

# Intelligence

Butler Group Subscription Services

## Information Delivery TECHNOLOGY AUDIT

### Actuate

#### Actuate 7

**Abstract** *Actuate 7 is an information application platform that enables organisations to provide actionable information from a wide variety of data sources including enterprise applications. Access to real-time information on demand, at any time, and in a usable format is rapidly becoming a requirement for many organisations, and the renewed focus on corporate governance has added impetus to management's need for this. Actuate is a comprehensive and flexible reporting suite, which is easy to build into existing applications. It also enables users to access the underlying data via a spreadsheet model, thereby enabling them to gain a better understanding of events.*

*Medium- to large-sized organisations can derive tremendous benefit from Actuate's solutions, and it is also appropriate for independent software vendors who wish to add sophisticated reporting to their products. The company's Web site has a number of demonstrations available that illustrate the power of the Actuate platform.*

#### STRENGTHS

- High availability and scalability, up to potentially millions of users.
- Excellent Web services integration capability.
- Reports can be distributed as Excel spreadsheets.

#### WEAKNESSES

- Not yet available on Linux platform.

#### FUTURE POTENTIAL

Further enhancements to the Actuate Query option to act on cached data as well as being used for on-demand queries, will extend the functionality of this option further into the BI realm.

## ► FUNCTIONALITY

Actuate is a company with a history of helping organisations to get the full benefit of information held within its various applications. In the past, it was perhaps more well-known for providing information delivery solutions that enabled IT to generate presentation quality reports for users to access quickly and easily in a variety of formats. However, the company is now moving more towards enabling business users to access business-critical information in more flexible ways, facilitating decision-making and enabling them to respond to changing market conditions.

### Product Analysis

The majority of the stakeholders in an organisation; employees, customers, and business partners, need to access the information that is stored within the various applications that are used throughout the enterprise. Being able to do this in a timely manner provides insight and potentially competitive advantage, but it can be hard to achieve using the applications themselves. Often, simple access to reports is not enough – business users need to access the underlying data in order to manipulate and produce subsets or supersets of that data, and historically they have tended to resort to independent spreadsheets such as Excel to enable them to do this, although this can lead to inaccuracies and much time spent formatting spreadsheets.

Actuate has decided to embrace and extend this preference, and therefore in addition to its reporting suite, provides the ability for business users to design their own spreadsheets to access corporate data sources, using the Actuate e.Spreadsheet Designer, and also for them to receive 'reports' in the form of Excel spreadsheets delivered to their desktop.

Actuate has continually enhanced its information delivery offering, and with the latest version also incorporates two new concepts: Information Objects, which can be regarded as a 'view' of enterprise data from one or more sources, and Actuate Query, a 'no training required' Web-based query tool that business users can use to interrogate the Information Objects and view output as

Dynamic HTML (DHTML), Excel format, Adobe PDF, or Actuate's own e.Analysis graphical format.

*The Information Object Designer allows IT to create a simplified view for business users into enterprise information sources, all the while protecting those resources from abuse.*

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abuse, and avoiding potential runaway queries. These enable the users to safely but directly interrogate operational data as well as data warehouses.

