eclipseCON™ 2007

BIRT: Introduction to the Eclipse Business Intelligence & Reporting Tools Project

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Eclipse BIRT Project Management Committee
VP Product Management, Actuate Corporation

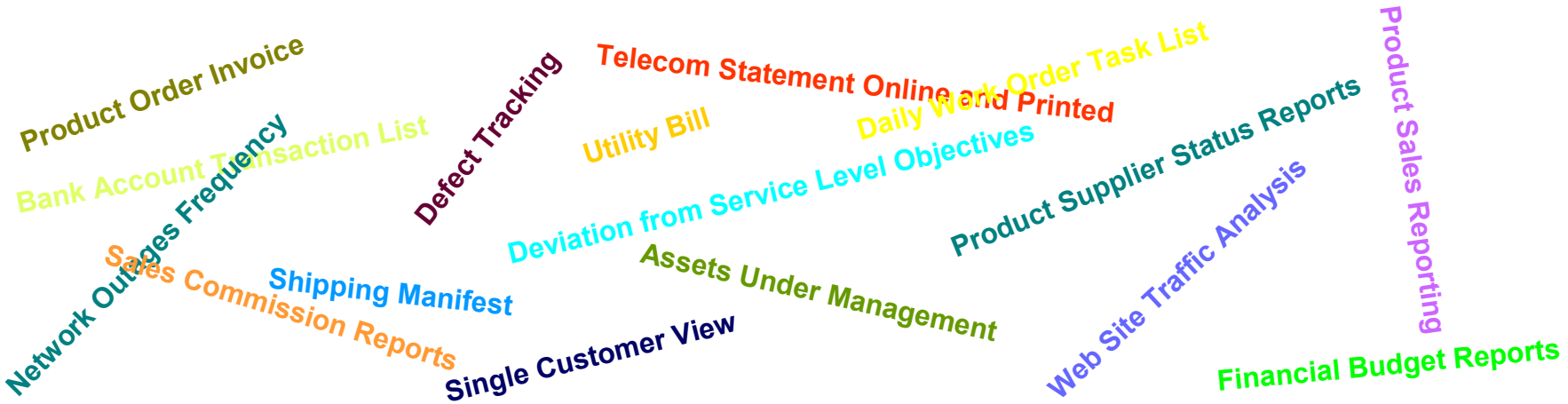
 March 4, 2007

Agenda

BIRT Project = Business Intelligence and Report Tools Project

- Business Intelligence and Reporting Primer
- How Developers Solve the Problem Today
- The Emergence of the BIRT Project
- Demonstration
- Gallery
- API's, Extensibility
- Actuate BIRT
- Summary

Business Intelligence and Reporting Primer



- Most applications have some type of reporting need
- Simple reporting is easy, but users demand more
- Real-world report development is challenging
  - Non-relational data sources
  - Sorting, aggregation and calculations on data
  - Professional presentation of information
- Meeting user demand for reporting is key to application success

How Developers Traditionally Solve the Problem

JSP

JFaces

Java

JavaScript

XSLT

XML

HTML

Build

Custom Developed Solution

Buy

Closed Source Commercial Products

Crystal Reports

ReportNet

JReports

StyleReports

Open Source Creates New Choices

Build	**Custom Developed Solution**
Build using Open Source Code	**Leverage Open Source in a Custom Solution**
Open Source Products	**Open Source Based Products**
Buy	**Closed Source Commercial Products**

Business Intelligence and Reporting Tools

ACTUATE. THE LEADER IN ENTERPRISE REPORTING APPLICATIONS

PRESS RELEASE

Print E-mail

ACTUATE JOINS ECLIPSE FOUNDATION AS STRATEGIC DEVELOPER AND BOARD MEMBER

Actuate Proposes a Business Intelligence and Reporting Tools Project to the Eclipse Open-Source Community for Review

Actuate International User Conference- Los Angeles – August 24, 2004 – The Eclipse Foundation, a community committed to the implementation of a universal platform for tools integration, and Actuate Corporation (NASDAQ: ACTU), the world leader in Enterprise Reporting Applications, today announced that Actuate has joined the Eclipse Foundation as a Strategic Developer. Actuate will join existing Strategic Developers IBM Corporation, Intel and QNX Software Systems Limited as a Board Member for the Eclipse Community. In addition, Actuate is leveraging a decade of experience in business intelligence and enterprise reporting to propose the Business Intelligence and Reporting Tools (BIRT) Project. If approved by the Eclipse community, BIRT will be the first top-level Eclipse project for the development of applications that include business intelligence and enterprise reporting functionality. The BIRT project proposal will be available on the Eclipse Foundation website for review and comment over the next 30 days.

Actuate and Eclipse recognize that reporting and analysis are key functions of every enterprise and customer-facing application. Today, the majority of developers build reporting functionality into applications by hand coding Java Server Pages (JSP) and would

BIRT Project Goals

- Next generation reporting technology
- Web centric design metaphor
- Open source and extensible
- XML report design format
- Foundation for commercial products
- Build community and ecosystem

BIRT Project Committers

- Actuate (http://www.actuate.com)
- Innovent Solutions (http://www.innoventsolutions.com)
- IBM (http://www.ibm.com)
- InetSoft (http://www.inetsoft.com)

BIRT Project Scope

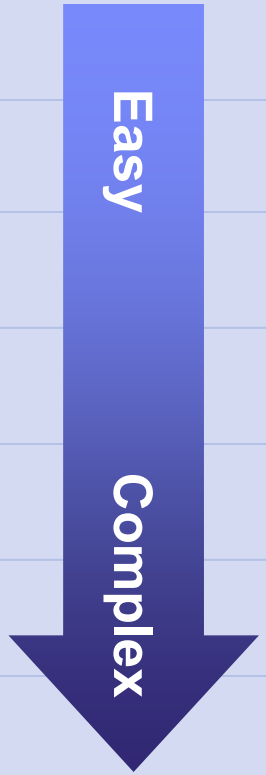
Operational Reporting	Ad hoc Query & Reporting	Analytics/OLAP/Data Mining
Typical Characteristics:		
• Operational reports	• Simple ad hoc exploration of data	• Complex "Slice and Dice" of data
• Developer creates reports	• Business user creates reports	• Business user creates reports
• Very easy end user access	• Fairly easy to use	• More complex to use
• Highly formatted	• Typically limited formatting	• Minimal formatting
• Multiple output formats	• Interactive	• Very interactive
• No end user training needed	• Minimal training	• Requires training
• Data access can be complex	• Semantic layer hides complexity	• Semantic layer/data cubes

BIRT Initial Focus

Business Intelligence Continuum

BIRT Project Initial Target Users

Audience	Features
Report Developers	Drag & Drop authoring, charting
Advanced Report Developers	Scripting, Script API
Runtime Integration Developers	BIRT Viewer and Engine APIs
Report Design Integration	Design Engine API
Extension Developers	BIRT Extension Points
Core Development	Eclipse Development, Open Source



BIRT: Feature Rich Open Source Technology

- Designed to handle real-world reporting problems
- Innovative approach to report layout and design – a web page design paradigm
- Technology should make simple reports easy to develop…

  …but it should also be flexible enough to handle complex report layouts

Open Source BIRT Report 1.0 New Features

- Listing and Grouped Listing Reports
- Multi-section Reports
- Sub-reports
- List (including groupings, subtotals)
- Table (including groupings, subtotals)
- Text
- Grid
- Chart
- Label Element
- Data Element
- Image Element
- Web Style Output
- Web-based Report Viewer
- PDF Output
- Printing
- Cut, Copy, and Paste
- Report Wizard (> Cheat Sheets)
- Schematic Design View
- Outline View
- Report Preview
- Style Builder
- Chart Wizard (> Chart Properties)
- Palette View
- Page Setup User Interface
- Grouping User Interface
- Properties User Interface
- Query Editor
- Expression Builder
- Basic Parameters
- Scripting
- Aggregations
- Computed Columns
- Filtering
- Sorting
- Grouping
- JDBC Queries
- Custom Data Access
- Multiple Data Sources and Queries
- Report Execution and Viewing API
- Extensible Model
- Report Design API and Format
- Internationalization

