

MAPS Implementation Solution Document

Abstract

This document outlines a potential solution for a MAPS Implementation at a Clients Location. The solution is described in detail including diagrams, in order to provide the reader with enough information to gain an understanding of the system, its functionality and business benefits, and the implementation process.

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Prepared by:	Broc Harcourt, Mike Price

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1 PURPOSE & INTRODUCTION

This document is designed to offer an overview of the implementation options for the Proaxiom Multiple Application Processing System (MAPS). It covers background information on the MAPS system, a suggested implementation model, how it can be deployed, and the processes involved in an implementation.

1.1 Overview of Multiple Application Processing System (MAPS)

Many organisations are under increasing pressure to reduce operational costs and improve business processes, without making a major impact on operations or sacrificing customer service levels.

The MAPS application processing system has been designed specifically to assist organisations that need to make complex, recurring decisions on applications in a constantly changing environment.

MAPS brings three main advantages to an organisation:

- Business Process Automation
- Advanced scoring and credit application decisioning
- Management Information and Reporting

MAPS uses advanced business rules processing technology to automate many routine, manual tasks, allowing knowledge workers to focus on more productive tasks. Many manual, routine, and paper-based processes are eliminated through process automation in MAPS, and the accuracy, objectivity, and timeliness of decision making is significantly improved.

The MAPS system combines advanced business rules processing with scorecards and decision automation to ensure that the right offer can be made to every customer, every time. Furthermore, it completely eliminates an organisations reliance on paper driven processes, resulting in applications being processed quickly, efficiently and correctly every time.

The modular architecture of MAPS empowers an organisation to select and implement the features and functionality that will deliver the most business benefit. This means that the system can be implemented to conform with an organisations preferred business process, instead of the business process having to change to accommodate the system.

MAPS has proven to be a fast, reliable, and flexible system, and is used by major international financial organisations to improve processes, eliminate paper, optimise credit scoring, and reduce credit risk exposure by 15 to 25%. It is easy to deploy, and is designed to leverage off existing infrastructure where possible, thus maximising an organisations return on its Information Technology investment.

The proposed solution will allow the client to accurately and efficiently assess applications, to consistently evaluate risk, provide for process efficiency, and significantly improve lending quality.

1.2 Benefits of the MAPS System

Over and above the commonly accepted benefits of automated application processing systems, the specific benefits of the MAPS Application Processing System can be summarised as follows:

- **Flexible Architecture:**

The MAPS architecture, relational database and operating platform allows for relatively simple integration of the solution with existing host systems and third party databases, thus minimising both the operational risk and client resources required for implementation.

- **Business Rules autonomy:**

The modular design of MAPS means that the business rules for each product type are stored in an independent code silo. This brings the dual benefits of speed to market for new product releases, and also ensures that any changes made to a products processing flow does not affect the other products.

- **Supports unlimited scorecards:**

MAPS supports the implementation of an unlimited number of independent, parameter driven scorecards. This enables a credit risk component to be added to any marketing analysis. With the implementation of scorecards, it is important that these are continually monitored to ensure accuracy, and that they are meeting the required business objectives.

- **Web based system:**

MAPS operates with a browser based user interface, allowing for ease of deployment across the organisation, and a variety of set up options. The web based interface allows for easy modification or additions to the data capture and referral tools.

Key Functionality:

Process driven, not paper driven. Once an application is received in the system it can be tracked and will never be misplaced, delayed or lost.

Optimised risk / reward (bad debts / accept rates) through automation of credit rules and the introduction of a Credit Scoring methodology

Customer segmentation functionality in order to implement application scorecards, decision rules, marketing upsell and cross-sell strategies, and organisational policy rules efficiently and accurately.

Benchmarking of strategies via champion / challenger so that process improvements and lending strategies can be regularly enhanced.