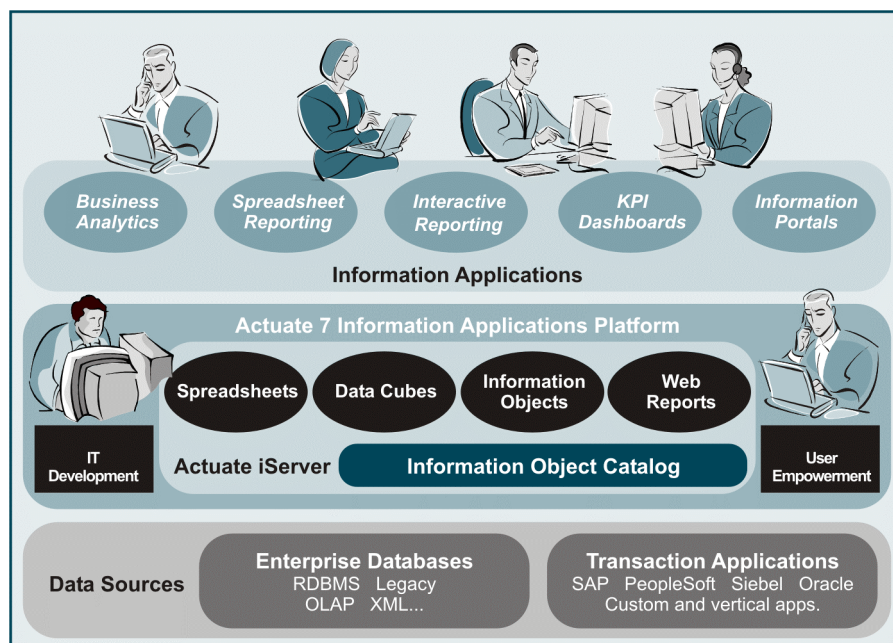
Actuate 7 can also be tightly integrated with existing applications, using built-in Web services capability, thereby ensuring that access to corporate data is part of each user's operational role. By delivering personalised information it can add great value to an organisation, for example, enhancing a Self Service Portal or a Customer Relationship Management strategy. Additionally, strong internationalisation capability means that reports can be viewed in a variety of languages on request.

Butler Group believes that deploying Actuate 7 within an organisation will provide the ability to empower the vast majority of its stakeholders with access to timely information – timely because it is the operational data itself that can be accessed, without affecting performance. Actuate has placed great emphasis on both scalability and availability, ensuring that information can be delivered to potentially hundreds of thousands of users without affecting the performance of operational systems.

## Product Operation

Actuate 7 provides a variety of tools to help organisations to get the right information to the right place – which may be outside the organisation – in a timely manner. Actuate calls these ‘information applications’, by which it means customised and personalised views of corporate data from a wide variety of sources, presented in the way that the end-user wishes to use it.

The diagram below illustrates the various components of Actuate 7.



**Actuate 7 Architecture Diagram**

Actuate 7 can be viewed from three main perspectives:- the design and development of reports, actual deployment of reports, and end-user access to reports.

### Development Features

Actuate provides developers with a drag-and-drop interface to enable rapid design of reports, with a full visual environment to develop, test, and view sophisticated designs. Reports can be created from any combination of data sources such as relational databases or Enterprise JavaBeans (EJBs); they can use visual items such as text or graphics, and can include frames for display. The **e.Report Designer** tool enables experienced users to create their own report both from the components created by developers and by using any of a series of generic, read-only components provided by Actuate with the product.

Developers use **e.Report Designer Professional** to create and save components to a library, and can concurrently access a range of different data sources, from flat files and XML files to relational databases, CORBA objects, EJBs, and legacy application data sources. If necessary, the Actuate Basic scripting language can be used, which is syntactically comparable to Visual Basic and provides programmatic control of report generation. New features in version 7 include a cross-tabulation builder, HyperCharts – the ability to drill down on hyperlinks within charts, and support for searching dynamically created controls.

The new Actuate **Information Object Designer** enables the IT department to create abstractions, or views of the underlying data sources, combining and flattening these in order to provide secure, controlled access to data. This enables the users to directly and securely query the Information Object using Actuate Query (see later for more detail), thus freeing up IT support time. Information Objects can encapsulate complex data access logic and expose data to users in business-friendly terms – for example, providing data fields with understandable names.

Actuate's **e.Report Designer Java Edition** has similar functionality to the e.Report Designer Professional and can be used to develop reports on any platform as well as integrate into a Java application.

Where customised Web sites that include reporting content are required, the **Active Portal** product, a set of Java Server Pages (JSPs) or Active Server Pages (ASPs), can be used, which can be tightly integrated with J2EE- compliant application servers or .NET environments. This enables report parameter values to be entered using check boxes and radio buttons, to provide a more familiar and user-friendly interface to the end-user. New features within Active Portal include one-click client side printing from the browser, the ability to cancel synchronous jobs from the DHTML viewer if they are taking too long, and the option of saving an e.Analysis cube for later offline analysis (see later for more on e.Analysis).

All Actuate reports can be produced in a variety of formats: DHTML, PDF, and XML, and report content can also be returned as a Reportlet™; a partial DHTML page, which can be integrated into existing Web pages.

