White Paper

Interactive Visual Analytics

Put your Smart Brains in the Driver's Seat

An analysis of the

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powerful connections

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1 Management Summary

Analytics is the next step beyond business intelligence when it comes to decision-making.

What is "Analytics"? This whitepaper will help you learn about analytics and how it can deliver value to your organisation.

- Do you know which of your suppliers is mission critical to your production? Will their failure bring down your production for hours or even days?

- Do you know what percentage of supplier revenue is due to your spending? Do you get good terms and conditions from suppliers, using this information?

- Do you know who your most profitable customers are? Are you providing superior services in order to retain them and are you able to service them, up-sell/cross-sell at appropriate points when interacting with them?

- Do you know in Q1 that you will miss your sales target in Q4, because your actual volume of leads is insufficient?

- Do you know what revenue you are actually loosing because customers cannot connect to your call centre due to peak demand?

- Do you know how much business you miss by not fully exploiting cross-sell opportunities in face-to-face encounters, outlets, and web shops?

- Do you know how much money this means for your enterprise? Do you know how to find it, get it and keep it?

Traditional **Business Intelligence (BI) tools** (reporting, dashboards, adhoc querying, OLAP – online analytical processing, and even spreadsheets) fail to deliver such insights. The tools are architected to summarize data and display updates for **known, pre-determined** questions. They are not architected to support ever-changing environments where business professionals constantly need to ask and answer new questions. Therefore, they do not meet management expectations: results to be applied to processes and strategies for turning information into action. They are difficult to master. Information remains a privilege in many enterprises. Only a handful of experts (the power users or business analysts) are in a position to exploit information via the old tools. Management decisions and actions are based on static reports and guesses, much less on facts.

Business Analytics is the approach used to overcome the BI problems. Analytics consists of **interactive visual analytics** and **embedded analytics**. Interactive visual analytics is an ad hoc, interactive, project-oriented process driven by human interactions. It is a dynamic, people-centric approach to analysis that is supported by the human eye. Its intuitive visual interface allows business professionals to ask and answer their own questions to solve real problems - problems that were unforeseen and therefore impossible to program into a report or BI dashboard. It puts the eye into a position where it can act as a superior pattern identifier, leveraging statistical algorithms only as needed. And due to its collaborative services, it supports boardroom style decision-making.

The goal of interactive visual analytics is to enable fact-based decisions which can meet the speed and dynamics of the business and to get a better insight into markets, customers and risks. Interactive visual analytics can also help with the development of predictive models for embedded analytics. Embedded

analytics enriches processes by embedding analytical and information services into business processes and applications. It creates intelligent processes that identify and solve problems before they arise. Interactive visual analytics and embedded analytics are complimentary and together they are defined as Business Analytics; helping people make faster, more well informed decisions at the speed of thought.

Business Analytics is not as new as people may think. **Spotfire**, one of the leading vendors of interactive visual analytics, has a proven track record in many industries, including life sciences, energy, and semi conductor research and development. From early research to drug safety, Spotfire's DecisionSite® helps analysts explore and better understand their data. The world's largest pharmaceutical companies and most successful biotechs use DecisionSite across a broad spectrum of research, development and business processes, to help their users make informed decisions that reduce time to market, reduce risk and ultimately improve the safety and efficacy of new drugs. Over 25,000 users in close to 1,000 organisations around the world use Spotfire DecisionSite to drive confident decision-making by quickly and easily spotting trends, outliers and unanticipated relationships in critical business data.

The strengths of Spotfire help it overcome the BI problems: Interactive visual analytics brings its boardroom decision-making style to all business people. With its people-centric and intuitive approach, it makes it easy to base decisions on facts – especially in continuously and fast changing environments. Interactive visual analytics creates and continuously optimises analytical and information services for embedded analytics that can be used to enrich business processes. In contrast to interactive visual analytics, embedded analytics works as a black box. Special knowledge about how this intelligence works is not necessary when working in the context of intelligent processes. Analytics including even sophisticated approaches such as data mining, text mining and web mining is made available to everybody through embedded analytics.

Goal of this White Paper on Interactive Visual Analytics

Enterprises surviving and succeeding in an increasingly competitive market with continuously accelerating market dynamics and speed will have to decide which basic platform and infrastructure to choose for fast, fact-based decision-making. This whitepaper will help address some key considerations for Business Analytics.

