

Technology Evaluation
and Comparison Report

June 2003

Application Modernisation

Strategies for Embracing Current and Future Technologies

looksoftware

newlook, centric, and the dynamic environment

Summary

*looksoftware addresses corporate demands to modernise and integrate existing enterprise applications by providing an integrated and innovative toolset that re-uses, extends, and integrates legacy application assets. Two products – **newlook**, and **centric**, share the **looksoftware** dynamic environment – interact closely to enable the functionality of enterprise applications to be extended into new areas of the business. Important features provided by **looksoftware** include Web to host connectivity, and Advanced Refacing, which provides rules based dynamic generation of User Interfaces (UIs) for host applications.*

looksoftware regards its key market opportunity as being Small to Medium-sized Enterprises (SMEs), along with the software vendors that support them, as the need for these businesses to cost-effectively modernise, extend, and integrate their iSeries-based enterprise applications to other platforms is often poorly supported.

*The **looksoftware** range focuses upon rapid and easy repurposing, extension and integration of existing enterprise applications, providing tools that enable presentation, application and data layers to interact with core systems in a more flexible manner without raising maintenance issues. The stated purpose of the company is to design, develop, and market innovative Web to host e-business solutions that are dedicated to the reduction of complexity, and the improvement of business attributes such as responsiveness and productivity.*

*Butler Group believes that the **looksoftware** portfolio contains impressive technology, and that the dynamic architecture satisfies key demands in the Application Modernisation market. The fact that the company's product are already embedded into the offerings of fellow Independent Software Vendors (ISVs) creates a tremendous reach, and coupled with the strong focus upon the SME market this implies significant opportunities for expansion in this market.*

► OVERVIEW

The Application Modernisation market covers a range of products and approaches, with only the common theme of attempting to extract functionality from existing systems in more effective ways; whether emulation-based, transformational, or Web service-oriented, vendors are attempting to provide opportunities to acquire and utilise business processes based on older technologies with greater flexibility.

The dilemma for modern businesses is that although systems that have supported their efforts for many years are still productive and dependable, these self-same systems do not lend themselves well to modernisation, or integration with agile business strategies. Compounding this issue is the fact that technological advances can quickly relegate even the most contemporary systems to a legacy status.

This latter point reminds us that Application Modernisation is not purely a mainframe issue at all; the drivers toward modernisation begin to bite wherever business processes are undermined by poor interfacing between systems and users, as well as applications themselves.

The opportunity recognised by **looksoftware** is the fact that although the largest enterprises have access to highly experienced development teams and/or expensive Systems Integrators (SIs) to address some of their legacy and mainframe problems, smaller companies that are equally dependent upon their iSeries mainframes are often poorly served. Three products are offered by **looksoftware** to enable these types of organisation to extract greater levels of value from their existing investments. The dynamic environment operates in a Just In Time (JIT) manner, in which objects are created on-the-fly based on current application state; against this highly flexible backdrop, the **newlook** product provides refacing, generates new interfaces, and supports desktop integration, whilst **centric** provides deeper application integration and data integration support.

The **newlook** functionality consists of:

- Rules-based dynamic environment for fast User Interface (UI) generation and easy maintenance.
- UI Designer for custom re-facing and new UIs.
- Objects, Events, and Actions provide powerful, easy-to-learn extension support.
- Integrated 5250/3270 emulation where required.
- Integrated de-bugging and error handling.
- Multiple Application Programming Interfaces (APIs) for seamless desktop integration.
- Secure Sockets Layer (SSL), Virtual Private Network (VPN), and Socks support for flexible security.
- Integrated printer emulation, multi-session support, file transfer support etc.
- Integration with **centric** for multi-platform server access.

