Challenges and Solutions for Leveraging RIXML

Application of XAware Technology

December 17, 2002

For information contact:

Jojy Mathew
VP, Strategic Development & Product Strategy

XAware, Inc.
www.xaware.com

XAware Technical White Paper (December 2002)

DISCLAIMER OF LIABILITY

Executive Summary

As technology flourishes, information overload at buy- and sell-side financial services firms has reached critical levels. Without a standard to classify, sort, filter, manage, and distribute available research data, investment firms cannot operate effectively. RIXML (Research Information Exchange Markup Language) was developed to enable firms to access and use the information they need on a daily basis, to assist their decision-making process, act upon market fluctuations, implement corporate strategies, and communicate with internal and external clients.

Wide-scale industry adoption and implementation of the RIXML classification methodology and specification is critical to future success of the standard. Moreover, success is contingent upon firms' ability to rapidly incorporate the classification methodology (e.g., enable their systems to work within the RIXML classifications and effectively "read" RIXML-tagged external research data), and apply the appropriate tagging to their own internally generated content. By implementing RIXML, firms will benefit from increased efficiency of research distribution, more effective targeting, personalization, and overall usability.

XAware has developed integration components which financial services firms, system integrators, and software vendors can leverage to manage and integrate data and technology from multiple vendors. The XAware solution enables common information models leveraging XML-based standards for interoperability, and is an engine for compliance with the RIXML standard.

XAware's ready-to-integrate software components can expedite the implementation of RIXML. XAware's components incorporate a "building block" approach, enabling firms to rapidly connect to financial services firms' existing framework, and subsequently integrate more and more data into the RIXML standard. XAware's components are designed to play a central role in RIXML implementation, an object-oriented, messaging interface that links distributed management applications.

I. History and Overview of RIXML

In late 2000, RIXML.org, a consortium of buy- and sell-side financial services firms, conceived RIXML (Research Information Exchange Markup Language), an open standard which would enable firms to assimilate, manage, and readily use their ever-growing volume of financial and investment research data. The organization envisioned a system that would enable financial services firms to categorize, aggregate, compare, sort, and distribute financial research more easily and effectively, and reduce information overload. All data is tagged based on many classifications, including company, region, industry, type of data (e.g., SEC filing, webcast, press release, research report, etc.), making it easily recognizable and therefore more easily retrievable. RIXML was to be an open, extensible, and flexible industry standard, not a proprietary platform, system, or product, and would incorporating XML messaging technology.

Today, research data are handled, or in many cases not handled, in various ways. RIXML.org estimates, in *addition* to internally published content, there are more than 800,000 research "reports" and more than 900,000 research "notes" published annually—a total of more than 1.7 million pieces of research content. Broken down, this content alone totals more than 6,600 documents per day, or 5 documents published per minute! In addition, much of an asset management firm's internal research takes the form of memos, emails, and telephone conversations. A firm also needs to assimilate company-originated press releases, conference calls, and SEC (or similar for non-US firms) filings. Moreover, new distribution channels, such as webcasting and other audio/video media, have opened up to add to the information available.

Simply put, investment managers are overloaded with research "content." With limited classification and distribution capabilities, it is difficult to locate specific items, and heretofore there has been no formalized, standard methodology with which to manage the problem. In this scenario, it is all too easy to make an uninformed decision—or miss an opportunity completely—simply because critical bits of information are buried under huge volumes of data.

Implementing RIXML will greatly benefit both buy- and sell-side firms in many ways. Buy-side firms will benefit from enhanced search tools, greater ability to sort information, ability to aggregate research information received from multiple sources, better personalization capabilities, and the ability to filter out all but the most relevant information to their portfolios.

RIXML will facilitate sell-side firms' ability to enhance value by getting research to the right people at the right time, delivering a uniform publishing methodology, providing enhanced branding and brand awareness, and enabling firms to personalize, customize and target content using multiple delivery mechanisms. Initially launched in April 2001 with version 1.0, RIXML, versions 2.0 and 2.1 were introduced in mid-2002. Consortium member firms have implemented RIXML and currently report using it in a limited capacity, on a test basis.

