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BI & Analytics Health Check Overview

Objectives of the Engagement

- To study the existing policies, frameworks and systems at Mimo Finance
- To provide an objective, third party assessment on the as-is state-of-the-house
- To identify gaps in the current frameworks with respect to industry best practices, but relevant to Mimo
- To provide recommendations/ action items with a roadmap depending on importance & criticality

Methodology Adopted*

- The following key business divisions were studied at Mimo Finance over the discussions with the members of senior management and junior staff
  - Organization Heads
  - JLG
  - MESO
  - Vigilance
  - Audit
  - MIS
  - IT Projects

Deliverables to MIMO

For each of the business divisions the gaps between the current state at Mimo and the best practices in industry were identified and based on these gaps, key business recommendations for each of these are being presented

* Details of Methodology Adopted shown in next page
**Valuefy Health Check Methodology**

**Valuefy On-site CRM Assessment**
- Study Module
  - On-site study and assessment of current Mimo’s practices
  - Study of systems, resources, strategies, scorecards and analysis done by Mimo

**Valuefy Health Check Engine**
- Analysis Module
  - Analysis of Mimo’s practices
  - Benchmarking against the best in breed & identifying areas of improvement

**Valuefy Health Check Report**
- Consulting module
  - Final recommendations report
  - Suggested approach to Mimo to deliver best practices
Thank You

We sincerely thank the whole Mimo Team for lending their whole hearted support to us during our onsite study. Our best wishes to all the members of the Mimo team.

We would specifically like to thank:
- Mr. Murali
- Mr. Manav
- Mr. Rahul
- Mr. Harshabardan
- Other members of the Mimo Team
Valuefy Health Check Matrix
Current State, Gaps & Recommendations
Challenges

Challenge for Mimo

✔ Achieve the aggressive growth targets with risk control
✔ Create a brand name and build customer association
✔ Create scalable systems and processes to support the growth

Enablers

✔ Scalable and forward looking customer acquisition process
✔ Proactive risk and delinquency management
✔ Robust IT systems and support mechanisms
✔ Business Intelligence & Predictive Analytics
## Valuefy BI Analytics & CRM Health Check Matrix

<table>
<thead>
<tr>
<th>IT Enabled Information Management</th>
<th>Single Source of Truth</th>
<th>Comprehensive</th>
<th>Zero Redundancy</th>
<th>Closed Loop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Maturity</td>
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<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>IT Enablement</td>
<td>●</td>
<td>●</td>
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<table>
<thead>
<tr>
<th>Business Intelligence</th>
<th>Accessibility</th>
<th>Comprehensive</th>
<th>Analytical Capabilities</th>
<th>Closed Loop</th>
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<tbody>
<tr>
<td>Tools/Reports</td>
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<td>●</td>
<td>●</td>
<td>●</td>
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<tr>
<td>Usage</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Analytics &amp; Scorecards</th>
<th>Data Adequacy</th>
<th>Comprehensive</th>
<th>Analytical Rigor</th>
<th>Closed Loop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer Acquisition</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Monitoring &amp; Recovery</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<tr>
<td>CRM Analytics</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
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</table>

<table>
<thead>
<tr>
<th>The 3Ps</th>
<th>Structure</th>
<th>Comprehensive/ Excellence</th>
<th>Zero Redundancy/ Efficient</th>
<th>Closed Loop</th>
</tr>
</thead>
<tbody>
<tr>
<td>People</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Policies</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
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<tr>
<td>Processes</td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

- **●** Completely Achieved
- **○** Partially Achieved
- **〇** Not Achieved
- **□** Further Analysis Required
- **☀** Areas of strategic importance

*Note: Refer Glossary for detailed explanation of the parameters*
Mimo’s standing on TDWI’s Maturity Model

A representation of the five stages of TDWI Maturity Model. The Y-axis or the bell curve suggests the percentage of organizations in any given stage.

**GULF**
- Perception of BI as strategic
- Funding
- Data Quality
- Comfort with spreadmarts

**CHASM**
- Business Volatility & ownership
- Standardizing semantics
- Corporate centralized IT
- Report chaos
- Avoiding architectural inflexibility

**TDWI** (The Data Warehousing Institute) provides education, training, certification, news, and research for executives and information technology (IT) professionals worldwide. Founded in 1995, TDWI is the premier educational institute for business intelligence and data warehousing.