The **centric** product features are as follows:

- Remote Procedure Call (RPC) application layer integration.
- Dynamic Data Exchange (DDE) and Dynamic Link Library (DLL) application layer support.
- Distributed Data Management (DDM) database layer integration for IBM DB2.
- ActiveX Data Objects (ADO) database layer integration for SQL Server, Oracle, Access etc.
- Web services browser.
- Integrated debugging and error handling.
- Objects, Events, and Actions provide powerful, easy-to-learn extension support.
- Integration with **newlook** for UI management and presentation layer integration.

looksoftware expects that the combined features of its product set, whether deployed *en masse* or in conjunction with third-party solutions, will be used to reface existing applications, integrate mainframe applications with their front-office counterparts, and also support initiatives designed to create new UIs for enterprise applications in general.

Butler Group believes that a wide range of functionality and disciplines will be required in order to extract truly valuable results from enterprise software projects, ranging between the discovery of application and program resource through to the management of new processes based upon components of business logic; every product and service attempting to support such projects should therefore be flexible enough to accommodate several, if not all, of the elements that now come under detailed consideration.

► DISCOVERY OF APPLICATIONS

In many cases, the legacy environment will be both complex and poorly documented. If applications are to effectively interact against this backdrop, modernisation tools must first act to inventory legacy systems, determine relationships in order to preserve the business process flow, and establish what data elements are present. Ideally, this process should be clearly documented, or alternatively the modernisation tool should capture or create documentation from the legacy source itself.

As **looksoftware** functionality consistently acts as an interface between the enterprise applications and the company's business users, the tools themselves are non-invasive, and no provision is needed for close examination of legacy code. Similarly, automatic documentation of legacy programs is not a priority for this approach, and **looksoftware** does not support this.

► APPLICATION ANALYSIS

Having determined what elements of the legacy system are present through discovery processes, the next logical step is to analyse what they are doing. Analysis should identify key elements, such as Job Control Libraries (JCLs), process dependencies, and, most important of all, determine how much 'dead' code is present in order that this can be removed, reducing maintenance costs.

Although **looksoftware** does not document legacy applications or report on their activity, it does constantly assess activity and processes, via the dynamic architecture. The JIT nature of this **looksoftware** tool is a strong differentiator for the product set as an integrated whole. The architecture constantly assesses the state of the existing enterprise applications, and creates objects at execution time based on the current state, rather than a static capture. As an example of this, whenever a User Interface (UI) is generated, it is done so dynamically, based on the execution time data stream. This enables changes, such as maintenance efforts, to be made to the legacy applications in question without having to make any alterations in the **looksoftware** environment as well.

► PRESENTATION LOGIC

The problem with legacy code is typically not that it is substandard, or inadequate for enterprise needs, but rather that its capabilities must be accessed via difficult-to-use interfaces. Application Modernisation tools may address this issue by dedicating functionality to the presentational layers of legacy solutions, in either an invasive or non-invasive manner.

The creation of user-friendly interfaces connecting to existing enterprise applications and/or mainframes between business users in Small to Medium-sized Enterprises (SMEs) is typically not well provisioned for. **looksoftware** is an exception to this rule, and a key strength of this product range is the recognition that there is a large market of *iSeries* mainframe using-businesses that cannot afford (or alternatively, risk) the use of invasive technology options to create more flexible connections between their front-office applications and business users, and the critical back-office systems that actually host the company's core applications.

centric is the product that focuses most closely upon the delivery of interfaces between users and existing mainframe systems, and its functionality centres upon three main areas; Presentation, Application, and Database.

- **Presentation:** Provides direct access to 5250 and 3270 applications via **newlook**'s presentation layer integration.
- **Application:** Integration with new and existing programs, commands, and Web services, at the application layer.
- **Database:** Direct access to DB 2 and other popular databases, and also provides flexible data layer integration.

► BUSINESS LOGIC

Separating the presentational layers from the business logic layer can be an equally important element. Business logic, when clearly defined, can be componentised for extensive re-use across processes, simplifying the development of new services and enterprise initiatives. The nature of legacy code, often obscure to contemporary developers, demands strong support in the enablement of business logic extraction and conversion.