Today, XAware delivers a specialized solution for implementing RIXML in financial services firms, enabling firms to achieve RIXML integration. XAware technology uses a building block approach, connecting to existing systems, and allowing firms to gradually incorporate more and more data into the RIXML standard. XAware technology delivers immediate return on investment for financial services firms, system integrators, and technology vendors seeking to implement RIXML standards quickly and easily.

II. Real-Life Challenges—RIXML Components

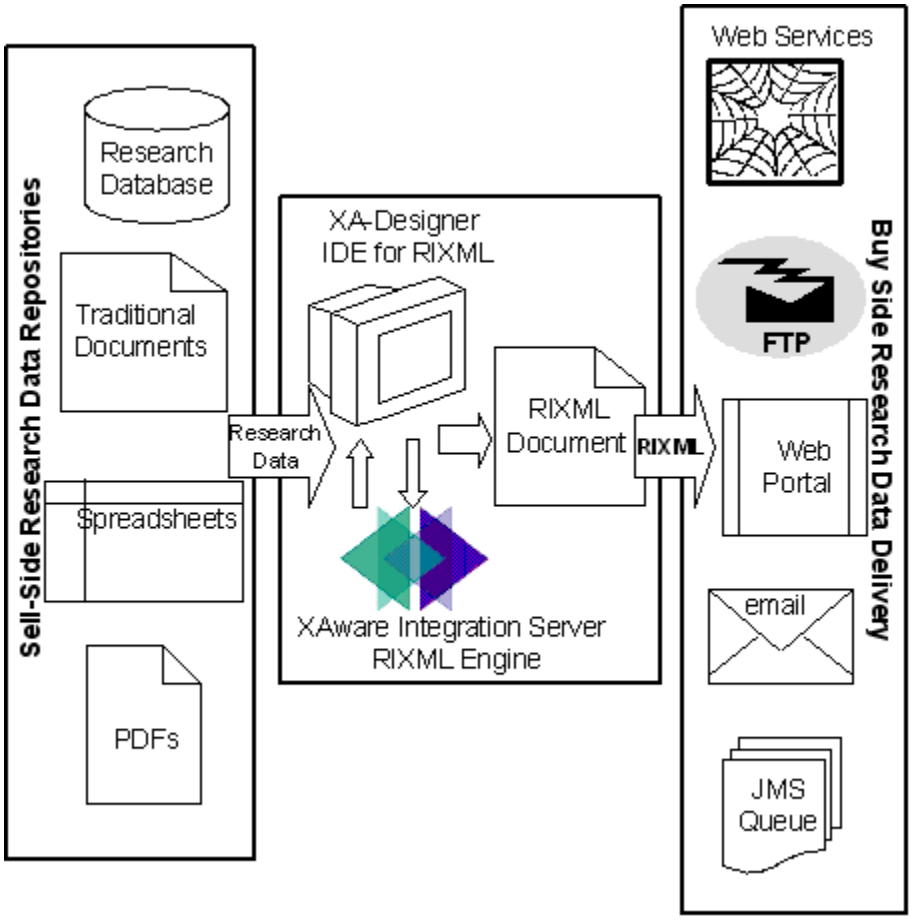
Implementing the RIXML standard can truly revolutionize the way firms manage the assimilation and internal and external distribution of research information. The following sample case studies provide real-life examples of challenges financial services firms and their vendors face every day, and RIXML solutions that enable firms to manage these issues, and provide their employees and clients with better information while delivering business value.

"Client A" – Challenge: How can a firm that receives more than 10,000 research-related emails each day process information to make it more manageable and its users more effective?

