Biapro Training.
SQL Server 2005 and
Business Intelligence Solutions.

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businessintelligence& analysisprofessionals

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Introduction

At present, Microsoft Technologies dominates World Wide Business intelligence Market with its products and services.

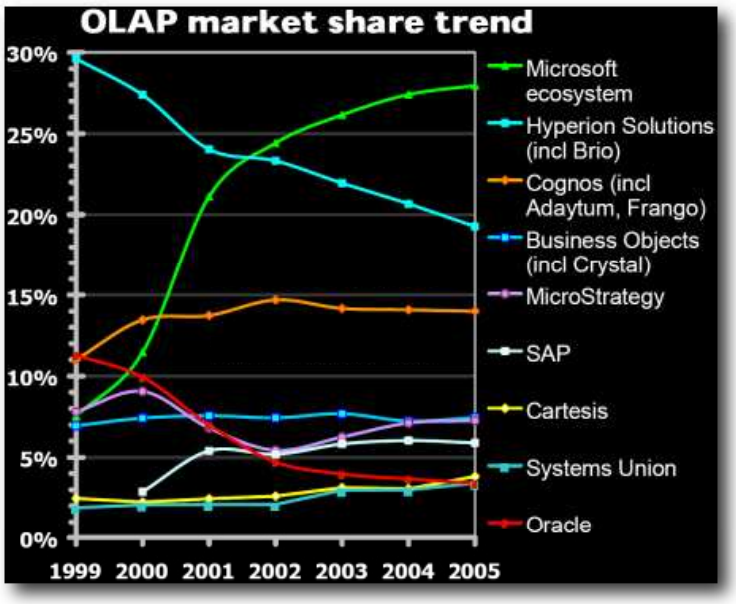

Figure 1, Source: Olap Report, www.olapreport.com

¿What is Business Intelligence?

Business intelligence (BI) has two basic different meanings related to the use of the term intelligence. The primary, less frequently, is the human intelligence capacity applied in business affairs/activities. Intelligence of business is a new field of the investigation of the application of human cognitive faculties and artificial intelligence technologies to the managerial intelligent decision support systems for different business problems, see for example BI as a cognitive capacity.

The second relates to the intelligence as information valued for its currency and relevance. It is expert information, knowledge and technologies efficient in the management of organizational and individual business. Therefore, in this sense, business intelligence is a broad category of applications and technologies for gathering, providing access to, and analyzing data for the purpose of helping enterprise users make better business decisions. The term implies having a comprehensive knowledge of all of the factors that affect your business. It is imperative that you have an in depth knowledge about factors such as your customers, competitors, business partners, economic environment, and internal operations to make effective and good quality business decisions. Business intelligence enables you to make these kinds of decisions.

Note: Source: Wikipedia, http://en.wikipedia.org/wiki/Business_intelligence

Company needs

Needs discovered in companies installed around the world are:

Business Demands:

1. Shorter processing windows
    a. Limited downtime
    b. Continuous business operation
2. More regulations
    a. Sarbanes-Oxley, Basel II
    b. Compliance and auditing
3. More sophisticated users
    a. Need timely data to make decisions
    b. At every level of the organization

Data Demands:

1. Greater volumes of data
    a. Clickstreams, e-commerce
    b. RFID, call centers
2. Diverse sources of data
    a. Web services, unstructured data
    b. Legacy systems, OLTP, and OLAP
3. Diverse data destinations
    a. PDAs, cell phones
    b. Personalized reporting, portals

Microsoft has been developed a Business Intelligence platform based on the following products and services:

Figure 2

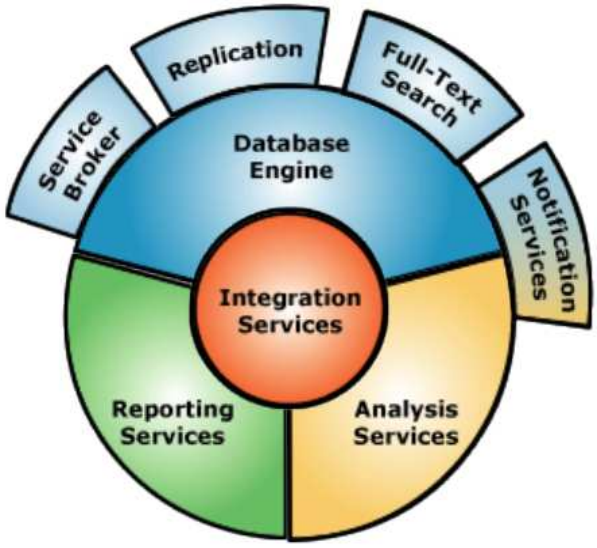

Figure 3

The idea behind this BI Platform is offer Services to:

