

Agresso Business World  
"ERP with No Expiry Date"  
– an architectural white paper

ERP...with NO Expiry Date™



**Agresso Business World**  
**“ERP with NO Expiry Date”**  
**An architectural white paper**  
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## **I. Introduction:**

Today's CIO is operating in a period of unprecedented change, delivering information systems against the background of constantly shifting goalposts. Rapid growth, re-organisations, divestments and acquisitions, new markets, products and business models, accounting regulation and compliance are just some of the every day challenges that organisations face. In these circumstances, it is important that systems architectures are malleable, yet robust, so that business information and processes can be adapted on the fly, and delivered to decision makers irrespective of the changes they face.

Yet many modern day systems are architecturally flawed, inflexible to change and rooted in outdated concepts designed for the needs of a different generation. Faced with rampant growth and globalisation considerable emphasis has been placed in the past on processing large volumes of transactions, often at the expense of information management. Even today, the structure of popular enterprise resource planning (ERP) and financial applications reflect this early thinking, with discrete solutions for transaction processing and information management frequently sourced from completely different vendors.

In effect, we have become accustomed to a situation where the 'transaction world' is separated from the 'information world.' Where operational information is delivered by ERP systems yet management information is produced by business intelligence systems; where metadata is scattered throughout the enterprise, where process guidance is uncoupled from the applications; where user interfaces are inconsistent; documents are out of reach and external systems are inaccessible. As a result, public and private sector organisations world-wide have been saddled with high costs of ownership as they seek to maintain the integrity of their information systems when everything around them is changing.

Yet, information management and processing efficiency do not have to be trade-offs. The answer lies in a paradigm shift away from the twin pillars of the transaction world and information world occupied by traditional ERP systems to a simplified but coherent architecture; a Business Management System that combines these worlds without compromise; where the transaction system and information system are one and the same, so that changes in one are automatically reflected in the other.

It is this concept of a holistic Business Management System that underpins the design and technical architecture of the Agresso Business World (ABW) system. This white paper reviews how the technical design principles of Agresso Business World with its unique approach to data management (Information Warehouse), process modelling capability (Business Processes) and information delivery (Analytics/Reporting) imbues an organisation with the agility necessary to

respond to business change long after the initial implementation is complete – an ERP with NO expiry date!

## **II. Architectural concepts**

The Agresso technology platform (see section IV) utilises 'open' standards and allows CIOs to leverage their preferred choice of popular and readily available industry components. A unique fusion of an information warehouse, business process support and analytics/reporting capability gives Agresso Business World a distinct competitive advantage.

Unlike its major ERP competitors that have acquired capability through acquisition, Agresso's culture of self-sufficiency has allowed it to press home the compelling advantage of home grown applications. It means that information warehouse, business process model and analytics/reporting are inextricably linked in a virtuous cycle so that a change in any of these three core competencies automatically informs a change in the other two without re-architecting or business disruption. For example, a new business process automatically leverages the information warehouse and reporting, similarly, the addition of new metadata is immediately available to processes and analytics. Finally, changes to analyses are immediately set in business and process context.

This is in sharp contrast to ERP vendors that rely on third party solutions or less tightly bound in-house approaches. Superficially, information may flow between them, but in practice, a change to one aspect inevitably requires a change to the other - quite often accompanied by skilled IT intervention. By comparison, there is no practical limit on the scope of the Agresso unified environment which is designed to be maintained with limited IT skills. The net result is organisational resilience to change which few, if any competitors can emulate.

## ***Information warehouse***

Managing an effective business strategy in a climate of constant business change is extremely challenging, yet is the heart of Agresso's competitive differentiation.

Agresso's core design rests on an integrated data model - an information warehouse that supports data throughout the system. The applications reside within a single shared environment in which metadata is defined once and made available immediately to financial, procurement, project costing, HR and payroll applications. This data model not only serves as a shared repository of information for the applications but also acts as an automatically defined 'catalogue' for Agresso's wide range of specialised reporting and information delivery tools.

This approach confers significant advantages over the more common technique of integrating third-party datamarts, business intelligence and reporting tools. Agresso's reporting and presentation tools have an immediate 'understanding' of the underlying data structures and unlike third-party tools, there is no need to define a data dictionary or catalogue, or provide ongoing maintenance as business requirements change. Change is simple and transparent: new information is available immediately to a broad spectrum of users, while terminology and structures remain consistent across the business.

Agresso's architecture ensures the integrity of information across the enterprise by allowing user-defined additions to the data model, automatically providing maintenance routines around them, as well as the facility to link to any desired external applications. Using the multidimensional capability of the information warehouse with its user-definable attributes and relationships, together with ad-hoc groupings, flexi fields and links to other related systems, Agresso's enterprise-wide data model provides outstanding flexibility to change.

For example, Agresso can support any (current and likely future) information needs across the organisation simply by adding new information elements and define them as 'master files', thereby building up entire applications in parallel with the standard applications and processes. Organisations can formalise unique or idiosyncratic processes that are unlikely to be supported by software elsewhere – and do so inexpensively, without any specialised IT knowledge or modifications. This functionality allows significant ongoing tailoring of the application.