Actuate's **e.Spreadsheet Designer** is a tool that allows Excel-literate business users to design their own spreadsheet reports and publish them to the server, if authorised to do so by IT. Actuate states that only 15 minutes of training is required to show a business user how to create reports, and the demonstration given to Butler Group certainly backs this up. Full formatting is available using style sheets, and the user can switch between design mode and running the report until the design is complete. The spreadsheet can then be re-run on updated data without the need to reformat data or make changes to the spreadsheet. The resulting native Excel spreadsheet can then be distributed either via the Web or e-mail attachments.

From a development perspective, Actuate 7 has been enhanced significantly to improve integration to existing infrastructure. For example, it now includes SAP Business Warehouse access, enabling reporting applications to be integrated more closely with SAP, and the Designer tools can enable extremely close integration with existing applications, both packaged and developed in-house.

## Deployment

The Actuate iServer is central to the entire information application platform; it generates, manages, and securely delivers business information to the users of that information, whether they are inside or outside the organisation. It has a multi-process, multi-threaded architecture that ensures flexibility, performance, and scalability; sharing workload across multiple server nodes, and across CPUs within the node, as more users and more reports are included. Reports can be delivered on demand, with progressive page delivery ensuring that the user can see any page (not just the first page) of the report as it is processed, rather than waiting for the whole report to be completed.

Reports can also be scheduled and held in cache, which for many organisations will fulfil much of the regular Information Delivery requirements. A cached report is only run and stored once, and can then be viewed, searched, and have data extracted from it as required, by many thousands of viewers in multiple formats, with page viewing and searching being subject to user/role privileges. Reports can be archived, under the control of a Web-based cluster administration console, and again, only one copy needs to be stored in the archive. Where it is not necessary to save an on-demand report, for example, where a customer requests a list of their most recent transactions, Actuate's **Express Content** feature enables reports to be generated even more rapidly, because they do not need to be stored.

Actuate has the ability to store user and role information internally, or can be tightly integrated with a number of external security models, such as Lightweight Directory Access Protocol (LDAP)-enabled security directories, providing single sign-on capability. Both methods provide a manageable security model, ensuring users can only generate and view a report they should be entitled to see. Optional Page-Level Security means that, for example, a salesperson will only be able to view the details for the accounts that he/she is responsible for, and will see these as though they are personalised to him/her, starting at page one.

The sales manager may then be able to see summary information by each salesperson as well as optionally the detailed accounts, again as though it were a personalised report. The sales director can see all information, if the security allows, and may well be viewing thousands of pages of detail, as well as the summary information, which is essential to decision-making.

### User Experience

End-users find Actuate intuitive and easy to use, and have control over what information they are seeing and the format in which it is presented. This is done using out-of-the-box functionality such as sophisticated report searching, simple navigation, and single click extraction of report content to multiple formats. Report parameters provide end-user flexibility; by specifying a set of preferences, users can control any of the data retrieval and formatting features of a report template. These preferences can then be passed to the iServer as a URL string, which is then interpreted. This approach provides end-users with extensible flexibility for report generation, without needing to install client-side software or provide end-user training.

Help text can be associated with data fields on reports to explain important points, such as how the column was calculated, or a note to aid interpretation. Data transformations and calculations are performed at report runtime. A customisable table of contents is provided with each report, enabling simple and rapid navigation through it; for example, to reach summary information.

Reports can be viewed at run time in a variety of languages including French, German, and Japanese as well as English. Unicode support ensures that reports, portal, and Web pages can also be localised in other languages. Support for locales ensures that right to left languages such as Middle Eastern languages are also supported.

Communication with the server cluster can optionally be encrypted using standard SSL encryption over HTTPS if required, built on top of the Web services Simple Object Access Protocol (SOAP) messaging layer.

An optional component, **e.Analysis Option**, enables users to dynamically query and summarise reports stored in cache, using a pivot table, as well as to graphically analyse those reports. Any user with Excel experience can use this tool, since it uses the same approach.