Additional Benefits:

- Reduces human keying errors and the requirement to re-key data
- Credit scoring reduces bad debt ratio by 15-25%
- Product / customer optimisation means that the right product can be offered to the right customer every time
- Provides accurate, concise data for marketing, sales forecasting and analysis
- Data can be re-used in future application scoring and behavioural scoring analysis
- Reduces organisational reliance on paperwork and manual processes
- Provides detailed, easy to read reports on an ad-hoc or scheduled basis
- Provides an easy-to-read view of all relevant information for each application
- Pre-bureau scoring means not all applications have to go to a credit bureau
- Automated process means consistent application of credit policy across the organisation
- Faster decision turn around on applications (<1 minute)
- Creates an audit trail and history for every application
- Teams become more productive and can handle a higher volume of applications

2 THE MAPS COMPONENTS

2.1 MAPS Control Module

The MAPS system is a powerful, flexible, rules based decisioning engine, capable of processing a variety of application types using data from many different sources. The Control module contains the MAPS BRP processor, which contains all of the atomic functions used in BRP mapping.

The BRP modules call the Control module to receive instructions on the sequence for processing an application. This centralised function means that changes to the MAPS atomic functions only need to be made once in order to be executed throughout the entire system.

2.2 MAPS Mail Scanner (MMS)

The MAPS Mail Scanner module is an important part of the initial mail opening and registration process. When an application arrives, basic application data is entered into MMS, thus registering the fact that the application has been received.

From this point onwards, if a customer rings to enquire as to the status of an application, call center staff will immediately be able to provide up to date information back to the customer.

Another function of MMS is to produce barcode labels that can be attached to the application and any correspondence associated with it. At this point, the application form and supporting documentation can be scanned, thus removing the paper from the application process.

2.3 Data Capture and Application Load Processing (ALP)

MAPS can receive application data from a variety of sources. This is ideally suited to environments where existing front end infrastructure already performs the data capture function.

If no existing data capture facility is available, then application data can be entered into MAPS via the web based data capture screens. These screens are customised to meet the requirements of the client, and can be used for both internal (intranet) and external (internet) application data capture.

2.4 Business Rules Processors (BRP's)

When an application is submitted to MAPS for processing, the MAPS Business Rules Processors (BRP's) will determine the workflow process and sequence of actions that are to take place on that application, as determined by the business.

A typical BRP sequence might involve:

- validation of application data
- pre bureau scoring
- application of business rules
- credit bureau call

- post bureau scoring
- application of business rules to determine outcome

The MAPS BRP's are written in JAVA code, and are contained as separate modules within MAPS. This allows for the rapid creation of new products, with no disruption to existing products.

2.5 Scorecards

The introduction of scorecards allows the use of best case / worst case scoring. This may eliminate the requirement to perform a credit bureau or third party check on every applicant. Additionally, the use of post bureau application scoring ensures that every customer can be offered terms that reflect their risk level. Multiple scorecards can be contained within MAPS and the scorecards to be used are determined by the BRP.

2.6 MAUI Referral Tool

On some occasions, MAPS will refer an application for review by a human operator. Operators use the MAUI (MAPS Advanced User Interface) browser based tool to quickly and efficiently work through referred applications. An example of when an application would refer is when MAPS identifies invalid data in the application, and the customer may need to be contacted to confirm or correct details supplied with their application.

2.7 Correspondence and Document Repository

MAPS enables a wide range of documentation and customer correspondence to be generated, either using templates, free form text, or a combination of both. The system provides a centralised document repository, and all documentation relating to the application, including scanned images such as correspondence from the customer, can be uploaded and attached to the application. These documents can be viewed by users, supervisors and managers. Documents can be printed locally by users or sent for batch printing if required.

2.8 Connectivity with Internal and External systems

The flexible architecture of MAPS allows it to easily communicate with other systems, such as the clients Customer Information system for opening new accounts, and external systems, such as credit bureaus and other third party data sources. This information can be fed into MAPS to assist in the decision making process. The standard MAPS system would be implemented with a communications interface to a Customer Management System (CMS) and at least one Credit Bureau. Connectivity with other third party systems can be included initially, or added at a later date if so desired.

