

Technology Audit

Enterprise Applications

SSA Global
SSA ERP_{LN}

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Abstract

SSA ERP_{LN} is an Enterprise Resource Planning (ERP) application that is suitable for discrete manufacturing in a range of industry sectors. Organisations today need improved visibility and better control, but the most important aspect of newer computer systems is the ease of use they provide. This product offers significant usability enhancements over older applications, making it quicker (and cheaper) to deploy. An impressive aspect of the solution is the optional Dynamic Enterprise Modeler, which allows processes to be defined (and easily modified) visually, allowing users to see the next step within a potentially complex process. The company offers other applications to cover areas such as human resources and CRM, which are not part of this product. Companies that need applications to support demand-driven manufacturing and distribution – in addition, of course, to those looking to upgrade from older ERP systems such as Baan, MANMAN and MK – should consider evaluating SSA ERP_{LN}. Rather than just simply looking for a feature/function match, a good way to evaluate this application would be to identify a business process and see how it could be demonstrated within this product as a proof of concept.

KEY FINDINGS

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

✓	Multilingual, Unicode-based application.	✓	Good reporting functionality (uses Cognos ReportNet).
ⓘ	The solution has its own object-oriented 4GL development language, and J2EE.	ⓘ	Does not include Human Resource or Payroll functions. HCM is available as a strategic extension from SSA Global.
✓	Intermediate products can have a different manufacturing strategy to finished goods.	✓	Good support when upgrading from previous applications.
✓	Serial number and lot control capability.	✓	Supports a wide range of manufacturing strategies.

LOOK AHEAD

The current version (at the time of writing) of SSA ERP_{LN} is 6.1, and SSA Global intends to continue to enhance the application, including offering more embedded localisations and added support for Brazil via a Feature Pack later in the year. Additional enhancements on the Supply Chain Planner are also likely, which will provide customers with still more integrated solutions.

► FUNCTIONALITY

Product Analysis

Many companies today seek to gain benefits from implementing integrated applications that support the main business functions, often called Enterprise Resource Planning (ERP) applications. Businesses face many challenges in automating key business processes such as planning, collaboration, and execution. With complex (and often global) supply chain networks, multiple manufacturing and distribution sites, and complex processes, organisations need integrated solutions that can address such problems as multiple languages and currencies, combined with the functionality required for a range of manufacturing processes.

SSA Global offers SSA ERP_{LN} as a solution to many of these challenges. It delivers a range of capabilities that support a wide range of manufacturing industries, with a modern architecture and Web-based user interfaces. SSA ERP_{LN} is the culmination of the continued development of the SSA Baan ERP application, but adds in relevant functionality from some of the other applications in the SSA portfolio. The application was launched at its 6.0 version in June 2004, and has seen considerable interest from a number of existing and new customers. In addition to sales to new customers, it is intended to be the upgrade path for users of SSA Baan, SSA MANMAN/HP, and SSA MK. The focus of the application is very much on supporting discrete manufacturing organisations, with a wide range of manufacturing typologies, including, of course, Make-To-Order (MTO), Make-to-Stock (MTS), and engineer to order industries, as well as being suitable for distribution organisations.

Where the solution delivers value is in the emphasis on supporting business processes across the enterprise, obviously with a particular emphasis on manufacturing. It supports lean manufacturing, but also covers freight management and after-sales service. Solution templates that cover more specific requirements of several target industries (such as automotive, aerospace and defence, high-tech electronics, and industrial machinery and equipment) are embedded into the application.

One of the distinguishing features of the application is the embedded Dynamic Enterprise Modeler (DEM) tool, which allows the organisation to map out entire processes visually, making it quick to configure and deploy the application. This focus on ease of use (as well as good upgrade paths from older SSA Global products) is likely to tempt companies that are using older 'green screen' applications to review the solution in depth.

The help system includes comparisons with previous versions of Baan, which makes upgrades much easier for existing users as they can quickly find out the main differences.

SSA ERP_{LN} is not designed to support complex process manufacturing companies (for example, food manufacturing); for this the company offers SSA ERP_{LX}, which is the recently-launched (April 2005) replacement for SSA BPCS and other products.

