

Interactive Reporting

Interactive Reporting

Overview - White Paper

Dec 2004

Summary

Purpose

This document is a white paper describing the envisaged evolution of the Interactive Reporting Business Intelligence Product. It describes aspects of the analytic engine available today and outlines the Interactive Reporting vision of the next generation of Business Intelligence tools.

Audience

This document is intended primarily for dissemination to a technically literate audience. However, it should be accessible to any stakeholder in the Business Intelligence (BI) domain. It will be principally be of interest to:

- Chief Information Officers/Chief Technical Officers
- Data Warehouse administrators
- Data modellers
- Technical consultancies and systems integrators

Business Intelligence

The overwhelming majority of enterprises (from SMEs to multinational corporations) retain the details of their commercial transactions in some form of data warehouse. It has long been recognised that these data warehouses are untapped repositories of valuable information concerning the enterprise's performance. The goal of Business Intelligence tools is to unlock the inherent value of these data stores and generate a real return on the enterprise's investment.

Necessity of Business Intelligence

- Enhance productivity (especially in a challenging economic conditions)
- Integrated view of an enterprise's performance
- Generate actionable information
- Need for awareness of important developments in real-time, not just at the end of a month/quarter.

Business Intelligence (current generation)

Existing Business Intelligence (BI) tools suffer from a number of drawbacks.

- Major organisational commitment is required – implementation of a large system-integration project typically requires coordination across a large number of departments, each often with a different operating paradigm
- Accessible only to large enterprises
- Significant resources required – in terms of finance, organisational commitment and time allotted to integration and user training
- High level of technical competency required for use – often a full-time administrator is necessary
- Cost – minimum pricing for the deployment of Business Intelligence platform is typically \$100,000-\$300,000.

- Large maintenance requirements – systems are typically custom-designed/configured, so maintenance is costly and requires a high level of technical competence (typically involving outside consultants)
- Entire implementation is enterprise-specific
- Long implementation time-scales – installation and adoption of Business Intelligence tools takes, at a minimum, several months and may take up to several years.
- Limited modularity – little of the data modelling or system-integration work performed may be reused
- Restricted platform heterogeneity – most Business Intelligence platforms require very specific software configurations (both on the server-side and on the client-side).

Next Generation of Business Intelligence

The goal of Interactive Reporting is to lead the next wave of Business Intelligence capabilities through addressing all of the above issues to develop a Business Intelligence platform for the 21st century.

Interactive Reporting

The ultimate goal of any Business Intelligence product is to bridge the gap between the overwhelming amount of information held in vast transactional data warehouses and an enterprise's ability to generate useful business metrics from that data. Interactive Reporting leverages proven technologies to build the next generation of BI tools.

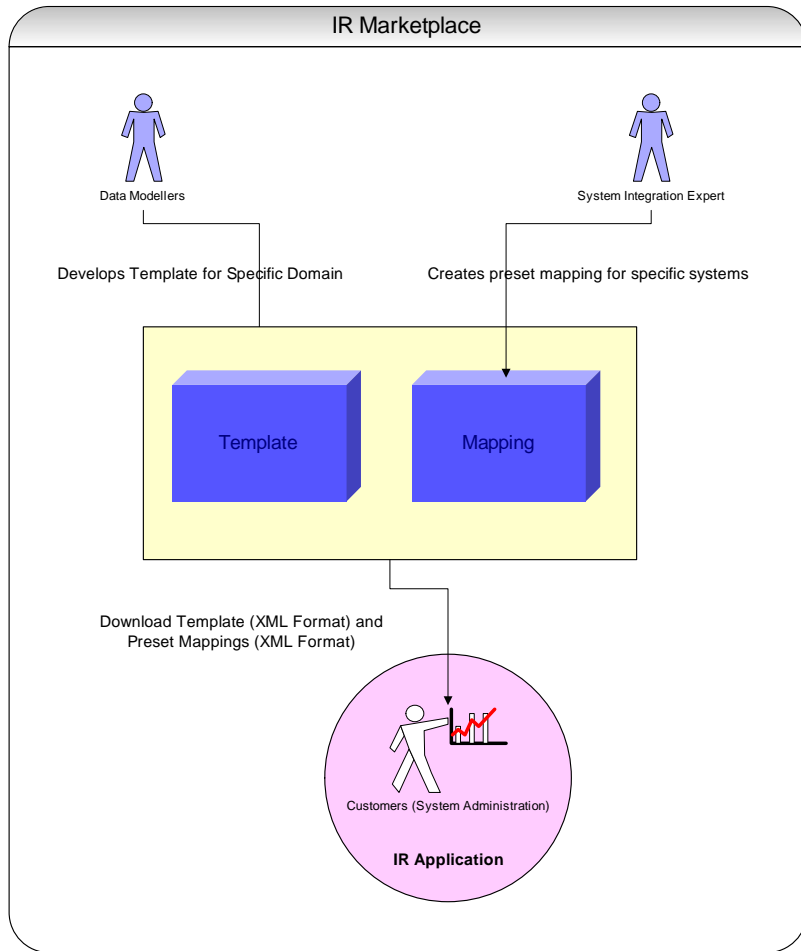
Overview of Interactive Reporting Business Intelligence model