The interface to other systems can be provided for, using MAPS auto-operators. This means that no changes to the CMS would be required. This also allows for ease of migration to other system that may be used in the future.

2.9 Management Information and Reporting

The MAPS in-built management reporting suite provides managers and supervisors with daily, weekly, monthly and ad hoc reporting. These reports can be customised to suit the particular requirements of the Client.

The performance metrics of all task processes are tracked and stored within the MAPS database. Analysis of this data provides valuable feedback to the business and assists in both datamining of customer information and marketing opportunities, and also identifying and removing bottlenecks in both manual and automated processes. User activity logs show resource usage and assist in monitoring resource productivity.

2.10 Workflow Management

The MAPS system operates on an application level workflow management framework. This allows multiple applications to be processed simultaneously, resulting in improved productivity and streamlined processes in the decision making process.

Multi-level user and group access allows tasks to be assigned to different operator authorisation levels, so that tasks that require a higher level of sign off can only be actioned by authorised operators.

3 MAPS ARCHITECTURE DIAGRAM

3.1 Model 1: Suggested MAPS implementation model

Applications are created either by a customer entering data via a webpage, Customer Service Operators entering the data directly into the MAPS data capture screens (via Intranet), or the information being populated into MAPS from the Customer Management System. The MAPS ALP (Application Load Processor) ensures data integrity prior to population of the database.

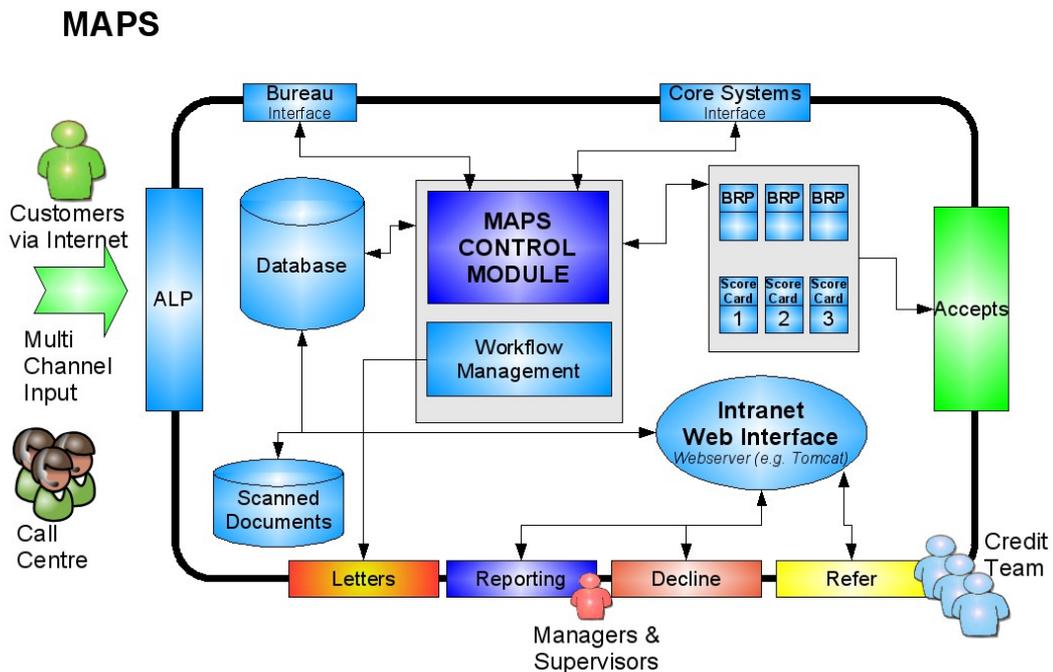


Fig 1: A model of a potential MAPS architecture

The MAPS Control Module will determine and call the BRP to be used based on the application type. The BRP will run through a sequence of business rules, calling other MAPS modules as required. The application is scored initially using a 'pre-bureau' scorecard, which provides a score based on application data alone. Depending on the parameters for application score cut-off, it may be determined at this point that an application can be accepted (or declined) without making a credit bureau call.