Client A is a US-based mutual fund manager, with more than $120 billion in assets and more than 7 million shareholder accounts across more than 65 funds. Client A's approximately 250 executives, fund managers, analysts, and research assistants receive in excess of 10,000 research-related emails every day. This means, in two weeks' time and counting email alone, Client A may amass over one million pieces of research content, all of which needs to be sorted, filtered, highlighted, and disseminated effectively to the appropriate managers and analysts. This information must be further aggregated with other internal and external data providers and company-originated information, press releases, and filings. Client A's analysts and fund managers need to assimilate all salient information effectively, to act quickly and take advantage of market fluctuations and new available research, make decisions to manage investments effectively, and thereby increase investor returns.

"Client A" – Solution: XAware's RIXML research portal delivers a vehicle for effective use of research data.

XAware provided an integration engine, facilitating a comprehensive Research Portal for Client A. XAware's integration layer applies RIXML tagging methodology to Client A's email research data, enabling Client A's managers to use RIXML standard tags for research products, source, content, context, and legal information as they send new emails. Using XAware's building block approach, data are updated with the RIXML tagging methodology as they are entered or accessed, eliminating the time-consuming and cumbersome task of manually tagging an entire database of historical data. As other, non-email related research data are received, Client A's Research Portal is able to "read" the RIXML tags at the Integration Server, and incorporate these data into the available research.



Client A's Research Portal delivers easy, instant access to all desired data,placing the right information in the right people's hands, at the right time—so they are able to make the right decisions.

Results: With XAware's RIXML components, Client A has a timely RIXML process in place. More importantly, they rely on a trusted source for research information. Client A's managers and analysts can use the Portal to readily access, sort, and filter information they need, when they need it, to make better, more informed investment decisions. They are able to greatly reduce time spent sorting and filtering literally millions of data items, because the Portal has already applied the appropriate sorts and filters.

Because of XAware's building block approach, Client A effectively incorporates the RIXML tagging methodology almost immediately. Moreover, because of the Integration Server's ability to aggregate and transform data, Client A's team is able to use the Portal "push" or "pull" information. For example, a fund manager can target data to his or her research team, senior management, or individual portfolio managers. Additionally, each individual manager or team can customize the Portal to "pull" email alerts each time research data about particular target companies is received. An additional benefit to Company A's email system is an overall reduction in email load, effectively eliminating redundant emails and forwarding.

"Client B" – Challenge: In today's competitive market environment, how does a broker add client value?

Client B is a full-service investment broker facing tight competition from lower-priced "budget" brokers. With the advent of the Internet, gone are the days of the traditional broker-client face-to-face or phone-to-phone relationship. Today, individual investors are sophisticated, and have multiple, readily available sources for inexpensive on-line research and trading. Client B struggles to compete and must continually deliver more and more value to retain customers, while facing tighter margins on the constant demand to reduce fees.

"Client B" – Solution: XAware creates a RIXML-based integration layer to Client B's Report and Data Portal, enabling the brokerage to be a single- source provider.

XAware works with Client B to develop an integration layer for Client B's Report Portal, enabling Client B to deliver targeted, personalized research to its brokerage individual investor clients. XAware's rules processing capability enables Client B to deliver a fully customized, RIXML-based information resource for proprietary and general information, news, events, and the like, aggregating data and information from various sources.

Each of Client B's clients can access a customized view via the Report Portal, incorporating their individual portfolio and account, and recent trade information, as well as all available internal and external research, news, and information about their individual holdings. Clients can further customize individual views by selecting desired equities and securities, preferred reporting format (i.e., email alerts, on-line reports, or both), even language. Customers can also use the portal to access earnings calls, webcasts, and other investment-related information, in addition to searching Client B's entire research database to explore new investment opportunities. For example, a customer can perform a search on all equities that have received a rating increase in the last week, month, or quarter.

Results: Client B rapidly adds value by customizing each individual client's view, adding new RIXML-tagged data based on personal contact. For example, a customer may mention a future interest in a specific equity or IPO. The broker can immediately add that issue to the customer's Report Portal, so all future research and data about that issue is immediately available to that customer.

