XBRL at the Monte dei Paschi di Siena: Experience and Prospects

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Summary

- Usage of XBRL in the Basel II-modified Financial Services Industry
- Semantic-based Business Intelligence services
- The MUSING initiative [www.musing.eu](http://www.musing.eu)
- Preview of field-tested services (Credit workflow)
- First conclusions and outlook
Banca Monte dei Paschi di Siena

- Banca MPS is the organization leading the Monte dei Paschi di Siena Group (Italy's third largest banking group).

- We pride ourselves with being the oldest bank in the world (founded in 1472), and yet maintaining strong inclination for product and services innovation.

- Since 2005 we publish on our website the Group’s Balance Sheet in XBRL (first bank in Italy).
XBRL for better Investor Relations

- The Consorzio Operativo di Gruppo MPS developed in XBRL the 2005 Financial Statement of Banca Monte dei Paschi.
- Online in the Investor Relations section at www.mps.it
- Extension of the official IFRS taxonomy (IFRS-GP-2005-05-15) to comply with Italian-specific regulations.
Next Generation Business Intelligence

- Performing business intelligence is a vital activity for the financial services industry (internal & external info).

- The Basel II-compliant modified scenario expands needs of both Financial Institutions and their Customers (enterprises as well as individuals) for ability of exploiting information.

- Semantic-based Business Intelligence is going to enable sustainable processing of internal/external, quantitative/qualitative, structured/unstructured info.

- Banca MPS is Partner of the EC-sponsored R&D project named “MUSING”.

- The MUSING initiative, relying on innovative semantic-based technologies and with a pervasive usage of XBRL, is developing a set of e-services to support the next generation of (Basel II-compliant) industrial processes.
Semantic-based approach

- Semantic-web and human language technologies to support the “next generation BI”:
  - Automatic annotation
  - Reasoning
  - Multi-linguality
  - Ontologies (temporally evolving)
  - Pervasive usage of XBRL

- The need for R&D → No off-the-shelf solutions

- The main benefits:
  - Automation in human-intensive analysis processes
  - Reach
  - Reasoning
  - Knowledge building
Semantic-based flow

FRM ontologies

INTERNAT’N ontologies

IT OpR ontologies

General ontologies
Company - Document – Line – Loss Event – Management

Knowledge repository (XBRL instance)

Data analysers (PDF2XBRL, IE, …)

Data (Business Registers, user-provided, …)

Knowledge Exploiters (models, evaluators, indicators, …)

User
Support to credit merit assessment for Customers & Prospects

Third party customer
(e.g.: SME that wants to perform a Basel II self-assessment)

Through web services

MUSING FRM customer
(e.g.: financial institution that wants to acquire prospect lists)

Client’s proprietary info
(structured & unstructured)

MUSING info & ontologies

External Info (web etc...)

MUSING services in Financial Risk Management
MUSING services

- Financial Risk Management value chain & services

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<th>FRM Value Chain</th>
<th>Data Acquisition</th>
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<td>Process Description</td>
<td>Internal and external data acquisition</td>
<td>Quantitative and Qualitative information processing</td>
<td>Credit scoring techniques Rating</td>
<td>Credit issuing and communication of information dealing with the rating evaluation</td>
<td>Management of credit issuing, credit monitoring and credit collecting process</td>
<td>BI product packaging and delivery (credit reporting, etc)</td>
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Services

- Quantitative and qualitative info extraction
- BS processing
- Business Inspector
- Bayesian quantitative information integration for PD measurement
- EU-harmonised payment pool
XBRL inside

- Linking taxonomies to ontologies: exploiting the full XBRL potential
- MUSING ontology architecture combines ontologies with relational tables

- XBRL represented as property taxonomy
- This is analogous to a relational table for balance sheets BUT
  - we make the XBRL hierarchy explicit by subclassing
  - we gain with the flexibility of labeling, linking metadata etc.

Original material supplied by MUSING partner DERI (www.deri.at) is gratefully acknowledged
Field-tested services: 1. Balance Sheet processor

- Objective: automate upload of enterprises Balance Sheets (e.g., into an IRB system), according to a given XBRL taxonomy (tested: Germany & Italy).

- Current performances: precision > 60%, recall ~ 90%.

Original material supplied by MUSING partner DFKI ([www.dfk.de](http://www.dfk.de)) is gratefully acknowledged.
Field-tested services: 1bis.Balance Sheet processor

Original material supplied by MUSING partner Metaware (www.metaware.it) is gratefully acknowledged

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**Balance Sheet Viewer**

- View the Balance Sheet
- View the connections with “Nota Integrativa”
- View the financial indicators
- View the XBRL instance

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**Quantitative info acquisition**

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XBRL instance
Field-tested services: 2. Qualitative Info Acquisition

- Objective: automate acquisition of qualitative information
- Current performances: questionnaire acquisition, linkages Balance Sheet/unstructured annex

Original material supplied by MUSING partner Metaware (www.metaware.it) is gratefully acknowledged
Field-tested services: 3. Business Inspector

- Objective: explore complex connections among enterprises/individuals (e.g., ownership, board membership, cross-borders dependencies, etc.) and provide navigation-like interaction to the user. Support to reporting.

- Current performances: tested on Italian data through EBR:
  - Real-time: Participations & Ownership; Partners & Members; Powers & Offices; Sector of Economic Activity.
  - “asynchronous way” (5to10 mins): Annual Accounts; Deeds.
“Host a pilot” - an opportunity to collaborate

- The MUSING Consortium proposes to selected institutions to host a pilot application of a semantic-based BI, customised service

- Part of the MUSING commitment towards the EC

- Concept designed according to a specific end-user need

- Your organisation’s data, the MUSING technology
First Conclusions and Outlook

- MUSING delivers semantic technologies-powered Business Intelligence e-services supporting the banking industry.

- The main tangible benefit is more value from information, arising from cost-effective processing of it and/or more insightful analyses.

- Linking ontologies and XBRL taxonomies.

- With a workplan up to 2010, MUSING intends to break new ground in the usage of next generation, XBRL-powered Business Intelligence to deliver more services for the financial industry, covering (with a pan-European approach!) the Basel II-compliant value chain of Financial Risk Management.

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