Non-invasive approaches, such as **looksoftware**'s, along with the majority of Web service-based approaches, tend to adopt the view that the legacy applications being connected to are in good working condition. The assumption on the part of a prospective customer is frequently that if the legacy application is not broken, there is little point in fixing it, and whilst this view may lead to difficulties further down the line, in the short term non-invasive technologies will enjoy considerable success in creating new options for connectivity, rather than change.

As a non-invasive product set, **looksoftware**'s line does not require changes to be made to the business logic on the mainframe, focusing instead upon ensuring that the logic can be accessed more flexibly by a business user through presentational layers. The product set is very well suited for a range of approaches, including Web enablement, application integration, and emulation, amongst others.

► BUSINESS LOGIC USAGE

The aim of capturing and improving access to the underlying business logic is to ensure that the business rules that depend on this can be more flexibly supported and utilised. Business rules must also be identified and documented in order to simplify any subsequent recombination into new services. One logical option is for this information to be stored within a business rule repository. The Application Modernisation tool should also be assessed in terms of how it achieves conversions from legacy code, such as which languages it operates with, and the question of how this conversion is carried out in real time should be addressed.

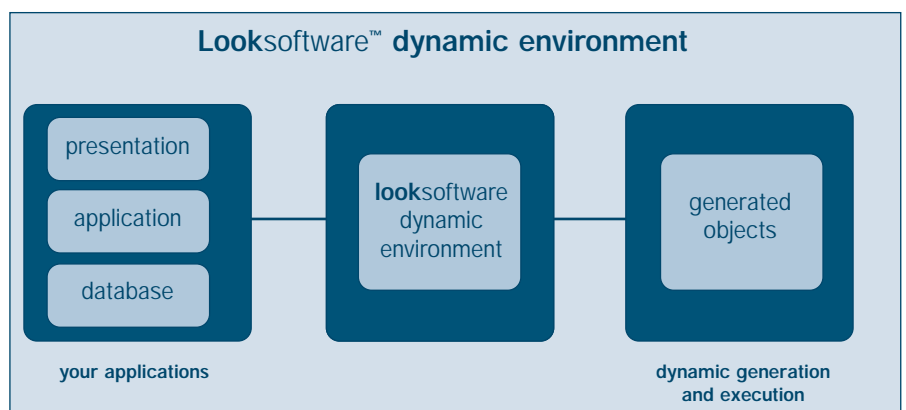
The dynamic environment creates objects at execution time, as noted, and therefore connects to application processes on-the-fly. Business logic runs as normal upon the mainframe, and needs no alteration or modification for **looksoftware**'s tools to closely interact with it. A standard sales cycle for **looksoftware** is actually to take a portion of the potential customer's existing application, and then demonstrate how this can be re-used, modernised, and integrated with more contemporary applications in a live demonstration. This enables a very rapid demonstration of real operational differences, with the results of the change visible and measurable within a matter of a few days.

Integrated scripting support and debugging allows rapid and customisable extension and integration with legacy applications. Coupled with the **looksoftware** ability to ensure that presentational layers between the user and the applications can be automatically generated and reliable even if the core application itself has been modified, this results in a very flexible means of ensuring high levels of application accessibility and well-supported business rules.

► COMPONENT MANAGEMENT

Breaking legacy processes into reusable and highly flexible components is the goal of most Application Modernisation vendors, as this step alone greatly improves application development efforts, and also reduces operational costs. The level of componentisation varies considerably from vendor to vendor, according to focus and core strengths. Component management is a key area to vendors and end-users positioning themselves to take advantage of the Web services model.

The dynamic environment is designed to accommodate change, so that applications can continue to be enhanced without repeated conversion, collection, or re-compilation efforts. The object model supports refactoring, Web-enablement, new UI's, Web services, server access, and multi-platform database access. Common services, such as debugging, error handling, object inspection, and expressions, are available in a variety of circumstances, for example, when refactoring a legacy application or integrating a Web service. The integrated tools and services share the **looksoftware** dynamic environment.



looksoftware Dynamic Architecture

Should an existing application be componentised manually or by using a third-party tool, the components can be referenced directly by the **looksoftware** environment.