Interactive Reporting's vision of the Business Intelligence domain is of the leveraging of existing competencies, made available through a web-based marketplace, to allow enterprises to acquire pre-developed data models (templates) and pre-generated mappings between these templates and all major data warehouses.

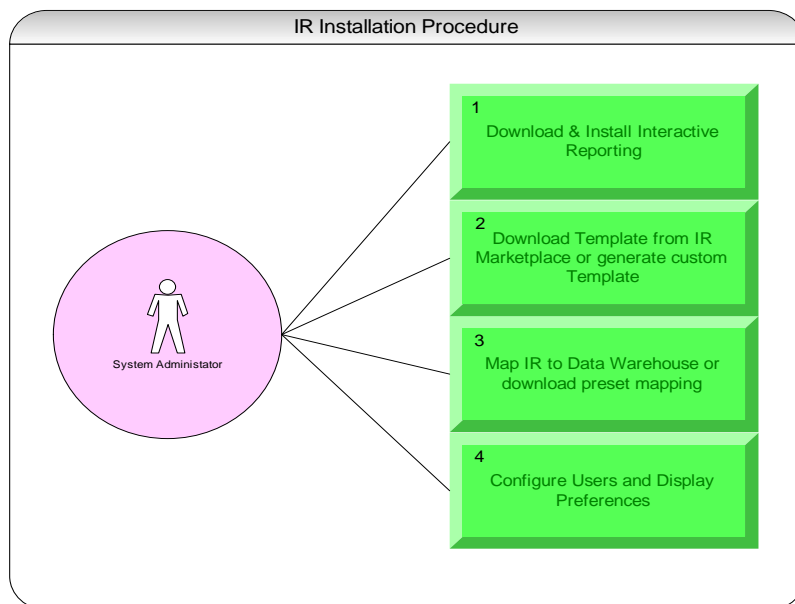
In the installation and deployment of Interactive Reporting, the following roles defined are:

- Data modellers – these are commercial/financial domain experts who produce abstract models to analyze a particular domain (e.g. sales, inventory, etc.). The models they produce are made available for download from the Interactive Reporting Marketplace in an open XML format.
- Systems integration experts – these are consultants whose expertise lies in the integration of heterogeneous systems. They produce standard mappings between different data warehouses and individual templates. The mappings they produce are also made available for download from the Interactive Reporting Marketplace in an open XML format.
- System administrator - this is an employee of or a consultant acting on behalf of the customer who installs, configures and deploys Interactive Reporting on the customer's intranet.

While the role of System Administrator is essential, the other roles may not be relevant to a particular deployment of Interactive Reporting if either the template or mapping is developed in-house.



