

# Is There Anything New about Business Process Intelligence?

## Panel

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Business Process Intelligence (BPI) refers to the application of business intelligence techniques (including for example OLAP analysis and data mining) in business process management, with the goal of providing a better understanding of a company's processes and of devising ways to improve them. BPI includes many subareas. As indicative examples, we list the following:

- Process discovery: this refers to the analysis of enterprise operations in order to derive the process models that these operations obey. It may be useful for users to better understand their operations and it can be the first step that leads to supporting the process with a workflow tool. It can also be used to reengineer an existing process model to make it more efficient.
  - 'Intelligent' process analysis: this refers to the analysis of business process execution to discover interesting correlations, e.g., between process data and resources and business metrics, to perform capacity planning, or to identify the causes of low-quality process executions (whatever quality may mean for the analyst). For example, users may be interested in discovering under which situations a certain exception is raised, or the process follows a certain path, or leads to a certain outcome.
  - Prediction: besides analyzing the value of business metrics and understanding, among other things, the causes of low-quality process executions, BPI aims at predicting critical situations (e.g., an exception, or a delay) on a running process instance before it actually happens. Ideally, predictions are made at the early stages of execution a process instance, and are then refined as the execution progresses and more data becomes available.
  - Exception handling: once a problem has been recognized (or predicted), another goal of BPI is to assist the analyst in making decisions to address the problem. This may be for example based on mining how similar problems were successfully handled in the past.
- Static optimization: the intelligent analysis described above may lead to the identification of areas of optimization for a process, for example in terms of different sizing of resource pools, different resource assignment criteria, and the like. BPI offers support for optimizing the process configuration to improve upon those areas.
  - Dynamic optimization: ideally, one could think of an intelligent component that constantly manages and supervises each process instance (in a controlled way), for example by having influence in routing and task assignment decisions in order to maximize certain business objectives.

We next list some of the issues discussed in the panel:

- Which kind of problems can be solved by BPI? which problems cannot be solved?
- Which technologies are suited for BPI? Are existing technologies enough? Do we need novel techniques?
- What will be the business impact of BPI, if any, and over what time frame?
- Can the same concepts be extended to other middleware (application servers, web services) and what are the challenges, similarities, and differences?
- How much automation can be realistically achieved? How much control is convenient in the closed loop?
- What does real time mean for BPI? How much is realistically achieved? Is real time really necessary?
- What is the future of BPI? Does/will it respond to actual needs of business executives?