2 Interactive Visual Analytics – from Business Intelligence to Business Analytics

2.1 The Power of Analytics

Leveraging business data is a challenge for companies that need to respond to rapidly evolving markets and changing customer dynamics. Indeed, making wrong decisions today ends in disasters tomorrow. Identifying potentials for profit, rigorously cutting costs as well as precisely calculating where to optimally spend the remaining resources are key issues not only for top management but also for business managers. Geopolitical uncertainties make planning and decision-making much more difficult, but more important than ever. The best protection against an uncertain future is figuring out how to avoid being surprised when the unexpected happens. Better still, business executives need to be able to quickly and flexibly adapt to new business scenarios. To accomplish these goals, companies must constantly improve their ability to identify, classify, and intelligently analyse all available information.

From Data to Knowledge to Action

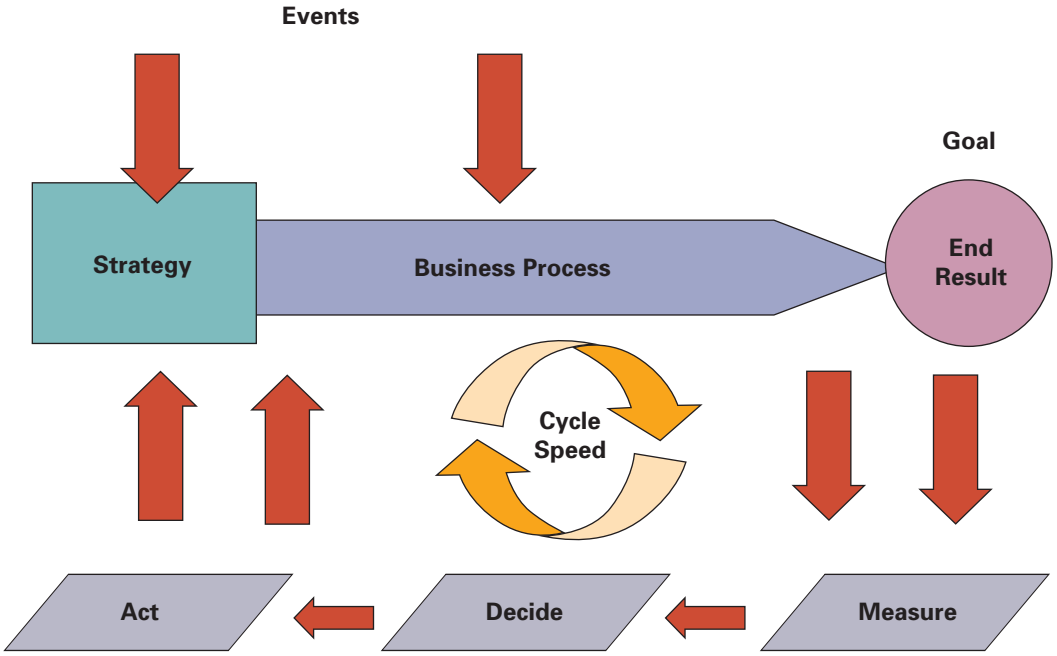

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Figure 1: The concept of analytics is turning data to knowledge to action for monitoring and controlling business and business processes. Based on strategy, goals and objectives, business processes and business metrics for efficient process control and continuous optimisation are modelled in parallel. Founded on measuring and monitoring, analytics bases decision-making on facts. Decisions lead to actions for controlling the process and its performance (tactical and operational corporate performance management) as well as strategy updates, goals and objectives (strategic corporate performance management). Synchronising monitoring, decisions and action taking with the speed of the business process and business dynamics is key – indeed, fast and timely analytics improves competitiveness.

The goal of analytics is to turn all enterprise data into knowledge that lets business managers immediately comprehend the dynamic state of their business and act accordingly. (Fig. 1)

An enterprise's ultimate goal is to identify and solve problems before they arise. This is the target of analytics. Decision makers need to be increasingly attuned to business opportunities that arise whenever a customer, business, or industry factor changes. The role of analytics is exploiting change.

The need to act upon information is a key driver of analytics. Re-integrating business intelligence back into the business decision making process, operational systems, and business processes including human interactions is the key to making sure that an enterprise can respond quickly and appropriately to changes in customer and market conditions. To bring about this organisational dynamic, the analytic results must be available to and consumable by all people and processes within an enterprise.

2.2 The Data Analysis Gap

In the past, business intelligence (BI) tools were supposed to provide the needed and required insight into what was happening and would happen in an enterprise. However, BI tools failed to deliver the promised value. Indeed, it was always difficult to measure value achieved by business intelligence and the data warehouse.