BIRT: Feature Rich Open Source Technology

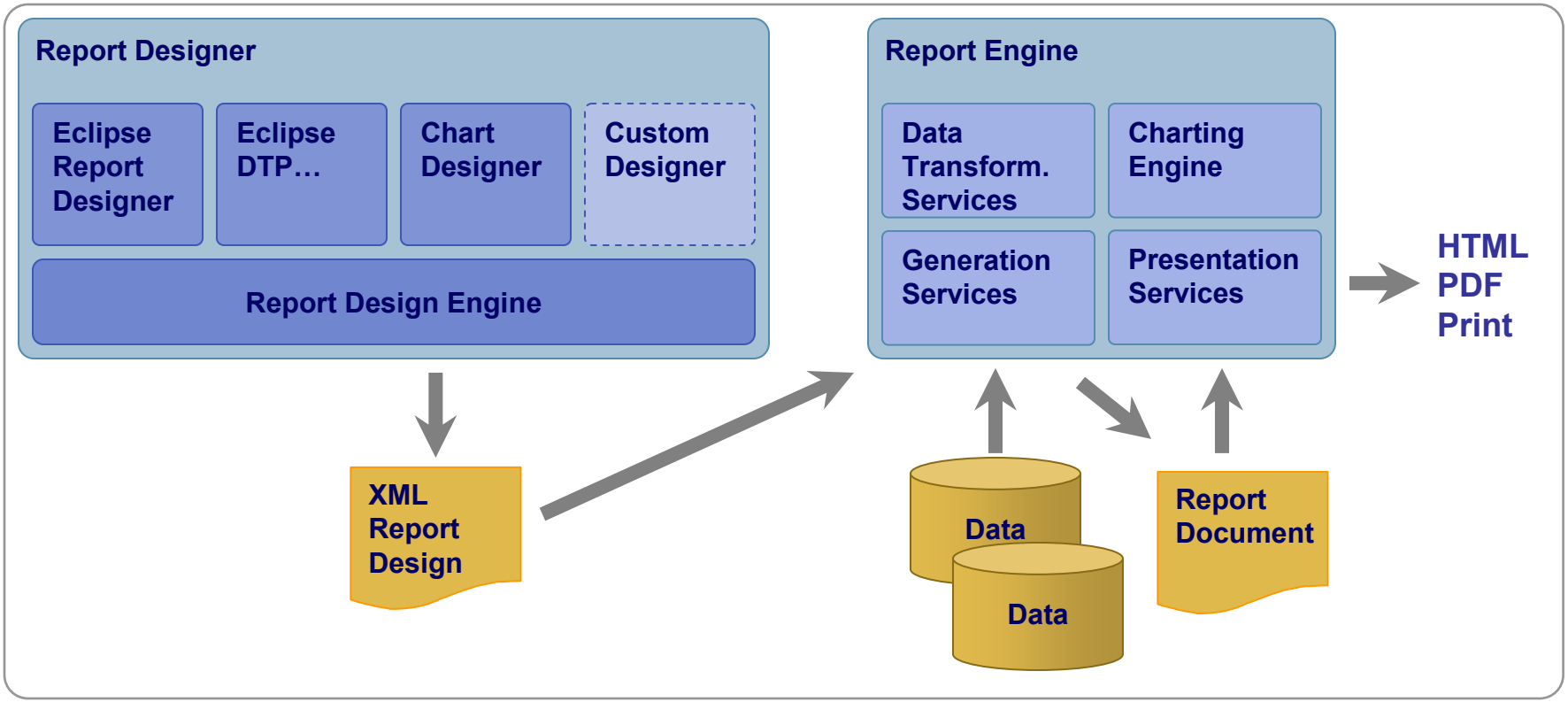
Open Source BIRT Report 2.1 New Features

- Enhanced chart interactivity and scripting
- New chart marker, scale and legend control
- Additional Y-axis support in charts
- Percentage Pie chart type
- Central location for resource files
- Hyperlinks to Table of Contents entries
- Automatic parameter discovery for hyperlink
- Connection pooling for JDBC data sources
- Multiple Master page support
- Improved usability in parameter management
- Cascading parameters with multiple sources
- Ability to JOIN datasets in BIRT
- Advanced control on data bindings
- More page break and heading control
- Connection profile support

Open Source BIRT Report 2.0 New Features

- Table of Contents Support in Viewer UI
- Chart Interactivity at View Time in Reports
- Ability to Export Report Data as CSV
- Data Extraction from a Report
- Table of Contents API Support in Engine
- Top N / Bottom N Report Layout
- Multi-pass Aggregate, Sorting and Filtering Support
- Hyperlinks to Other Reports
- Multi-page Reports
- Persistent Storage of Report Output
- Basic XML as a Data Source
- Improvements to Chart components
- Provide Methods for Controlling Chart Behavior
- Provide support for Displaying CLOB (Text) Data from Database
- Provide support for Displaying BLOB (Image) Data from Database
- Bookmarks (Hyperlinks into a Report Body)
- Expanded JavaScript Support
- New and improved chart types
- Controlled/bounded use of System Memory
- Disk-Based Sorting and Data Manipulation
- Page-on-Demand Report Viewing APIs
- Cache Query Results while Developing
- Page-on-Demand Navigation UI/UI Framework
- Concurrent User Scalability for large numbers of Active Users
- Improve PDF Output Generation
- Dynamic Parameter List Support
- Cascading Dynamic Parameter Lists
- Chart Builder/Wizard
- Ability to use Property Editor for Chart Elements
- New Expression Builder for Improved Usability
- Syntax color coding in Expression Builder
- Auto-complete in Expression Builder
- Custom Template Support for New Reports
- Enhance Report Object Model API for Ease of Use
- Improvements to Chart Engine API
- Improve and Publish Chart Model
- Library Support for Reusable Report Items and Objects
- External Style Sheets for Use Across Multiple Report Designs
- Perspective for Java Code Editing in Report Designs
- Ability to import CSS Style Sheets
- Pass-through of External Context Objects to ODA Data Providers
- Support Data Set Output Parameters
- Move ODA Runtime Extension Point and Java Interfaces to DTP
- Provide Plug-in Adapter for BIRT ODA Drivers to DTP ODA

High Level BIRT Architecture



BIRT in Action!

Report Gallery

Classic Models, Inc.

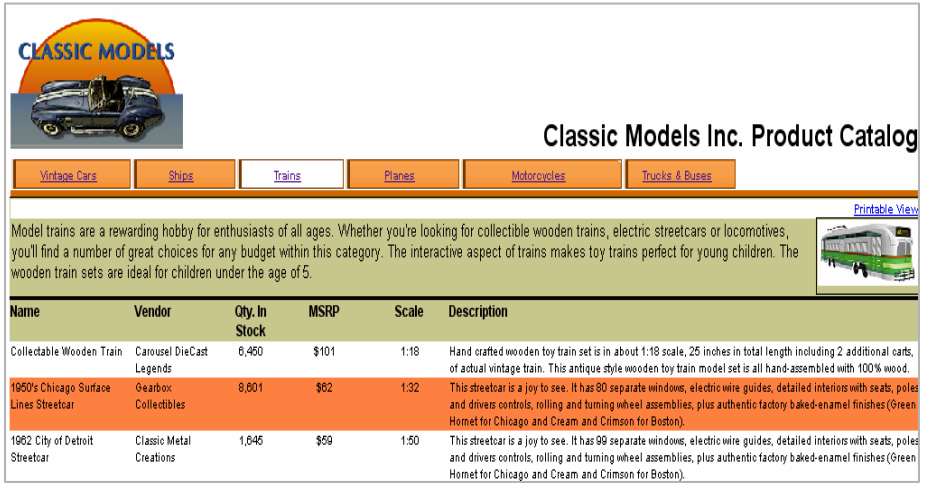
701 Gateway Boulevard,
San Francisco, CA 94107

Employee Directory

Diane Murphy	**President**	**dmurphy@classicmodelcars.com**	**x5800**	**Office Code: 1**
	Mary Patterson	VP Sales	mpatterso@classicmodelcars.com	x4611
	Jeff Firrelli	VP Marketing	jfirrelli@classicmodelcars.com	x9273
Mary Patterson	**VP Sales**	**mpatterso@classicmodelcars.com**	**x4611**	**Office Code: 1**
	William Patterson	Sales Manager (APAC)	wpatterson@classicmodelcars.com	x4871
	Gerard Bondur	Sale Manager (EMEA)	gbondur@classicmodelcars.com	x5408
	Anthony Bow	Sales Manager (NA)	abow@classicmodelcars.com	x5428
	Mami Nishi	Sales Rep	mnishi@classicmodelcars.com	x101
William Patterson	**Sales Manager (APAC)**	**wpatterson@classicmodelcars.com**	**x4871**	**Office Code: 6**
	Andy Fixter	Sales Rep	afixter@classicmodelcars.com	x101
	Peter Marsh	Sales Rep	pmarsh@classicmodelcars.com	x102
	Tom King	Sales Rep	tking@classicmodelcars.com	x103
Gerard Bondur	**Sale Manager (EMEA)**	**gbondur@classicmodelcars.com**	**x5408**	**Office Code: 4**
	Loui Bondur	Sales Rep	lbondur@classicmodelcars.com	x6493
	Gerard Hernandez	Sales Rep	ghernande@classicmodelcars.com	x2028
	Pamela Castillo	Sales Rep	pcastillo@classicmodelcars.com	x2759
	Larry Bott	Sales Rep	lbott@classicmodelcars.com	x2311
	Barry Jones	Sales Rep	bjones@classicmodelcars.com	x102
	Martin Gerard	Sales Rep	mgerard@classicmodelcars.com	x2312
Anthony Bow	**Sales Manager (NA)**	**abow@classicmodelcars.com**	**x5428**	**Office Code: 1**
	Leslie Jennings	Sales Rep	ljennings@classicmodelcars.com	x3291
	Leslie Thompson	Sales Rep	lthompson@classicmodelcars.com	x4065

Employee Directory

Product Catalog



Classic Models Inc. Product Catalog

Vintage Cars | Ships | Trains | Planes | Motorcycles | Trucks & Buses

Printable View

Model trains are a rewarding hobby for enthusiasts of all ages. Whether you're looking for collectible wooden trains, electric streetcars or locomotives, you'll find a number of great choices for any budget within this category. The interactive aspect of trains makes toy trains perfect for young children. The wooden train sets are ideal for children under the age of 5.

