Rules and Service-Oriented Technology for Regulatory Compliance

MIT Center for eBusiness Annual Sponsors' Conference
"eBusiness is Business"
May 19th 2004

Dr. Said Tabet
Co-Founder and Co-Chair, The RuleML Initiative
http://www.ruleml.org
Important numbers...

- Approx. 5,030 funds and 7,790 advisors currently registered controlling over $21 trillion of assets...
- ....and engaging in tens of millions of transactions each years...
- ....subject to hundreds of thousands of regulatory rules and guidelines
...and the Problem

- Multiple Regulators
- Multiple Systems
- Multiple Jurisdictions
- Multiple Languages

And everything is always changing

“Range of compliance regimes will deepen and widen…” Gartner April 2004
Reshaping the Role of Compliance

- Major scandals and increased regulatory attention
- The SEC (Securities and Exchange Commission) to increase the frequency of its examinations
- Adopting a pro-active ‘Culture of Compliance’ is key for investment firms to survive and remain competitive
- Technology will play a central role
Areas of Focus

Areas of focus related to compliance issues:

- Internal controls
- Portfolio Management
- Personal Trading
- Best Execution, Trade Allocation
- Privacy and Access Control
- Communications
  - Email, Instant Messaging, Phone Calls,…
  - ….
State of Compliance Today
-- Technical Challenges

Post-Trade Compliance Checks
Need for Pre-Trade and real-time compliance Challenges

- Data Issues: Policies and Procedures
- Compliance Monitoring and Reporting independence from other business processes and workflow
- Inefficient implementation of Regulatory rules and client guidelines.
- Systems do not perform and scale to the required level
Evaluating Compliance Monitoring

Most Systems fail to provide effective compliance monitoring
- Inconsistent results
- Data availability and reliability
- Inadequate implementation of compliance rules

Systems should be capable of generating compliance proofs and provide reasons for violations and warnings.

Compliance monitoring can be viewed as an effective compliance tool but also, with the appropriate implementation, can achieve high levels of productivity.
Monitoring and Corporate Governance

There is some monitoring
- By different systems
- In multiple locations
- In various formats

There is some use made of this data
- Utilisation is *Ad hoc*
- Manual and inefficient search functions

Compliance Officers looking for efficient identification and recovery of all communications involved in corporate governance breaches
The goal of the RuleML Initiative is to develop RuleML as the canonical Web language for rules, then later for logic and proof, using XML markup, formal semantics, and efficient implementations.

RuleML started life before the semantic web initiative was officially launched. It is a very significant group.

Tim Berners-Lee, Director, W3C
The RuleML Initiative

- RuleML covers various types of rules
  - ... and thus of policies and guidelines
- Approach is to enable rule interchange as well as promote interoperation between industry standards in information and process modelling
  - JSR 94, SQL'99, OCL, BPMI, WSFL, XLang, WSCI, OWL, XQuery, DAML-S, etc...
Towards a Regulatory Rules Repository

- Distributing Regulatory rules and policies using a RuleML-based standard repository
  - To dramatically reduce the implementation of new regulations
  - Automated Rules update and robust compliance support

- A Web Service-Oriented approach to integrate Data Models and Regulations

- The importance of rules validation and verification is key to the adoption of an effective compliance program in any firm

- Technology can act as an enabler helping regulators in the inspection process and its standardization effort
Towards a Regulatory Rules Repository (Cont’d)

New Regulations

Updated Regulations

Web Services

Subscription and Notification

Client Systems accessing the repository
Technology advantages of RuleML Web Rules

Flexibility, optimized logic and Productivity:
- Faster time-to-market
- Business users access to business logic
- Managed complexity and personalized services to client

Why is this important?
- Global Markets Needs
- Become and remain competitive
- Database queries will not give you the very important derived information that can be inferred in real-time

Global, Mobile, Agile architecture
Optional Slides
The Need for Ontologies

Ontologies

- Ontology = Taxonomies + Rules

Logic and Proof

Web of Trust
Ontologies for Financial Services

- Unified Semantic Modeling
  - Application consistency

- Semantic reuse
  - Application service discovery

- Just-in time integration
  - Auto configuration
Rules in Financial Services

Rules are everywhere: in databases, in client applications, middleware, networks, contracts, marketing materials,…

Rules can represent: policies, compliance, regulations, business processes, trust, personalization, recommendations, transactions, authorization, etc.
Semantic Web Services

- It’s all about semantic integration
  - Integrating processes
  - Integrating data formats

- Ontologies enable us to reason about intent because they capture the meaning
  - Ontologies of data
  - Ontologies of processes
A New Deal for Financial Services

Delivering Total Information Awareness

Collectively: Providing Regulatory Authorities with …
- Power to maintain orderly markets
- Enforce regulatory compliance
- Detect and eliminate fraudulent practice

Competitively: Providing Financial Institutions with …
- Superior view of the markets
- More effective capital and asset management
- Minimize their risk/exposure
Q&A