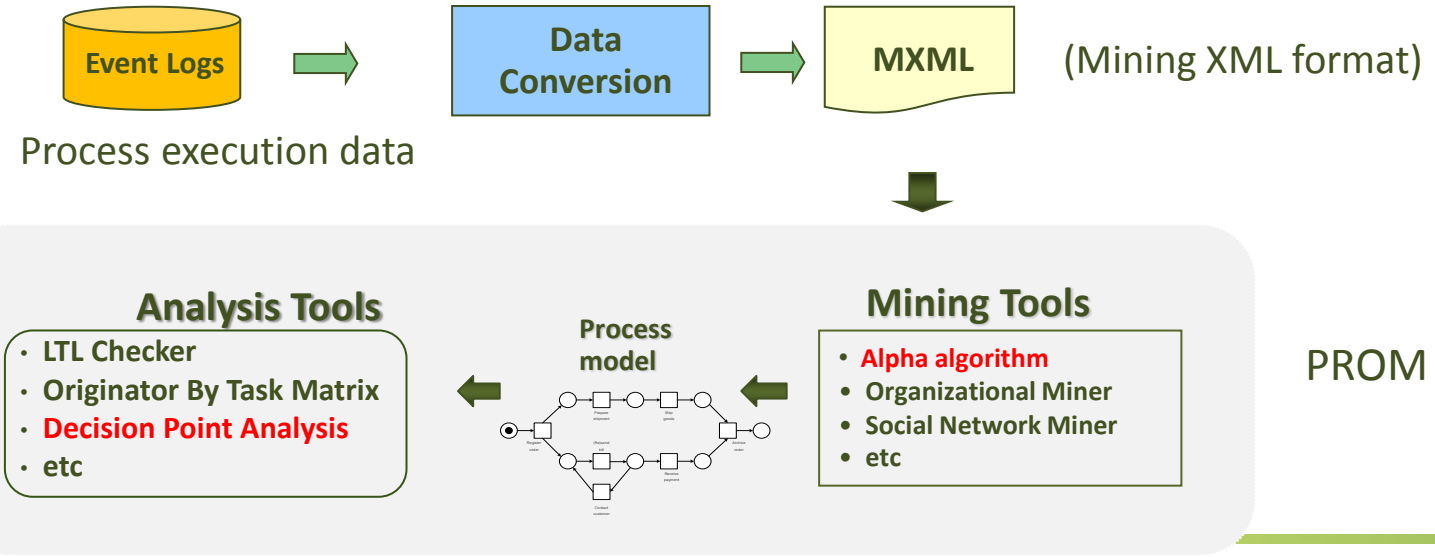
BPM: Process Mining Tools

- Business process mining refers to recent technology for mining and analyzing process data logged by IT systems (Pedrinaci and J. Domingue, 2007)
  - extract knowledge about the actual process execution
  - uncover patterns in process data or
  - predict potential problems in current processes.