► DEPLOYMENT

looksoftware recommends one week of training in the use of its products as being a realistic minimum requirement where refactoring and/or application integration projects are to be undertaken using its products. Depending upon the complexity and range of the project, greater levels of product familiarity may be required, and naturally expertise in the use of the applications being extended will also prove beneficial. The company provides both training and consultancy support where required, or alternatively this can be provided by reseller partners or SIs.

Although its products have been deployed with minimal training being required, **looksoftware** does strongly recommend training as being an element of deployment. Other suggested requirements include experience with modern UI design principles, and expertise in use of events and objects.

However, the company observes that proficiency with its toolset does not require any specialised technical skills, a point which Butler Group believes is an important one given the possibility of lack of highly skilled resource at the SMEs which form the target market for **looksoftware**. UI design and application integration scripting is enabled using intuitive, object-based WYSIWYG editors.

The average implementation times for **looksoftware** deployments fall between one and three months; smaller projects can be successfully deployed within a month, dependent upon their scope. A full enterprise-level project may take longer than the average, perhaps taking six months or more. A modular approach can easily be supported in deployment, for example, a customer might initially choose to implement refactoring and UI rejuvenation as a first step, then consider application integration and extension at a later date.

All 32-bit Windows platforms, with Internet Explorer release 5 or greater, are supported by **looksoftware**, as are all eServer iSeries configurations supporting OS/400 V4 or later. The **looksoftware** range operates against applications on iSeries and zSeries, which typically involve RPG, COBOL, or C. Windows-based legacy applications are also supported, whilst Web services consumption support allows integration with other platforms.

The **looksoftware** product set operates against IBM DB/2, SQL Server, Oracle, Sybase, and Access, and must integrate with the Web server for Web deployment. A range of Web servers are supported, including WebSphere, Apache, and Tomcat, and if Web services need to be created then **looksoftware** recommends the use of either WebSphere or .NET tools. It should be noted that **looksoftware** observes that legacy system change management procedures do need to be reviewed to incorporate its dynamic UI generation.

looksoftware products are licensed for developer and business user use on an active concurrent user basis, and the standard software license provides for perpetual use should this be required by the customer. Because the number of users will naturally vary wildly from company to company, it is impractical to provide cost estimates relative to this product range. Annual maintenance will be 18% of the software license fees paid, and this provides provision for helpline access, releases of fixes, enhancements to the product, and also new releases as they become available. Major releases occur annually, and the dynamic environment is currently at release 6.1. Minor point releases are released every four months, on average.

► MARKET STRATEGY

looksoftware produces products that target cross industry interests, and it has customers in both vertical and horizontal market sectors. Examples include financial, government, manufacturing, and distribution, which are areas that commonly face legacy issues – less commonly encountered in this context are other software vendors, but vertical-specific providers, such as Sterling Commerce, embed **looksoftware** into their own portfolios in order to provide more extensive support to the integration efforts of their own end-user customers.

The typical client for **looksoftware** is an SME, usually an eServer shop with an internal IT resource; this does not preclude the possibility that a larger enterprise will also reap the benefits of implementation. Software vendors range in size between a handful of employees up to thousands. The company is confident that its customers will begin to extract Return On Investment (ROI) in the same business cycle that **looksoftware** technology is deployed, due to factors such as reductions in cost, increases in revenue, etc.

An excellent opportunity for **looksoftware** lies in the fact that Independent Software Vendors (ISVs) can utilise its technology in their vertical solutions to ensure Web-enablement, customisable UIs, and extend multi-platform integration capabilities. Another opportunity stems from the Application Service Provider (ASP) sector, as ASPs must ensure that they are capable of delivering applications with customisable interfaces that nevertheless share a single application base.

looksoftware is an increasingly successful vendor in a specific area of the Application Modernisation market, due to the flexible integration that its tools offer to users and fellow vendors, and also to its focus upon a market segment that is in dire need of support with legacy extension projects, but which usually either cannot afford Enterprise Application Integration (EAI) projects, or which lacks the skilled resource to support these. Although the **looksoftware** product line and services is equally at home in the largest of enterprises, Butler Group believes that the focus upon SMEs is a sound and effective strategy, which will reap significant dividends.