Agresso can also cope with fundamental change at fairly short notice, such as multi-GAAP accounting under IFRS (International Financial Reporting Standards), newly introduced compliance rules, mergers and acquisitions, as well as everyday business changes such as a limited management re-organisation. Additional data fields, cost centres, accounts and dimensions can be changed rapidly and made available across the information warehouse.

Fundamentally, Agresso's information warehouse can be used as the heart of an enterprise information system, building in additional business processes/requirements while taking advantage of the special cohesiveness of the reporting and data management in which it excels.

## ***Business Processes***

Agresso extends both business process support and user productivity through deeply embedded workflow, business alerts and document management, which in line with its design philosophy, are in-house applications that can immediately leverage structures and data held in the information warehouse.

The document management system provides the ability to link any transaction or master file element to non-Agresso documents, which could include, for example, scanned images, Excel workbooks, Word documents, Notepad documents, Hyperlink/web pages or other Agresso reports. These attached images and files can be stored within the information warehouse or in an external document archive and can be viewed in context on any drill down inquiry.

The purpose-built Agresso workflow engine is inextricably linked with the underlying information warehouse. This means that workflow routines can take immediate advantage of organisational hierarchies or other relationships and business logic within the database, guides workflow routines and approval processes. For example, adding supplier approval processes to the 'purchase order to pay' cycle by utilising workflow, document management and additional master file maintenance. Similarly, adding more detail about project resources to a project costing application can be accomplished with user definable additions and rolled out immediately to all projects.

One key advantage of Agresso workflow is activity analysis. The system can accumulate a history of processing times per user, for each activity, including the number and type of items processed in a defined period. By deriving activity costs, organisations can identify and reduce or eliminate non-value-added activities to reduce costs and improve profit margins.

Additionally, user definable business alerts, based on the occurrence of an event or business rule defined in the system, allow exceptional conditions to be pushed to end users in a variety of ways, such as, desktop, e-mail and mobile phone. Alerts can also be used to drive new systems tasks automatically or launch a new sequence of user tasks (workflow). Security is embedded within the system so that alerts and routine matters requiring action can be incorporated in task lists on the user's desktop or portal.

## ***Analytics/Reporting***

Agresso Business World allows organisations to define a broad range of analytical parameters attached to core and transactional information:

- Standard routine transactional analysis, leveraging master file data
- User-defined 'flexi fields,' where the validity of attributes can be limited to defined date ranges or to certain user groups/linkages
- Reporting hierarchies, to allow information to be viewed in a practically limitless number of different dimensions. (For example, service areas that are summarised by work groups, then product divisions, regional or country basis.)

Agresso's architecture and all of the accompanying attributes, hierarchies and relations are maintained in the integrated data model and are available via a wide variety of analytic/reporting tools. One of the most popular ways of accessing data within the system is using the "Balance Table", which allow user-defined views that can aggregate information by attribute, period and company across any modules within Agresso Business World; or, users can combine data from Agresso and non-Agresso sources.

Agresso provides extensive role-based views/reporting/analysis, increasing the efficiency of information retrieval and user productivity. Experience shows that around 25 percent of a typical office worker's day is spent looking for information that is often held in other departments, functional areas or physical locations. With Agresso, users can drill through the integrated data warehouse to underlying transactions, documents and images appended by the Agresso document management system

Ad-hoc reporting is supported in a variety of ways, including inquiries on transactions, balances and master file information within the information warehouse. Simple 'point and click' technology defines report formats and saves templates as menu options for repeated/shared use. Embedded alerting and drill downs can be free format or guided via links between successive templates. These templates can be exposed in other Agresso Business World reporting tools to take advantage of additional functionality. For example, a report can be generated in Excelerator, Agresso Business World's dynamically linked spreadsheet tool; or Agresso Business World's "Analyser," which provides a wide variety of graphing options. "Information pages" allow groupings of favourite reports and inquiries to be displayed as executable options on a start-up page.

More traditional production reporting is supported through tools such as Agresso Report Writer, a text based reporting tool that is ideal for audit reports, or

Agresso Report Creator, a graphical reporting tool that can apply more imaginative graphics and formatting to regular production reports.

The tight integration between information delivery and the underlying data model means that changes to metadata within the model are immediately exposed in the information layer. Operational reporting can be re-aligned almost immediately with new responsibilities following a management re-shuffle, and by retaining old and new hierarchies, the system can readily support matrix style management reporting.

### III. Competitive Differentiation

ERP systems, most notably SAP and Oracle, were popularised during the 1990s, a period of massive global expansion characterised by heady stock market prices and double digit growth. In this climate, companies were anxious to harmonise their business processes around the world, reduce average transaction costs and standardise on a single supplier platform. Enron had not collapsed, Sarbanes-Oxley was not on the statute books and International Financial Reporting Standards were not yet on the agenda. The priority was to manage profitable growth and 'business as usual' rather than constant business change.

