

Complex Event Processing Changes Business Intelligence

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Complex Event Processing (CEP) is changing the rules of Business Intelligence (BI). Streaming data (that are events) are forging a new way in processing and analyzing data as well as acting on opportunities and risks.

In the traditional BI approach (before "Event Processing"), we were dealing with "Data" and were building data blocks (ODS's, Data Warehouses, Datamarts) to analyze the data. Few years ago big data concepts emerged, where the main components were Hadoop and NoSQL technologies. However, these technologies are a continuation of the same paradigm which says that we need to store the data before analyzing them. Also, there is necessarily no action associated with any part of this process.

Now we are introducing a new concept called "LET THE DATA FLOW". The main idea behind this concept is that it is impossible to store all the data but it is possible to let the data flow and process them on the fly. This brings us to Complex Event Processing. We can make the analogy that what the database is for analyzing data, event processing is the same for analyzing events. We expect event processing to become a critical component of BI in the near future. The new era will be the Event Processing era.

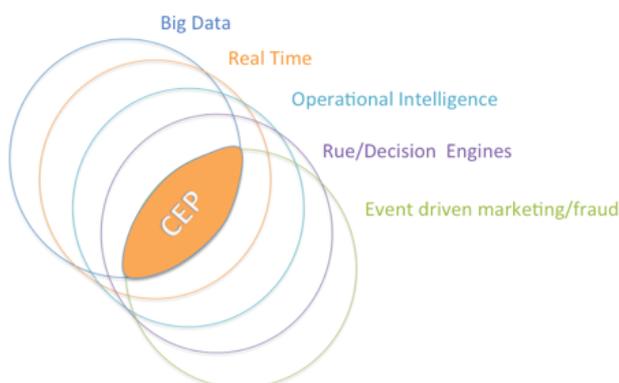
Before CEP, as BI consultants we were following the following path for data processing:



After CEP, the new path for data processing becomes:



This new approach creates more responsive, sensitive and relevant solutions in areas like marketing, fraud management, alert generation, etc.

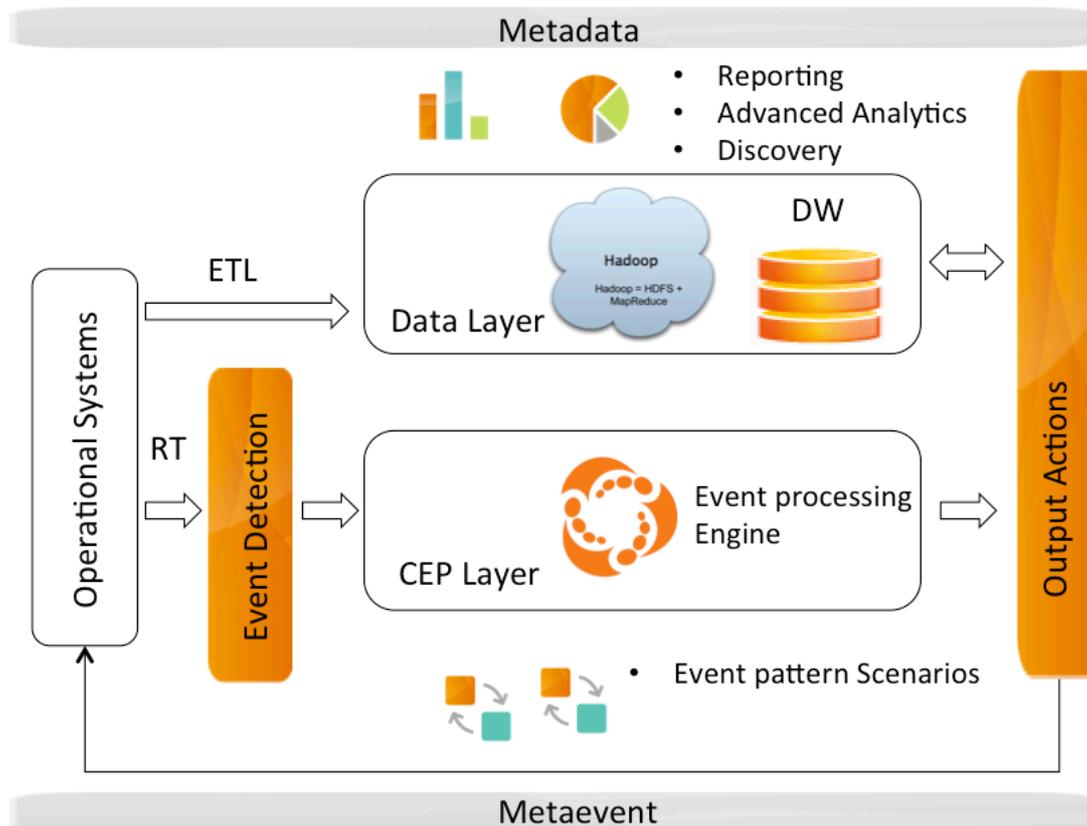


Complex Event Processing (CEP) sits at the intersection of many emerging technologies as shown in the figure to the left.

This shows that CEP is the enabling technology for several new trending topics.

By using CEP technologies, BI environments will be complemented by Operational Intelligence. While "Data" is the key component of Business Intelligence, "Event" is the key component for Operational Intelligence. BIOD (Business Intelligence for Operational Intelligence) is the new paradigm that brings intelligence in real time, ready to be used in operational systems.

The complete BIOD architecture is shown in the following figure. As shown, the data layer and the CEP layer are complementing each other in the big picture.



Our expectation is that CEP products in the market will evolve not only depending on their technologies but on the area in which they are powerfully used. For example, while some of the products are powerful for algorithmic trading, EVAM (www.evam.com) is powerful for marketing and for business oriented applications. In the future, CEP products will serve as platforms on top of which applications will be built.

So, the traditional BI approach is now enriched with CEP platforms. This evolution will continue and will lead to operational intelligence. Companies, which use both BI and OI, will become more intelligent organizations.