1. Integrate data from MS SQL Server and Others database like Oracle or DB2
2. Transformate Data and make process to synthesize data
3. Analyze Data and make Data enrichment with business logic and hierarchical views
    a. Data analysis with MS OLAP Technology
    b. Data analysis with MS Data Mining Technology
4. Distribute Informations with MS Report Services

Integration Services

Any Business Intelligence Project without new MS Integration Services has the following form:

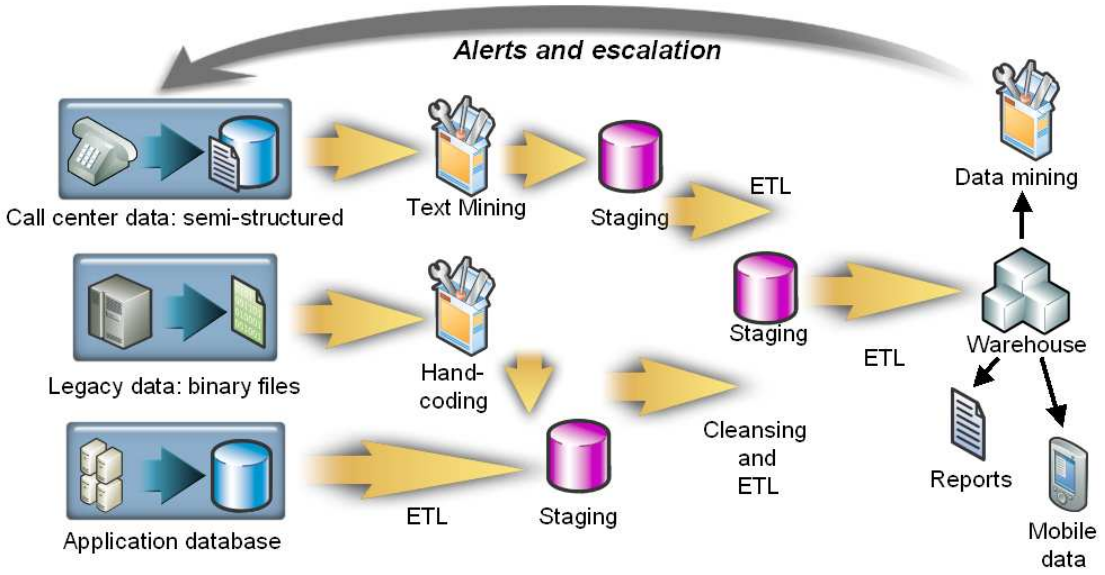

Figure 4

With MS Integration Services:

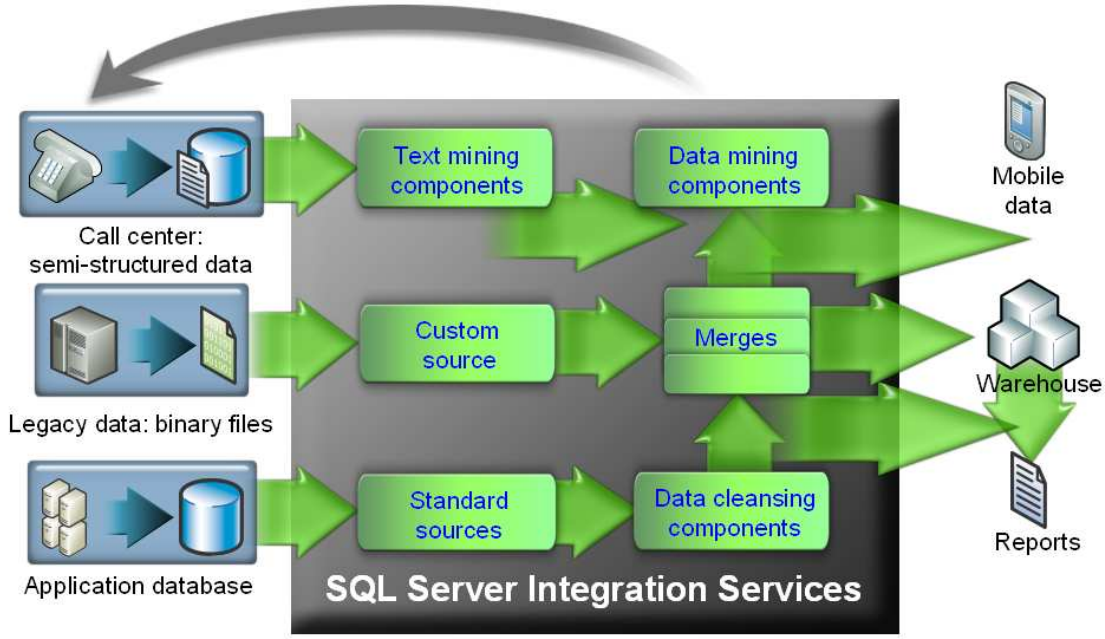

Figure 5

Once you have data in right way, MS Business Intelligence Platform give companies the opportunity to make easy Data Analysis.

Analysis Services

Companies need to be more accurately when they take decissions. It is very important to know the possibilities that MS Technology offer.

What type of analysis, MS offers?

1. Query Reporting Analysis
    a. What happened in the past
    b. Simple reports
    c. Key Performance Indicators
    d. OLAP cubes – slice/dice
2. Real Time
    a. What is happening
    b. Events/triggers
3. Data Mining
    a. Predictions for the future
    b. How and why
    c. Underlying reasons

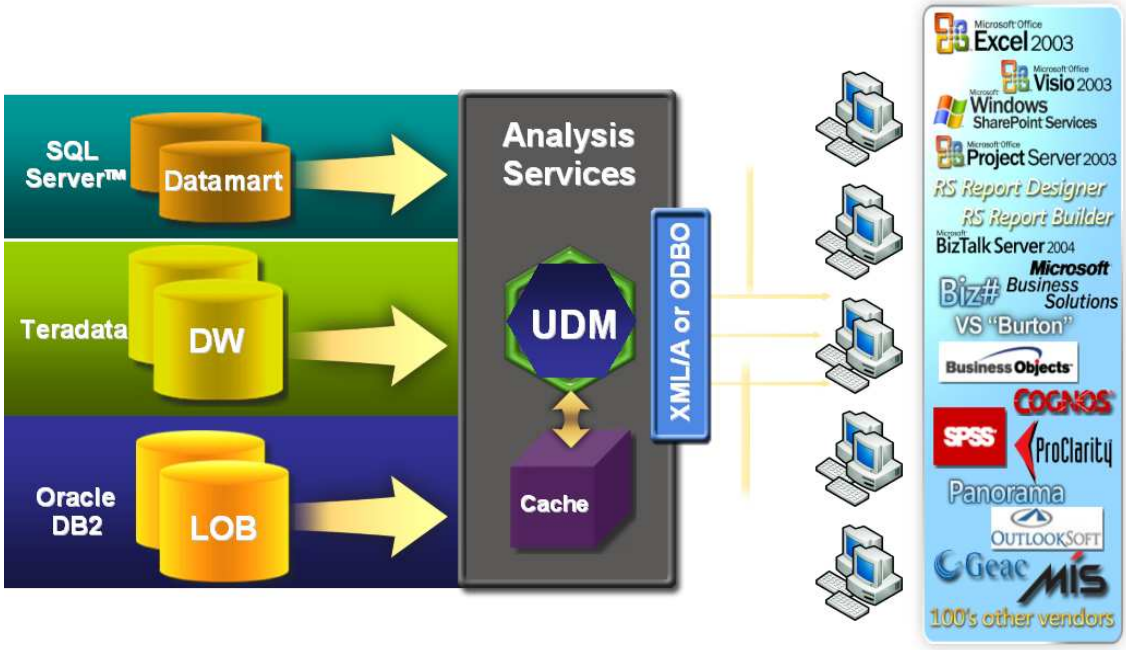

Figure 6

Olap technology.

OLAP is an acronym for On Line Analytical Processing. It is an approach to quickly provide the answer to analytical queries that are dimensional in nature. It is part of the broader category business intelligence, which also includes Extract transform load (ETL), relational reporting and data mining. The typical applications of OLAP are in business reporting for sales, marketing, management reporting, business process management (BPM), budgeting and forecasting, financial reporting and similar areas. The term OLAP was created as a slight modification of the traditional database term OLTP (On Line Transaction Processing).

Databases configured for OLAP employ a multidimensional data model, allowing for complex analytical and ad-hoc queries with a rapid execution time. Nigel Pendse has suggested that an alternative and perhaps more descriptive term to describe the concept of OLAP is Fast Analysis of Shared Multidimensional Information (FASMI). They borrow aspects of navigational databases and hierarchical databases that are speedier than their relational kin.

