@visualintegrator | Streamlined Business Intelligence for SAP & Oracle Platforms

About visualmetrics

visualmetrics is a Business Intelligence (BI) solutions provider that develops and delivers best of breed Analytical Applications, utilising BI tools, to its focus markets. Based in United Kingdom and founded in 1997, **visualmetrics** also offers consultancy services to construct custom applications tailored to a client's specific requirements.

visualmetrics has developed specialist project methodologies for the delivery of its solutions - **DRIVE** for custom Analytical Applications and an accelerated form, **@drive**, for standard applications. These services span the full application life cycle from functional specification to application support and enhancement, ensuring that project risk is managed and ROI is maximised.

visualmetrics maintains partnerships with leading product, application and service partners in the BI market. **visualmetrics** sees its value not only in assisting its customers to exploit data as information on which to base decisions, but as intelligence to promote insight into businesses performance.

Our clients include market leaders such as DHL, Unipart, Balfour Beatty Utilities, CIPD and Places for People.

visualmetrics has developed a suite of Analytical Applications, based on their length and breadth of industry and technical experience:

- **visualrevenue** for finance
- **visualavenue** for property management
- **visualaffinity** for contact centres
- **visuallogistics** for logistics
- **visualintellect** for human resources
- **visualperformance** for sales
- **visualcontract** for contract service provision
- **visualcontrol** for budgeting and planning
- **visualintegrator** for data delivery automation

Executive Summary

@visualintegrator is a meta-data exploration and software integration toolset which reduces the risk, cost and time of building Analytical Applications for monitoring business performance for organisations running SAP ERP, SAP BW or Oracle applications. **@visualintegrator** enables the meta-data structures of the Enterprise Data Platform to be instantly visualised, dynamically interrogated and queried, and swiftly produces meta-data models that scope the sources of all the data required for Data Warehouse and Business Intelligence Solution creation. **@visualintegrator** then selectively extracts, cleanses, organises and feeds that data into the Data Warehouse. **@visualintegrator** automates the processes of enterprise data exploration & scoping and Data Warehouse creation, for Business Intelligence Solution implementation in a drastically reduced timescale, with critical risks mitigated and for maximised ROI, enabling:

- Interactive discovery & modelling of ERP data
- Automated production of meta-data models
- Streamlined ETL and automated DW creation
- Reduced data ownership costs through automation
- Assured project and scope alignment
- Reduced project timescales and costs

Business and Operational Scenario

Typically, a business imperative at the Executive level highlights the need to improve Information Insight within a specific area of the business' operations, or across the organisation was a whole, through the creation of a Data Warehouse or implementation of a Business Intelligence toolset such as SAP Business Objects or IBM Cognos.

Delivering a best-practice Business Intelligence or Data Warehousing Solution where an organisation has standardised its operational applications upon an SAP or Oracle ERP platform, or utilises SAP Business Warehouse, sounds straight forward. In reality the sheer complexity of the way in which data is stored and volume of that data makes the process of manually scoping and building the data model highly complex, and is further complicated by the likely customisation of the platform – whilst a standard implementation of SAP R/3, for example, has near 90,000 tables, it is not uncommon for the real operational number of tables to be over 180,000. Combined with the broad range of business processes ERP supports, the limited design for non-technical purposes and there lack of design consideration for ancillary application development, the sheer scale of the challenge becomes apparent.

The traditional solution has been to employ a large team of highly skilled technical consultants, and undertake a long-term data exploration and scoping exercise at great expense. The results of this process are invariably risked by the timescale the process takes, the fact that the data structure is constantly evolving in line with business changing conditions, human error in the manual processes themselves and the potential cost overruns. This approach risks the return on investment the business hopes to achieve from the project.

To combat these challenges, visualmetrics have developed **@visualintegrator**, which removes the need for a manual scoping exercise, and automates the end-to-end processes of solution scoping, data scoping, data integration, Data Warehouse creation and thereby streamlines Business Intelligence application implementation.