Name	Vendor	Qty. In Stock	MSRP	Scale	Description
Collectable Wooden Train	Carousel DieCast Legends	6,450	$101	1:18	Hand crafted wooden toy train set is in about 1:18 scale, 25 inches in total length including 2 additional carts, of actual vintage train. This antique style wooden toy train model set is all hand-assembled with 100% wood.
1950's Chicago Surface Lines Streetcar	Gearbox Collectibles	8,601	$62	1:32	This streetcar is a joy to see. It has 80 separate windows, electric wire guides, detailed interiors with seats, poles and drivers controls, rolling and turning wheel assemblies, plus authentic factory baked-enamel finishes (Green Hornet for Chicago and Cream and Crimson for Boston).
1962 City of Detroit Streetcar	Classic Metal Creations	1,645	$59	1:50	This streetcar is a joy to see. It has 99 separate windows, electric wire guides, detailed interiors with seats, poles and drivers controls, rolling and turning wheel assemblies, plus authentic factory baked-enamel finishes (Green Hornet for Chicago and Cream and Crimson for Boston).

Report Gallery

Crosstab/Matrix Report

CLASSIC MODELS

Classic Models, Inc.
701 Gateway Boulevard
South San Francisco, CA 94080

Annual Sales By Product Lines

Year	Classic Cars	Motorcycles	Planes	Ships	Trains	Trucks & Buses	Vintage Cars	Total
2003								
Q1	$152,581	$33,062	$37,136	$24,446	$7,810	$43,593	$106,982	$405,613
Q2	$194,291	$41,629	$50,387	$50,171	$12,144	$62,804	$81,959	$493,388
Q3	$243,978	$79,845	$45,047	$24,272	$7,027	$73,842	$110,486	$584,500
Q4	$778,535	$194,372	$168,251	$102,153	$38,839	$196,416	$311,111	$1,789,678
Total	$1,369,386	$348,909	$300,822	$201,044	$65,822	$376,657	$610,539	$3,273,181
2004								
Q1	$317,306	$85,681	$65,159	$66,762	$21,028	$67,942	$136,849	$760,730
Q2	$252,165	$80,101	$69,780	$30,719	$4,862	$73,696	$119,997	$631,322
Q3	$419,674	$127,310	$105,973	$66,859	$21,728	$106,833	$200,420	$1,048,801
Q4	$739,276	$234,150	$204,551	$141,609	$39,278	$200,230	$366,660	$1,925,757
Total	$1,728,423	$527,243	$445,464	$305,951	$86,897	$448,702	$823,927	$4,366,611
2005								
Q1	$392,920	$112,384	$103,702	$60,591	$18,235	$101,332	$183,041	$972,208
Q2	$225,273	$128,874	$35,870	$20,812	$4,076	$41,874	$60,113	$516,894
Total	$618,193	$241,259	$139,573	$81,404	$22,311	$143,207	$243,155	$1,489,103
Grand Total	$3,716,003	$1,117,412	$885,859	$588,400	$175,030	$968,566	$1,677,622	$9,128,896

Form Letter

BIRT Report Viewer

Showing page 4 of 112 Go to page:

CLASSIC MODELS

Violeta Benitez
FunGiftIdeas.com
1785 First Street,
USA

Jul 27, 2006 4:28 PM

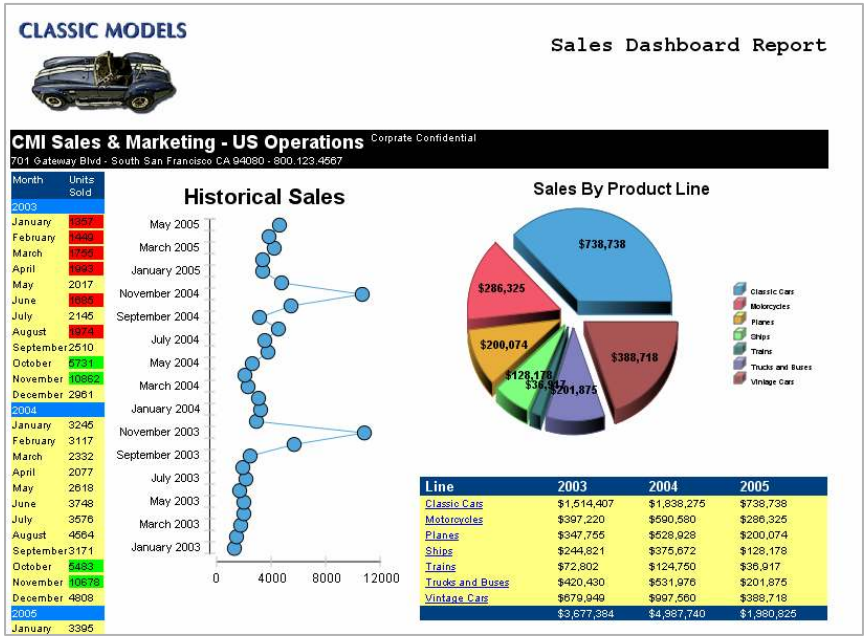
Dear **Violeta**,

Thank you for your recent order **10321**. We are currently processing your order. If you have any questions please contact your sales rep at 1-800-555-5555.

Sincerely,

Your friendly sales assistant

Report Gallery



Sales Dashboard

Sales Invoice

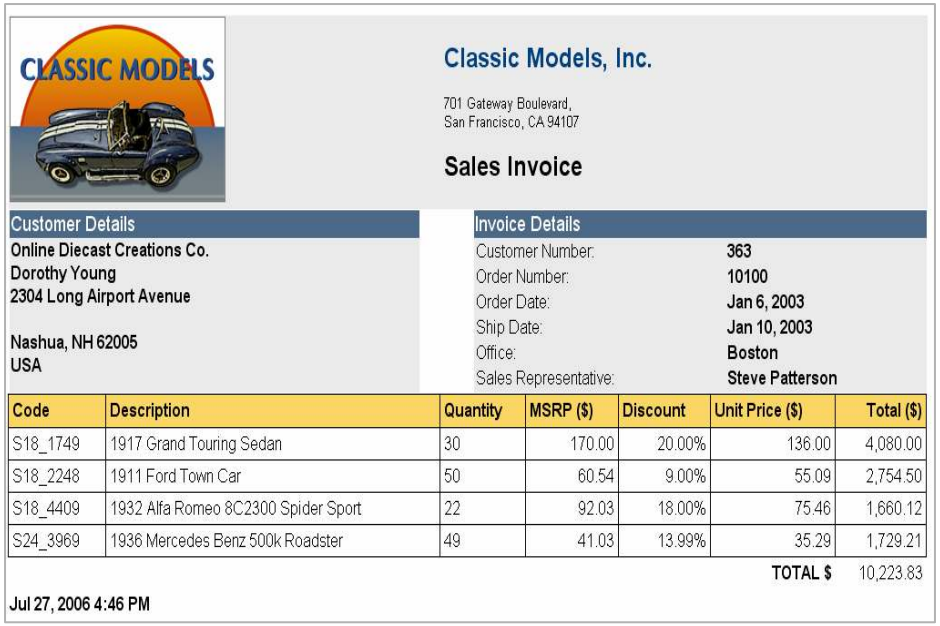
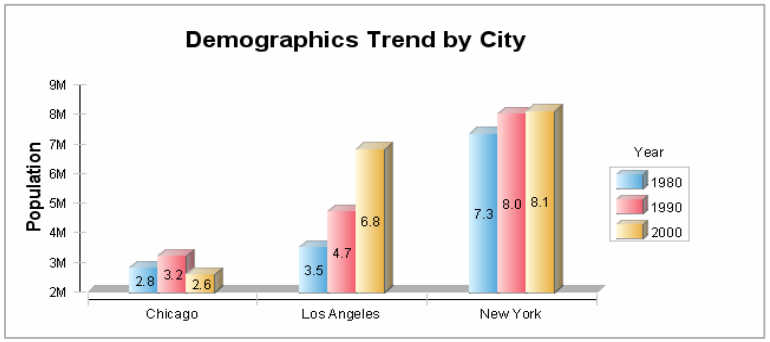
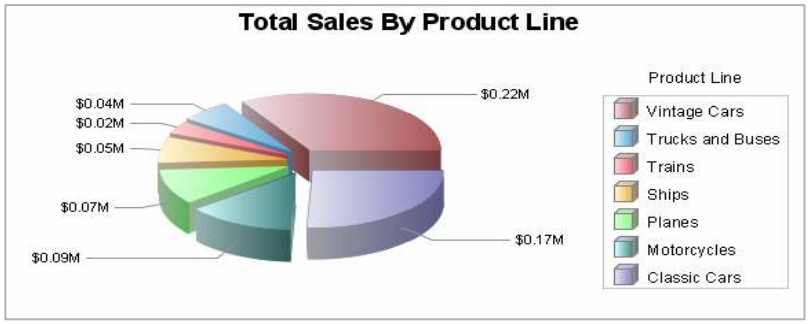
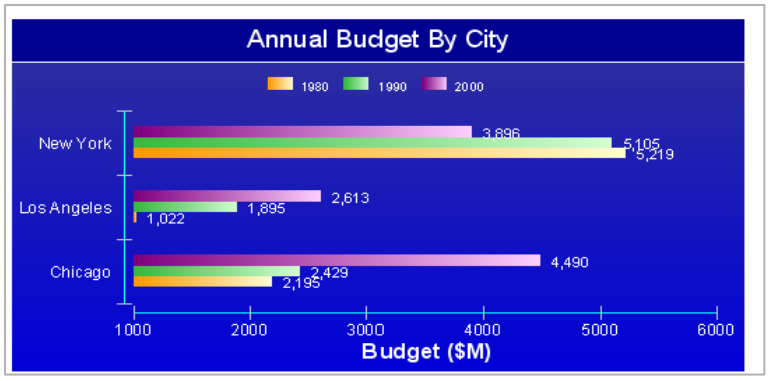