The optional new **Actuate Query** is a Web-based tool that allows end-users to carry out ad hoc queries on Information Objects, which have been created by the IT department, with minimal or no training. This enables them to get answers for themselves directly from the underlying data, without needing to request specific reports. Butler Group believes that the combination of Information Objects and Actuate Query is a powerful new feature that will be well received by business users who are comfortable with attempting to find things out for themselves.

### General

Actuate 7 provides even greater scalability than the re-architected version 6. In terms of processing and storage scalability, the application was already enterprise-scalable, and now permits potentially millions of users concurrent access to large numbers of reports. The storage capacity of the server can be expanded almost indefinitely by adding Report Encyclopaedia volumes (used for storing and accessing reports) and physical disk partitions for additional storage capacity.

As well as processing scalability, Actuate 7 provides clustering capabilities, where the Actuate iServer can run across a cluster of several heterogeneous low-cost machines. Automatic load balancing and transaction partitioning can spread the work evenly across a number of machines, and active servers can be used to provide failover cover. As an organisation's requirements increase in scale, the application can be expanded by adding additional servers to the cluster.

Actuate states that no distinction is made between UNIX and Windows servers when added to the Actuate cluster. Any machine can therefore be added to the cluster at any time with little configuration.

A key feature of Actuate is that it integrates seamlessly with existing applications, and often users are not aware that it is Actuate they are using, the end-user interface can be completely re-branded, even providing multiple brandings across the organisation.

The basic Actuate application comes with the Actuate iServer, and either the e.Reporting or e.Spreadsheet options. Other features such as the Designer tools, Actuate Query, and the e.Analysis tools are optional extras.

## **Product Emphasis**

With the new version of Actuate 7, the company has moved further towards the ability to empower the majority of users within (and outside) the organisation with timely information. Much progress has been made in scalability and performance, which were already hot features of the solution. Additionally, any organisation that is considering providing querying capabilities to large numbers of users needs to seriously look at the cost of ownership of the underlying software and hardware required to deliver this, and Actuate performs competitively here.

Whilst other reporting providers have some Web services functionality, Actuate has embraced the Web services concept fully, and provides extensive direct connectivity to both J2EE and .NET applications.

## **DEPLOYMENT**

Actuate 7 can be deployed on a wide variety of platforms. The servers supported include Windows NT 4.0 Server, Windows 2000 Server, and Microsoft Windows XP Professional, Solaris, HP-UX, and AIX. On the client side, Microsoft Internet Explorer 5.0, 5.5, and 6.0, or Netscape Navigator 4.7 or 6.2 is required. Platforms and browsers may be subject to change.

The suite has been specifically designed to support a large number of different databases, including Oracle 7, 8, 8i, and 9i; IBM DB2; Informix; Sybase; Progress; and Microsoft SQL Server 6.5, 7.0, or 2000; and ODBC-compliant databases.

Information can also be taken directly from any J2EE application, by incorporating Java Objects, EJBs, or Java applets. In addition, applications written using Visual Basic, C#, C++, .NET, and COM components can all be accessed directly by Actuate.

Actuate can be implemented on Web Servers, including Microsoft Internet Information Server, Apache HTTP Server, IBM HTTP Server, and iPlanet Web Server 6.0. The product can also be implemented using Servlet Engines and Application Servers, including BEA WebLogic Server and IBM WebSphere.

Actuate has actively embraced the Web services concept by providing a rich SOAP API, which enables comprehensive integration with J2EE, .NET, legacy, and other third-party applications. All of the available functionality, such as control over object management, user management, and scheduling, is thus exposed via a SOAP based API, enabling the automation of entire tasks – including user administration, profile creation, privileges, content subscription, and search capabilities.

In order to develop report components Visual Basic skills may be required. Once components have been developed, a competent Excel or Access business user would be able to use them to create simple new reports. The intuitive nature of the product means that end-users who are familiar with a Web browser will require no training. A J2EE-based sample application is included with the product to enable rapid report development, giving insight into the technology.



Benchmark tests, published on the company's Web site, indicate that Actuate is capable of supporting in excess of a million users, and these effectively support the company's claims of low operational ownership costs.

