



ARTEnterprise™

PRODUCT FAMILY SUMMARY



ARTEnterprise™ Components

By adding intelligence and efficiency to your critical business processes, MindBox® greatly simplifies the task of providing faster and more individualized decisions and service throughout your enterprise.

The ARTEnterprise Product Family is a suite of rules-based, decisioning software components. They reduce cost and risk with a proven approach that enables rapid automation of your business policies. Loan and account origination, sales, customer service, underwriting, pricing, product configuration and deal negotiation are all examples of decision intensive processes that are automated by MindBox technology. This technology is so powerful it allows you to tailor each individual interaction to optimize your relationship with a given customer, regardless of customer point of contact.

In addition, the ARTEnterprise Product Family helps your company retain and leverage its intellectual capital. It captures the knowledge and decision processes of your best performers in an automated system, available 24/7. As a result, everyone on your team performs at the level of your very best employees. With the ARTEnterprise Product Family, your customers get the same high quality decisions or information regardless of how and when they look for it.

Generates New Revenue Streams


With personalized customer interaction, clients are presented with product offers and customer service solutions

meeting their specific requirements at all points of contact. This added value results in more completed transactions, higher levels of customer satisfaction and increased opportunities for cross-selling. These automated processes help increase revenue streams at the same time they improve efficiencies and increase profits.

Specific Component Features

MindBox's financial services domain components fit neatly into the workflow of a lending process. ARTOptimize™ is the flagship component, providing all the core functionality required to implement an entire lending process from credit check to deal structuring to pricing to underwriting.

The components are structured to capture an institution's knowledge and best practices in systems that can be rapidly deployed. In addition, the component approach allows for phased implementation of these systems — our customers begin to see ROI before the full system is in place and they are affordable for a wide range of institutions.



“Lenders considering purchase of a loan decisioning product suite should consider those that are componentized. That is, each functional module is easily integrated not only with the other modules, but also with other loan origination systems. This is important for FSIs that already have some loan origination functionality provided by a vendor but would like to integrate additional functionality.

CRAIG FOCARDI
RESEARCH DIRECTOR, CONSUMER LENDING
THE TOWER GROUP

Components A La Carte

Most customers want to buy the complete ART *Optimize* integrated suite. However, individual components are also available. Each can be implemented independently of other components.

MindBox Prequalification Engine

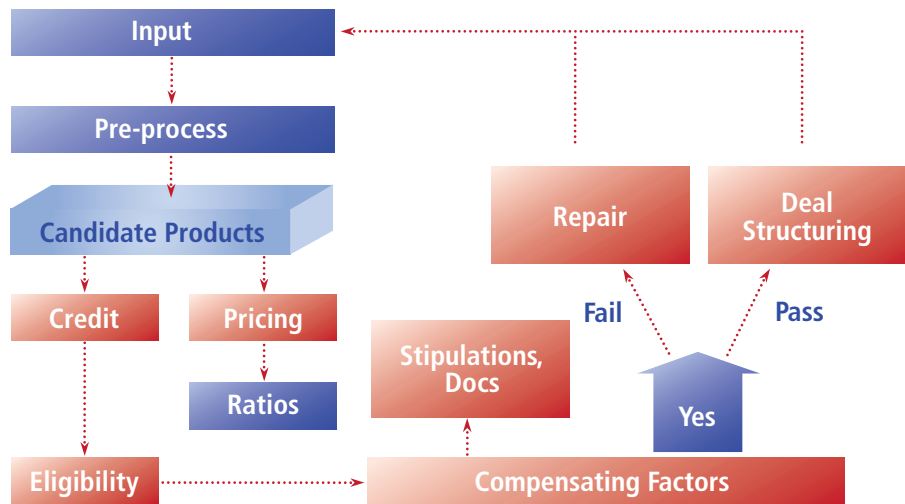
When borrowers or brokers are looking for quick estimates from a mortgage lender, they don't want to have to give too much information. They don't want to have to document that information. They want to give a little data, get a rapid but accurate answer, and then proceed according to their best opportunity. This prequalification step is a critical contact point for mortgage lenders — at this initial contact, they can either impress and engage a borrower or broker with the best possible offer given the data, or they can come up short, sending the potential client elsewhere.

The MindBox Prequalification Engine uses ART *Price* and ART *Qualify* to automate decisions made in this initial stage of the mortgage lending process. There are several key steps this engine automates:

- Gather initial loan and preference information from the borrower or broker
- Determine product eligibility and ineligibility based on lender policies and guidelines
- Provides initial pricing quote (rate)

In automating these processes, the engine incorporates several key decisions and features:

- Provide list of eligible products, sorted by borrower preference; this can



include selecting product eligibility across multiple investors' products

- Analyze summarized and qualitative credit as part of the decision process — not an actual score but a good, bad type rating
- Provide high level stipulations
- Provide list of ineligible products, with reasons for ineligibility
- Identify near misses and reasons why
- Look up rates based on stated information
- Apply adjustments based on stated information to give a first pass at overall price
- Centralize and maintain lending policies and guidelines in the MindBox Power Editor for long term ease of use and ease of maintenance.