The output of an OLAP query is typically displayed in a matrix (or pivot) format. The dimensions form the row and column of the matrix; the measures, the values.

Note: Source: Wikipedia, http://en.wikipedia.org/wiki/Online_Analytical_Processing

Figure 7

Data mining Technology

Data mining (DM), also called Knowledge-Discovery in Databases (KDD) or Knowledge-Discovery and Data Mining, is the process of automatically searching large volumes of data for patterns using association rules. It is a fairly recent topic in computer science but applies many older computational techniques from statistics, information retrieval, machine learning and pattern recognition.

Note: Source: Wikipedia, http://en.wikipedia.org/wiki/Data_mining

The methodology used to use MS Data Mining Technology is:

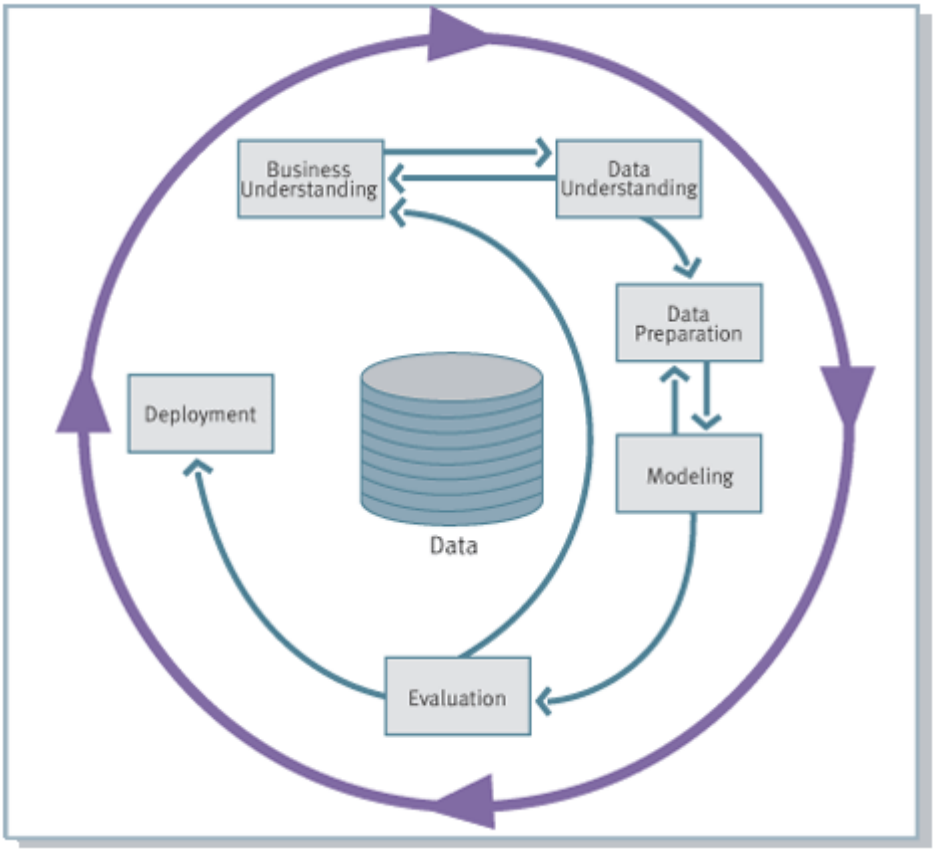

Figure 8, Source: CRoss Industry Standard Processfor Data Mining

Further informacion about CRISP 1.0 Process and User Guide, http://www.crisp-dm.org/CRISPWP-0800.pdf

MS Data mining technolgy is based on the following algorithms:

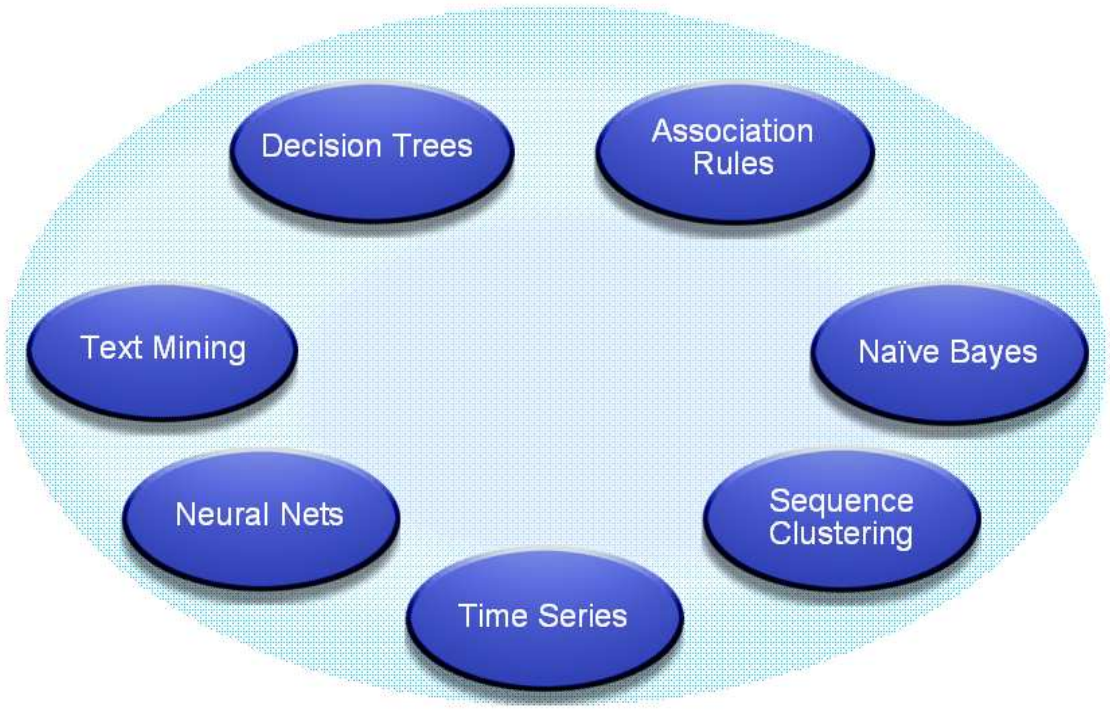

Figure 9

Key Performance Indicators, KPIs

Executives and decision makers need at-a-glance access to key business metrics so they can quickly assess the health of the business and take command when conditions change. With Key Performance Indicators (KPIs) for Microsoft Business Solutions Business Portal, companies can define and help deliver instant access to personalized views of key business information via a Web-based portal. Profitability, debt-to-equity, and gross margin are just a few of the KPIs you can create.

Display Structure	Value	Goal	Status	Trend
Customer Scorecard				
Customer Retention Rate	0.92	1		
Financial Scorecard				
Increase Profitability				
Revenue Per Employee	1100	1000		
Sales	1105253	1100000		

Figure 10

Reporting Services

To be successful in today's competitive marketplace, organizations need to extend information beyond the walls of their organization and seamlessly interact with customers, partners, and suppliers in real time. Microsoft SQL Server Reporting Services enables organizations to transform valuable

enterprise data into shared information for insightful, timely decisions at a lower total cost of ownership.

SQL Server Reporting Services is a comprehensive, server-based solution that enables the creation, management, and delivery of both traditional, paper-oriented reports and interactive, Web-based reports. An integrated part of the Microsoft business intelligence framework, Reporting Services combines the data management capabilities of SQL Server and Microsoft Windows Server with familiar and powerful Microsoft Office System applications to deliver real-time information to support daily operations and drive decisions.