In support of internationalisation, all data is held internally in Unicode format, which is like a master set of all character code pages, enabling the use of a very wide range of languages, including double-byte languages such as Chinese. Support for locales is also comprehensively addressed by Actuate 7.

Actuate offers enterprise-standard 24x7 support, as well as training, consulting, integration, and customisation services. Training courses are likely to be required for administration and template design.

## ► PRODUCT STRATEGY

Actuate has continued to enhance its Information Delivery product suite to become what it now calls an Information Application platform, which Butler Group believes offers improved integration capabilities as well as enhanced end-user interactive queries. It is moving towards direct competition with higher level Business Intelligence vendors as well as other reporting tools vendors, particularly with its newly-formed Reporting Engines subsidiary which will market the Java report engine to software vendors and developers to embed within their applications.

As well as ISVs, the company is wisely targeting Actuate 7 at those market sectors that are planning to increase IT spending in 2003 – financial services, Healthcare, process manufacturing, Education, Government, and Services. However, any organisation that requires high numbers of users to be able to access information in a flexible manner will find Actuate 7 an invaluable and user-friendly tool.

The company has its own direct sales force, which accounts for approximately 70% of all sales, and also distributes the product through other software vendors that embed the product into their own applications. This has the unfortunate drawback that many users worldwide are benefiting from Actuate but are not aware of it, since it has the look and feel of the application in which it resides. Actuate has over 300 such partners, including BMC Software, Siebel, and Sun.

Technology partners include BEA, IBM, Sun, Microsoft, and Plumtree.

The product is licensed per CPU, with the developer tools an additional per-user cost, and the optional modules an add-on per CPU charge. The basic license fee per CPU is US\$35,000.

Actuate can provide integration and customisation services, and has a large number of VAR and Systems Integrator partners who can also assist in this aspect. The ratio of license fees to services will vary depending on the scale of integration required.

Actuate has found that the main competition it has faced historically was from custom-built, in-house solutions, often built in low-level languages such as HTML or C. It is now pitting itself against mainstream BI vendors, and will need to alter its marketing strategy if it is to gain a share of this market.

## ► COMPANY PROFILE

Founded in 1993, Actuate Corporation is based in South San Francisco, California, USA. The company has a number of regional offices in the US, and international offices in Singapore (Asia-Pacific), Japan, France, Germany, Switzerland, and the UK. Actuate currently has just over 500 employees, including over 50 in the UK.

The company has been publicly listed since 1998, and is quoted on the NASDAQ exchange under the symbol ACTU. Revenues have grown year-on-year, with the unsurprising exception of the most recent year, and the company has had 17 consecutive profitable quarters.

	2000 (US\$ million)	2001 (US\$ million)	2002 (US\$ million)
Revenues	107.3	125.0	109

The company acquired Tidestone Technologies in May 2001, and rapidly integrated the technology, introducing the first version of Actuate e.Spreadsheet Server less than five months later.

Actuate can now boast over 2000 direct customers, with a strong presence across a number of industries, including Automotive (General Motors, Tower Automotive), Chemicals (Eastman Chemical), Manufacturing (3M, Gillette, and Proctor & Gamble), Technology (Halifax Corporation and Lockheed Martin), and Travel (Marriott International and Sabre). The company also has over 300 OEM partners with deep penetration into CRM (e.g. Siebel Systems), Service Automation (e.g. Niku), and System Management (e.g. BMC Software). It is also certified for use with SAP.

Actuate is a member of the Web Services Interoperability Organisation, WS-I.

## ► SUMMARY

The dictionary definition for the word 'actuate' is '*to put into motion or action; to activate*', and this neatly provides a focus for what the company aims to help its customers achieve. By embracing the spreadsheet concept, rather than offering a competing tool, Actuate is now providing business users – a significant number of people within any organisation – with the ability to access corporate data directly and therefore take timely and appropriate action based on what they find for themselves rather than what has been defined in a standard report.

Butler Group believes that Actuate has evolved significantly from its early reporting days, and now enables enterprise-strength reporting, with excellent personalisation and internationalisation ability, together with powerful tools to enable wider access to the underlying data. Whilst power users may still prefer to use a heavy duty BI tool, the Excel model embraced by Actuate is likely to make this the tool of choice for business users.

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