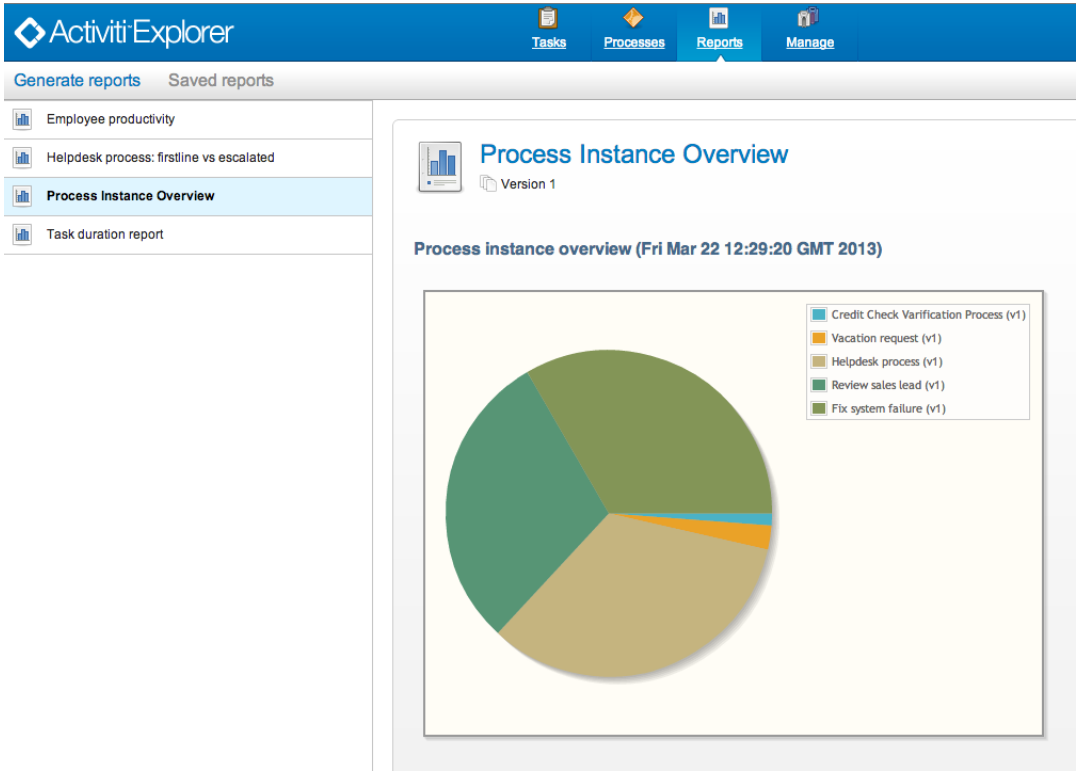
BPM: Process Mining Framework (ProM)

- Developed by the Process Mining Group, Eindhoven Technical University in the Netherlands (van der Aalst, et al., 2007)
- Supports more than 230 process mining and analysis techniques in the form of plug-ins.



BPM: Execution and Monitoring Tools

- Process execution and monitoring tools provide process deployment capabilities, human interaction on human tasks, and monitoring dashboards.



BPM Tools Summary

- There are many commercial BPM tools with varying emphases.
- Open source tools are increasing in functionality and support for industry best practices.
- Some proprietary tools may be usable by business analysts without IT support.
- Open source tools tend to be more developer-focused.
- With some IT support, open source tools can be extremely cost effective.

Cloud Computing and Platform as a Service

- The benefits of cloud computing to the enterprise are widely recognized:
  - Pay as you go
  - High quality IT services without IT department involvement
  - A good way to try out solutions without committing IT support resources

- The benefits apply to all major cloud service models:
  - Infrastructure as a service (IaaS)
  - Platform as a service (PaaS)
  - Software as a service (SaaS)

Cloud Computing and Platform as a Service

- For IaaS and SaaS, the benefits and tradeoffs are clear.
- What about PaaS? Common features of PaaS services:
  - Application deployment
  - Automated lifecycle management
  - Integrated services
  - Easy integration through Web services
- Potential accelerate the cycle from requirements to deployment.
- Technology is immature and developing very fast.

Cloud Computing and Platform as a Service

- Example: CloudBees

Cloud Computing and Platform as a Service

- Example: CloudBees
  - Software industry best practices for developers (continuous integration, continuous deployment)
  - Integration with multiple back end IaaS

- BPM on PaaS
  - There are many commercial SaaS BPM solutions
  - Disadvantage: vendor lock in, lack of control
  - Open source BPM tools require additional work to be enterprise ready
  - PaaS solutions like the CloudBees Activiti clickstart may increase the value of adopting open-source BPM tools

Prospects

- Very little is needed to get started:
  - Modern open source BPM tools
  - Increasingly capable PaaS solutions
  - A bit of skill in IT and distributed systems architecture
- The potential benefits are great:
  - Increased collaboration
  - Clear responsibilities
  - More value-added decision making, less non-productive work
  - Own your IT
- If you need help building capacity or getting started, talk to AIT.

Related Research at AIT

- In CSIM at AIT we are interested in research and development along many of the lines mentioned today.
- Some ongoing research in CSIM:
  - Business process mining
  - Activity recommendation for business process designers
  - Cloud infrastructure simulation
  - Automated cloud provisioning for public and private clouds
  - Public cloud application-specific cost modeling and optimization

Thank You

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