

# Report on the 6th International Workshop on Business Intelligence for the Real Time Enterprise

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## Overview

The 6th International Workshop on Business Intelligence for the Real Time Enterprise (BIRTE 2012) was held on August 27, 2012 in conjunction with the VLDB 2012 Conference in Istanbul, Turkey. With a good number of attendees, from various academic and industrial sectors, the workshop was an extremely attractive forum to discuss topics related to the emerging field of making business intelligence more real-time. The workshop included one keynote, three invited talks, and five presentations of peer-reviewed research papers in this context. After the official opening of the workshop, Donovan Schneider (Salesforce.com, USA) delivered an excellent and engaging keynote about real-time reporting practices at Salesforce, which was followed by three sessions with talks focusing on “Advanced BI Applications and Vivification”, “ETL and Query Processing in Real-Time BI” and “Challenges and Advances in Analytics Platforms”.

## Keynote

The keynote talk speaker was Donovan Schneider who is a Principal Architect at Salesforce.com developing real-time analytics for their multi-tenant software-as-a-service platform. In this talk “Real-Time Reporting at Salesforce”, Donovan explained the issues with running millions of real-time reports every day on Salesforce multi-tenant cloud platform and presented the solution including the architecture, query processing, optimization strategies and other considerations to get real-time reporting at such scale.

## Advanced BI Applications and Vivification

The first morning session on advanced BI Applications featured the talk titled “The Vivification Problem in Real-Time Business Intelligence” by Patricia Arocena which delved on the vivification problem and sketched approaches towards a solution aimed at integrating the IT world, data management technologies and the Business world. Ulrike Fischer’s (TU Dresden and Aalborg University et al.) talk on “Real-Time Business Intelligence in the MIRABEL

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Smart Grid System” presented the challenges in real time BI and the data management solutions for a distributed energy grid system in the MIRABEL project. The second paper on “Data Mining in Life Sciences Using In-Memory DBMS” by Joos-Hendrik Boese et al. from SAP described how HANA meets some inherent requirements of data mining in life sciences and presented a use case.

## ETL and Query Processing in Real-Time BI

The afternoon session started with the invited talk “On-Demand ETL Architecture for Right-Time BI” by Florian Waas from EMC /Greenplum. He outlined some of the key differences practiced in Greenplum for ETL queries in the view of real-time query processing. The work by Yagiz Kargin et al. (CWI) on Instant-On Scientific Data Warehouses for Data Intensive Research addressed the inefficiencies in ETL processes commonly used in scientific data analysis by proposing Lazy ETL. The third talk “Query Processing of Pre-Partitioned Data Using Sandwich Operators” by Stephan Baumann et al. (TU Ilmenau, CWI) introduced the Sandwich Operators approach to exploit pre-sorting or pre-grouping from clustered storage schemes to lower memory consumption and execution time. This session also featured the invited talk by Raymond Ng from the University of British Columbia entitled “Towards multi-modal extraction and summarization of conversations” which described the challenges in summarizing email and other conversational data and discussed open problems to make it a reality and be conducted in real-time..

## Challenges and Advances in Analytics Platforms

The final session opened with the invited talk of Meichun Hsu from HP Labs on “Live Analytics Service Platform”. In her presentation Hsu highlighted the challenges, key features and integration of data management and analytics services in HP Lab’s Real-time Analytics Platform. Konstantinos Zoumpatianos (U. Trento) followed by presenting the paper “Strategic Management for Real-Time Business Intelligence” where the authors introduced the idea of developing a Business Intelligence stack on top of data

warehouses to enable continuous evaluation of analytical queries. In the talk “Pricing Approaches for Data Markets”, Alexander Loser (TU Berlin) highlighted the key challenges with regard to pricing strategies for trading raw data, associated analytical services, and analytic results on cloud-based platforms in different market situations. He posed several interesting research problems for the business intelligence community.

### *Discussion*

Overall, there was clearly a wide spectrum of related technologies to be explored and much interest in this area. The presentations of the speakers were accompanied by lively discussions. The issues discussed centered around several main questions: (1) What are some of the newly emerging applications of real-time Business Intelligence and how they can be integrated with existing business models and IT infrastructure. (2) What are the main challenges in BI

real-time query processing over data warehouses and various approaches of optimizing ETL queries in a real-time context. (3) What are the challenges in developing real-time analytics platforms for Business Intelligence and scientific applications and (4) how to extend existing database technology in order to exploit the advantages of the existing data mining techniques?

### *Summary*

In summary, the BIRTE 2012 workshop was one more extremely successful event in the BIRTE series attracting a peak audience of over 50 attendees. The slides of the presentations and a preliminary version of the corresponding papers can be found on the BIRTE’s 2012 webpage: <http://birte2012.cs.wpi.edu/>. The final version of the papers are available as post-proceedings in an LNBIP volume edited by Springer. We are looking forward to BIRTE 2013 to be held in conjunction with VLDB 2013 in Italy.