

AGRESSO

ERP...with NO Expiration Date™

Agresso Business World

ERP ... with NO Expiration Date™

An Architectural White Paper

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Introduction

Today's CIO must operate in a period of unprecedented change, delivering information systems against the background of constantly shifting goal posts. Rapid growth, re-organizations, divestitures, acquisitions, new markets/products/business models and compliance are some of the every day challenges organizations face. In this environment, it is important that a system's architecture is malleable yet robust, so that business information and processes can be adapted on the fly.

Despite the undisputable need for agility, many modern day systems are architecturally flawed, inflexible to change and rooted in outdated concepts designed for the needs of a different generation.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 globalization, considerable emphasis has been placed on past requirements - 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.

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. Metadata is scattered throughout the enterprise. Process guidance is uncoupled from applications. User interfaces are inconsistent; documents are out of reach and external systems are inaccessible. As a result, public and private sector organizations worldwide 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.

Information management and processing efficiency do not have to be a trade-off. 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 both the transaction and information world without compromise; where the transaction system and information system are one and the same, so that changes in one system are automatically reflected in the other.

Agresso gives organizations the agility necessary to respond to business change long after the initial implementation is complete, delivering an ERP solution that can continually adapt to changing needs. The concept of a holistic Business Management System underpins the design and technical architecture of the Agresso Business World (ABW) system.

This white paper reviews the technical design principles of Agresso Business World that encompasses its unique approach to: data management ([Information Warehouse](#)), process modelling capability ([Business Processes](#)) and information delivery ([Reporting and Analytics](#)).

Architectural concepts

The Agresso technology platform (see page 10) utilizes 'open' standards and allows CIOs to leverage their preferred choice of popular and readily available industry components. This is a requirement of all modern day ERP solutions, and those vendors without this capability are creating elaborate integration "work-arounds" to amend this failing.

More importantly, is Agresso's inherent weaving of three components that allow companies' core back and front-office infrastructure to move in lockstep – accommodating unlimited change. A unique fusion of an [information warehouse](#), [business process](#), and [reporting and analytics](#) capability gives Agresso Business World a distinct competitive advantage.

Unlike its major ERP competitors acquiring capability through acquisition, Agresso's home grown applications have been built from the ground up and are not the result of disparate acquisitions.

The [information warehouse](#), [business process](#) and [reporting and analytics](#) information delivery models are inextricably linked in a virtual cycle. 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.

ERP vendors that rely on third-party solutions or less tightly bound in-house approaches don't measure up. 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 and negative bottom-line margins.

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 organizational resilience to change that is unmatched in the ERP solutions market.

Architectural concepts

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 pivots on an integrated data model – an [information warehouse](#) that provides intelligent availability of 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 specialized reporting and information delivery tools.

This approach offers 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 in an "open" framework. Meaning, the system readily allows 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 capabilities, ad-hoc groupings, flexi fields and links to other related systems, Agresso's enterprise-wide data model is unparalleled in the market.

As an illustration; Agresso clients can add new business processes and define them as 'master files' building up entire applications in parallel with standard applications. Organizations can formalize unique processes that are unlikely to be supported by software elsewhere – and do so inexpensively, without any specialized IT knowledge or modifications, allowing extensive ongoing tailoring.

Agresso clients can also cope with fundamental change at fairly short notice, such as multi-GAAP accounting under International Financial Reporting Standards and/or newly introduced compliance rules requiring the capturing of additional data fields. Cost centers, 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 analytics](#) capabilities.

Architectural concepts

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, including 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 ability to retrieve relevant documentation improves operational efficiency and enhances the responsiveness of an organization to customers and suppliers.

The purpose-built Agresso workflow engine is inextricably linked with the underlying [information warehouse](#). This means that workflow routines can take immediate advantage of organizational hierarchies or other relationships, and business logic within the database guides workflow routines and approval processes. For example, purchase order cycles can be greatly accelerated by defining supplier approval parameters via Agresso Business World's workflow, document management and 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 intelligence 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, organizations 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 exception conditions to be pushed to end users in a variety of ways (desktop, wireless, etc.) Alerts can also be used to drive new systems tasks automatically or to 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.

Architectural concepts

Reporting and Analytics

Agresso Business World allows organizations 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; and
- Reporting hierarchies, to allow information to be viewed in a practically limitless number of different dimensions; e.g. summarized by work groups, then product divisions, regional or country basis.

Agresso's architecture and all of the associated embedded business intelligence is maintained in the integrated data model and is available via a wide variety of [reporting and analytics](#) tools.

One of the most popular ways of accessing data within the system is using the 'Balance Table,' allowing user-defined views that can aggregate information by specific parameters, time periods and company divisions across any modules within Agresso. 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 the correlating business actions. Users can drill through the integrated [information 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 and 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 reporting tools to take advantage of additional functionality. e.g., a report can be surfaced in 'Excelerator,' Agresso's dynamically linked spreadsheet tool; or 'Analyzer,' which provides a wide variety of graphing options. 'Information pages' allow groupings of favorite reports or inquiries to be displayed as executable options on a start-up page.

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

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 reorganization, and by retaining old and new hierarchies the system can readily support matrix style management reporting.

Competitive Differentiation

ERP systems, most notably SAP and Oracle, were popularized during the 1990s, a period of massive global expansion characterized by heady stock market prices and double-digit growth. In this climate, companies were anxious to harmonize their business processes around the world, reduce average transaction costs and standardize 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.

Organizations built and deployed during that period concentrated on optimizing transaction systems, business process re-engineering and rationalizing shared service centers. 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 synchronize data between the information layer and the transaction layer. The typical ERP systems architecture was a loosely coupled and an inefficient amalgam of applications and technology.

Comparative highlights of Agresso Architecture and traditional ERP

| 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, according users significant choice across the enterprise | 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 |

Competitive Differentiation

Comparative highlights of Agresso Architecture and traditional ERP (cont'd)

| Characteristic | Agresso Business World | Traditional ERP |
|------------------|--|---|
| Consulting Input | Ease of configuration and simplicity of architecture minimize 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 leaders' 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 process](#), and [reporting and analytics](#) seamlessly in a single architecture.

Agresso competitors struggle with complex architectures built on a mixed heritage of legacy systems. Attempts to mitigate the resulting complexities is seen through frantic attempts to develop new architectures; for example, Oracle Fusion and SAP Business Suite 2007.

In contrast, Agresso is in the enviable competitive position of not having to re-architect its framework and has a proven solution based on 20 years of in-house development.

Agresso R&D efforts today are focused on embellishment...adding to the richness and openness of its solution with the finessing of new web services, heightened role-based support, self-service additions, work flow improvements, portal independency and seamless system interoperability. All of this is accomplished by leveraging a full range of open standards and without locking customers into proprietary technology.

Technology platform

Open Standards

Agresso's industry standard components and concepts empower individual companies to decide which technology they prefer to use – liberating organizations from being locked into technology solutions that are fashionable one day and out of favor 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.

Services-Oriented Architecture (SOA)

Agresso offers a robust 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 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 utilizing common components, the technical platform fits readily into nearly all technology strategies and can be relied upon to be cost effective and scalable.

Summary

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

Many systems proclaim flexibility at the onset of an installation, but lack the architectural capabilities to evolve after the initial deployment.

Agresso offers the ability to change structures at a moments notice, add information requirements, introduce applications and tackle the necessary analytical and reporting requirements required.

Using Agresso, CIOs can develop an information systems strategy with the knowledge that the underlying architecture has the post implementation agility to accommodate any planned or unplanned business scenarios as they unfold.