Chart Gallery







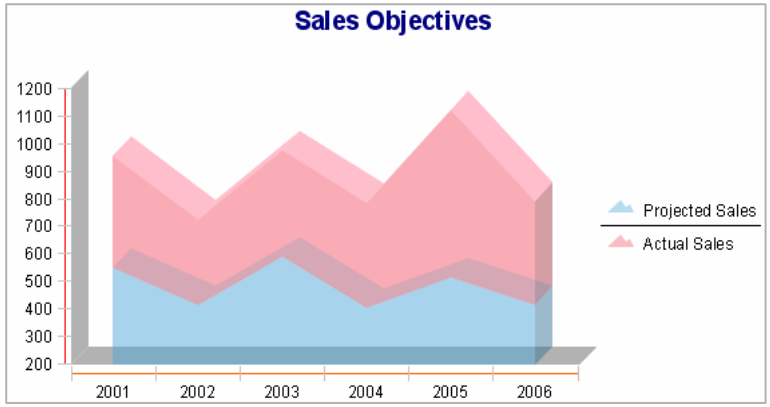
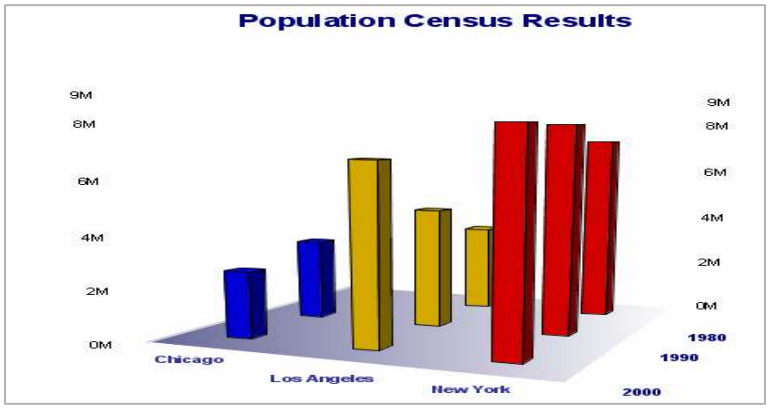
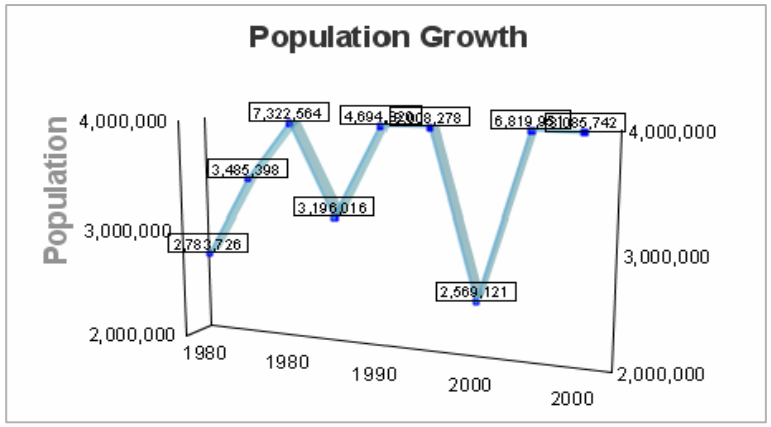
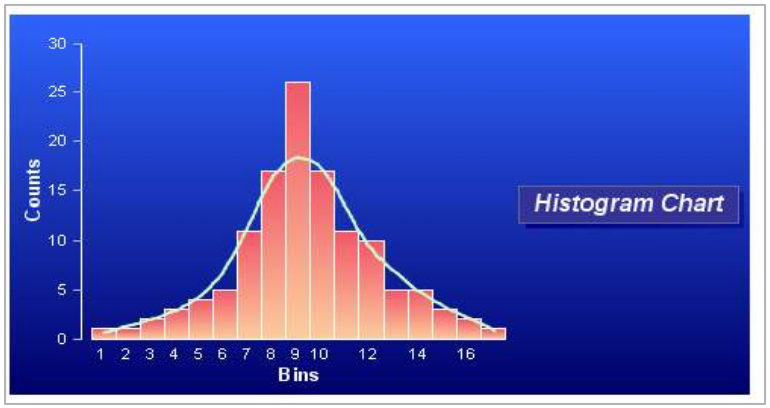


Chart Gallery







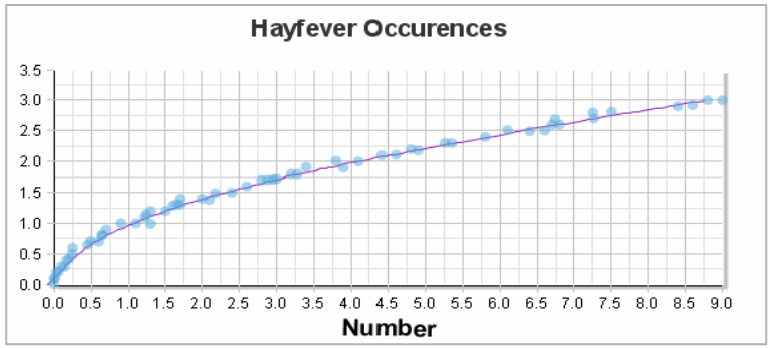
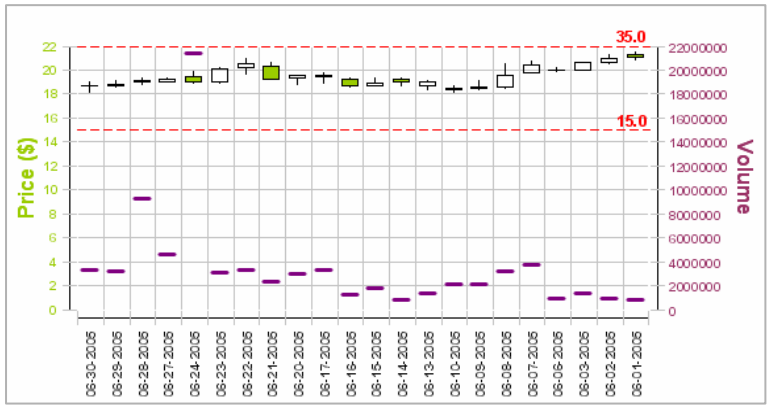
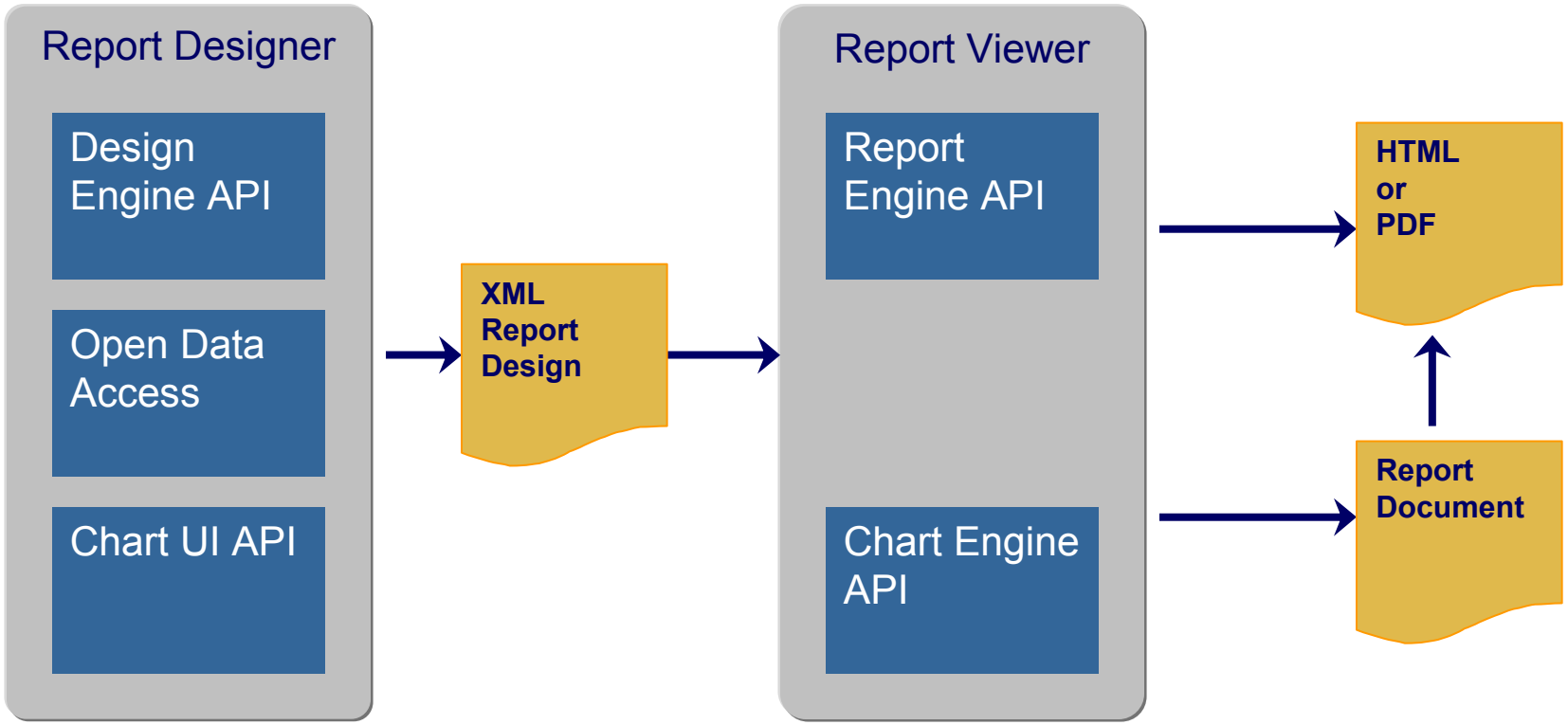


