MULTISENSOR
Topics and Results

speech recognition   machine translation
context modelling   sentiment extraction
topic-based modeling   content alignment
semantic representation   decision support

concept extraction   concept & event detection
web crawling   social interaction analysis
summarization   multimodal indexing & retrieval
knowledge modeling   content delivery

MULTISENSOR concept

Vision

MULTISENSOR aims at bridging the gap between distributed and heterogeneous multilingual content concerning global economic data and news stories.

MULTISENSOR envisages a unified view of heteroge-neous resources (sensors) sensing the world such as international TV, newspapers, radio and social media.

Concept

MULTISENSOR will build upon the concept of **multidimensional content integration** by considering the following dimensions for mining, correlating, linking, understanding and summarising heterogeneous material: language, multimedia, semantics, context, emotion, time and location.

Overall goal

Development of a **unified platform** that allows for the **multidimensional content integration** from heterogeneous sensors, with a view to providing **end-user services** such as international media monitoring, and decision support for SME internationalisation.
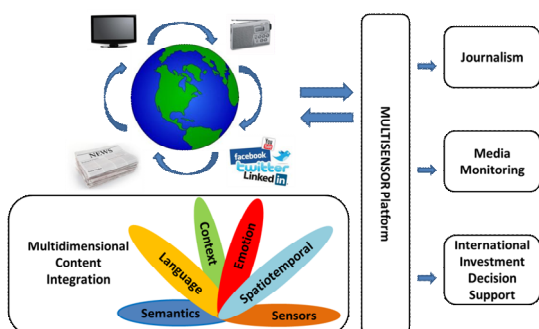

Challenges & Objectives

Challenges:

➢ Data are multimodal, multilingual, heterogeneous and presented in unstructured way

➢ Vast amount of user generated content in the web and especially in social media.

➢ Data are highly distributed containing contradictory, duplicate or complementary information
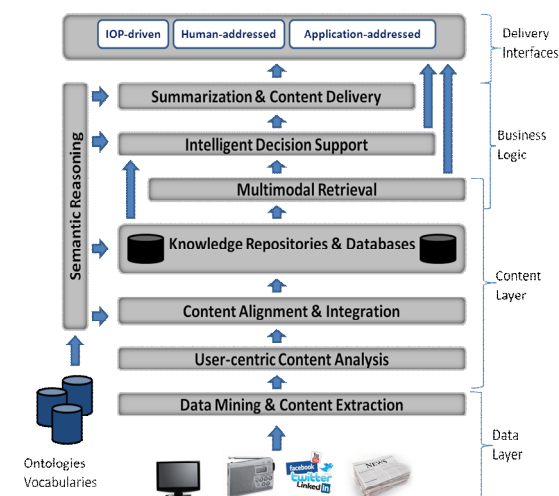
Objectives

➢ **data mining** from several **international resources** including news articles, audiovisual content, blogs and social media and development of mechanisms for the **distillation** of information

➢ content analysis to extract **sentiment** and **context**, and analysis of computer-mediated **interaction** in **social media**

➢ **semantic integration**, context-aware **interpretation** and **retrieval** over the spatiotemporal dimension of multimedia and multilingual data

➢ **semantic reasoning** and intelligent **decision support** services

➢ multilingual **summarisation**
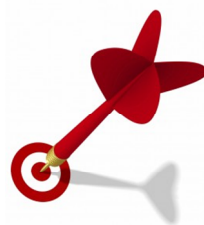
Architecture

Layers:

➢ **Data layer:**
  - data mining from heterogeneous sensors

➢ **Content layer**: processing of retrieved data to distil meaningful information and modeling of information by using lightweight semantics
  - content interpretation by considering the sentimental and context dimensions
  - content integration to correlate complementary and contradictory information
  - multidimensional indexing for supporting multimodal retrieval

➢ **Business logic layer:**
  - intelligent decision support relying on semantic reasoning techniques
  - intelligent summarisation using automatic content generation techniques

➢ **Delivery interfaces**:
  - IOP Driven (e.g. RESTFul approaches)
  - Human-addressed
  - Application-addressed

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MULTISENSOR
Topics and Results

Use Case – International media monitoring

Journalists:

➢ Need to handle heterogeneous datastreams coming from several sources

➢ Want to detect, summarize, evaluate content relevant to the most crucial, life-defining topics in order to support public in information gathering

MULTISENSOR platform will allow journalists to analyse large amounts of input data and generate high volumes of output data and unified articles.

Clients of media monitoring portals

➢ Require direct access to targeted, business and consumer information

➢ Monitor their brand or reputation by analysing all opinion-forming media

MULTISENSOR platform will perform influence analysis and derive which actors primarily affect opinion forming so as to focus monitoring on target media outlets and influencers.
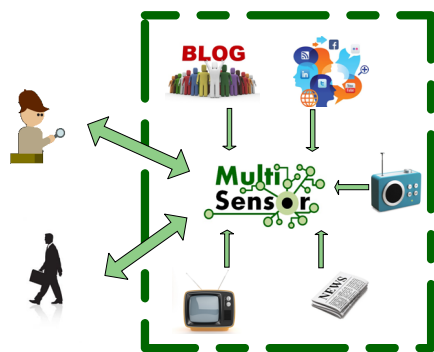
Use Case – SME Internationalisation

Internationalisation and exportation of their products considered the **main solution** by SMEs in many European countries to get out of the financial **crisis**.

Main Information required:

➢ spending habits of consumers

➢ economic fundamentals of the countries

➢ domestic and foreign competition

➢ distributors of product in the selected markets

Current situation involves**:**

➢ Access foreign trade offices in each country

➢ Access dedicated databases

➢ Use general purpose search engines

Current practices are time consuming and complicated, since information is heterogeneous, highly distributed and multilingual.

With MULTISENSOR platform, SMEs will retrieve summarised and need-tailored information in their own language without accessing several resources. The system will provide a decision support service to consult SMEs regarding the risk involved in a potential investment.
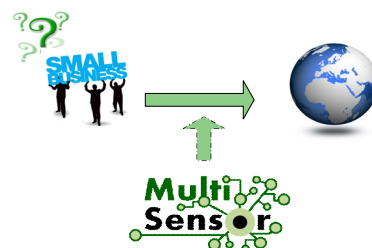
Impact & Results

Impact

➢ Strong participation of private-sector players in the consortium

➢ Improve European competitive position in multilingual digital market through provision of better products & services

➢ Production of reliable information to support journalists and media monitoring companies

➢ Facilitate decision of a company for international investment in an unstable ground

Outcome

➢ Integrated MULTISENSOR platform for SME internationalisation and media monitoring

➢ Standalone modules or services, e.g. Machine translation, Multimodal indexing, Decision Support modules

➢ Modules will be provided under commercial, open source or freeware licenses.

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