The deployment procedure for Interactive Reporting may be summarised by:



Advantages of the Interactive Reporting approach

- Leverage existing competencies – businesses are no longer required to have a custom solution developed for their needs (with the large, specialised maintenance commitment that this entails)
- Bring high-performance BI tools within reach of SMEs – the factors prohibiting the adoption of BI tools by smaller enterprises are typically cost and the level of technical competence required. The Total Cost of Ownership (TCO) of Interactive Reporting is a fraction of existing tools (as pre-developed templates and mappings can be obtained) and a full-time administration commitment is not required.
- Self-service – users are able to pose queries using the terminology already extant in their enterprise and obtain graphical and tabular reports displaying the information that is of interest to them.
- Information retrievable in a variety of formats (MS-Excel, HTML, Email)
- Significantly reduced administration requirements – no client-side administration,
- Rapid and extensive user adoption - minimal training is required to use Interactive Reporting
- Hide data warehouse foibles – all major database systems are supported (see Appendix for details), with SQL support fully implemented and OLAP support planned for the next release.
- Seamless query, reporting and analysis – users can ask questions of their own choosing or
- Customized terminology – no need to learn a new vocabulary, as the terminology already in use
- Selective exposure of enterprise information to users – e.g. allow internal staff to examine data pertaining only to their own department or allow customers to track their own purchasing patterns.
- Configurable security - restrict information availability based on user identity. Also, SSL may be configured to secure data provided over an extranet.

Interactive Reporting Marketplace

One of the principal advantages of Interactive Reporting's vision is the modularity of Business Intelligence logic. The integration of Interactive Reporting (or any BI tool) to a client's specific situation involves two principal components:

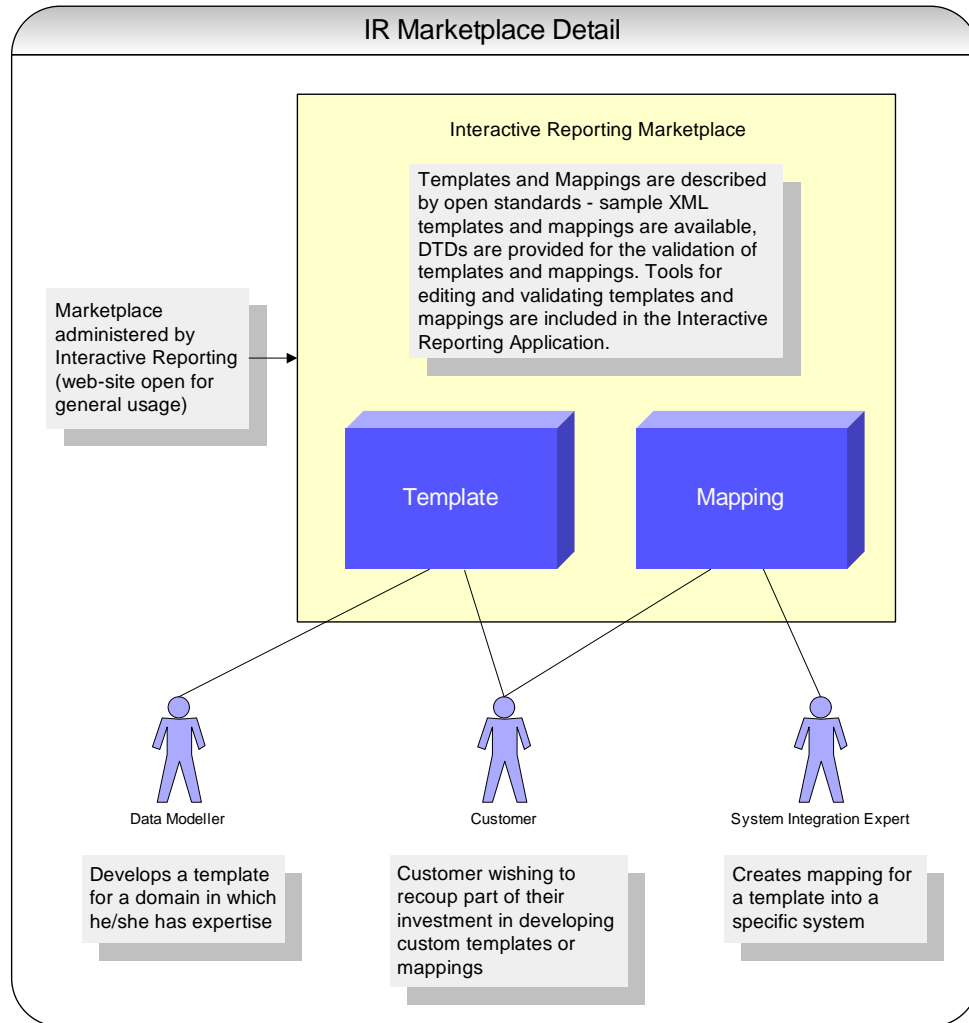
- Template – an abstract data model encapsulating the analytics of interest in a particular application (e.g. sales volume and profit margin in the analysis of sales information, quantity of stock on hand and value of stock held in inventory analysis)
- Mapping – meta-data describing how the data model should obtain its information from the client's data warehouse (e.g. how to retrieve the data appropriate to sales analysis from an Oracle data warehouse of transactional information)