Chart Gallery



Integration APIs: An Overview



Extension Point Overview

- Extensibility is a key principle for the BIRT project
- Data source extensibility
  - Application specific design-time query builders
  - Custom design-time & run-time data access
- Custom business logic extensibility
  - Incorporate complex business logic scripting
  - Access existing and new Java code
- Visualization extensibility
  - Build new visual data presentation ‘widgets’
  - Extend charting with new chart types; new output formats
- Rendering reports for output
  - Target report output for specific devices & formats

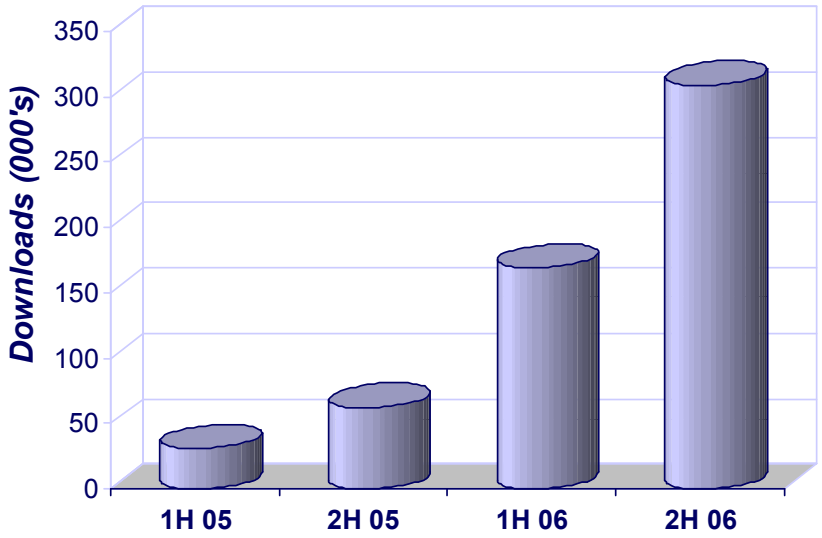
Business Intelligence & Reporting Tools Timeline

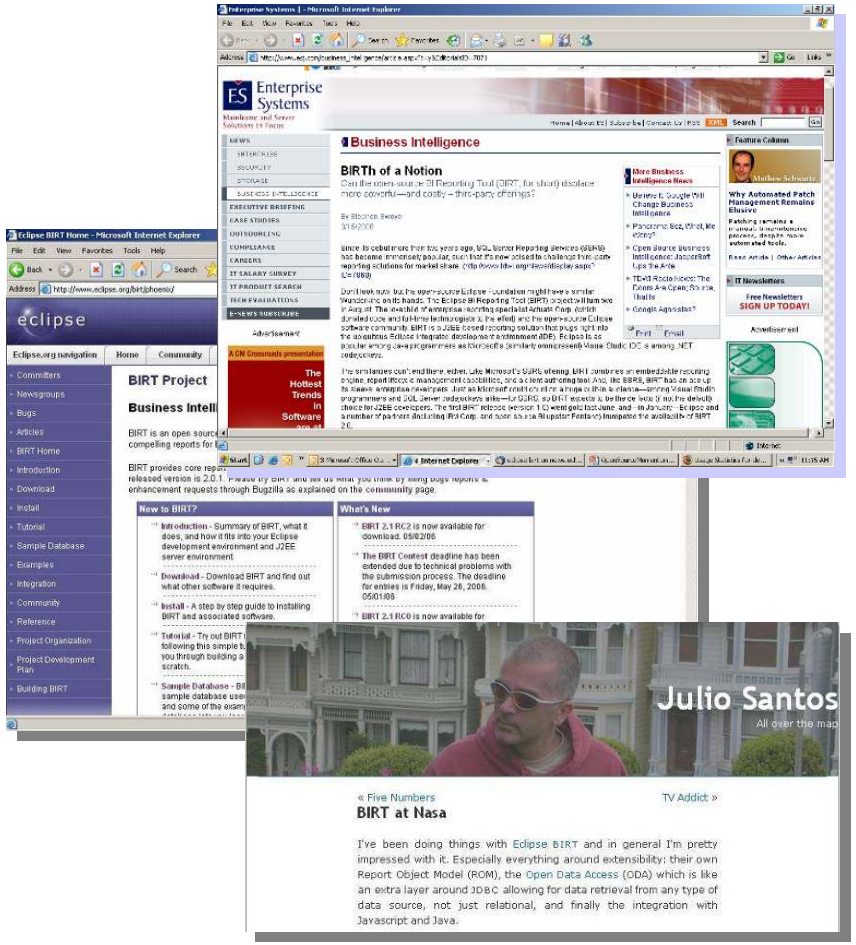
Aug, 2004	▪ BIRT Project Proposal posted for community review on Eclipse.org
Sep, 2004	▪ BIRT Project proposal accepted, and project launched
Feb, 2005	▪ 1.0 Preview: Eclipse Report Designer, Report Engine, Chart Engine
Jun, 2005	▪ 1.0 Release: Eclipse Report Designer, Report Engine, Chart Engine
Jul, 2005	▪ 1.0.1 Release: Support for Eclipse 3.1; RCP version of BIRT
Dec, 2005	▪ 2.0 Release: Support for a wide variety of common report types
Jun, 2006	▪ 2.1 Release: Advanced parameters, ability to join data sets
Sep, 2006	▪ 2.1.1 Release: Maintenance release
Feb, 2007	▪ 2.1.2 Release: Maintenance release
TBD	▪ 2.1.3 Release: Maintenance release
Jun, 2007	▪ 2.2 Target Release Date