► KEY FINDINGS AND LOOK AHEAD

KEY FINDINGS

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| ✓ Dynamic architecture presents interfaces through to legacy applications on-the-fly, rather than through static captures. | ✓ Supports Web enablement, application integration, and emulation initiatives. |
| ✓ Integrated scripting support and debugging. | i Business partner channel of over 100 companies. |

Key: ✓ Product Strength ✗ Product Weakness i Point of Information

LOOK AHEAD

looksoftware is currently working on several developments for its product range. Closer integration with .NET servers is planned, along with Enterprise JavaBean (EJB) support, the ability to create Web services, connection pooling, and integration with Business Process Management (BPM) tools.

► COMPANY PROFILE

looksoftware has been trading since 1995, and is a privately held company. Its headquarters are located in Wheelers Hill, Melbourne, Australia, and it has consultants based in the US and the UK.

Its initial business focus was the development of modernisation solutions for the IBM mid-range market, which led to the release of **newlook** in 1997. The first release led to international interest, and **newlook**'s functionality has been extended considerably since that time. As the needs for database access, Web services consumption, and RPC support became more of an opportunity, the **centric** product was designed to meet these demands. The company's revenues have been disclosed, and it has shown an average growth of 20% per year for the last three years, with each year being profitable. The company is growing, with the majority of its 22 employees operating at the Melbourne headquarters; forecasts suggest that the year to date performance is 20% over budget.

looksoftware's products are distributed directly, by the company's own marketing department, and via an extensive business partner channel, consisting of over 100 companies. The distribution network consists of strategic partners, application vendors, and reseller partners. Business partners include Clear Technologies, Fiserv, IBM, Lansa, Microsoft, and Sterling Commerce. The **looksoftware** product range is used by over 800 international organisations, public and private sectors alike, in 30 countries, including ABN Amro Bank, the Australian Defence Department, Castrol, DeBeers, Kraft Foods, Matsushita, Nashua, Sterling Commerce, and US Federal and State Government departments.

► CONTACT DETAILS

looksoftware
Suite 9, L1
622 Ferntree Gully Road
Wheelers Hill
Melbourne, Victoria 3150
Australia

