Operational Risk Information System

SIRO

Why SIRO?

Management Solutions' SIRO platform offers integrated operational risk and control management solutions to financial institutions and large corporations

SIRO's modules are designed and integrated to facilitate the advance management of Operational Risk and meet regulatory expectations.

- ▸ **Common data management:** organization, processes, risk categories, business lines, etc.
- ▸ Events database.
- ▸ Risk & Control Self-Assessment **(RCSA) questionnaires**.
- ▸ **Key Risk Indicators** – KRIs.
- ▸ **Action Plans**.
- ▸ Business **continuity**.
- ▸ **Follow-up** on recommendations.
- ▸ Internal model-based **Calculation Engine Module** (for Capital and Insurance Portfolio requirements).
- ▸ **Integrated reporting** dashboards.

Operational Risk self-assessment questionnaire

Solutions based on qualitative assessments (e.g. 'red', 'yellow' and 'green') have difficulties translating those into quantitative figures that can then be integrated with the financial impacts accounted for the operational risk events that have occurred

ADVANTAGES

OPERATIONAL RISK ARCHITECTURES BASED ON INTEGRATING SEPARATE SPECIALIST APPLICATIONS ARE PROBLEMATIC (COHERENCE, INTERFACES, EXTRA COSTS, SUBSTANTIAL EFFORT TO RECONCILE INFORMATION). AN INTEGRATED SOLUTION PROVIDES RISK MANAGERS WITH A GLOBAL PICTURE OF RISK

SIRO's scope has gone beyond Operational Risk management to include internal control, modeling and optimization of the insurance portfolio in large industrial corporations as well as specific management of legal, reputational and outsourcing risks.

Main features:

- **Experience:** available **since 2004**; mature and advanced tool.
- Proven tool: has passed **supervisory audit** and validation processes.
- Credentials: implemented in a large number of Financial Institutions. **Large user base**.
- **Developments**: methodological and functional updates released on an **annual** basis.
- Adaptable: a common core supports the most advanced Operational Risk Management methodologies, but is **flexible to adapt** to the individual needs of organizations.
- **Quantification**: statistical-mathematical engine **(SIRO-ARE)** that incorporates the most advanced techniques in the market, the widest range of distributions for severity fitting (e.g. Generalized Hyperbolic), capacity to work with scenarios, and maximum flexibility afforded by the tool's **R language** interpretation capability.
- **Sophisticated reporting**: integrates an **OLAP engine**, **interactive graphics** export to **Excel and PDF**, production of regular reports for management and business areas. Large number of predefined and customized reports.
- **Other areas**: specific versions for areas outside Operational Risk: such as **Insurable risk** (Insurance policy optimization), **Audit / Internal Control / Compliance and Business Continuity**.
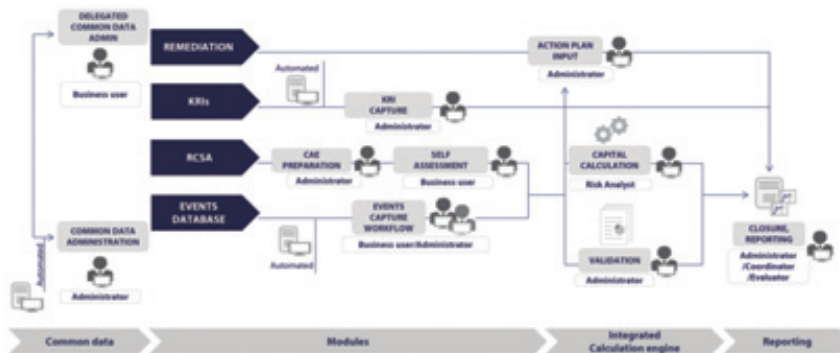
THE TOOL SHOULD ADAPT TO THE MANAGEMENT FRAMEWORK AS OPPOSED TO THE MANAGEMENT FRAMEWORK ADAPTING TO THE TOOL

*Event database query. Menu for direct access to the SIRO functionality*

MODULES

LESS MATURE TOOLS
CAPTURE A SNAPSHOT
PICTURE OF THE RISK MAP,
BUT DO NOT STAND UP
WELL TO ORGANIZATIONAL
AND PROCESS CHANGES
OVER TIME

Common data management module

Processes, Risks, Controls, Organizational Structure, Users and Roles, Risk Categories, Business Lines...

