



Event processing is evolution of information processing

From Radio to TV – adding information with additional sense



Database queries processes static information – answering questions about particular state of the universe



Event processing adds the dynamic dimension – getting observations about things that happen (transition among states).

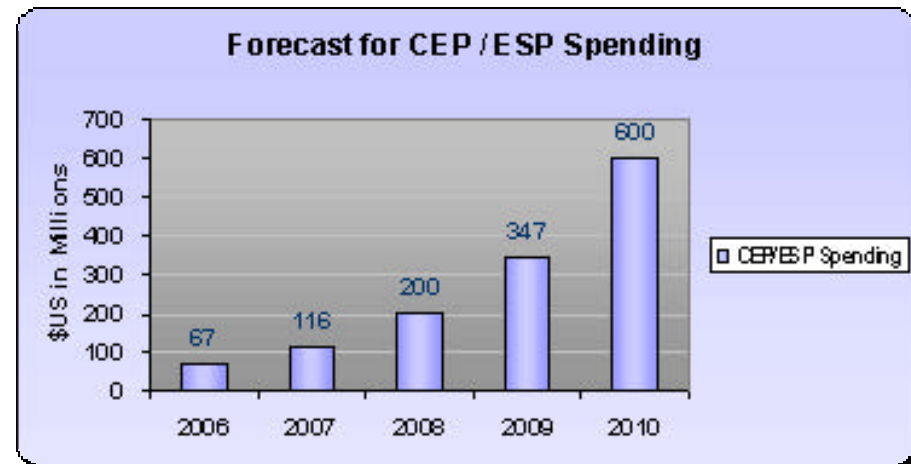
Event Processing Can help in identifying trends, threats, opportunities, and business situations that need reaction (e.g. angry customers; arbitrage opportunity; regulation violation)



The market views “event processing” as an emerging area

“I expect real-time processing of data streams to become an expanding area of software activity for many years. In my view, it is a new category of IT activity—a little like the data warehouse was when it first came on the scene. In other words, it is a whole technology area, around which a variety of capabilities will be created.”

Robin Bloor,
Bloor
Research



Tower Group forecast
for the Finance Sector



The Vision: Event Processing in 2013



- ❑ Event Processing repeats (in 30-something years offset) the success of “Data Management”
- ❑ Part of the “main stream computing”
 - Wide coverage in term of applications that are doing some type of event processing
 - There are broadly accepted standards
 - Event Processing extensions to programming languages
 - Large amount of developers are familiar with the concepts
 - It is widely taught in universities with popular textbooks
 - Well-established Research community
 - Other disciplines focused on extracting events and event patterns (image processing, information retrieval, search engines, data mining).



What do we have to do in order to get there Lessons from Relational Databases

❑ Why it succeeded ? ("Business Rules Applied", Barbara Von Halle)



- It has a sound theory behind it.
- Software vendors understood the theory (well... to some extent), and delivered commercial products
- There were some good books that eloquently explained the theory, the benefits, and the practicality, to the IT community
- Practitioners developed methodologies for using it.
- (my addition): SQL as an inter-galactic standard enabled interoperability.
- (my addition): A lot of R&D Investment to advance this area in engineering issues (transactions, query optimization, concurrency control)...