SSA ERP_{LN} appears to be a mature product that offers a good range of capabilities for companies in the target market for this product – manufacturing and distribution. Butler Group feels that the product name is a little basic – calling a product “ERP” certainly makes it obvious what it does, and means that users of the various older SSA Global products do not feel restricted by the history that may relate to the name of the application that they used to use. However, from a marketing perspective it does not catch the imagination.

Product Operation

The architecture of the application, illustrated in Figure 1, is essentially a 3-tier architecture, separating business logic from both the underlying data and the display. There is a choice of user interface, the Webtop (a Web-client offering) and Worktop. Both can be easily customised by the organisation. Ease of use is a key mantra, with simple searching available.

Much use is made of 'dashboards', which summarise information, indicating where data is available at lower levels. The graphic display is sophisticated yet relatively uncluttered, making use of tabs and windows. Portal access is an option.

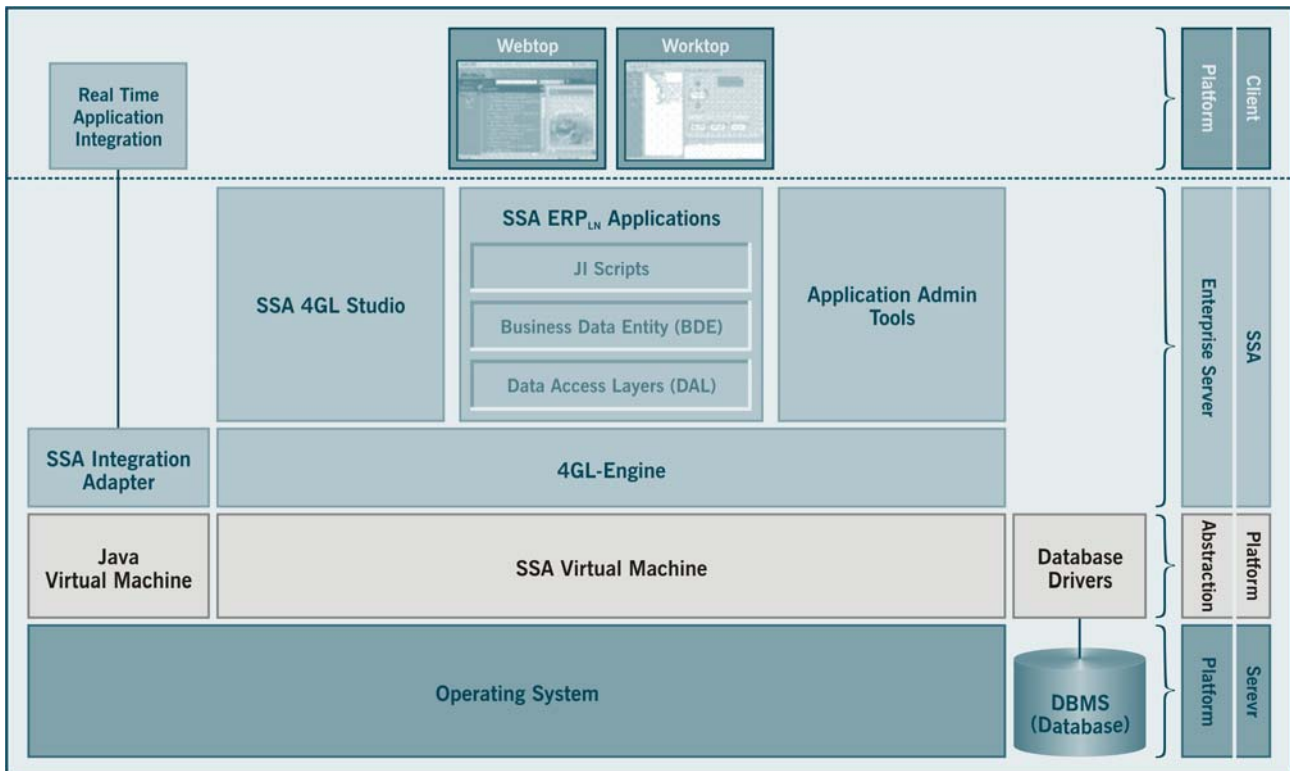


Figure 1: SSA ERP_{LN} Architecture

Older parts of the application are written in a proprietary 4GL, whilst newer areas of the product are written in Java. A plug-in to the Eclipse framework is provided to enable developers to work in a familiar environment – SSA Global recognises that ERP applications may need to be enhanced to suit the actual deployment and therefore makes it easy to do so.