ART *Price*™

ART *Price* allows lenders to meet customer needs with a price automatically tailored to the individual while complying with your company policy and profitability objectives. ART *Price* adjusts the base rate according to company policies to provide a fully calculated,

quotable price. This price includes the calculation of closing costs, including estimated real estate taxes, insurance and all other closing costs. The faster processing and improved ability to close initial sales increases your revenue. Finally, ART *Price* improves the quality of pricing decisions by integrating the best practices and knowledge of your top employees. Every customer gets your best offer.

ART *Qualify*™

ART *Qualify* allows institutions to maximize their revenue potential with a given customer, while ensuring adherence to risk management policies. ART *Qualify* provides for the automation of guidelines to determine product eligibility.

The component uses a decision engine to reconcile specific institution guidelines with customer information and requirements to determine that borrower's eligibility for specific products. ART *Qualify* also provides conditions and exclusions regarding the borrower's product eligibility based on institution guidelines. Finally, ART *Qualify* provides a

“Not all lenders can afford to make one lump IT investment in lending systems. Lenders should look for IT vendors that provide-componentized technology suites that enable them to implement pieces of the overall solution — or the entire suite — according to their needs and timeframes. The vendor should also provide the lender with a technology implementation roadmap allows any type or size of lender to grow over time and according to its most critical IT priorities.”

CRAIG FOCARDI
SENIOR ANALYST, THE TOWER GROUP

checklist of items required to verify the borrower’s statements on the loan application and any additional requirements that may be placed on acceptance of the loan program. This checklist specifies which party is responsible for meeting specific conditions or stipulations.

ARTOptimize™

ARTOptimize is designed to allow an institution to optimize every client contact, regardless of channel, ensuring that each client is given the best possible deal structure and pricing for their given needs. The product allows for complete personalization of every step in the loan origination, deal negotiation, optimization and underwriting process. Specifically, ARTOptimize leverages an institution’s data and business rules to complete the following steps:

- Integrates credit data from multiple sources
- Analyzes and acts upon that credit data according to specific company policy
- Provides explanations of credit decisions made and why subsequent

actions were taken

- Provides complete intelligent product selection capability, including appropriate product matching for a specific customer in addition to implementing product exclusion and eligibility decisions
- Prices the final product, providing the best possible offer for the specific customer
- Provides a list of conditions that must be met in order for the loan to be granted
- Provides a suggested list of debt consolidation strategies the borrower might take in order to lower costs and create a better debt portfolio. As part of this debt consolidation scenario, lays the foundation for the cross selling of other products, specifically, HELOCs and line of credit products
- Provides justification for the borrower to apply for and more importantly draw against a line of credit (second mortgage, HELOC, credit card, personal loan, etc.)
- Provides information and explanations regarding the best loan product to cross sell and why
- Includes the MindBox Power Editor, used to maintain the rules in a user friendly, recognizable environment.

ARTOptimize provides lenders with the ultimate tool to meet your customers’ needs while adhering to your company’s policies, best practices and your bottom line goals. It also is multi-channel, ensuring that customers will get the same decisions and information regardless of where, when or how they contact your institution. This minimizes risk, improves customer service, and increases revenue due to faster processing and improved ability to close sales.

Component Benefits

- Lending decisions incorporate the best practices of your company and your top employees, benefiting every customer interaction.
- Loan packaging and pricing are tailored to the individual while adhering to company policies, government regulations and your bottom line.
- Customer service is improved as clearly articulated reasons are given for each credit or loan decision.
- Changes in policy can be quickly and simultaneously incorporated across all channels.
- Industry standards, including MISMO, were considered in the development process, ensuring easy integration with other systems.
- Increases revenue and customer satisfaction by cross-selling appropriate products at the initial point of contact.

Business Systems for Business Users

One of the most powerful aspects of MindBox's technology is the MindBox Power Editor. This user friendly editor allows business managers to define and maintain automated business policies without developing code or relying on IT. In addition, the Power Editor allows the business user to organize the structure and hierarchy of the rules in the system according to their business environment.