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Application Overview

1 DRIVE | Understanding of the Business Requirements

The first stage in delivering a best-practice Data Warehouse and Business Intelligence Solution is to build a clear, concise and detailed understanding of the business requirements. **visualmetrics DRIVE** is our end-to-end project delivery methodology, covering the full application life cycle, and ensures the project is de-risked and ROI maximised. The first two phases of **DRIVE**, Discover and Reveal deliver the business scope for the solution:

- Project commitment & sponsorship
- Information consumer profiles
- Timescales, project milestones and costs
- High level architecture – technical constraints, "best-fit" technology
- Business need & vision
- Goals, Measures, Metrics and KPIs
- Resources & capabilities

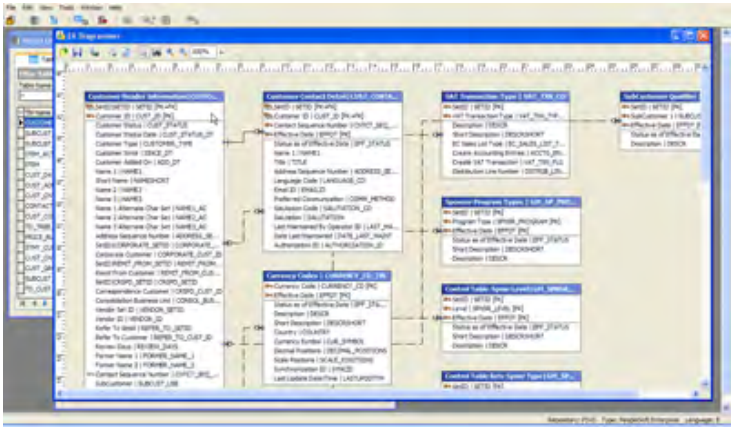
A Project Charter and Requirements Definition document are produced, which set out the business and technical roadmap for solution delivery. The business scope for the solution streamlines the IT department's task, delivers a clear vision of what's required, and ensures commitment and sponsorship from the business.

2 Saphir | Automating the Meta-Data Model for ETL

Armed with the high level technical and business scope of requirements, the second stage is to locate the data and data relationships within the Enterprise Data Platform, and build the data model for the Data Warehouse. The Saphir meta-data discovery tool is deployed, which extracts key metadata information from the Enterprise Application Data Dictionary. Typical information includes 'objects' relevant to the creation of the data model i.e. tables, fields, relationships and primary keys which is then stored in Saphir's Repository, allowing the Data Model to be built independently from of the operational system.

The Saphir tool allows for simple navigation through complex data structures with an easy-to-use browser: Search for tables and fields, navigate up and down relationship paths or search by application module. Once the relevant table is located, it is simple to drill into the full details of attributes, indexes and other related tables.

The Saphir module 'tree' presents a hierarchy of application modules, sub-modules and tables, allowing all tables belonging to a given module to be located. In the case of SAP, Saphir allows navigation by SAP Component, Program or Transaction enabling users to determine the actual Tables used by the selected Object. In the case of Siebel, Saphir allows navigation by Application, Screens and Views, enabling users to understand the links between a Siebel Screen and the underlying data structure via the Business Component layer.



With Saphir, sub-models are created to isolate and manage important sets of tables. Using this feature in combination with Saphir's search function, the number of tables required is reduced to meaningful subject areas to support specific projects. Saphir allows the rapid preview of subject areas as ER Diagrams, before final export to CASE tools such as ERwin, PowerDesigner, System Architect, Visio and ER/Studio for full downstream data modelling and integration.

Saphir produces a data model which scopes the data and its structures against the initial business scope of requirements, and can be used to streamline and rapidly deliver the ETL (Extract, Transform, Load) routines that will draw data from the Enterprise Data Platform and integrate it into the Data Warehouse for reporting.