Tel: + 613 9535 4444

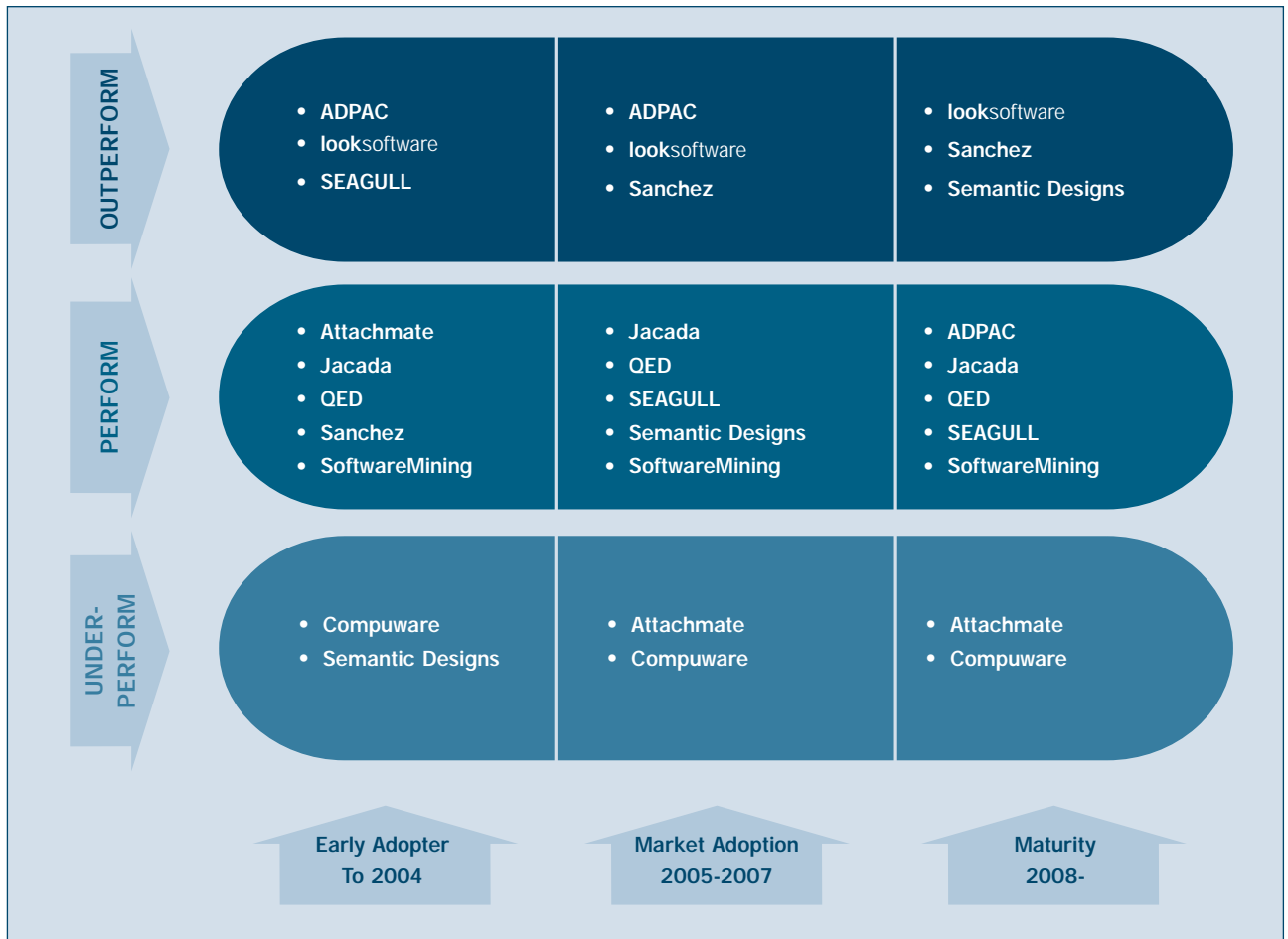
Fax: + 613 9535 4455

E-mail: info@looksoftware.com

www.looksoftware.com

Product Performance Table

Rating	Company/Product	Butler Group Opinion
Outperform	ADPAC ADPAC Legacy Application Overview	Although invasive products are not yet popular with the market, the mature and flexible ADPAC range closely fits enterprise needs.
	looksoftware newlook and centric	looksoftware products are used by a wide user base of businesses and fellow ISVs. Its dynamic architecture is a powerful differentiator.
	SEAGULL Transidiom 4.0	SEAGULL supports programmatic integration via Web services, and the company is closely in step with market demands.
Perform	Attachmate myEXTRA! Smart Connector Enterprise Edition 2.1	Attachmate supports connection to enterprise applications via Web services, with presentation as a priority rather than future proofing.
	Jacada Jacada Integrator 3.8	Application Modernisation is a renewal market, whilst Jacada is a powerful integrator – in some instances additional support will be called for.
	QED Business Systems Ltd. FireXML for CICS	FireXML solves a specific business problem, and does so extremely well. Issues beyond that problem will need additional support.
	Sanchez Computer Associates Line of Business Migration	Although not aligned with current market demands, the technology of this growing company is strong and addresses the real issues.
	SoftwareMining SoftwareMining	A framework portal with its strength in its use of Microsoft Active Directory to ensure roles-based access, single sign-on, and provisioning.
Under-perform	Compuware UNIFACE 8.3	Compuware's support for its established user base is strong, but beyond this its tools are not well positioned to win new levels of custom.
	Semantic Designs DMS SRT 1.1	This is a small company that is developing highly advanced products based on a unique vision. In time, organic growth and development will result in a significant upswing in its fortunes.