- Traditionally, a lot of information gleaned from BI tools went to upper management only. The problem is that BI tools were difficult to master and reported static information. This created a situation where information became privileged. Only a handful of experts (the power users or business analysts) were in a position to exploit information with these old tools. Information does not disseminate quickly into execution and business operations areas. The BI tools did not provide the right information in the right place at the right time for the right reason due to insufficient infrastructure and due to their lack of process-orientation.

- At best, business intelligence tools (reporting, OLAP – online analytical processing, dashboards, and even spreadsheets) can give you a look into the 'rear view mirror,' but they are not designed for driving the business intelligently with predictive models and forecasts. They focus on pre-determined questions and reports. Indeed, the sheer amount of reports to be examined and the volume of data to be viewed in OLAP cubes overwhelmed the business. An information deluge does not provide any insight at all.

- Dashboards are supposed to overcome the information deluge. But traditional BI tools have delivered insufficient dashboard builders. In many situations, dashboards provide views that are too restricted and too static. Dashboards are non-collaborative, and do not scale. Interactive analytics is an area where conventional business intelligence tools fall short.

- Furthermore, enterprises created BI islands. BI solutions have been mainly built with a departmental focus. Different departments have created different, inconsistent metadata for their BI and have used different tool sets from different vendors. This makes the consolidation of BI islands extremely difficult, indeed impossible in many situations. So, even if an enterprise has certain BI insights, a consistent top-down view on what is really going on cannot be achieved.

- Traditionally, a data mart was the foundation for BI tools. Today, this is no longer sufficient. Business Analytics must also support the operational aspects of monitoring and controlling business and business processes. Business Analytics needs simultaneous access to the data warehouse and to operational busi-

ness and process data. The key is to synchronise the information supply with the speed of the corresponding business and processes. Information must be available "just in time," i.e. in the end, information supply and demand must be synchronised.

2.3 Mastering Business Analytics

Analytics still presents information and knowledge using reports, graphical displays, time and location presentation (e.g., time series and geographical information systems), and by models (e.g., customer behaviour model, demand forecasting model, etc.). While this may look traditional at a first glance, there are substantial differences:

Analytics is process- and decision-driven, not data-driven. It links business strategy to processes and people according to their role in collaborative teams: the use and value of information now goes beyond the power users and business analysts that in the past were the only people benefiting from information provided by BI tools. Analytics means applying the boardroom decision-making style to all collaborative teams. Analytics now empowers all participants of the value network. It is targeted at the business rather than IT.

Analytics can be predictive. It is aimed at responding to unforeseen events and revealing new insights and unexpected discoveries. It is not limited to the analysis of historical data pre-programmed into a warehouse or a cube. It enables the business to ask and answer its own questions without an IT dependent development cycle.

Embedded Analytics – from strategy to operations. Embedding analytics into operational processes means synchronising information delivery with process speed and interacting with information at the speed of business so that decisions and actions can be taken in right-time. Through embedded analytics, processes become intelligent and event-driven.

Interactive Visual Analytics – empowering people. Interactive visual analytics (sometimes also called "Data Exploration") is an ad hoc, dynamic, easy-to-use, people-centric approach. The results of interactive analytics provide new analytics, e.g., profiles, rules, scores, and segmentation for a better insight into markets, customers, risks etc. Interactive visual analytics combines **statistical analysis and/or data mining, ad hoc querying, and visualisation techniques**. It puts the human eye in the pole position. The eye is indeed one of the best detectors of patterns and structures if supported appropriately.

Interactive visual analytics also supports the development of predictive models. This "intelligence" can be used to enrich certain business processes by embedded analytics. Embedded analytics is then implemented as an analytical and/or information service. Interactive visual analytics can be considered as a development environment for embedded analytics (Fig. 2). Within intelligent processes, embedded analytics works as a black box. Therefore, intelligence can be consumed by everybody in an enterprise.

Example. In a call centre, when customers call in, they can be identified by their phone number. Then customer value and customer behaviour can be used as an information and analytical service for better servicing customers (service level differentiation) and for optimising cross and up-selling to these customers. The call centre agent is guided by embedded analytics without knowing how it works.