Organisations built and deployed during that period concentrated on optimising transaction systems, business process re-engineering and rationalising shared service centres. ERP became synonymous with large transaction volumes, but information management was side-lined and left to 'best of breed' business intelligence, reporting and financial consolidation products to plug the gaps.

ERP providers produced their own data warehouses and reporting applications but they replicated metadata held in the transaction systems and it was difficult to synchronise data between the information layer and the transaction layer. The typical ERP systems architecture was a loosely coupled and inefficient amalgam of applications and technology.

| <b>Comparative highlights of Agresso Architecture and traditional ERP</b> |  |  |
|---|--|--|
| Characteristic  | Agresso Business World   | Traditional ERP  |
| Proprietary vs 'Open'   | Supports all popular environments, for database, operating systems and standards for interfacing, interoperability and integration     | Employs proprietary technology and provides interoperability on a selected basis.  |
| Data model  | Single data model for data dictionary, business logic, information delivery and process control which spans all of the application set | Metadata duplicated, especially where application set has been enlarged through acquisition rather than in-house development |

|                                   |   |   |
|-----------------------------------|---|---|
| Information delivery              | Totally self-sufficient, across the enterprise according to users' preferred choice of reporting method.  | Greater reliance on third party tools for business intelligence and reporting   |
| Post implementation modifications | Data model is accessible, allowing precise tailoring of parameters, additional fields, extensions to applications and integration with external data sources without extensive IT input | Even basic tailoring almost always reliant on extensive IT input and configuration.   |
| Consulting input                  | Ease of configuration and simplicity of architecture minimise consulting input and implementation timescales  | High levels of configuration and complexity of deployment/architectures encourage significant consulting input                    |
| Stability                         | Architecture has stood the test of time with long history of adapting to new technologies without major upheaval  | Significant acquisitions have disrupted large parts of the ERP market giving rise to customer uncertainty over future development |

These limitations went unnoticed during a period of rapid growth, but the shortcomings of the current ERP architectures has been widely exposed in more challenging times.

Whilst these limitations went unnoticed during a period of rapid growth, the frailty of the architectures has been widely exposed in more challenging times. This is in marked contrast to the relative simplicity and technical elegance of the Agresso solution which has successfully combined its highly integrated information warehouse, business processes and analytics/reporting seamlessly in a single architecture. Whilst other vendors struggle to effect change using complex architectures built on a mixed heritage of legacy systems, Agresso has stood the test of time and evolved gradually over the years, developing its code rather than acquiring applications and building on the integrated model that has been the foundation of its success. In marked contrast to other ERP vendors that have announced new architectures, for example, Oracle Fusion and SAP Business Suite 2007, Agresso has taken change in its stride, 'evolution rather than revolution' adding, for example, more web services, roles based support, self service, work

flow, portal independency, interoperability with Microsoft Office and single sign-on, enhancing its architectural advantage. All of this is accomplished by leveraging a full range of open standards and without locking customers into proprietary technology.

## **IV. Technology platform**

### ***Open Standards***

Agresso's industry standard components and concepts empower individual companies to decide which technology they prefer to use and liberates organisations from being locked into technology solutions that are fashionable one day and out of favour the next. Open XML standards, .Net conformance and a choice of portal technologies allows companies to adapt their technology platform as the need arises within their Agresso solution.

### ***SOA***

Agresso offers a robust Services-Oriented Architecture (SOA). The technology platform leverages popular and readily available industry and 'open' standards in relation to databases and operating systems such as Oracle, SQL Server and MySQL as well Microsoft Windows, Unix, Linux and IIS. It also supports a smart (rich client) as well as a web (thin) client or a mixture of the two. Business logic is maintained centrally and separated from the user interface so that web clients are updated automatically and without manual intervention. The web client is highly configurable allowing a wide range of self service possibilities.

The technical architecture is compliant across a broad range of industry standards for interfacing, interoperability and integration. Increasingly, additional integration capability is provided via web services that simplify integration with other systems and provide the groundwork for future developments. By utilising common components, the technical platform fits readily into almost any technology strategy and can be relied upon to be cost effective, robust and scalable.

## **V. SUMMARY**

As companies seek to retain their ERP systems for longer periods they increasingly expect their software to be highly configurable in the face of business change and to be able to take advantage of the latest technology without major disruption to their business.

Whilst many systems proclaim such agility, very few (if any) suppliers are able to deliver it, especially over the long run. The ability to change structures at a moments notice, add information requirements, introduce applications and have all of the information served up across the enterprise in a well controlled process requires a unique architecture.

Agresso's powerful information warehouse, process modelling capability, analysis and reporting are combined in a single environment. It means that CIOs can develop an information systems strategy with confidence, safe in the knowledge

that the underlying architecture has the post implementation agility to accommodate a wide range of planned and unplanned business scenarios as they unfold.

## About FSN

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