Features
Can be integrated into the corporate intranet.
Allows automatic data capture from enterprise master data sources.
Allows data transfer to external systems.
Focus on risk users. Minimum workload.
Full traceability of changes.
Possibility to attach documents.

Risk Control Self Assessment (RCSA)

Work organization through campaigns.
Customizable assessment workflow.
Questionnaire generation from templates.
Assessment methodology quantifiable in currency units.
Assessment auditability.
Online VaR calculation through Monte Carlo Dynamic questionnaires.
User help.
Specific assessments:
  ‣ Outsourcing risk
  ‣ Legal risk
  ‣ Reputational risk
Independent control assessment.

Operational Risk - Action Plans

Direct relationship with risks and controls.
Possibility to attach documents to plans.
Alert generation.
Action plans as a result of high risk assessment scores, input of significant events, outlier indicators or deficient controls.
Integration of action plans with audit recommendations.

Operational Risk - Loss Database

Registration of events, their impacts, and direct and indirect recoveries.
Capture:
  ‣ Individual, screen-based.
  ‣ Massive, screen-based (Excel).
  ‣ Automated capture interface.
Capture workflow.
N:1 relationship with risks.
Possibility to attach documents to events.
Multi-impact events.
Integration with Action Plans.

SIRO-ARE (Advanced Risk Engine)

Data analysis and cleansing, hypothesis verification and identification and setup of Operational Risk categories.
Frequency and severity distribution fitting.
Integration of sources:
  ‣ Internal loss database.
  ‣ Qualitative data (scenarios).
  ‣ External events.
VaR calculation.
Back testing.
Stress Testing.
Sensitivity and stability analysis.
Regulatory reporting.
Integration with R language.

Operational Risk - Indicators

KRI, KCI and KPI support.
Setup of indicators, their interpretation and scales.
Capture:
  ‣ Individual, screen-based
  ‣ Massive, screen-based (Excel)
  ‣ Automated capture interface
N:1 relationship with risks and with risk categories
Single and composite multivariate indicators providing a detailed/aggregated picture.
Alert generation.
Integration with Action Plans.

Insurable Risk / Insurance Portfolio Optimization

Management and valuation of physical assets.
Insurance portfolio management.
Loss capture.
Frequency and severity distribution modeling.
"What-if" analysis.
Franchise and reinsured risk optimization.
Captive insurer management.

Business continuity/BIA analysis

Process criticality rating oriented to establishing Continuity Plans.
Discontinuity impact assessment:
  ‣ Financial
  ‣ Regulators
  ‣ Reputational
  ‣ Other areas
  ‣ Clients
Continuity Plan testing management.

Cross-functional features

Integrated OLAP engine.
Integrated statistical calculation engine.
Interactive graphics.
Regular, integrated reports.
Document management on the system's database.
Workflow engine backed by database.
Profiling and authentication can be delegated.
Online historical and current data query.
Traceability and auditability of changes.

Technical architecture

SIRO is offered in two forms: Software as a Service (SaaS), guaranteeing maximum security and service levels, and on-premises, with a customizable architecture designed to adapt to the organization's specific technology

SIRO architecture
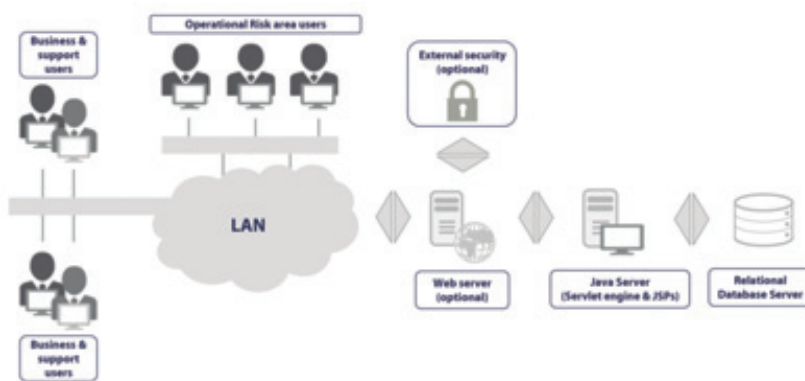
Three-layer architecture

▸ A Java server that implements a servlet container and a Java Server Pages (JSP) engine, of which there are versions for almost all current Operating Systems: WebSphere, Tomcat, WebLogic, etc.

▸ A Relational Database Management System (RDBMS): Oracle, SQL Server, etc.

▸ A web server (optional), usually part of the intranet infrastructure, where user authentication is delegated.