If the BRP proceeds with a bureau call, it will carry this function out using the MAPS bureau interfaces. Once this data is returned from the credit bureau, the BRP will determine a 'post-bureau' score. With this information, and in conjunction with the organisations business rules, MAPS will determine if the application will be accepted, referred, or declined. The overall processing time per application, including the response time for the bureau call, is generally between 20 and 60 seconds. Excluding the bureau call, the response time for MAPS is sub one second.

Referred applications are placed into a queue and assigned to a group of operators based on their referral reason. This allows for segmentation of operator tasks based on authorisation level. Referrals are processed using the MAUI interface, and once the referral reasons have been dealt with the application is re-processed through MAPS using the bureau data stored against the application.

The screenshot shows a web browser window titled "370611: BRENDAN MARSHALL - Application Referred - Firefox". The address bar shows the URL: "http://redoctor.proaxiom.co.nz/customer_service/maui.do?show_form=showApplication&applicatic". The browser's bookmark bar contains "Getting Started", "Latest Headlines", "MAPS Walkthrough", "MAPS Admin", "e-Dollars", and "LFSI". The main content area displays the "PROAXIOM MAPS APPLICATION USER INTERFACE DEMONSTRATION RELEASE". The interface is divided into several sections:

- Left Sidebar:** Contains navigation links such as "CREDIT CARD", "APPLICANTS", "FRAUD & DUPLICATES", "NOTES", "HISTORY", "Save", "Auto-Queue", and "Decision Pend Lapse".
- Personal Details:** Fields include Title (MR), Other (BRENDAN P MARSHALL), First Name, Int, Surname (Signed), Date of Birth (24/07/1984), Gender (Male), Mothers Maiden Name, No. of dependants (0), Customer Number, and Card Name.
- Contact Information:** Fields for Home Ph# (-04-4990309), Mobile Ph# (-021-1727888), Work Ph# (-04-1926397), and Email (EXAMPLE@PROAXIOM.CO.NZ).
- Residential Status:** Includes checkboxes for Houseowner, Living with Parents, Living with Relatives, Tenant (Furnished), Lodger, Other, Tenant (Unfurnished), and Employer Provided.
- Employment Details:** Includes checkboxes for Full Time, Part Time, Self-Employed, Homeemaker, Agency Contract, Fixed Term Contract, Retired, Unemployed, and Student.
- Right Sidebar:** Contains "Outstanding" (Application form has not been signed, Time at previous address not given, Previous address has no country, Residential address has no country, Residential address has no town), "Addressed", and "Recent Notes" (Add, Vis).

Fig 2: Screen shot of the MAUI referral processing tool

New accounts are opened automatically in the clients CMS by MAPS. Records of all applications are stored in the MAPS database, which allows for record checking of new applications against previously accepted or declined applications. The conditions for acceptance cut-off's are stored as parameters within MAPS, allowing the business to quickly and easily change the terms for acceptance.

The MAPS Management Information and Reporting suite contains a range of tools for use by supervisors and managers. It allows for scheduled and ad-hoc reporting on a wide range of statistics, and the queue monitor feature allows supervisors to see the status of all applications at any given time.

4 SCORECARD MONITORING

With the introduction of scorecards to the application process, it is important that the performance of these cards is continually monitored.