BIRT Market Momentum and Uptake

Sample Adopters To Date Since BIRT 1.0 Released in June 2005

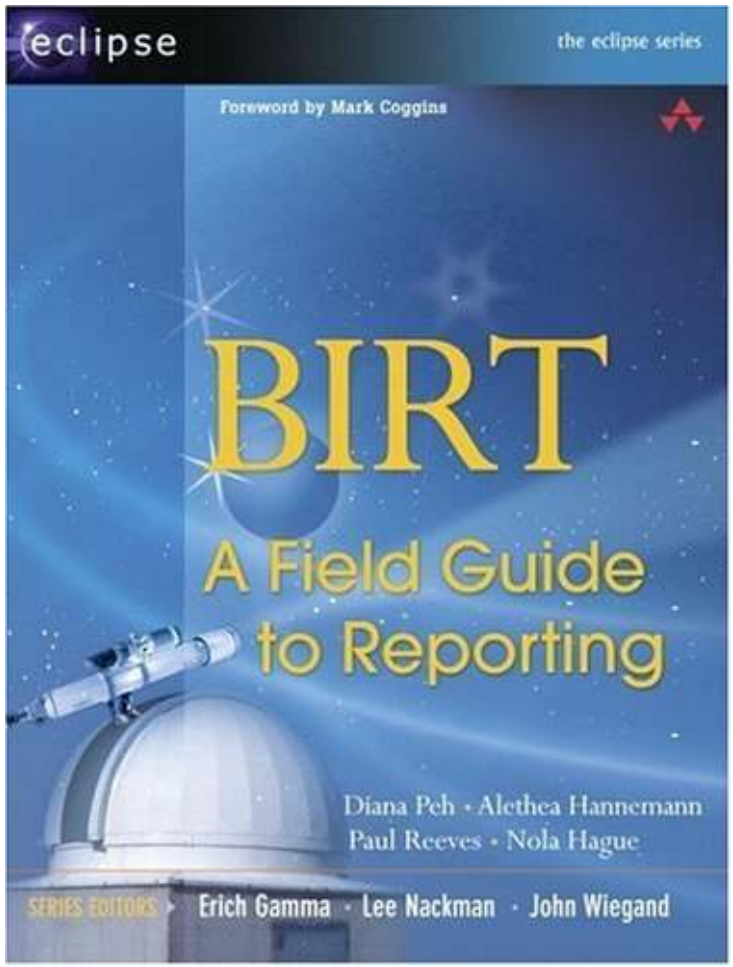
BIRT Market Momentum and Uptake

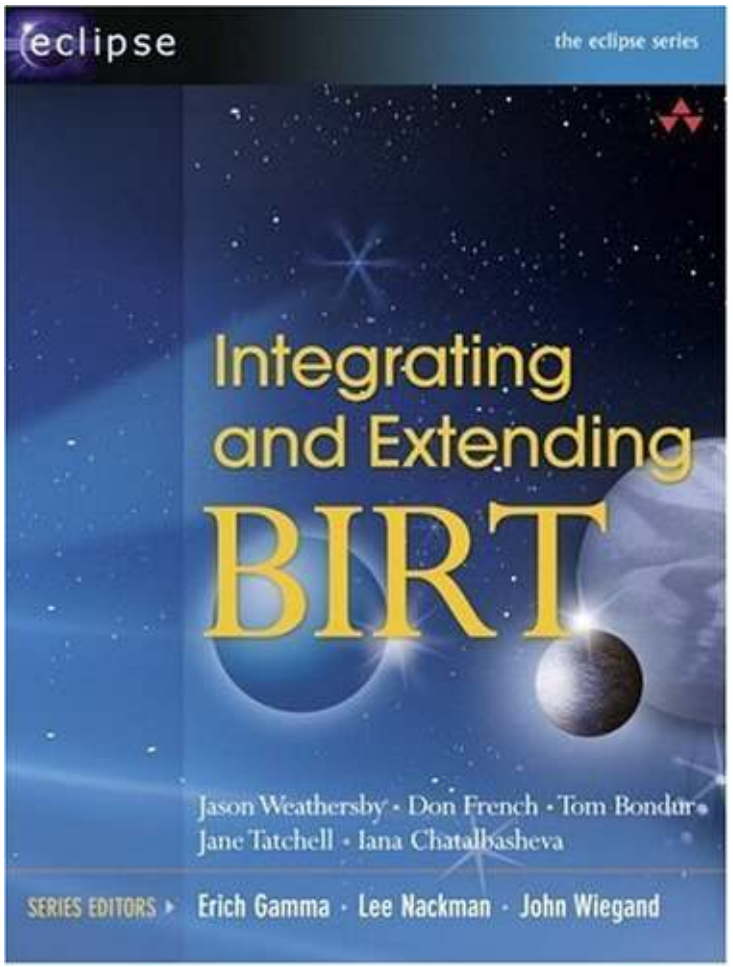




"From my research, BIRT is a really big deal, it has legitimate traction in the market."
Stephen O'Grady, RedMonk

New Publications Available From Amazon





What is BIRT Being Used For?

BIRT's flexibility supports very diverse applications:

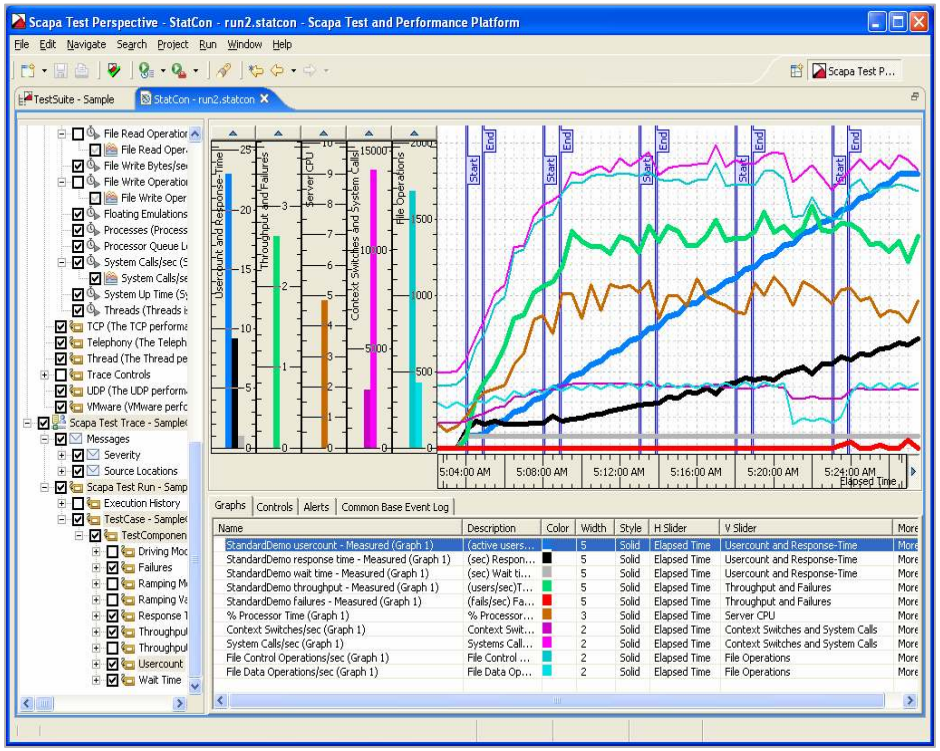
- Personal desktop report development tool
- Reporting technology integrated into corporate web applications
- Reporting technology integrated into corporate desktop applications
- Reporting technology integrated into ISV web applications
- Reporting technology integrated into ISV Eclipse-based applications

Case Study – Scapa Technology

Scapa Technologies is privately-held, based in Edinburgh, UK

Build and sell system performance & analysis solutions into vertical sectors, including telecommunications, retail & financial services

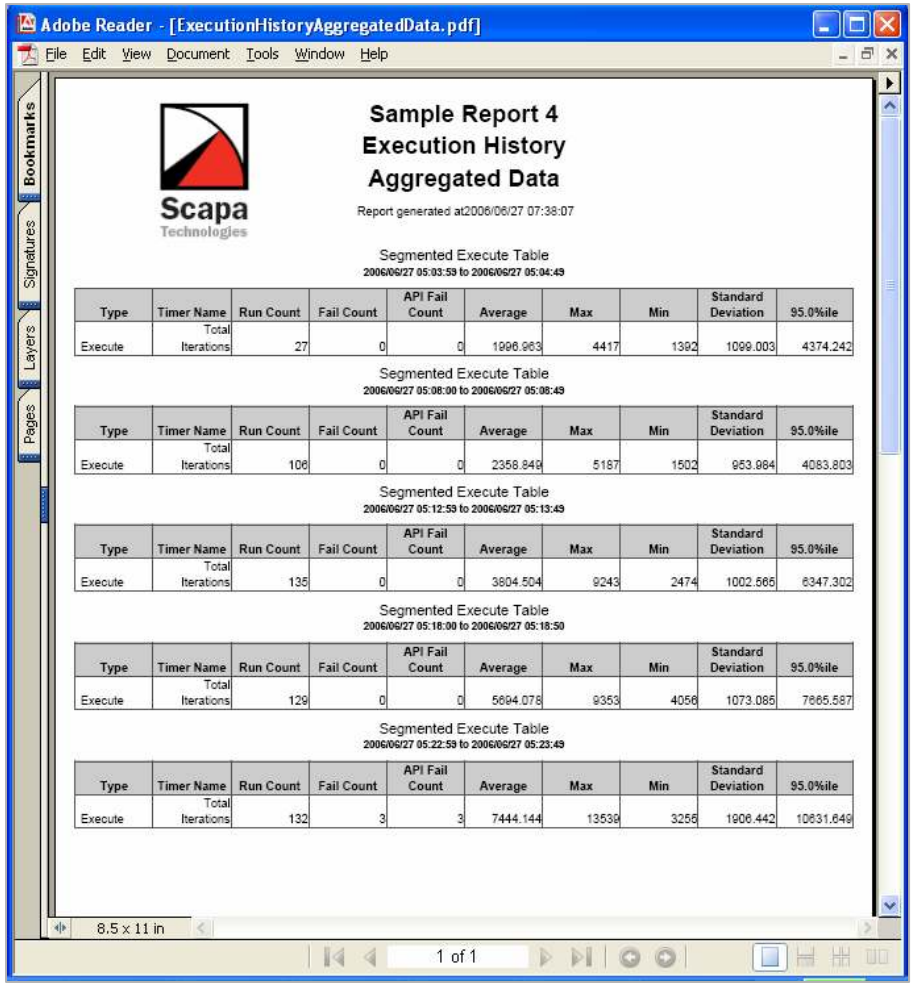
Scapa Test and Performance Platform is a powerful application performance testing, diagnosis & monitoring product applicable across a wide range of commercial software technologies at multiple points in the application lifecycle



http://www.scapatech.com/

Case Study – Scapa Technology

- BIRT runtime component is embedded in Scapa Test and Performance Platform
- Scapa application leverages the BIRT API to invoke the runtime component
- Users run reports & select the report layout, structure & visual preferences from within the Scapa user-interface
- BIRT runtime component adopts the look & feel of the Scapa application
- Built hooks within application that drive what the report should look like & create a report template programmatically