▸ Client: user PC with a web browser.

Service modes

▸ Software as a Service.

▸ On premises.

Technical features

▸ Developed independently of the operating system, Java Application Server and Relational Database Management System used.

▸ Security can be delegated to the existing corporate Single Sign On/Intranet architecture.

▸ Protection of URLs and against malicious access.

▸ Corrective maintenance and support with flexible Service Levels tailored to each individual organization.

▸ Yearly version updates under the maintenance contract.

Technical features
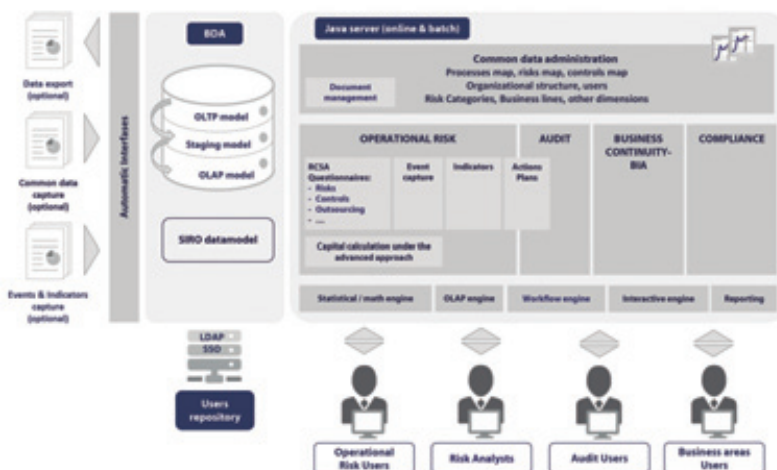
CREDENTIALS

OPERATIONAL RISK UNITS HAVE VERY LIMITED HUMAN RESOURCES THAT CANNOT BECOME SLAVES TO ROUTINE. TOOLS SHOULD BE SUFFICIENTLY MATURE AND OPTIMIZED SO AS TO REDUCE THEIR WORKLOAD AND ALLOW THEM TO FOCUS ON HIGHER VALUE-ADDED TASKS

Main SIRO implementations

The different SIRO modules are widely implemented in organizations of various kinds and endorsed by Regulatory Authorities. Among the types of organizations in which SIRO is implemented are:

- ▶ Central Banks, as well as regulatory and supervisory bodies.
- ▶ Large, highly diversified financial groups with a presence in different geographical regions.
- ▶ Financial institutions with an international presence.
- ▶ Financial institutions with a local presence.
- ▶ Insurance companies.
- ▶ Corporations in industry sectors (Insurable risk module/Insurance portfolio optimization).

Management Solutions
Leading business consulting services firm

Management Solutions is an international consulting Firm whose core mission is to deliver business, risk, financial, organization and process-related advisory services, targeted at both functional aspects and the implementation of related technologies.

Management Solutions currently has a multidisciplinary team (functional, mathematical, technical and systems integration) of **2,000 professionals,** and operates through 24 offices (11 in Europe, 12 in the Americas and 1 in Asia) from where we serve customers operating in over 40 countries in **Europe,** the **Americas, Asia** and **Africa** (Senegal, Equatorial Guinea, etc.).

Europe	Madrid, Barcelona, Bilbao, London, Frankfurt, Paris, Warsaw, Zurich, Milan, Rome, Lisbon
Americas	New York, Boston, Atlanta, Birmingham, San Juan de Puerto Rico, Mexico City, Medellin, Bogota, Sao Paulo, Lima, Santiago de Chile, Buenos Aires
Asia	Beijing

Management Solutions´ differentiating factor lies in its in-depth knowledge of the businesses in which its clients operate and in its high degree of sector-specific and functional specialization.

To ensure full coverage of its clients´ needs, Management Solutions structures its value proposition by industry and line of activity, bringing together a wide range of skills.

Industries

Financial Institutions (Banking and Insurance)

Energy

Telecommunications

Consumer and Industry

Government

Construction

Services

Strategy

Sales and Marketing Management

Transformation: Organization and Processes

Risk Management and Control

Management and Financial Information

New Technologies

We create value propositions for our clients and commit to their effective implementation to exceed client expectations, becoming their trusted partners

For further information you may contact:

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Management Solutions, Professional Consulting Services

Management Solutions is an international consulting firm whose core mission is to deliver business, risk, financial, organisation, technology and process-related advisory services.

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