The application can be deployed on a wide range of operating systems and databases – see the Deployment section below for details.

New functionality added in the most recent version (feature pack 2 of release 6.1) includes improved automation for multi-site companies with an enhanced planning engine; an interactive graphical planning board using drag-and-drop tools; the ability to do order pegging (works order to sales order); and direct supply to the shop floor for urgent component parts (without needing to receive into stock and then re-issue).

The ERP application covers many different organisational areas:

Finance

SSA ERP_{LN} includes full finance functionality for single and multi-site operations (general ledgers, accounts receivable, accounts payable, etc.), although for complex global organisations SSA Global offers a separate financial product: SSA Financial Management. SSA ERP_{LN} covers asset management, cost tracking and accounting, cash management, budgeting, invoicing, and time and attendance.

Full fiscal and management reporting is available within this application, with up to five dimensions. Both average and standard costing are supported, with a choice of methods for standard costing (moving average cost, LIFO, FIFO, and lot costing). It is possible to hold consignment stock, with self-billing when used. All customer invoicing is central, and invoices can be sent to customers as required (e.g. at each delivery, or monthly).

Sales

The Sales module covers pricing, margins, quotations (which can be converted easily to orders), contracts, and schedules. There is a product configuration element, which can be customised. Additional content can be associated with items; for example, it is possible to specify after sales requirements for an item, as well as cross-sell and up-sell opportunities. Basic product configuration is included, as are extra cost items (e.g. non-stock controlled manuals). It is possible to track special boxes, pallets, or packaging (which may then be returned and reused). Available To Promise (ATP) information across multiple warehouses is also shown.

A useful feature is flexible item groupings. Quite complex pricing structures and discounts are possible, such as price breaks, line values/order values, although not really up to the type of pricing used in the CPG market.

Two-way integration to Microsoft Office is possible, allowing templates to be set up (for example, for a quotation).

Purchasing

Full purchasing capability is covered, including requisitions, pricing, quotations, contracts, schedules, and supplier rating, both subjective and objective. Contracts and schedules can show the committed spend to date, and allow part payments for sub-assemblies, etc.

Planning

Various entities can be planned across the enterprise; including item planning, resource planning, demand planning, order planning, and full plan analysis. There is a single, unified planning engine for MRP, DRP, etc., and performance indicators are automatically provided.

An organisation can have a range of sourcing strategies, such as those from the warehouse or direct from manufacturer (or both), and planning supports a 'make or buy' decision, with effective dates. It is possible to set up simulations as well as an actual plan.

The planning system is a 'bucketless' system, (which can cover daily, weekly, monthly, periodic planning, or any combination thereof) and combines Master Production Scheduling with MRP – the planning horizon indicates where plans become detail. Forecasting can be carried out with four different algorithms; moving average, exponential smoothing, polynomial, and standard regression.

There is full product lifecycle support, including service management, engineering requirements, value-add information such as repair, disassembly, service parts, as well as serial and lot control, which supports greater regulation. Where more sophisticated Product Lifecycle Management (PLM) is needed, SSA Global offers a separate PLM application.

Projects

This covers project definition, project estimation and budgeting, project planning, monitoring, and invoicing.

Quality Management

Inspection checking can be set up at a range of stages – by defining the relevant values, such as sample checking, etc.

Manufacturing

The system covers Bills Of Materials (BOMs) – including multi-level BOMs, routing, cost calculations, manufacturing processes and shop floor controls (with links to a range of Manufacturing Execution Systems). It also includes tooling requirements and configuration control. Barcoding can be included (via partner systems). Lean manufacturing/Kanban is covered, although where this is a major requirement it may be wise to add the SSA LeanWare module to provide more sophisticated coverage.

Warehouse Management

Basic warehouse management is included, covering single/multi-batch and location controlled warehouses. Bulk and picking locations can be defined, and packaging can be traced. The solution covers inventory planning and handling, and inventory analysis. It is possible to link to a more sophisticated Warehouse Management System (WMS) if needed, although this will require additional integration.

Basic freight management has recently been added, covering the planning of shipments, drop points, sequencing, routes (including inter-plant), and cross-docking.

Service Management

A featured area that is not often covered by ERP packages is that of after-sales service; covering contract and sub-contract management, call management, service call management, and depot repair (including returned materials authorisation and spares).