A monitoring system enables the user to perform both scorecard performance tracking and management reporting. The benefits obtained can be summarised as follows:

- Ensure that scorecards are discriminating between good and bad applications, thus protecting the investment made in the scorecard and optimising the reduction in bad debt levels.
- Ensure that the most appropriate cut-off score has been selected. An incorrect cut-off score can lead to either an increase in bad debt rate or a decrease in market share.
- Ensure that there has not been a shift in the demographic profile of the customer base. A changing population profile can lead to a decrease in the predictive strength of the scorecard, resulting in poor assessment of credit worthiness.
- Identify sub-populations that are performing either worse or better than average. This will allow management to make strategic decisions to either accept or decline more of the future applications for these specific sub-populations.
- Be in a position to forecast future write-offs and bad debt through the analysis of trends and patterns in the data.

As scorecard monitoring does not form part of a base MAPS installation, data can be extracted from MAPS to enable analysis to take place using tools such as SAS or SPSS.

The MAPS system maintains a snap shot of information as at the time of application. This information is particularly useful in both application scorecard and behavioural scorecard development. Proxiom provides a full range of customer risk management services across the whole of the customer lifecycle, and are able to discuss these additional services at the clients convenience.

5 THE DETAILS

5.1 Discovery Phase

At the request of the client, Proaxiom will undertake a discovery phase in order to accurately define how the MAPS system can be integrated within a particular environment. During the discovery phase Proaxiom staff will be onsite at the clients location as required. The discovery phase allows Proaxiom to establish the exact requirements for the implementation of the MAPS system, and allows the cost of customisation and implementation to be determined.

During the discovery phase Proaxiom will require access to the site and key personnel. The results and findings of the discovery phase will be provided to the client in the form of a Solution Overview and Design document.

5.2 Customisation

A small amount of customisation is required for each installation to ensure that MAPS fits the requirements of individual organisations. Primarily, this includes the user interface screens and the Business Rules Processors. Customisation is carried out by Proaxiom as part of the MAPS installation.

5.3 Installation

Full documentation and support for the release will be provided by Proaxiom as required during the User Acceptance and Production releases. Proaxiom staff will also be available to assist the clients IT staff as required.

5.4 Warranty

Proaxiom provides a warranty covering any defects, existing or new, that arise within the first 90 days of the application going live in the clients production environment. The warranty covers any situation that arises when the internal workings of MAPS are not performing as specified. Further support levels after the warranty period has expired are covered in the following section.

5.5 Support

Proaxiom offers a high level of both business and technical support to its clients. Our systems architects, business analysts and project managers are on hand to assist when required, and ensure that maximum business benefit and return on investment are gained from the implementation of MAPS.

Support Option 1

This support option is available when Proaxiom hosts or controls the hosting of the MAPS application on behalf of the client, either onsite with the client or in Proaxiom's secure hosting environment.

Support Option 1 entails backups and basic system administration (machine start-up, shutdown, and recovery) of the working environment, plus application support and help desk support for MAPS users. It also provides 2nd tier application support over and above that provided at a help desk level.

Support Option 2

Support Option 2 covers support for the underlying operational aspects of the application. Proaxiom would provide additional application support over and above the level of help desk support. Help desk level support would be provided by the client.

It may be necessary for a Proaxiom staff member to be onsite to enable timely resolution of the issue. The following Problem Severity Rating Table details the Proaxiom response times for all support options, based on the severity of the issue as determined by the client.

Problem Severity	Definition	Feedback to Business	Target time for providing fix	Post incident review required
1	Critical Impact - Software problem has a critical impact on key system High Visibility problem	Every hour	2 hours	Yes
2	Serious Impact - causing an inability to use a portion of software functionality or cause a material adverse financial impact to client and/or deterioration in performance. Medium/High Visibility problem	Daily	24 Hours	No, but will be produced on request
3	Minor Impact - on ability to deliver services to internal and external customers. Low/Moderate Visibility problem	Every Week	5 Days	No
4	No Impact - to service delivery. Minimal/Nil Visibility problem	Every Week	10 Days	No

5.6 End of Document