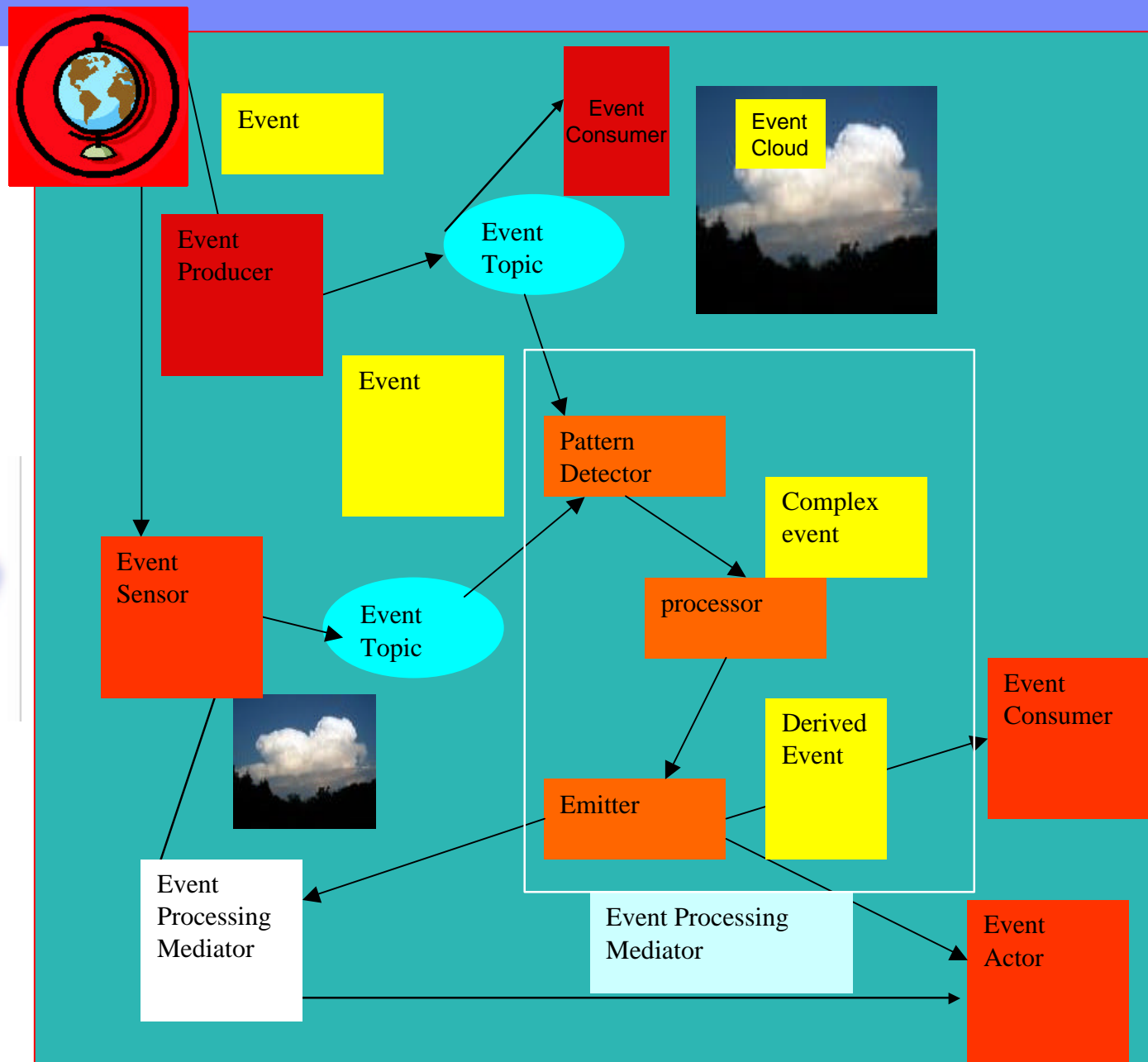


Challenges for the Event Processing community

- ❑ Pass the declining slope in the hype-cycle without crashing – being captured as a mature discipline.
- ❑ Good understanding of performance trade-offs, optimizations of various types, scalability etc..
- ❑ Adopt an agreed upon terminology. **Currently we are confusing the market**
- ❑ Adopt a solid model – “platform and implementation independent” as a basis (similar to semantic data model, but with extended role)
 - Vendors should be able to map from this model to their own implementations in an automatic way (or in time develop “native” implementation – but there is no commercial native implementation to semantic data models).
 - Standard in the model level, but also in event structures, interfaces etc..
- ❑ Adopt standard benchmarks
- ❑ software engineering practices will be crucial in the success.
- ❑ And good textbooks to educate the practitioners.