The rationale behind this positioning is as follows:

Early Adopter (to 2004)

What we are measuring in this section of the Report is the market for Application Modernisation technologies, which, whilst not exactly in the early adopter stage, given that a number of solutions have been evolving over the past decade or even longer, has a wide spread of vendors that are well-established as well as newer entrants providing innovative technologies.

As the market for tools to move existing applications forward has evolved, solutions have moved on from the early 'screen-scraping' technologies (although these are still in widespread use) to much more aggressive methods that wade into the existing application and either enable its renewal or break it down into components that can then be reassembled into new applications that more closely meet the needs of today's much wider range of users.

At this stage, whilst some suppliers are in the *Outperform* sector, we do not feel that there is a major dominant supplier, although the outperforming vendors of note are ADPAC, with its broad solution set that addresses the mainframe market comprehensively, and the relative newcomer, looksoftware. The latter vendor may not be a well-know vendor, but its tools are in widespread use by third-party consultancies.

We have placed Semantic Designs in the *Under-perform* sector in this phase, not because of its lack of an interesting solution – the company has very innovative tool – but as yet the company's toolset is in development, and also the company is relatively small.

Market Adoption (2005-2007)

Whilst this market has already reached a level of maturity, in that emulation and screen-scraping technologies are already in widespread use, we believe that the market will look to Web services as a method for linking applications together. It is also our belief that this is not necessarily the best solution long term, but one that will be seen as easy to achieve. Componentisation at this stage will be at a very high level, with only the more innovative organisations looking to break down applications into smaller, more re-usable components that can be rapidly combined into new applications.

Semantic Designs has moved into the *Perform* sector by this stage, with many of the other vendors jostling for position.

The market for 'front-ending' existing applications will be gradually declining by this stage, and we believe that vendors who have not moved beyond their core specialities in this area will under-perform the market as whole by this time.

Market Maturity (2008-)

Making projections this far into the future is a risky business, and we provide no guarantees that a particular vendor is necessarily still in place this far into the future. However, the market for applications to progressively transform existing applications is likely to still be buoyant. A word of warning here – the applications that require modernisation at this time in the future are likely to be rather different from the monolithic applications that still exist today in many organisations. By 2008, market pressures will have exerted their forces and the majority of organisations will have had to modernise their existing applications to a certain extent. This will not mean that maintenance will no longer be required, but that the sort of maintenance and modernisation is likely to be different.

Following on from this concept, we feel that ADPAC, with its reliance on mainframe-based rejuvenation, will relinquish its spot in the *Outperform* sector unless it changes strategy. We do not mean to indicate the death of the mainframe – this has been forecast numerous times in the past, and yet the mainframe concept is still very much alive and kicking. However, many organisations will have applications that are built on other technology by this stage, and in order to continue to provide a full toolset other platforms need to be included.

By this time, it is likely that solutions rather than just tools will be the way forward, and vendors need to be in a position either to partner with consulting and services organisations or to be part of one. It is quite possible that some of these vendors will no longer exist as independent entities, but their technologies will have been snapped-up by the big players in the software market. Semantic Designs has the technology vision to move up to the *Outperform* sector in this timescale.

www.butlergroup.com

Headquarters:

Europa House, 184 Ferensway, Hull,
East Yorkshire, HU1 3UT, UK

Tel: +44 (0)1482 586149

Fax: +44 (0)1482 323577

Australian Sales Office:

Butler Direct Pty Limited, Level 6,
275 Alfred Street, North Sydney,
NSW, 2060, Australia

Tel: +61 (0)2 9955 6249

Fax: +61 (0)2 9955 5883

Butler Group ▶

ANALYSIS WITHOUT COMPROMISE