3 visualintegrator | Automating Data Warehouse Creation

visualintegrator is built upon a set of predefined database tables and data extract processes. By automating key activities during the Integrate phase, visualintegrator is the critical asset which shortens the development time. **visualintegrator** provides significant automation the ETL stages of Data Warehouse creation and enables a fast transition from the design to the completed build of the databases, schema and metadata layers of the solution. Systems administration tools deployed within the Exploit phase, audit the performance and integrity of the Information Warehouse refresh processes, on an ongoing basis. **visualintegrator** helps automate and support the critical processes within these phases:

Database Creation

A generic database consisting of 40 WIP (Work In Progress) tables and 10 Data Warehouse tables are created by running a standard script. **visualintegrator** removes the need to create it manually. A **visualintegrator** editor maps the client's business terminology against the metadata and automatically applies these changes through to the schema. Manual metadata creation and naming is unnecessary.

Extract

Source data is captured from the Enterprise Data Platform as scoped by the Saphir data model. A series of SQL scripts are utilized to extract the data. Data is loaded using Microsoft SSIS or SAP Business Objects Data Integrator for Microsoft SQL/server or Oracle databases, into the WIP (Work in Progress) area, where all transformations occur before the final load to the live Data Warehouse. The **visualintegrator** architecture employs a predefined WIP database and a predefined set of connections which takes away the traditional need to design a database and tables.

Transform Process

This is where all the transformations, integrity checking and construction activities occur, that produce the Data Warehouse in its final form, for use by the Business intelligence application. The following activities are carried out:

Data conversion: Predefined tables and transformations allow an automatic process to replace the manual creation and conversion of source data to the correct data types.

Dimensions creation: An automatic procedure adds Dimension records, or updates existing records, so replacing an otherwise manual procedure.

Data integrity checking: Dimension keys are checked against Fact data to ensure that there is integrity between the two. An optimised process enables this to be run automatically and produces an audit log of inconsistencies. Again this replaces the manual activity of custom build integration.

Calculation definition: While the predefined database enables the build and checking on the database, definition of Calculations – the KPI's used in the Business Intelligence application - is normally client specific. However, the predefined schema contains pre existing "place holders" which result in a faster and more rigorous completion of this activity.

Table joining: Assigning and generating the integer keys between Facts and Dimensions is the final task in the production of the completed schema. The pre-existence of the schema and generic link processes automates this process, again bringing a significant advantage in time and quality over a custom build.

Load and Refresh

Once **visualintegrator** has transformed the data into the final form for the Business Intelligence application, it is loaded into the production Data Warehouse. A metadata layer using the client's business terminology is automatically overlaid onto the Data Warehouse, avoiding any need for information consumers to understand the technical database structures.

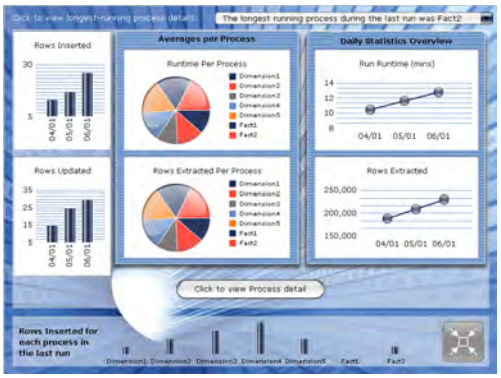
Systems Administration

During operational use within the Exploit phase, the build process occurs each time the Data Warehouse is refreshed. Each refresh is monitored for quality, integrity and performance. **visualintegrator** deploys a set of systems administration tools to achieve this.