A repair itself may have costs associated with identifying/quarantining/repair, and the system allows the purchase of items, return to supplier, and sub-contract repair. Loan items (and rotables) are also covered. Because of the Web client, mobile service capability is also available, allowing mobile staff to book time on site, materials used, and then potentially transmit this in real time where wireless connections are available.

Web-based self-service allows customers to report their own faults and run diagnostics, complete with FAQs.

The solution also covers planned maintenance, allowing maintenance to book scheduled time on production machines as well as scheduling service jobs.

Where necessary, Computer Telephony Integration (CTI) can be integrated, allowing more call automation.

Dynamic Enterprise Modeller

This is one of the key tools that, in our opinion, sets SSA ERP_{LN} apart from the competition. It is a visual process mapping tool, incorporating an element of workflow functionality, which really helps to achieve what SSA Global calls 'the four pillars of value': employee effectiveness, resource productivity, low TCO, and collaboration. DEM has been used (and proven) in a number of the company's larger customers.

SSA Open Architecture

This is the underlying application platform, which provides the core services to the application. It includes the SSA Webtop and Portal, Decision Services such as Scorecarding, Enterprise Analytics, and Reporting; Business Process Services (Collaboration, Integration, and Business Process Management); and Application Services such as Master Data Management, Administration, the development Studio, and Platform services.

With today's emphasis on global operations and more centralised IT, reliability can become an issue. SSA offers multiple levels of fault tolerance, including cluster servers, hot stand-by server environments, and entire replication. Where an application operation can only take place on one server, either because of the type of process or because of hardware constraints, then clustered servers provide resilience.

For service failover SSA ERP_{LN} is certified for use with Microsoft Cluster Server, HP ServiceGuard, and IBM HACMP. A Certified Professional must assist with the deployment of the solution. The company also offers SSA Application Management Services (AMSs) Disaster Recovery if required.

SSA ERP_{LN} is a highly scalable solution, with implementations of as many 30,000 users. SSA Global works in close co-operation with its technology partners to optimise and benchmark the overall solution, and benchmark figures can be provided to customers on request.

Deployment Examples

TelAir went live on SSA ERP_{LN} version 6.1 in January 2005, and the company is still in the process of rolling the application out across the entire company. It is consolidating onto one platform globally (having previously had at least two versions of Baan together with many different spreadsheet-based applications). The company has already seen an attractive return on investment (its aim is to save around US\$400k per annum by upgrading to this application).

Product Emphasis

The main thrust of SSA ERP_{LN} is to meet the needs of today's complex and potentially global manufacturing and distribution organisations, with the option to extend beyond core ERP functionality as required. Its modern architecture brings new capabilities to customers, particularly supporting the transition towards more service-oriented, modular applications of the future. The emphasis on process management is excellent as it allows users to see where they are within a complex process and therefore what the next operation should be. This approach is still relatively new in the ERP market, and will be appreciated by organisations that need to handle a number of different processes.

► DEPLOYMENT

SSA ERP_{LN} is available on a wide range of common platforms; the following table shows current and planned platform support:

Platform and Operating System	Version	Databases				
		Oracle 9i, 10g	Informix 9.40, 10	DB2 8.1, 8.2	SQL Server 2000	MySQL 5.0
HP9000 PA8000/HPUX (PA2)	11.00, 11.11	Yes	Yes	Yes		
IA64/HPUX	11.23	Yes				
Suse Linux (x86, x64)	SLES9	Yes	Yes	Yes		Yes
Red Hat Linux (x86, x64)	RHEL 3	Planned	Planned	Planned		Planned
Linux on Power 5	Linux/P5	Planned	Planned	Planned		Planned
IBM RS6000/AIX	5.2, 5.3	Yes	Yes	Yes		
Windows (x86, x84)	Win 2000, 2003	Yes	Yes	Yes	Yes	
Sun Sparc/Solaris	8, 9, 10	Yes	Yes	Yes		
IBM iSeries/iSOS	VsR3			Yes		

Web Servers supported include IBM WebSphere, BEA WebLogic, Sun ONE, Microsoft IIS, and Apache Tomcat. Hardware options include IBM iSeries, and processors including Intel/AMD and RISC/Itanium.