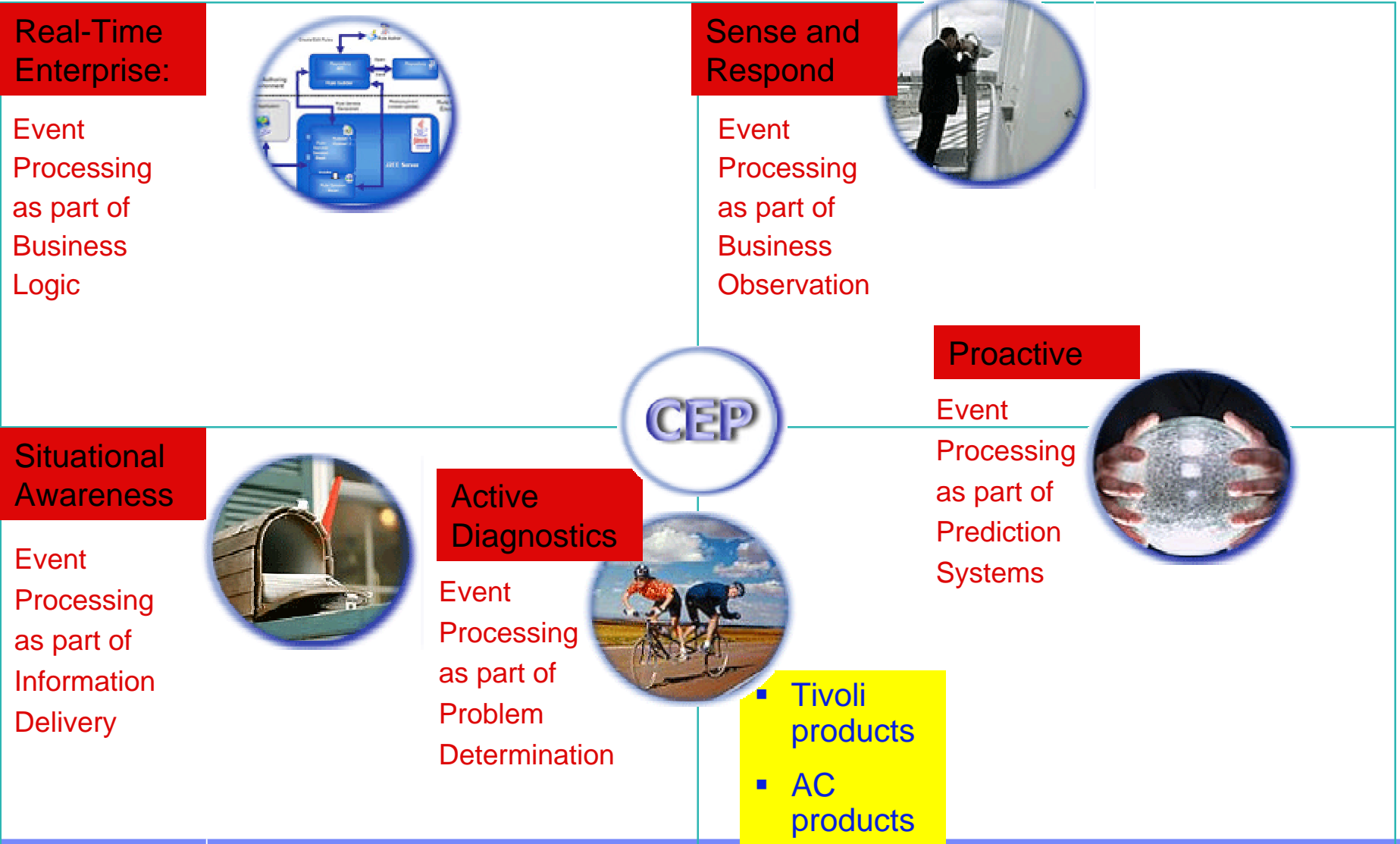


Event Processing In a Nutshell:



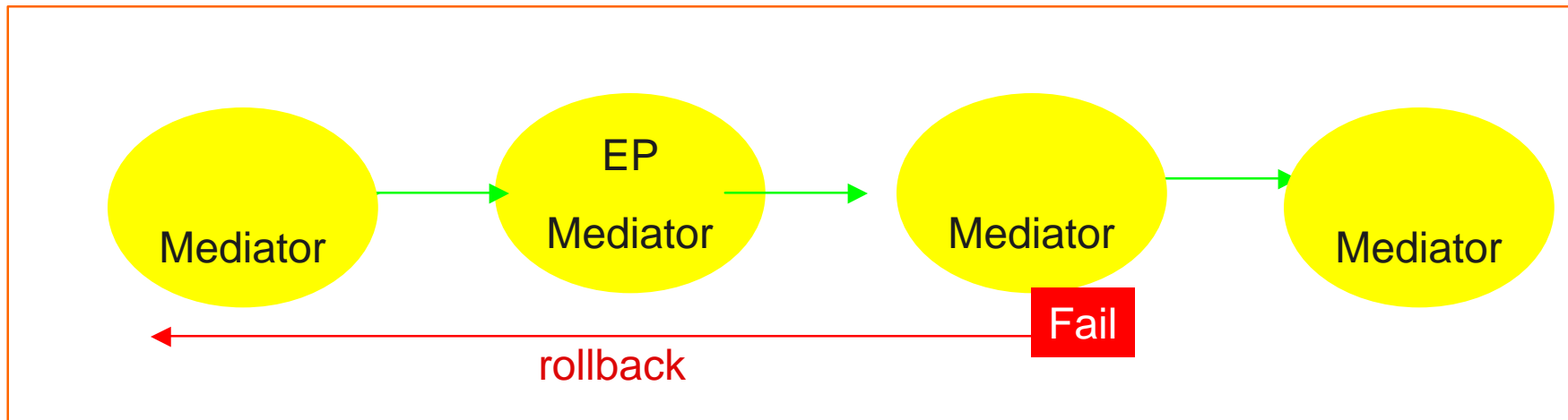


Market segments and associated products





Event processing within transaction



Transaction

When EP mediator executes within the business logic, it needs to have transactional behavior. The raw event can be part of ACID transaction, thus if the transaction fails needs to rollback, which means that derives events are rolled back, and triggered actions are not executed.