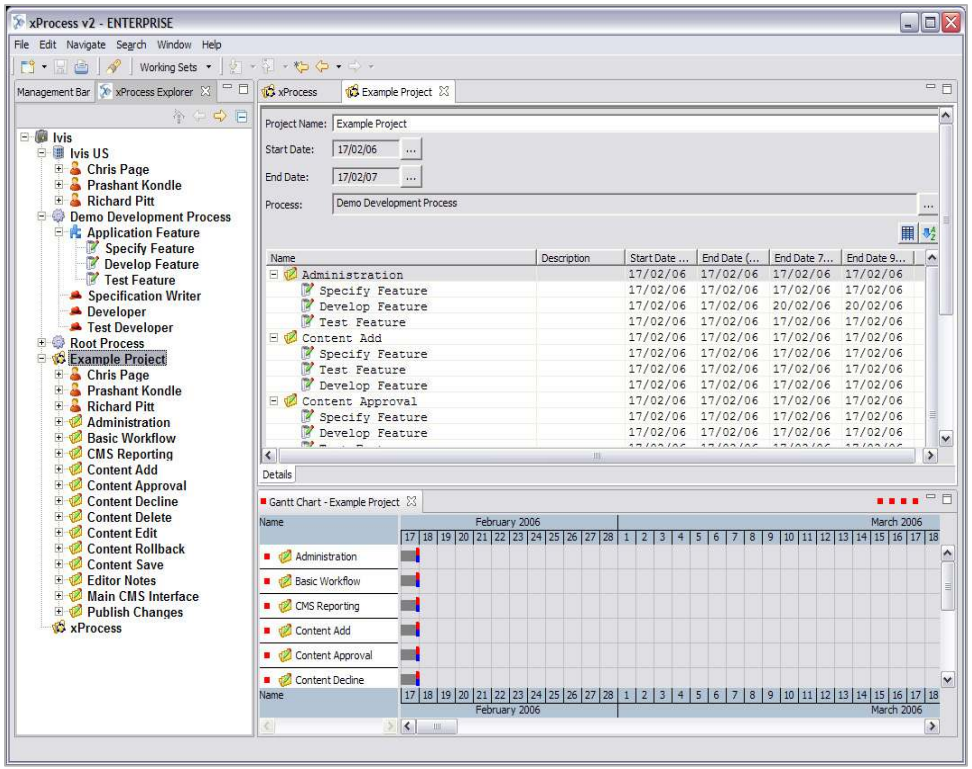


Case Study – Ivis Technologies

Ivis Technologies is privately held, based in Arizona, USA.

Build and sell software solutions that enable organizations to merge process improvement with live project execution.

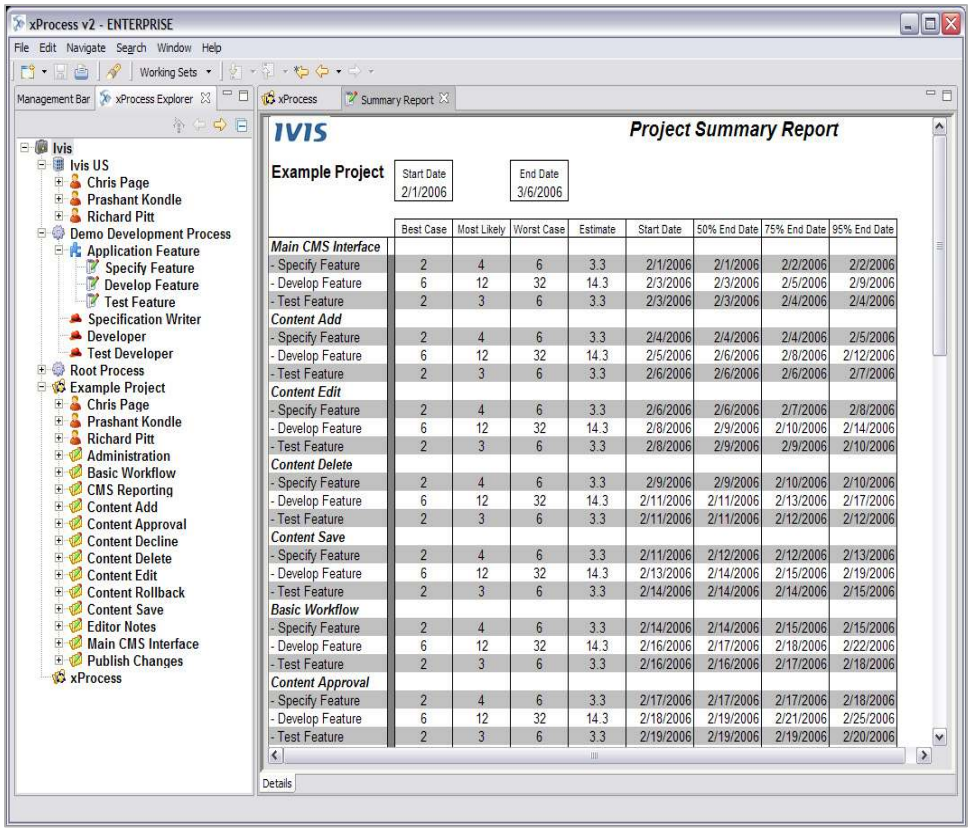
xProcess is the premier process improvement and project execution environment that captures & creates processes, generates project plans and supports continuous process improvements



http://www.ivis.com/public/products/xprocess

Case Study – Ivis Technology

- xProcess embeds BIRT
  - BIRT designer for built in reports
  - Custom built wrapper for DE API
  - Report lib => ~10 data sets
  - Runtime launched from xProcess
- Project Summary Report provides snapshot of a project at any time



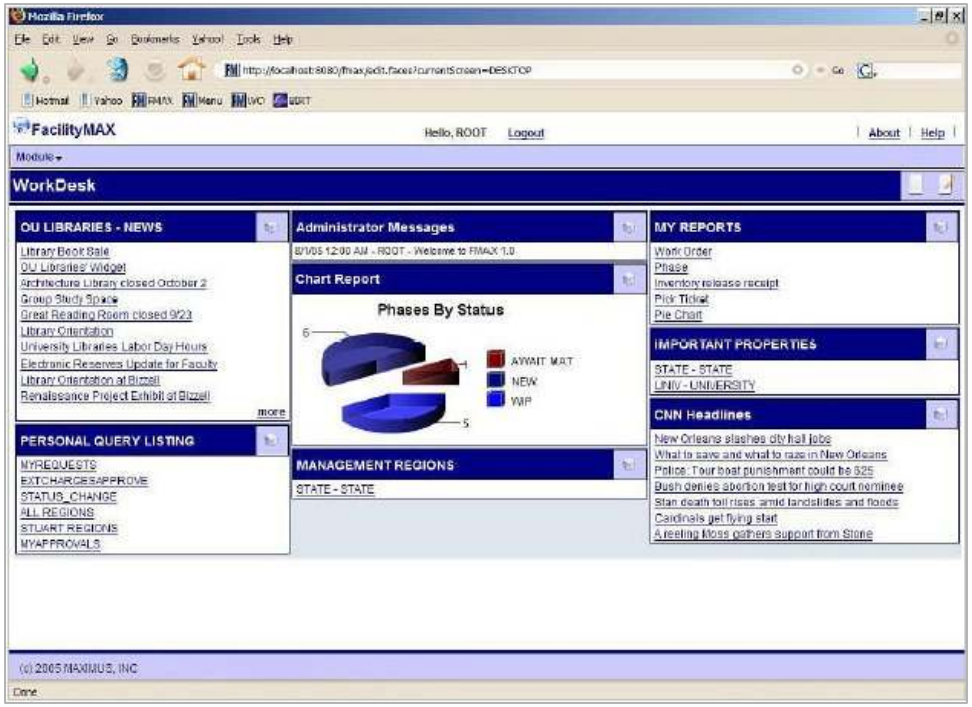
	Best Case	Most Likely	Worst Case	Estimate	Start Date	50% End Date	75% End Date	95% End Date
Main CMS Interface								
- Specify Feature	2	4	6	3.3	2/1/2006	2/1/2006	2/2/2006	2/2/2006
- Develop Feature	6	12	32	14.3	2/3/2006	2/3/2006	2/5/2006	2/9/2006
- Test Feature	2	3	6	3.3	2/3/2006	2/3/2006	2/4/2006	2/4/2006
Content Add								
- Specify Feature	2	4	6	3.3	2/4/2006	2/4/2006	2/4/2006	2/5/2006
- Develop Feature	6	12	32	14.3	2/5/2006	2/6/2006	2/8/2006	2/12/2006
- Test Feature	2	3	6	3.3	2/6/2006	2/6/2006	2/6/2006	2/7/2006
Content Edit								
- Specify Feature	2	4	6	3.3	2/6/2006	2/6/2006	2/7/2006	2/8/2006
- Develop Feature	6	12	32	14.3	2/8/2006	2/9/2006	2/10/2006	2/14/2006
- Test Feature	2	3	6	3.3	2/8/2006	2/9/2006	2/9/2006	2/10/2006
Content Delete								
- Specify Feature	2	4	6	3.3	2/9/2006	2/9/2006	2/10/2006	2/10/2006
- Develop Feature	6	12	32	14.3	2/11/2006	2/11/2006	2/13/2006	2/17/2006
- Test Feature	2	3	6	3.3	2/11/2006	2/11/2006	2/12/2006	2/12/2006
Content Save								
- Specify Feature	2	4	6	3.3	2/11/2006	2/12/2006	2/12/2006	2/13/2006
- Develop Feature	6	12	32	14.3	2/13/2006	2/14/2006	2/15/2006	2/19/2006
- Test Feature	2	3	6	3.3	2/14/2006	2/14/2006	2/14/2006	2/15/2006
Basic Workflow								
- Specify Feature	2	4	6	3.3	2/14/2006	2/14/2006	2/15/2006	2/15/2006
- Develop Feature	6	12	32	14.3	2/16/2006	2/17/2006	2/18/2006	2/22/2006
- Test Feature	2	3	6	3.3	2/16/2006	2/16/2006	2/17/2006	2/18/2006
Content Approval								
- Specify Feature	2	4	6	3.3	2/17/2006	2/17/2006	2/17/2006	2/18/2006
- Develop Feature	6	12	32	14.3	2/18/2006	2/19/2006	2/21/2006	2/25/2006
- Test Feature	2	3	6	3.3	2/19/2006	2/19/2006	2/19/2006	2/20/2006

Case Study – MAXIMUS

MAXIMUS is a public company (NYSE: MMS) headquartered in Reston, Virginia, USA.