Deployment of the application usually needs a project team to be assembled, including personnel from the finance function, distribution, and manufacturing, together with a technical person and a project manager. The exact composition of the team will depend on what data needs to be migrated and also on which additional modules may be required. Key users need to be available to help with any questions. A technical administrator is also needed to add users, perform system maintenance, and carry out fine-tuning of the database. Physical installation is Wizard-based, and relatively quick.

The time taken to deploy the application will vary (typically between three and nine months), but this will depend on the organisation's existing level of expertise in ERP and the number of modules installed. The implementation can be modular in that individual modules can be deployed separately, but the benefit of the application comes from its integrated, cross-functional nature.

Care needs to be taken to size hardware and infrastructure adequately to ensure response times.

SSA ERP_{LN} has been designed for integration with almost any external application or service. The application exposes its data and logic as Web services to the outside world, enabling it to be used by other applications. The SSA Open Architecture provides the full set of integration services to connect to any application, data source or data sink, via off-the-shelf legacy adapter technology (which would need to be purchased for the relevant applications) and integration brokering services.

SSA Global can provide both on-site and off-site training. As is the case with many ERP applications it is usual for the customer to provide their own front-line support, both for application and some technical issues (and therefore as part of an implementation project it is vital to ensure that adequate training is budgeted for).

SSA Global provides second-line support via its One Point service, which has guaranteed response times dependent on the criticality of the issue and the level of support paid for.

The SSA ERP_{LN} core applications make use of various Java-based services, including portal, enterprise analytics, reporting, integration brokering, collaboration, event management, workflow, business process management, application administration, and several more services. For many of these services SSA Global has embedded best-of-breed partner technologies from IBM, Cognos, and Fujitsu. SSA Global added business content to those services and tightly integrated them into the SSA ERP_{LN} core applications.

Any ERP application is likely to have a significant impact on business processes. It is vital that the organisation understands its current processes and then maps these to fit the application, but in many cases it can be configured to support current processes, which can then be modified to be more efficient over time as the business is re-engineered to take advantage of the automation and collaboration that the application can bring.

A lack of involvement from the customer, particularly at a high enough level, can put the deployment at risk, and it is good practice to set up a steering committee to support the implementation or upgrade.

► PRODUCT STRATEGY

SSA ERP_{LN} is positioned as a solution for hybrid and discrete manufacturing organisations, such as aerospace and defence, high-tech and electronics, and industrial machinery and equipment. It also provides a strong solution for mid-market and tier-one manufacturing organisations. The optimal site size is between 100 and 999 employees per site, which roughly equates to US\$50 million to US\$1 billion organisations.

The company sells and markets its products worldwide via its direct sales force. In addition, SSA Global has channel and affiliate partners that market and sometimes directly licence its products to their end users; chiefly smaller companies.

SSA Global has service, software, and technology alliances/partnerships with companies around the world. The company has a key partnership with IBM – under the terms of the agreement the two companies jointly market extended enterprise solutions from SSA Global built on IBM middleware, including IBM WebSphere Portal, IBM WebSphere Business Integration, IBM WebSphere Application Server, and IBM DB2 Universal Database. Other technology partners include Fujitsu (for workflow and Business Process Management), Cognos (for Enterprise Analytics and Reporting), BEA and JBoss for application servers, and Oracle, Microsoft, and MySQL AB for databases.

IBM Business Consulting Services and SSA Global also collaborate to offer implementation and consulting services. Other partners include Atos Origin, Accenture, Sirius, CSC, and Capgemini.

SSA Global, in common with other ERP vendors, also maintains some major hardware partnerships, in order to offer optimised solutions. IBM, Hewlett-Packard, Sun Microsystems, and Intel are the main hardware vendors that it partners with.

SSA ERP_{LN} is licensed on a perpetual licence basis, and is priced by user rather than component or module. The SSA Open Architecture is a separately priced option, although it is a core element of the solution. Customisations are charged on a time-and-materials basis.

As with any ERP implementation, professional services are likely to be a considerable element of the total project cost because of the training and configuration requirements.

Support is available via SSA's OnePoint offering, with the standard contract being 24-hour by 5-day week. Critical systems support is 24x7. Support costs range from 20% to 25% of the initial licence cost.