Mastering Business Analytics

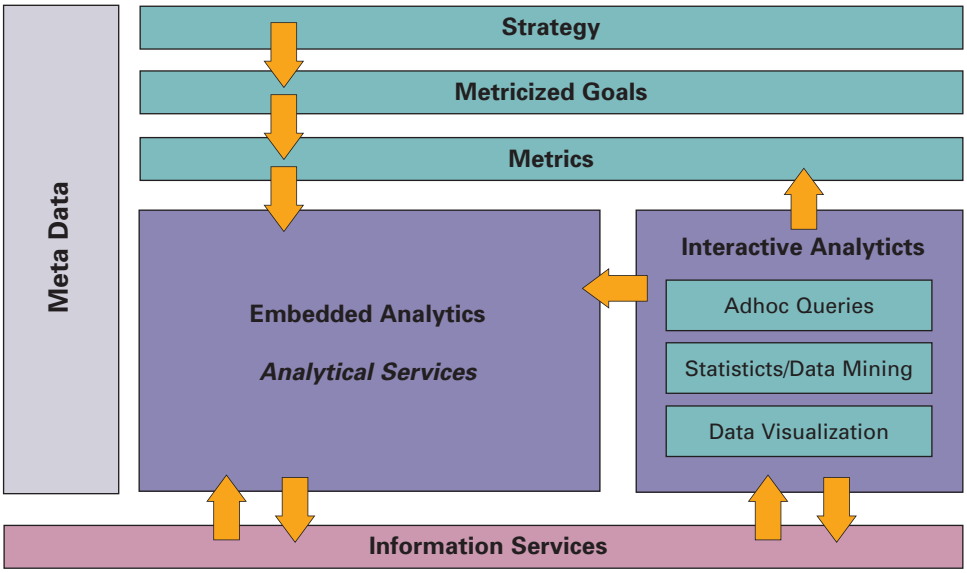

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Figure 2: The technical architecture of Analytics shows the position of Embedded and Interactive Visual Analytics (Interactive Visual Analytics is sometimes also called "data exploration"). It provides the reference architecture for comparing products and offerings of the various vendors for planning/developing, executing and managing embedded and interactive visual analytics. The key is to link processes and operations to analytics as well as to understand the complimentary concepts of embedding analytics into processes by analytical services and identifying and extracting unknown patterns and structures by interactive visual analytics. Interactive visual analytics includes concepts such as ad hoc querying, statistics/data mining and visualisation and collaboration services. As with embedded analytics, interactive visual analytics is based on Information Services providing seamless access to operational and analytical data as well as to any other data sources. This combines historical data with actual facts for better forecasts and predictive models. Finally, the results of interactive visual analytics could end up in analytical services for embedding gained insight into operations and processes.

3 Interactive Visual Analytics

Interactive visual analytics supports the human eye through its intuitive visual interface and its visualisation and collaborative services. Indeed, the eye can act as an excellent discriminator and detector of patterns and structures if appropriately supported. Therefore, interactive visual analysis combines the eye's strength with:

- tightly coupled visualisation services providing different views on the data simultaneously
- instant drill downs and dynamic queries
- application of statistical methods and techniques
- configurable and dynamic access to all relevant data sources beyond data marts
- an intuitive toolbox of metrics, functions, filters, statistics, and geospatial services not only for the frequent users

This empowers people in the lines of business to respond to all their questions directly and on the fly, enabling them to really speed up their processes and daily jobs. It is an extremely adaptable and scalable approach to interactive analysis as a compliment to pure statistics and data mining. And it goes beyond traditional BI tools like OLAP cubes, because the unforeseen can be addressed and analysed without the need to build new cubes. This provides a high degree of independence and flexibility without the delays of waiting for corporate IT.

"Put your smart brains in the driver's seat", is the slogan of interactive visual analytics. To make it happen, it needs the following additional components to offer an effective and efficient analytics platform:

- analytical workflow to support various case-oriented scenarios of interactive visual analytics empowering the occasional user
- intuitive builder of analytical workflows for guided analytics
- collaborative team support

Decision-making is a team effort. Therefore, collaborative team support is a critical success factor of interactive visual analytics. It is key to drive and standardise people's analysis workflow through guided analytics. Collaborating in teams requires new analytical workflows to be built on the fly. Collaborative services like information distribution, publishing, notification, annotation, versioning, as well as dynamically changing views and expanding the data space are indispensable. So, in the end, interactive visual analytics empowers boardroom style decision-making.

Interactive visual analytics excels by its visualisation. So, viewing and experiencing solutions like Spotfire's DecisionSite is a must. But before doing so, let us have a look at some customer cases presented in the next chapter.