The editor, which is packaged with MindBox's ARTEnterprise™ Product Family of components includes the following capabilities:

- Enables the development, management, and modification of policies/ rules and related objects
- Creates a centralized repository of business knowledge managed by business professionals, ensuring consistency of decisioning across the enterprise
- Includes a flexible template editor to allow rapid development of new categories, parameters, tabs, and administrative requirements
- Provides for role-based security, enabling different users to maintain and update defined areas of the system
- Enables setting of sunrise and sunset date control over policies and other business entities (products, parameters), enabling activation and expiration of these elements. This also means that rules are "retired" not deleted, thereby allowing a historical snapshot of business logic
- Provides consistency controls ensuring that conflicting rules are not created
- Includes automated Generation of rules from the repository, removing the need for IT involvement
- Provides a simple means for managing

"look and feel" to conform to company standards

The MindBox Power Editor ensures that an institution's rule-based system will be highly utilized and easily maintained, by providing the following features:

A LOOK AND FEEL THAT IS FAMILIAR TO THE BUSINESS USER

For example the mortgage version of the editor is created to look like a spreadsheet application. Tabs and fields all have familiar mortgage names. This helps ensure rapid adoption and maximum utilization of the system.

A POINT AND CLICK USER INTERFACE

Business users do not have to know how to code — they can declaratively state the rules. The MindBox Power Editor generates the runtime rules eliminating dependence on IT or any other technical group.

AUTOMATIC IMPORTATION OF DATA Rate sheets and other frequent updates can be automatically uploaded

SIMPLE ACCESS TO COMPLEX SYSTEMS The Power Editor allows very complex rules to be entered through a series of simple templates. Users can create sophisticated

business policies, without having to understand or know the sophistication of the underlying technology.

AUDIT TRAILS Activation and expiration dates ensure that not only can rules be used at the appropriate time, but that at any time business people can look up a given decision by timeframe and situation and understand what rules were fired. Changes to the rules themselves are also tracked by user and time.

USER LEVEL SECURITY Role based security, by user, enables updating of different parts of the system by various roles. This translates to a highly controlled and accurate rules repository, ensuring consistent decisioning, lower risk and saved dollars.

TEMPLATE EDITOR This portion of the MindBox Power Editor allows easy modification of guideline screens and fields, ensuring that the system can be quickly and easily adapted to each individual customer's requirements, delivering usability, lower training cost, and again, minimal involvement by IT. The MindBox Power Editor itself is modified by this template editing capability.





ART Enterprise Product Family

Scales With Your Business

ART Enterprise, MindBox's core rules and case-based reasoning engine, has been proven to scale efficiently for extremely high volumes without compromising speed or performance. ART Enterprise systems use an enhanced version of the RETE algorithm for processing rules to ensure the highest performance and scalability available. The RETE algorithm offers significantly better performance than traditional approaches as it ensures that all conditions are only evaluated once and then re-used across different rules, regardless of the number of rules to which they apply. In addition, when data changes, only those rules that are affected are processed. This ensures the most efficient and rapid decisioning.

Our improved load balancing capabilities ensure that your system maintains the highest possible level of performance. Load Balancing ensures that tasks are routed automatically to the most available and appropriate engine, whether that be a core ART Enterprise engine or a component engine.

ART Enterprise

RULE BASED DECISION ENGINES

ART Enterprise offers an elegant and efficient means of automating business processes, through the use of rule technology. Rules are independent entities of reusable logic that express business policies as a set of actions to be taken whenever a set of conditions is met. As new data enters the application, a highly optimized rule engine automatically selects the rules that apply to the current situation and uses them to make decisions and take appropriate actions.

CASE-BASED REASONING (CBR)

ART Enterprise also includes a fuzzy-logic technology called case-based reasoning. This technology enables decisions to be recommended even when the quantity or quality of data is imperfect. In these situations, the system would return a set of possible decisions with confidence factors as well as a list of items where more information is required in order to improve the confidence of the offered decisions. ART Enterprise's Case-based reasoning engine stores a library ("case-base") of previously solved or engineer-ed problems/situations, and solves new problems or situations by searching for similar past cases and adapting their solution to the current situation. This adds a level of sophisticated decision-making not available in purely rule-based systems, and works extremely well in situations where exact matches or a full set of criteria are not always available. This capability can be used in a wide variety of areas ranging from text analysis and processing to customer support, fault analysis and personalization. It can also be used in the sales process to support cross sell of product selections based on prior similar offers, further stream-lining and improving your ability to match the correct product to meet the customer's and your company's needs.

FULLY MODULAR OBJECT-ORIENTED

ENVIRONMENT ART Enterprise provides a completely object-oriented environment. This allows all the benefits of modularity, re-use, rapid integration and encapsulation to be made available to systems administrators.

ADAPTABLE OPEN ARCHITECTURE

ART Enterprise's open architecture allows it to be embedded in external

applications or be the central application that wraps or calls external applications. The deployment environment permits unbundling of the GUI, data integrator, CBR and rule/object components for efficient licensing and integration with other programs. ART Enterprise can access external programs through a wide range of options — ODBC, TCP-IP, Plug Ins, etc. ART Enterprise application components may reside on the client or server, whichever is most economical.