Interactive Reporting allows these aspects of BI integration to be modularised and separated from a specific installation. This permits the re-use of logic, provision of these aspects of the BI integration process by domain experts (or consultants/clients who have made an investment in the development of custom solutions and wish to recoup some of their investment through the sale of their template/mapping) and, most importantly, significant reductions in the cost and time required for an enterprise's acquisition of BI capabilities.

Interactive Reporting Marketplace

The template and mapping modules required by a particular installation of Interactive Reporting and provided in the form of XML (eXtensible Markup Language) files. Interactive Reporting's commitment to open standards is intended to facilitate the rapid and extensive adoption of the IR application. Templates and mappings may be created and edited using the integrated tools provided by Interactive Reporting or using standard tools for editing XML files. DTDs (Document Type Definitions) are provided for each type of module and separate tools for the validation of templates and modules are supplied.

The Interactive Reporting Marketplace may be represented diagrammatically as shown on the next page.



The Marketplace is openly accessible to any stakeholder in the Business Intelligence domain. While administered by Interactive Reporting, the Marketplace web-site is intended to facilitate interaction between providers of downloadable template and mapping modules.

To access the Marketplace, registration is required (but no charge is levied). Clients wishing to make use of a template or mapping provided through the site can download the module of interest to them (making an online payment to the provider of the module, rather than to Interactive Reporting).

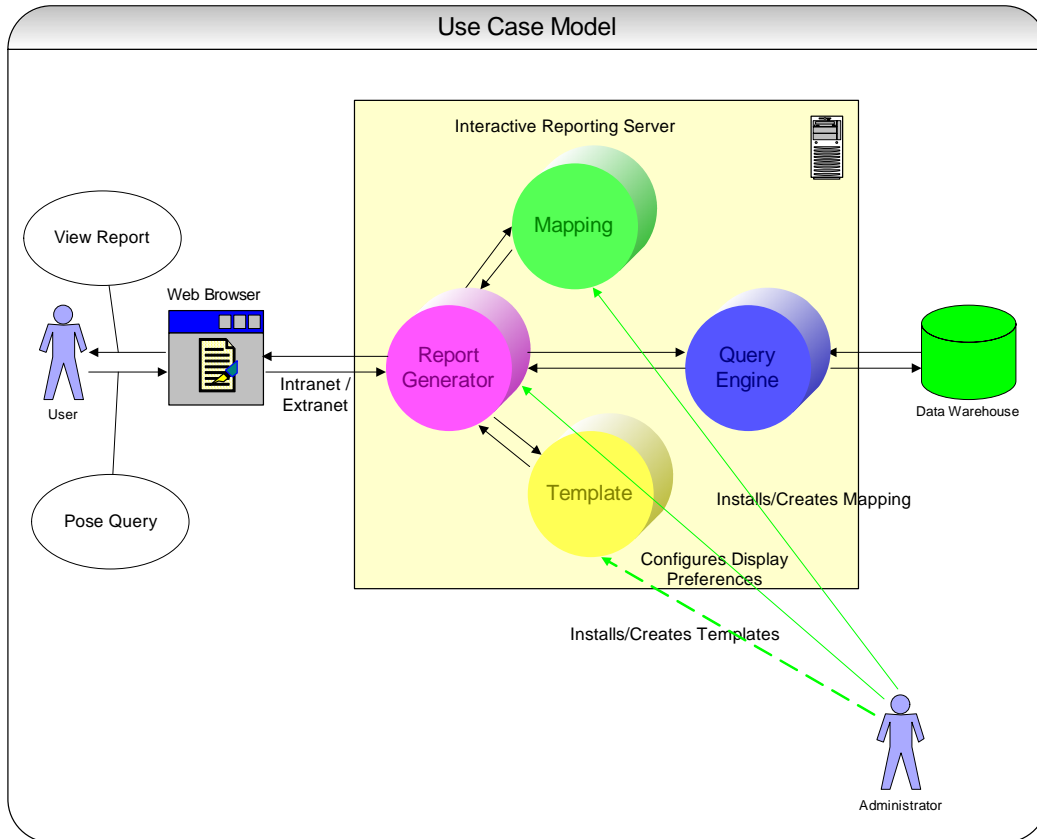
Interactive Reporting Application

The Interactive Reporting application is designed to facilitate:

- Rapid user adoption – the user interface uses only standard HTML elements and installations may be provided with preset ‘favourite’ reports for users
- Minimal training requirements
- Easy server-side administration – all administration is performed through a simple web-based interface,
- Rapid and seamless upgrades
- Easy installation – typically, only server-side installation is required (individual users simply use any one of a number of widely-available web browsers). Interactive Reporting is currently distributed as a single executable file (incorporating its own zero-administration web-server), with installation performed in a matter of minutes.

Interactive Reporting Application

A typical deployment scenario for the Interactive Reporting application would be:

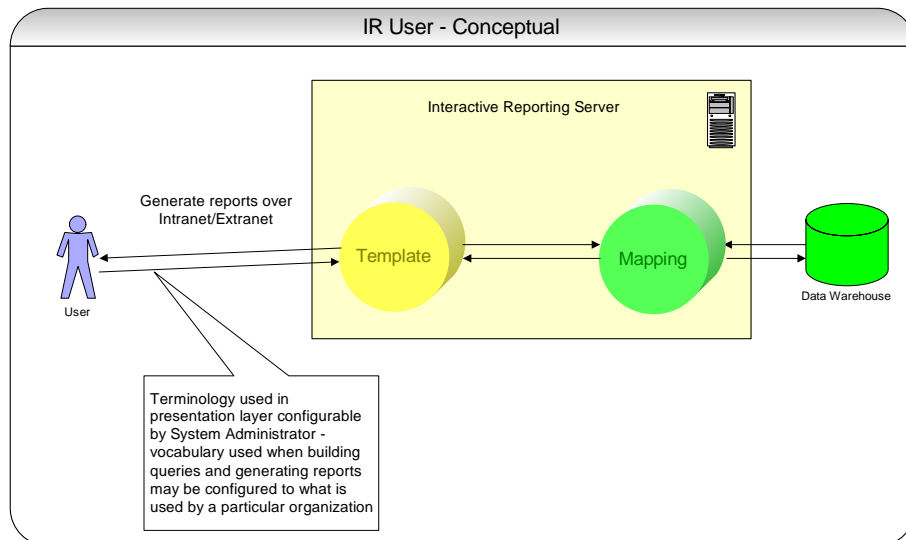


The deployment of Interactive Reporting is typical of internet/extranet applications, so no network/firewall reconfiguration is required (other than ensuring that the port appropriate to the Interactive Reporting server is open).

Interactive Reporting – User considerations

So as to facilitate the rapid adoption of Interactive Reporting (a significant problem with current Business Intelligence tools), the user interface uses many elements with which the majority of users would already be familiar:

- The application is accessed through a standard web browser, with the user interface using standard HTML elements
- The terminology presented to the user is configurable precisely by the System Administrator (so users are presented with an interface that uses vocabulary already extant in their enterprise). Conceptually, the application is structured as:



Supported System Integrations

Interactive Reporting currently interoperates with all popular data warehousing systems. Further integrations are planned

Data Warehouses

- Oracle
- Informix
- MySQL
- Redbrick
- Interbase/Firebird
- SQL-Server
- DB2
- FairCom C-Tree
- Access (for smaller enterprises)
- CSV files (for smaller enterprises)

OLAP support is planned for the next release.

Server Platforms

Interactive Reporting functions on all currently-supported Microsoft Windows Server platforms:

- Windows 2000
- Windows XP
- Windows Server 2003

Interactive Reporting also functions on:

- Windows 2000 Professional
- Windows XP Professional
- Windows XP Home

Client Platforms

Interactive Reporting requires a JavaScript-enabled browser for full functionality:

- Internet Explorer 5 & 6
- Opera Browser 6
- Firefox 1.0
- Netscape 7
- Mozilla 1.6