4 A Case for Spotfire

4.1 Revealing Customer Behaviour Patterns at Yakult

Business Profile

Yakult Netherlands B.V., a subsidiary of Yakult Honsha Co., Ltd., Japan, manufactures Yakult, a fermented milk beverage (also known as a "pro-biotic") that consumers buy because of its health benefits.

Application Profile

Spotfire DecisionSite uncovers consumer trends previously hidden in rich, but incompatible data sources so that Yakult managers know how to boost sales.

Customer Statement

"I could see that DecisionSite would be good for our business. DecisionSite easily combined different types of data into a single analysis, and its interactivity was a strong selling point."

Eddy van Hamersveld
Dutch Sales Manager Yakult

Winning in a more and more competitive market

The competitive heat for probiotics is rising. Danone offers a drink called Actimel. Introduced in 2004, Actimel boosted Dutch awareness of probiotic products. Campina introduced new flavours of its probiotic Vifit in 2005. And Unilever promotes its ProActiv functional food brand, which includes a margarine meant to lower cholesterol.

Eddy van Hamersveld, Dutch Sales Manager Yakult, sees using DecisionSite to refine Yakult's sales messages as consumers enjoy more choices. DecisionSite's ability to communicate analyses quickly and easily across an organisation promises to aid that refinement. For example, van Hamersveld wants to involve Yakult's Public Relations department in analysis of both their registered users and their online visitors. And, since he is collecting daily data about how consumers respond to promotions and perceive brands, he anticipates sharing his analytical results with Dutch managers and with managers at Yakult's European headquarters. If van Hamersveld offers Spotfire analyses through Web-based DecisionSite services, his colleagues can continue to query and analyse the "live" data that he shares. Alternatively, DecisionSite can export the results of his analyses into static, but convenient, Microsoft PowerPoint presentations. "Probiotics is a dynamic market, but DecisionSite helps us to stop and examine the factors that drive our business," van Hamersveld said. "I look forward to many Yakult managers contributing more data and DecisionSite analyses so that we have even more parameters for improving sales."

Nuggets Hidden in the Data

"We used DecisionSite for customer segmentation analysis, and found one group of consumers who are addicted to the taste," van Hamersveld said. DecisionSite automatically segments records into a defined number of clusters based on their similarity. Before that analysis, van Hamersveld had no idea that the sweet-and-sour flavour of Yakult was appealing in its own right.

Results

- Data is analyzed faster by the National Sales Manager
- Consumer preferences found through DecisionSite improve marketing campaigns
- Time and money are saved by avoiding ineffective promotions
- Regional managers gain insights into sales, marketing, and survey data

4.2 Empowering the Sales Manager to Make Key Decisions at Boehringer Ingelheim

Business Profile

The Boehringer Ingelheim group is one of the world's leading pharmaceutical companies. Headquartered in Ingelheim, Germany, it operates globally with 143 affiliates in 47 countries and almost 37,500 employees.

Application Profile

The Netherlands Operating Unit (OPU) of Boehringer Ingelheim deployed Spotfire DecisionSite to analyze the physician sales and marketing data collected in its Siebel customer relationship management (CRM) system.

Customer Statement

"Spotfire's cost-effectiveness and speed of analytics has enabled us to improve our data analysis process in ways we never could have anticipated."

Wilbert Beumer, Sales Force Effectiveness Manager, Boehringer Ingelheim Netherlands

Attain Sales Objectives by Improving Marketing Effectiveness and Account Management

The Netherlands OPU of Boehringer Ingelheim uses a robust CRM analytics solution to manage the huge volume of data associated with tracking its sales representatives' interactions with physicians throughout the Netherlands. The company uses a Siebel System 7.5 database to collect information on the sales and marketing activities with 40,000 physicians, such as the number of times a physician was visited in a given period and what products were detailed during the visits. On a regular basis sales force effectiveness managers work with the data to prepare the analytics that are forwarded to Boehringer Ingelheim sales managers, who review the reports to track these activities against their teams' sales objectives.

Sales managers analyze the data from two perspectives – from an employee performance standpoint and from a physician view. It's important to be able to gauge the productivity of each sales representative (e.g., how are they doing against their plan, how many days are they spending in the field vs. in the office vs. in training). At the same time they're interested in physician interactions, looking at frequency and coverage to ensure that target physicians are being adequately communicated with.

The Advantage of Interactive Visual Analytics

With the whole process automated by DecisionSite sales managers work with new data every day instead of relying on 3-week old data to assess how sales reps are working against their plans. In addition at their monthly sales meetings, sales managers are presenting up-to-the minute sales data, rather than out-of-date figures from the previous month.