XAware also enables Client B to build its business by generating "thought you might be interested" news items, targeting soft sales messages directly to individual clients based on their investing style, sector preferences, and risk tolerance.

Finally, Client B experiences higher customer satisfaction levels, stronger client relationships and better customer retention by adding value and eliminating the need for customers to go anywhere else for investment information.

"Client C" – Challenge: A leading technology vendor needs to incorporate a client's research database into its online trading and portfolio management system.

Client C is a technology vendor with a market-leading trading and portfolio management system. Client C's customer has an internally developed research database, as well as multiple external data providers. This customer wishes to integrate the research database, and external data, into the trading and portfolio management system, so research data is available to the trader and portfolio manager while trading decisions are being made.

"Client C" – Solution: XAware uses RIXML standards to deliver real-time desktop research combined with trading system capabilities and market data feeds.

Client C's problem is a common one in the financial services marketplace. Information resides in multiple, often proprietary, "silos" – and has little or no value if it is not readily available to the individuals who need to use it. XAware works with the technology vendor to integrate RIXML-tagged data with the trading system functionality, via an XML-based integration layer to the company's Trading Portal. XAware is able to incorporate the RIXML research data with trade data delivered via XML from the trading system. As the trader or portfolio manager considers a "what if" trading scenario, or enters a trade into the Trading Portal, he or she can use a "View Research" tool right on the desktop, to access all available research on any given equity or security, at the integration layer. After viewing available research, the trader can execute the trade directly from the portal into the trading system, via XML technology. XAware further facilitates connectivity by enabling the portfolio manager to update market data from an external data provider, via XML, directly to the trading system. The Trading Portal also supports T+1 settlement initiatives with XML messaging technology for notification and settlement.

Results: Client C's customer receives a better, more integrated solution, enabling traders and portfolio managers to use time and data more efficiently and effectively. In addition to retaining a satisfied client, the vendor enjoys increased competitive position. Because it incorporates standard RIXML tagging combined with XML messaging technology, the Trading Portal is readily transferable to the technology environments of other clients' using the same trading system, providing Client C with an additional revenue source.

"Client D" – Challenge: A pension fund wishes to add value by making relevant fund research data available to clients and individual fund members.

Client D's pension fund clients currently use an Internet Client Portal to view account status information. Each client company's employees can access the portal to view information about their account value, performance, contributions, distributions, etc., and to modify their individual portfolios. In a challenging market, with investors wary due to recent scandals, the pension fund seeks to add value by increasing the availability of research data to its fund members.

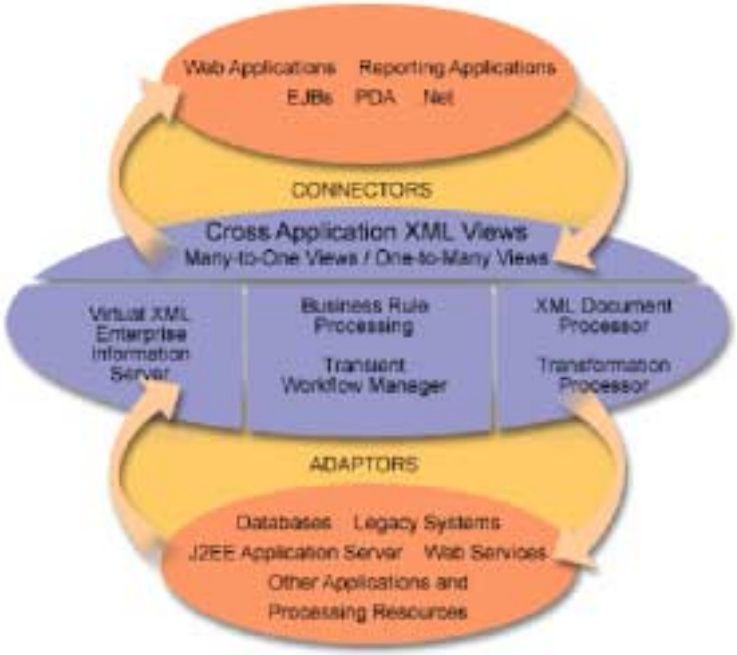
"Client D" – Solution: XAware uses RIXML methodology to sort, filter, and deliver targeted, fund-specific information, customized to the pension fund's individual members.