- Operational Reports (static, inflexible)
- Spreadmarts
- Customization required for any different report
- Problems with data integrity
- Adhoc step to BI
- Multiple data marts specific to department
- Less control
- First set of reports
- Broader approach to BI
- Central data warehouse
- Business Intelligence Unit formation
- Usage of information to make decisions
- KPIs defined
- Use of OLAP, yet ad hoc reports
- Unified Architecture with multilayered enterprise warehouse
- Comprehensive data
- Just-In-Time delivery
- Strategic viewpoint to performance
- Predictive analytics
- BIU reports to CXO
- Standard development methodologies for application propagation
- Extended enterprise to customers, suppliers etc.
- Event driven triggers/alarms
- Advanced architectural flexibility
## Key Recommendations

<table>
<thead>
<tr>
<th>IT Enabled Information Management</th>
<th>Recommendations</th>
<th>Suggested Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>➔ Align organization structure to analytics</td>
<td>➔ Merge IT &amp; MIS, Create separate BIU, suggest business to participate in data requirement and analysis infrastructure set up</td>
</tr>
<tr>
<td></td>
<td>➔ Have control over database &amp; applications</td>
<td>➔ Speak to BR.Net for arrangement: Mimo should have full database control with unlimited query capability. If not possible, create in-house</td>
</tr>
<tr>
<td></td>
<td>➔ Remove data duplication</td>
<td>➔ Have a single organization data warehouse with applications feeding data into it and information/analyses flowing out of it</td>
</tr>
<tr>
<td></td>
<td>➔ Make data structure comprehensive</td>
<td>➔ Integrate Audit data of FE and Branch grading</td>
</tr>
<tr>
<td></td>
<td></td>
<td>➔ Capture Pre-GRT data to be used for analytics and completing the PDCA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Business Intelligence</th>
<th>Recommendations</th>
<th>Suggested Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>➔ Improve accessibility</td>
<td>➔ Get direct access to database and reduce time for customized query/reports.</td>
</tr>
<tr>
<td></td>
<td>➔ Enhance usability</td>
<td>➔ Create dashboards and mechanisms for decreasing the data collection and dissemination life cycle</td>
</tr>
<tr>
<td></td>
<td>➔ Achieve comprehensiveness</td>
<td>➔ Use OLAP tools for better analysis and extracting intelligence</td>
</tr>
<tr>
<td></td>
<td>➔ Close Loops</td>
<td>➔ Emphasize informed decision making across all aspects of customer lifecycle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>➔ Analyze end to end information for comprehensive analysis and creation of cause-effect relationship</td>
</tr>
</tbody>
</table>
# Key Recommendations

<table>
<thead>
<tr>
<th>Analytics &amp; Scorecards</th>
<th>Recommendations</th>
<th>Suggested Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>➔ System Driven Expert Scorecard</td>
<td>➔ Back test the Judgmental Scorecard &amp; include other parameters in Credit Decision system</td>
</tr>
<tr>
<td></td>
<td>➔ Track &amp; Monitor the performance</td>
<td>➔ Track the performance of attributes</td>
</tr>
<tr>
<td></td>
<td>➔ Create new product offerings through Analytics</td>
<td>➔ Create Segmentation groups &amp; cross-sell products</td>
</tr>
<tr>
<td></td>
<td>➔ Progress towards statistical scorecards for various lifecycle of customers</td>
<td>➔ Designate a team who keep tracking campaigns &amp; analytical reports</td>
</tr>
<tr>
<td></td>
<td>➔ Back test the Judgmental Scorecard &amp; include other parameters in Credit Decision system</td>
<td>➔ Complete the data entry in data warehousing</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The 3P's (People, Policies &amp; Processes)</th>
<th>Recommendations</th>
<th>Suggested Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>➔ Create/rename functional roles</td>
<td>➔ Create Acquisition, risk and collection heads and avoid the same person handling the sales, collections and risk</td>
</tr>
<tr>
<td></td>
<td>➔ Reduce overheads</td>
<td>➔ Align with IT systems, bring agility by reducing human intervention, documents faxing etc.</td>
</tr>
<tr>
<td></td>
<td>➔ Close Loops</td>
<td>➔ Encourage and instill the process of tracking customer behavior/defaults with application information using BI tools</td>
</tr>
<tr>
<td></td>
<td>➔ Back test the Judgmental Scorecard &amp; include other parameters in Credit Decision system</td>
<td>➔ Create processes to capture ad hoc data at ground level, like demographic transition, which can be used for strategic intent</td>
</tr>
</tbody>
</table>
Timelines For Recommendations
Key Action Items with timelines