LANGUAGES XML, C/C++ and Java native language support integrates decision-making capability into distributed object-oriented application architectures.

PLATFORMS Microsoft Windows NT, Windows 2000, Solaris and HP-UX on Unix, and Linux systems supported.

DATABASES All ODBC-Compliant databases.

Plugs into Your Current Technology Environment

ART Enterprise's open architecture integrates easily with your existing systems, hardware and software. The flexible component architecture allows you to leverage your existing investments and ensures that the system will adapt over time to meet changing technology.

In order to ensure the seamless integration of ART Enterprise into your environment, we have created several services and interfaces to common technology standards. These ensure rapid and successful implementation of ART Enterprise systems, regardless of the environment surrounding them. Specifically, ART Enterprise integration includes a wide set of tools and inte-

gration kits to connect our systems to a wide variety of technologies:

JAVA INTEROPERABILITY *ARTEnterprise's* java interoperability is consistent with the J2EE Connector Standard. Therefore, *ARTEnterprise* can operate seamlessly in any EJB, JB or Java Messaging Standard environment.

XML INTERFACE XML (Extensible Markup Language) Our XML interface is an integration service that provides a way to create *ARTEnterprise* objects from the tags defined in a DTD (Document Type Definition), and also allows a user to use *ARTEnterprise* to generate XML documents that can communicate back to other systems effortlessly.

DATABASE INTEGRATION TOOLS These tools provide integration of multiple database sources into *ARTEnterprise* objects. They include support for multi-threaded database integration, ensuring high performance in either a web or networked environment.

DOCUMENT INTEGRATION TOOLS These tools provide viewer classes for text documents, making it easier to read in text based documents. Case Based Reasoning can be used to retrieve documents using a combination of text and database attributes.

SYSTEM INTEGRATION TOOLS Systems administrators can easily integrate *ARTEnterprise* applications into existing systems to add intelligence to strategic applications. In addition to support for peer-to-peer communication using TCP/IP sockets and secure sockets, *ARTEnterprise* delivers an embeddable architecture with an open API that supports both dynamic linking and static linking with C++ call-in and call-out capabilities and

also supports links to other systems via XML and HTTP protocols.

WEB INTEGRATOR The Web Integrator is a component included in *ARTEnterprise* that uses a high level interface to provide the ability to quickly and easily communicate with Web clients without having to know the low-level communications or code level details. The Web Integrator allows *ARTEnterprise* applications to act as either a client or server in generating or accepting http requests.

Powerful System Tools Engine Service Provider

The MindBox Engine Service Provider (ESP) is provided as part of the MindBox solution. ESP provides a variety of services for managing the component engines. Some services include:

- Managing the orderly startup and shutdown of the rule engines.
- Managing the activation of new data and rules.
- Providing load balancing and transaction routing services.
- Providing failure recovery, rerouting, and failure notification services.
- Accepts both socket and HTTP connections.

ESP has an administrative GUI where its various functions can be controlled, or alternatively it can receive transactions from other applications.

Debugging and performance tools

In response to enhancement requests from our User Group members, MindBox has introduced new debugging and performance monitoring tools. These include:

- Ability to integrate performance monitoring with transactions
- Improved reporting of detailed performance results (including the ability to format in excel, information accumulated per object)
- Improved Tracing
- Ability to trace attribute value changes
- Reporting of partial rule matches
- Simplified interface to trace functions

“We were looking for a strategic partner to help us provide a better loan application experience for our customers. We wanted to speed up our loan decision turn-around times and proactively offer customers a range of loan alternatives that would suit their individual situations. Using MindBox’s software platform, we are able to automate routine steps like eligibility and pricing to save on underwriting costs. And, we are able to improve customer satisfaction by providing instant approval decisions. MindBox’s solution was a perfect fit for us because it provides the technology functions we need in one advanced and cost-effective software environment.”

WAYNE SADIN
CIO, AEGIS MORTGAGE



"We are a relatively new customer, yet we are already experiencing a significant savings in IT costs because the technology design allows our business staff, who don't have any IT or technical development experience, to make adjustments to the powerful rules engine on an as needed basis. In fact, the Power Editor will probably save HomeBanc Mortgage \$150,000 a year in IT costs."

BILL REED

SENIOR VICE PRESIDENT, HOMEBANC

CORPORATE HEADQUARTERS
MindBox®
300 Drake's Landing, Suite 155
Greenbrae, CA 94904
877.650.MIND

www.mindbox.com

©2005 MindBox. Printed in U.S.A. ART Enterprise and MindBox are trademarks of MindBox. ART Price, ART Qualify, ART Explain, ART Animate, and ART Optimize are trademarks of MindBox. All other company names and products are property of their respective holders in the United States, other countries, or both.