Sales managers are no longer dependent on the sales force effectiveness managers to get answers to additional questions raised by the initial reports. This newfound ability to dynamically analyze different scenarios to make real-time comparisons empowers the Dutch OPU to more quickly analyze data to understand how our teams are performing.

Results

- Spotfire DecisionSite reduced data analysis processing time by 80%
- Sales managers now have access to up-to-the minute sales figures
- Found unexpected correlations and patterns in data
- Enhanced efficiency of sales management process and employees
- One central place to find latest results or run your own reports

4.3 Spotfire brings Cortal Consors' customer data to life

Business Profile

Cortal Consors is a direct broker offering financial investment products and services to more than one million customers across Europe.

Application Profile

Spotfire DecisionSite consolidates, analyses and insightfully visualises customer and market data, empowering decision makers to recognise new trends and markets.

Customer Statement

"Spotfire is an explorative tool that thanks to the integrated statistical models is also strong on analytics. It's exceptionally powerful, because it's visual. The solution is an ideal platform allowing you to integrate multi-sourced data and create your own, flexible data field. You're no longer tied to a packaged data model."

Jörg Neumann, Manager Customer Intelligence Cortal Consors

Spotfire's DecisionSite allows the private investment bank Cortal Consors to optimise its information cycle

Information from smart data analysis is key for Cortal Consors' success. All corporate departments base their business decisions on the data delivered by the business intelligence infrastructure. For many years, the organisation has been using products from MicroStrategy, SAS Institute and Clarify to create an environment for decision-making within the framework of the so-called "Circle of Intelligence".

The Circle of Intelligence was established in 2002 with the introduction of a campaign management system. Jörg Neumann, Cortal Consors' Customer Intelligence Manager, says: "Today we can carry out campaigns in which we extract information from the Data Warehouse and run triggered promotions. For example: if cash receipts of a certain amount are paid into a customer's account, he automatically receives an email or the contact is forwarded to the call centre. The employees there can phone the customer and advise him on specific investment opportunities. This is in the meantime an end-to-end, self-contained process, there's no longer any need to send data to and fro between the systems for CRM, campaign management and the Data Warehouse. You define the specifications, extract the data, can monitor the campaign, transfer the results back to the Data Warehouse, build the reports and learn directly. That's our Circle!"

The Advantage of Interactive Visual Analytics

What prompted the Spotfire implementation was Cortal Consors' integration in the BNP-Paribas Group and its restructuring as a European investment bank. Now, Spotfire ideally rounds out the "Circle of Intelligence" information cycle, and that produces the occasional surprised face. "The feedback on our analyses from the operative departments", explains CI Manager Jörg Neumann, "was positive across the board. Visualisations at last, they said!" DecisionSite guides the user totally intuitively and "people", says Mr Neumann, "live by visualising." DecisionSite is a tool that helps to satisfy this need for visual information, he believes.

Results

- At last visualisation of data rather than just tables: "living" data
- Same-day evaluation of business-relevant customer data
- Up-to-the-minute interactive, visual analysis of important key indicators for operating departments and management
- Rapid and intuitive leveraging of new market possibilities

5 The Spotfire DecisonSite Advantage

As we have seen in the case studies in the previous chapter, Spotfire's DecisionSite combines the three most important principles of analytics: **interactivity, visualisation, and collaboration**. It is designed to optimally support human decision-making by interactive visual analytics. With its visual user experience, DecisionSite provides deep insights into data and engages the eye as a detector and pattern extractor. With its collaboration tools and its interactivity, DecisionSite supports and guides human communication processes for finding and taking decisions "on the spot".

