**SOCIAL BI**

- Analyse trends and moods from the environment (social networks, blogs, forums, etc.) by combining semantically-enriched UGC with corporate data.

A **hierarchy of topics** must be defined to perform effective analyses, but topics are **HETEROGENEOUS** **FUZZY** **EXPRESSIVE** **UNPREDICTABLE**

**META-STAR** is an alternative to star-schema for modeling topic hierarchies, which combines meta-modeling, navigation tables, traditional DTs:
- Irregular and schemaless hierarchies
- No impact on the intentional level
- OLAP queries’ expressiveness extended
- Static enterprise dimensions integrated

- Full architecture deployed; formal definitions, execution plans and cost model provided
- Performances comparable with star schema
- SBI architecture and meta-stars have been successfully adopted on several projects

**BI on BIG DATA**

- Identify the homogeneous concepts or sub-schema that coexist within a NoSQL document database and extract a set of data according to relational patterns
  - Flattening of every nested structure
  - Application of clustering and frequent-itemset mining techniques to find frequent sub-schemata
  - Application of conditional functional dependencies to further differentiate the derived schemata

**PERVASIVE BI**

An innovative and forward-looking perspective for BI, characterized by **timeliness** (real-time queries), integration (BI anywhere, anytime), **personalization**

Traditional recommendation techniques are mainly focused on single OLAP queries

Proposal: a collaborative filtering approach focused on OLAP sessions
- **ALIGNMENT:** get the most similar OLAP session and align them to the current one
- **RANKING:** extract the common sub-sessions, rated on similarity and frequency in the log
- **FITTING:** adapt the top-ranked sub-sessions to the current one

**SELF-SERVICE BI**

Fusion Cubes extend local DW by integrating knowledge from external sources (linked data, open data, etc.) on a self-service basis

**iMOLD** (interactive multidimensional modeling of linked data) is an approach to semi-automatically derive multidimensional schemata from linked data
- Detection of roll-up relationships and levels on public ontologies by searching MD patterns
- Acquisition of knowledge and reusage by every user
- Adoption of QB4OLAP and SM4AM to model the internal knowledge
- Future work aimed at facts detection and deployment of schema and data

- Algorithms and UI implemented and tested
- Particularly useful in cross-domain ontologies, where relationships are copious and hard to grasp