Business process intelligence (BPI) is an emerging area that has been increasing in importance during the last few years as a result of the pressing need for companies to improve the business processes underlying their business operations so as to better meet their business goals. A number of groups in different research areas are working on technologies to support different aspects of BPI, even if they do not call it this.

Many other names exist for such technologies, and there is confusion concerning the exact meaning of terms like BAM (business activity monitoring), BOM (business operations management), BPM (business performance management), among others. The reality is that there is much overlap among techniques and tools supporting all these technologies. The realization of the first workshop on BPI gave the opportunity to start consolidating this field while at the same time building a community that recognizes BPI as an area encompassing all these technologies whose end goal is the improvement of enterprise business operations.

Broadly speaking we can say that BPI is the application of business intelligence to business processes so as to improve different aspects of how such processes are being conducted. Some of these aspects include:

- 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. 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 of 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 have been successfully handled in the past.

- Static and dynamic optimization: on the static side, 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. On the dynamic side, ideally one could think of an intelli-
gent 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.

In spite of the wide variety of aspects addressed by BPI, in this first instance of the BPI workshop the submitted contributions, briefly described below, only covered a very reduced subset. The strongest focus was on process discovery and related subjects, perhaps because it is the most well-known area of BPI. This is evidence that BPI is still in its infancy and that the research community working on related fields needs to be made aware of the emergence of this new technology.

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