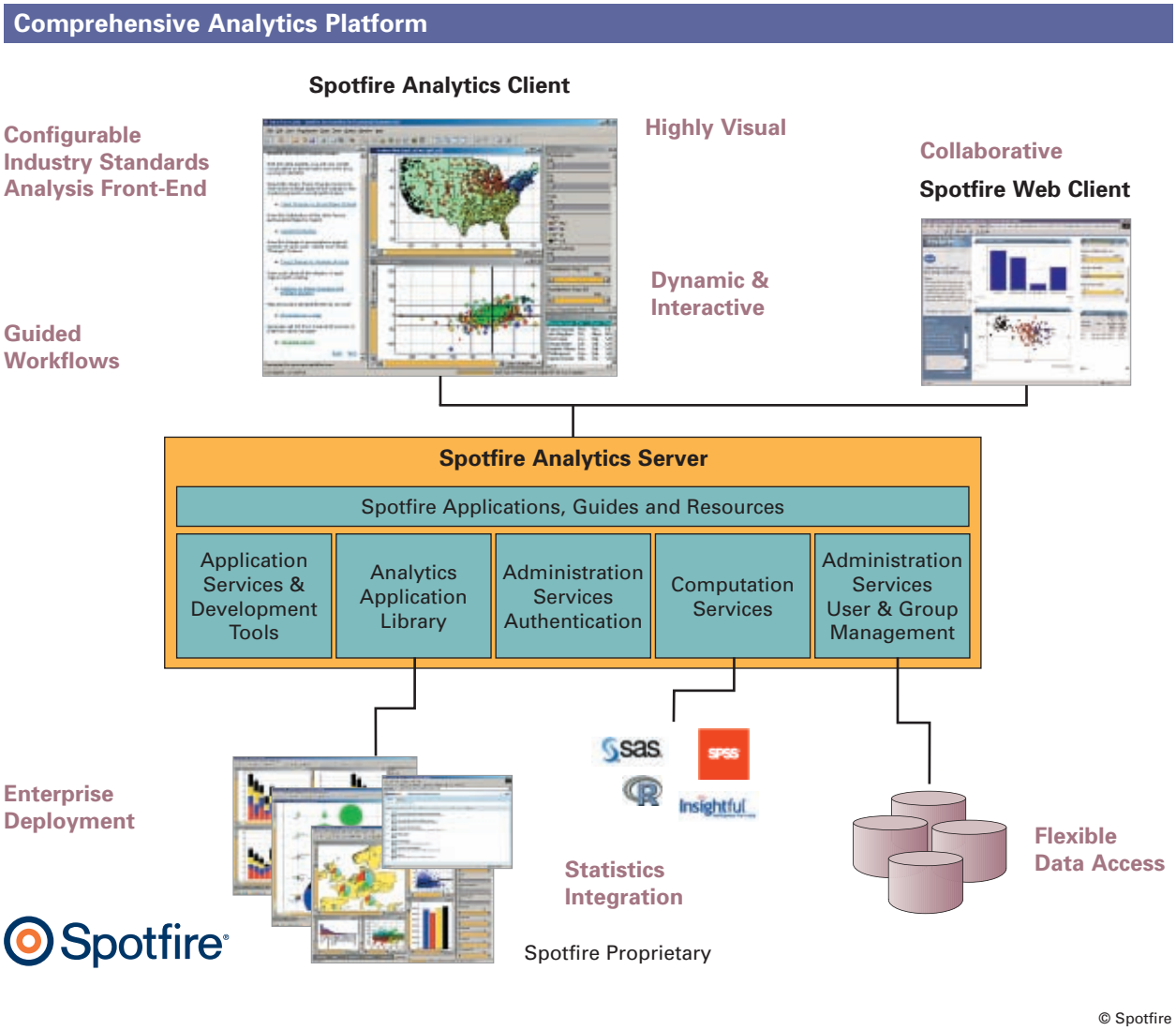

Figure 3: DecisionSite comes with client/server architecture - a thick client provides rapid response to new analyses, whereas collaboration (Posters) is based on thin client architecture. The Analytics Server provides the back-end services. Information Services include the meta-layer and access to operational, analytical, and local data. Computation Services integrate external data (also via Web Services) and functional services from R, S+, SAS, and other providers of algorithms by a service development kit. Chemistry Services provide access to isis/mdl services for researchers. Application Services include analytical workflow and development tools (note: can also invoke Web Services).

Benefits of Spotfire's DecisionSite

- **Highly Visual**
  - New findings jump out from the screen
  - Insight into trends and patterns is fast
  - Interactive and linked visualisations

- **Collaborative**
  - Share findings with interactive, web-based analytics

- **Entirely Interactive**
  - Dynamic filtering
  - Interactive and linked visualisations
  - Ask and answer new questions without waiting for reports

- **Guided Workflows**
  - Support any business analysis process
  - Extend as needed
  - Capture and re-use your analysis workflows
  - Encapsulate business processes and best practices
  - Save time and improve efficiency
  - Eliminate repetitive tasks

- **Statistics Integration**
  - Deploy statistics to business users in easy-to-use Guided workflows

- **Easy Data Access**
  - Drill down to detailed data
  - Integrate corporate data sources with local data on the fly
  - Write back to database

Spotfire goes beyond traditional BI tools. Key differentiators are its dynamic user experience, business orientation and independence from IT. It is intuitive and people-centric. There is no need to build OLAP cubes and/or data marts. Its visualisation is striking and empowers business people to also analyse the unforeseen and to keep pace with the dynamics and speed of business. Its support for collaboration is strong. Guided, easily built and customised analytical workflows as well as collaborative services for sharing information outperform traditional approaches taken by the classical BI vendors.