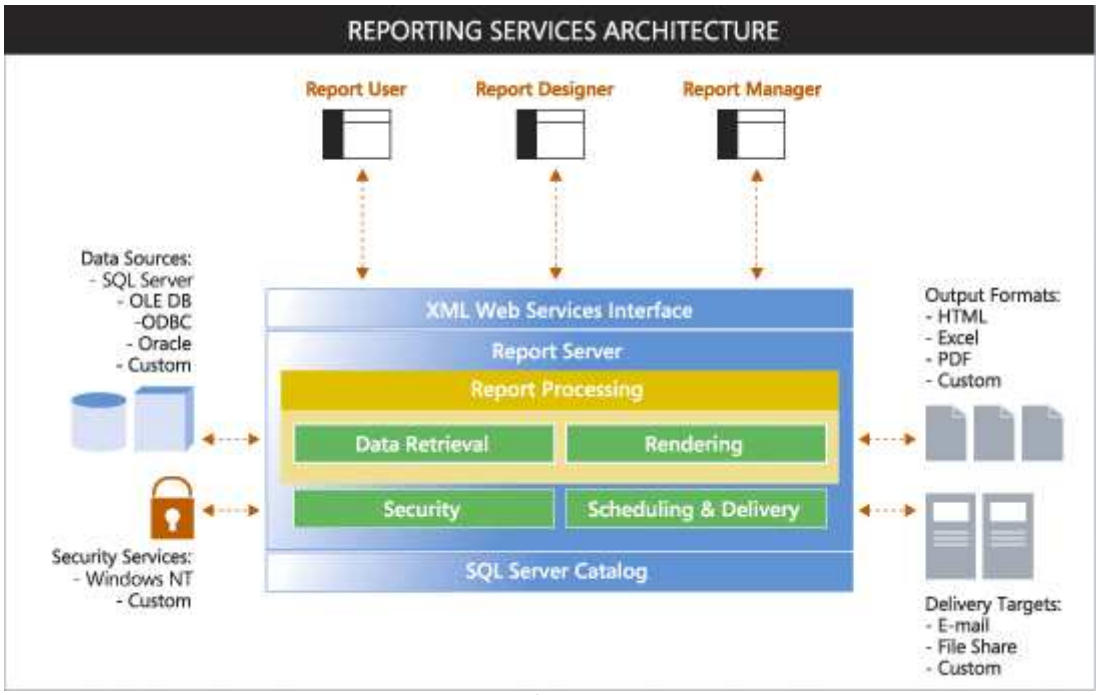

Figure 11

What is the lifecycle model?

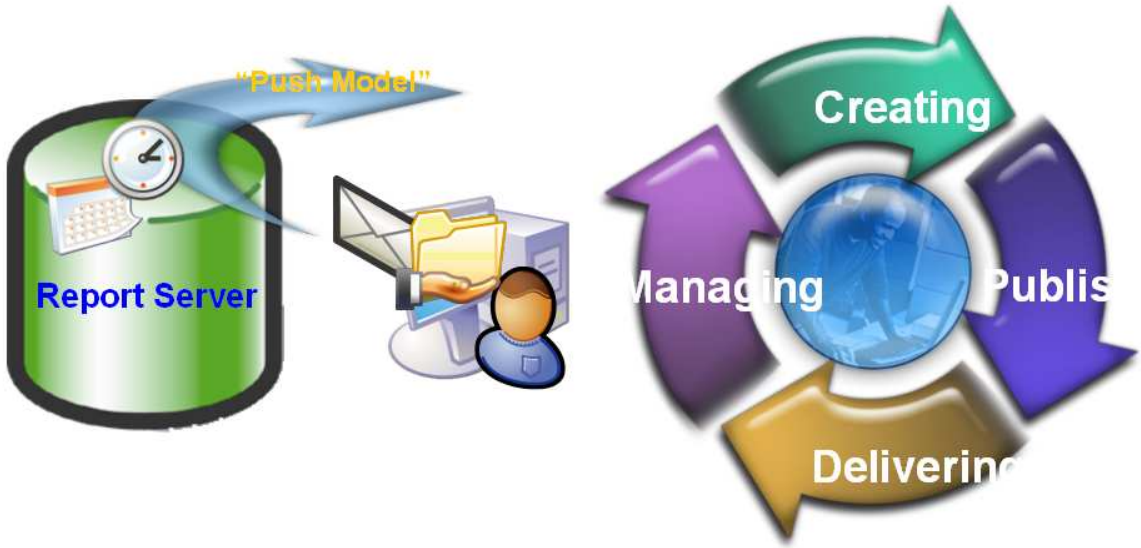

Figure 12

1. **Report authoring.** Report developers can create reports to be published to the Report Server using Microsoft or other design tools that use Report Definition Language (RDL), an XML-based industry standard used to define reports.
2. **Report management.** Report definitions, folders, and resources are published and managed as a Web service. Managed reports can be executed either on demand or on a specified schedule, and are cached for consistency and performance. New in SQL Server 2005 Reporting Services, administrators can use the Management Studio to organize reports and data sources, schedule report execution and delivery, and track reporting history.
3. **Report delivery.** SQL Server Reporting Services supports both on-demand (pull) and event-based (push) delivery of reports. Users can view reports in a Web-based format or in e-mail.
4. **Report security.** SQL Server Reporting Services implements a flexible, role-based security model to protect reports and reporting resources. The product includes extensible interfaces for integrating other security models as well.

Conclusion:
With MS Business Intelligence platform, BIAPRO can deliver innovative solutions to increase its productivity's customers.

Figure 13