Leading government services company with over 5,200 employees providing consulting, systems and outsourcing services.

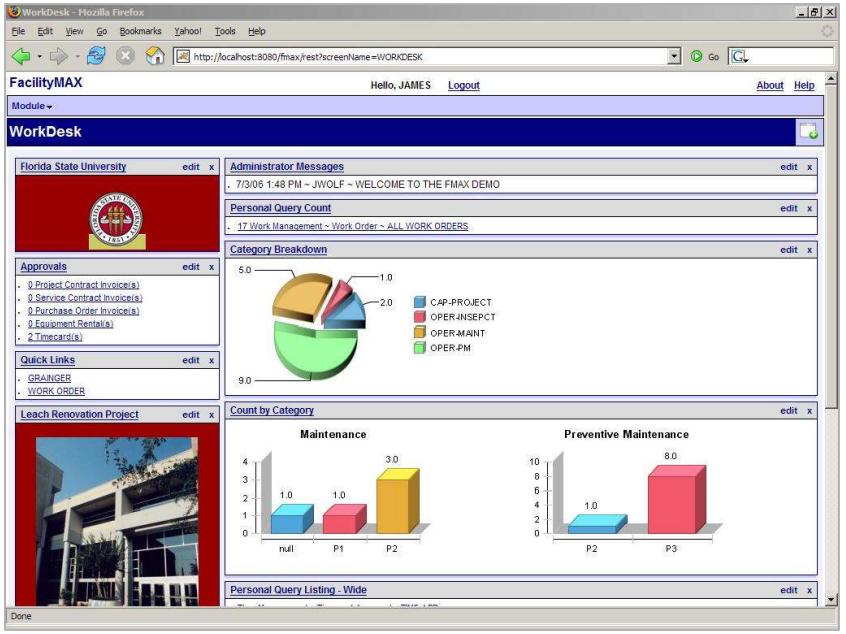
FacilityMAX is a web based application that enables organizations to improve, automate and integrate all of their facility management, asset management and maintenance operations. FacilityMAX has over 150 customers.



http://www.assetsolutions.maximus.com

Case Study – MAXIMUS

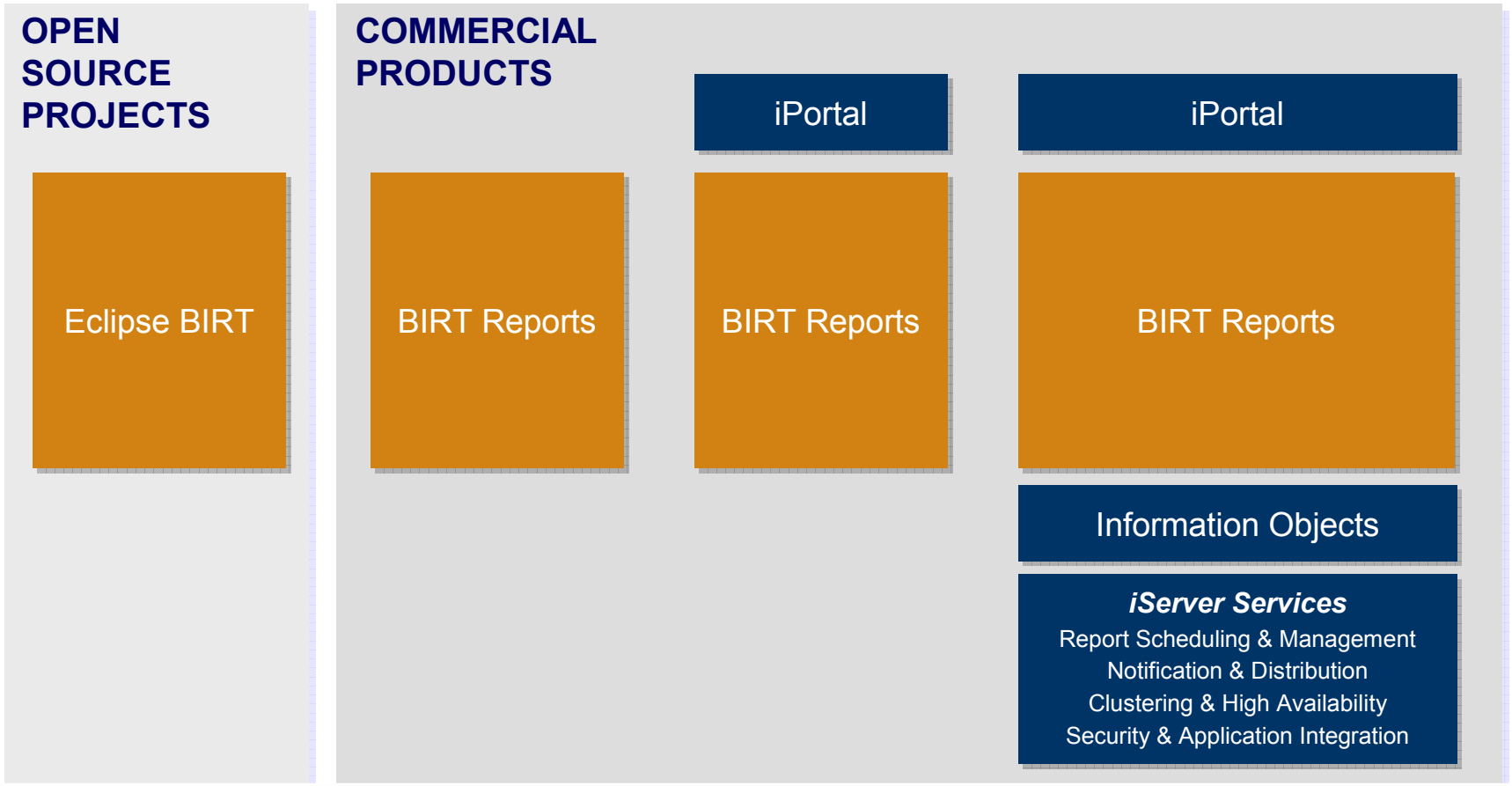
- BIRT is embedded in the FacilityMAX web application
- MAXIMUS selected BIRT because:
  - Low total cost of ownership
  - Solid technology and architecture
  - Comprehensive support for variety of report layouts
  - Ability to report on large volumes of data
  - Open standards, including 100% Java and J2EE standard
  - Support from the Eclipse project and large open source community
- BIRT reports include work order status and trends; facility and project budgets; and employee productivity
- Initial integration completed in a few days
- Reports created in real-time and can refresh automatically on application screen



"The BIRT Reports technology offers a significantly lower total cost of ownership and high-quality Web-based reports to our customers."

Trey Drake, Software Architect, Asset Solutions Group at MAXIMUS

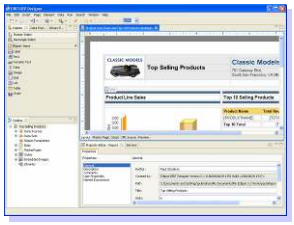
Actuate Provides Flexible Deployment Choices



Actuate BIRT Report Technology Family

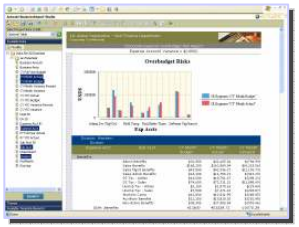
Actuate BIRT Report Designer Pro

Desktop tool for professional IT developers
Full power of scripting in Java; Eclipse IDE; and more



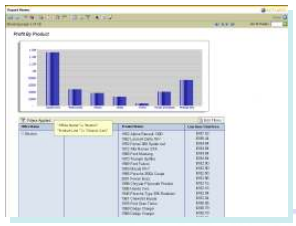
Actuate BIRT Report Designer

Desktop tool for report developers and power users
Easier to use; can leverage components created in Pro



Actuate BusinessReport Studio

Web tool for report creation by business users
Simple to use yet powerful template based model



Actuate BusinessReport / BIRT Report Interactive Viewer

Web tool for exploring and manipulating report documents
Answer ad hoc business questions without writing a report

BIRT: What is Next?

- Continue to add reporting capabilities for existing components
  - BIRT 2.1.3 – Q2 2007: Maintenance Release
  - BIRT 2.2 – June 2007: Feature Release
- BIRT 2.2: Project Plan at www.eclipse.org/birt
  - Expanded support for report types (Example: Dynamic crosstab)
  - New and improved data sources (Example: Web Services)
  - Additional output formats (Example: Excel)
  - Developer productivity (Example: integration components)
  - Additional charts types and Smart Formatting
  - … See project plan for many more
- Expand project into Analytics area of Business Intelligence

BIRT Project Summary

- Top level Eclipse project
- 100% Java, Open Source, powerful, extensible reporting technology
- Easy to use, with a web centric design metaphor
- Supported by an active community
- Open source and free, with a commercial friendly license

- Getting started & learning more:
  - BIRT pages on Eclipse Web site http://www.eclipse.org/birt
  - BIRT pages on Actuate Web site http://www.actuate.com/birt
  - BIRT related blog http://birtworld.blogspot.com
  - BIRT Newsgroup news://news.eclipse.org/eclipse.birt

THANK YOU!