Client D works with XAware to further customize the Client Portal to incorporate RIXML-tagged research data. Drawing directly form the Pension Fund's research database, the fund manager can deliver published reports, as well as other news, and events specific to each individual investor's funds, directly to the Client Portal. In addition, as members consider reallocating contributions, or diversifying into new funds, they can access relevant research information prior to making a decision.

Results: Pension fund members benefit from gaining access to research information that previously would have been unavailable to them or very difficult to find and piece together. Fund members are more informed about their investment decisions, and are more confident in their decisions, and consequently, their fund contributions. The pension fund benefits from improved client satisfaction and increased competitive position due to the ability to deliver a value-added service.

III. RIXML Software Solutions from XAware

XAware delivers an XML solution for integration, migration, and enablement required by financial services firms, system integrators, and technology vendors seeking to quickly adopt the RIXML classification standards. XAware's software components expedite compliance with the RIXML classification and tagging standard, providing an integration server and adapters that enable bi-directional interfaces to financial services firms' existing systems for tagging and delivering information.



XAware's RIXML components enable financial services firms, system integrators, and technology vendors readily deploy a comprehensive RIXML solution.

In an ideal world, all systems would operate on a single, standard database. But in the real world of multiple independent subsidiaries, mergers and acquisitions, etc., such an ideal is unrealistic. XAware's data integration solution allows financial services firms, system integrators, and technology vendors to aggregate back-end data sources, thereby linking "silos" of information, within web services, relational data sources, mainframe and proprietary systems—bringing reality closer to the ideal.

- XAware's integration components provide financial services firms with a seamless, 360° view of the customer from multiple data sources.
- XAware's migration components enable firms to readily migrate data from one source to another, simplifying the data migration process.
- Finally, XAware's enabling technology provides a layer for back end systems, providing easy access to the data via XML views, and support for storing, exchanging, and sorting XML data.

XAware's RIXML components provide financial services firms a simple way to leverage existing technology, and turn hoards of data into a useful tool and valuable asset. For technology vendors and system integrators, XAware delivers competitive advantage by enabling them to rapidly develop, deploy, and market a flexible, robust, and comprehensive RIXML solution that meets their clients' requirements.

IV. Conclusion

Leveraging XAware's RIXML components will enable financial services firms to quickly incorporate RIXML standard and thereby benefit from better use of research data, better service to both internal and external clients, and improved return on their technology investment. Moreover, XAware's RIXML components enable system integrators and

technology vendors to assist clients in rapidly deploying RIXML-enabled applications, reduce time to market, conserve resources and save valuable development manpower. XAware is the XML market leader, with four years' experience as an XML and integration expert delivering innovative hardware and software products that focus on high-value advantages and differentiation.

About XAware, Inc.

XAware, Inc. is a worldwide leader in XML information exchange supporting both J2EE and Microsoft .Net technologies. XAware's lightweight embeddable data integration components dramatically reduce time to market, while increasing interoperability for application vendors in the financial services and government sectors. Focused on serving the needs of systems integrators and software vendors, XAware software components reduce the complexities of accessing, transforming and integrating disparate data and application resources. Founded in 1999, XAware is based in Colorado Springs, CO, and is venture-backed. For more information on XAware, visit www.xaware.com or call 719-884-5500.

XAware, Inc.
2060 Briargate Parkway, Suite 150
Colorado Springs, CO 80920
www.xaware.com