Spotfire customers include industry leaders who have deployed Spotfire DecisionSite to gain an information advantage over their competitors. Among Spotfire's 1,000 customers are global companies such as: AMD, Boehringer Ingelheim, BP, ChevronTexaco, Kerr McGee Corporation, Lilly, L'Oreal, Merck, Nestle, Pfizer, Procter & Gamble, Shell, Texas instruments, Toshiba, Unilever, and a variety of government agencies from both the civilian and intelligence services. Using DecisionSite, Spotfire customers have made new discoveries, solved costly manufacturing problems and improved sales performance.

Spotfire is well positioned as a business analytics vendor for interactive, visual, and collaborative solutions. With a proven foundation and mature technology, Spotfire's DecisionSite has been in daily production for years. DecisionSite also has strong partnerships, e.g., BEA, ESRI, IBM, Oracle, and SUN as well as Spotfire has a powerful, worldwide partner program and network of partners with regional and vertical service and consultancy know-how. Spotfire's challenge is to continue to grow continuously in its traditional research oriented markets and to successfully simultaneously penetrate business oriented markets, introducing its boardroom decision-making approach through interactive visual analytics.

6 Appendix

Related Reading

Martin, W., Nußdorfer, R.: PM Portals – Collaboration and Presentation Services: Pulse Check – Processes and People, iBond White Paper Vol. 4, www.eaiforum.de, Munich, 2006, 32 pages

Martin, W., Nußdorfer, R.: Corporate (Business) Performance Management: Pulse Check – Operational, Tactical, and Strategic CPM, iBonD White Paper Vol. 2, www.eaiforum.de, Munich, 2005, 38 pages

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Nußdorfer, R., Martin, W.: iSO – Integrated Solutions: All Together Now, End-To-End Processes Across Integration Hubs, iBonD White Paper Vol. 3, www.eaiforum.de; Munich, 2004, 41 pages

Cost-free download of these white papers at www.wolfgang-martin-team.net

This White Paper has been sponsored by Spotfire – about Spotfire

For thousands of business professionals faced with day-to-day decisions, Spotfire analytics offers the platinum user experience for visually interacting with information. Distinguished by its intuitive ease and analytic power, Spotfire software rapidly reveals unseen threats and illuminates new opportunities, creating significant economic value. Spotfire's customers include industry leaders among the Global 2000 that have deployed Spotfire analytics to gain an information advantage over their competitors.

For more information, visit http://www.spotfire.com.

About the Author

Designated in 2001one of the top 10 most influential IT consultants in Europe (by Info Economist magazine), **Dr. Wolfgang Martin** is a leading authority on Business Integration, Service-Oriented Architectures (SOA), Business Intelligence (BI), Corporate Performance Management (CPM), and Customer Relationship Management (CRM). After 5½ years with META Group, latterly as Senior Vice President International Application Delivery Strategies, Mr. Martin established the Wolfgang Martin Team. Here he continues to focus on technological innovations that drive business, examining their impact on organization, enterprise culture, business architecture and business processes. Mr. Martin is a notable commentator on conference platforms and in TV appearances across Europe. His analytic skills are sought by many of Europe's leading companies in consulting engagements. A frequent contributor of articles for IT journals and trade papers, he is also an editor of technical literature, such as "Data Warehousing – Data Mining – OLAP" (Bonn, 1998), "Strategic Bulletin on EAI" (Munich, 2002, 2003 & 2004), „Strategic Bulletin on CRM" (Munich, 2002, 2003 & 2004), "Strategic Bulletin on BI" (Munich, 2003, 2004 & 2005), „Jahresgutachten CRM", (Würzburg, 2002, 2003, 2004 & 2005). Prior to META Group, Wolfgang Martin held various management positions with Sybase and Software AG, responsible for business development, marketing and product marketing. Prior to this, he became an expert on decision support while with Comshare. His academic work included Computational Statistics at the Universities of Bonn (Germany) and Paris-Sud (France). Dr. Martin has a doctoral rer.nat. degree in Applied Mathematics from the University of Bonn (Germany).