SSA Global has a policy of 'never sunsetting a product', meaning that customers using older products can continue to get support for as long as they need it. Of course, the company is keen for customers to upgrade when possible; hence the launch of new products that deliver significant enhancements to functionality.

The company aims for an annual release program across all of its products, supplemented by service packs that provide some specific technology, functional, or localisation enhancements (for example, additional languages). Often, technology enhancements are prepared ahead of time, in major releases, so that when fully implemented the actual functionality update can be 'switched on' as required without requiring the system to be taken down.

The ERP market has seen much consolidation over recent years, with SSA itself having acquired a number of products. Typical competitors include SAP, Oracle, and often IFS and Intenia. Microsoft is starting to compete, but relies on partners extending the core applications in order to provide more specific functionality that is already part of SSA ERP_{LN}. Continued consolidation may threaten SSA's position if consolidation makes more large players that deliver full suite functionality emerge – this is a distinct possibility (particularly as Infor, for example, continues its acquisition trail). SSA Global will need to gain more market share to compete, and its strategy for doing this looks positive.

SSA Global intends to gain a leading position in the market, by focusing on its key target sectors, such as Industrial Machinery and Equipment. It also offers a range of solutions that integrate with the core ERP products, such as Supply Chain Management (SCM), Customer Relationship Management (CRM), and Product Lifecycle Management (PLM). The company intends to continue to add more functionality to the application based on customer requirements, focusing on the vertical needs of the industries it targets.

► COMPANY PROFILE

SSA Global is a provider of ERP solutions for manufacturing, services, and public organisations worldwide. The company's headquarters are in Chicago, Illinois, and it has 121 offices worldwide.

Founded in 1981 as System Software Associates, SSA Global has gone through several distinctive stages of development. Along the way the company has made a number of acquisitions, which started in 2001 with the purchase of Max International, a UK-based company focusing on European manufacturing and SMEs. Also, in 2002 SSA Global acquired InterBiz Product Group from Computer Associates, as well as Infinium Software, a company focused on North American process manufacturing and healthcare organisations.

The acquisitions continued in 2003, with SSA Global acquiring Ironside – a buy-side e-commerce company, Baan (an underperforming Dutch ERP provider purchased from Invensys), Elevon – a knowledge management and collaborative commerce company, and finally EXE Technologies – a SCM business.

More acquisitions were made in June and July of 2004 with the company acquiring substantially all of the assets of Arzoon, a provider of integrated logistics and global trade management technology, as well as purchasing Marcam, a provider of specialised, operational-level ERP solutions for process manufacturers from Invensys.

2005 saw SSA Global become a public company (it is quoted on NASDAQ under the symbol SSAG) along with Epiphany's suite of products becoming an integrated part of the SSA CRM solution and the addition of Boniva's talent management suite strengthening SSA Human Capital Management.

SSA Global now has some 3,500 employees, with around 1,200 in development. The company spends on average 15% of its annual revenues on the development of new solutions and enhancements.

It has around 13,400 active customers in total, and there are over 250 projects under way for the latest release of SSA ERP_{LN}. Key customers using this product include Boeing, Barco, BAE Systems, Komatsu, and TelAir International. In general, SSA ERP_{LN} (and its predecessors) is used across several departments within the business, such as for finance, sales, purchasing, service, and manufacturing operations.

The company's financial year ends 31 July, and figures for the past three years are shown below:

	2005 (US\$ million)	2004 (US\$ million)	2003 (US\$ million)
Revenue:	711.8	636.5	296.6
Change on previous year:	12%	115%	N/A
Total Net Income/(Loss):	32.5	18.8	52.3

► SUMMARY

All in all, SSA ERP_{LN} is a mature solution that provides significant functionality whilst improving ease of use, thus keeping ownership costs low. The company has shown that it can acquire strategically suitable products (for example, Epiphany as a stable CRM solution) to complement its offerings in areas where it did not have such clear capabilities. The product architecture is also designed to enable SSA ERP_{LN} to fit into a wide range of scenarios, making it highly suitable for distributed businesses.

The focus on flexibility, suiting a wide range of manufacturing and distribution strategies, is impressive; as is the process emphasis (with or without the DEM extra). Butler Group's only real concern is with the product name, which is unimaginative. However, given the ability for the application to blend into an organisation's culture by portal access or customising the user interface, perhaps this will not matter to users of the system, who will feel that it is just part of what they use to do their job.

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