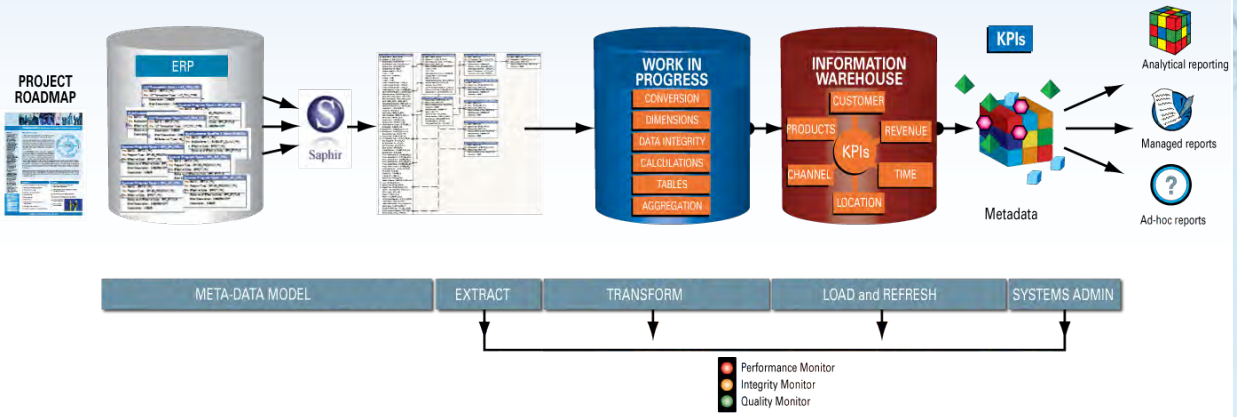
Monitors

visualintegrator retains histories of the number of records processed through the different activities of the ETL processes, and their processing times for each occasion the Data Warehouse is refreshed, enabling on-going performance monitoring of the Data Warehouse. Integrity monitoring tools perform a reconciliation check between key control totals. Deviations would indicate incorrect dimensional data. A quality monitoring function ensures the quality of data and there aggregations held within tables.

Performance, Integrity and Quality monitoring functions are delivered through automated alerting via email, portal report, SMS or dashboard.



Technical Architecture



Benefits

@visualintegrator delivers SAP and Oracle ERP users with an automated solution for delivering rapid Business Intelligence from their Enterprise Data. The vast reduction in time and costs through automation, and compared to traditional methods, justifies the investment and ensures ROI is maximised.

The key areas of benefit are:

- Interactive discovery and modelling of ERP application data
- Automated production of meta-data models against business requirements
- Streamlined ETL design and automated Data Warehouse creation
- Real-time monitoring of technical data performance, quality and integrity
- Key risks mitigated, costs removed and timescales reduced
- Assured alignment between solution delivered and initial scope
- Significant reduction in the costs of data ownership and technical skills required

visualmetrics Glossary

Analytical Application: a pre-built application using a BI toolset and based upon a domain of data, which allows an organisation to track, monitor and effect business performance through analysis of its Metrics.

Business Intelligence (BI): software tools from companies such as Cognos and Business Objects which are employed in the overall delivery of CPM based solutions and Analytical Applications.

Corporate Performance Management (CPM): the process of understanding and effecting the quality of an organisation's performance, based upon the interplay of BI, Metrics and Methods (also otherwise known as BPM: Business Performance Management or EPM: Enterprise Performance Management).

Data Warehouse: an off line database, which retains all the aggregated and restructured data that delivers the CPM solution through an Analytical Application.

Information Supply Chain: a suite of software programmes which automates the time based and selective extraction, transformation and loading of relevant data for reporting purposes, into the Data Warehouse.

Methods: the process that an organisation employs to fulfil its operational activity. When qualified by Metrics and reported via a BI tool set the results are used to meet CPM objectives.

Metrics: business measures which are quantifiable, including their associated business rules, (also otherwise known as KPIs: Key Performance Indicators).

Reporting: a broadly generic term which includes Business Intelligence, Analytical Applications, Business Performance Management and Key Performance Indicators.

Balanced Scorecard: a management system that enables organisations to clarify their vision and strategy and translate them into action. It provides feedback around both the internal business processes and external outcomes in order to continuously improve strategic performance and results. It retains traditional financial measures to assist in creating future value through investment in customers, suppliers, employees, processes, technology, and innovation.

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