Information to Decision
- Get unlimited query control of warehouse, reduce TAT of customized information
- Freeze & start measuring KPIs
- Use information for decision making
- Eliminate report chaos

Analytics & Usage
- Back tested & System driven Judgemental scorecard
- Segmentation framework for Cross-sell of other products

Advanced Use of analytics
- Statistical Scorecard for Application Processing
- Plan for Collections/ Recovery Scorecard
- Plan to develop Behavioral Scorecard

IT & Data Consolidation
- Get pre-GRT data, Capture demographic transitions, events, competitor info
- Transition to enterprise warehouse
- Reduce data dissemination cycle, reduce paperwork/overheads

Increasing analytical capability, usage and strategic alignment

Achieving consistent and high-quality data

- Single source of truth achieved
- Integrated applications
- Better information availability
- BI capability
- Cause effect analyses
- Integrated scorecards

Increasing analytical capability, usage and strategic alignment

- Integrated applications
- Better information availability
- Integrated scorecards

Achieving consistent and high-quality data

3 Months 9 Months 1.5 Years
IT Enabled Information Management

Gap Analysis Report
IT Enabled Information Management

Business Objective

➢ To create an infrastructure having comprehensive data storage mechanism, accessible on the fly to business users across the organization for analysis and decision making across the customer lifecycle.

Best Practices

A state-of-the-art Information Management is ensured by the following:

➢ Enterprise Data Warehouse depicting single source of truth
➢ Comprehensive & efficient data capture from all touch points
➢ IT applications to support the business processes with a closed loop
➢ Zero redundancy in data and applications

Data Warehouse completeness requires covering the following touch points:

➢ Customer Acquisition
➢ Payment Interactions
➢ Delinquency cases
➢ Fraud
➢ Other interactions providing data for future use

Tools

➢ Databases
➢ Applications/Devices for data capture

Skills

➢ Database programmers
➢ Application programmers
IT Enabled Information Management

### Current State

#### Database & Applications

**BR.NET**
- Software as a service, web application with SQL server database, not open to query facilities
- All customer data (post GRT) captured and maintained in BR.NET
- Customer Data is captured from various touch points by field officers at a branch level
  - **Acquisition (New Customer):** Post DPN, the customer data from forms in regional office is entered by MIS Team
  - **Collections:** Data entered by Branches directly (system in process)
  - **Delinquency:** Data entered in system with lag
- The data is reflected in the database in 2 days time, first time OD gets reflected in 3-4 days at RMO

#### Operations Management

- Developed by IT vendor, hosted on a cloud owned by Mimo
- Data pre GRT to be captured, Other data to be updated via daily dump from BR.Net
- Audit department data would be integrated into this

#### GIS

- Data from third party sources, census etc. for visual geographical heat-map analysis (closed loop, integrated MIS)

#### HRMS

- HR management for internal purposes

---

### Tools

- Outsourced hardware/software/cloud

### Skills

- MIS Team (9)
- IT Projects (1)
- Outsourced vendors
IT Enabled Information Management - Gaps

Gaps

- **Comprehensiveness** - Not fully achieved
  - Data storage post GRT. Data pre-GRT is not stored, data for rejects is not stored
  - Few fields in application form entered as ad hoc fields, not fully integrated with the main warehouse
  - Data from audit department to be integrated into the ops system

- **Architecture** - High Redundancy Medium Scalability, Low Integration
  - Ops management tool to replicate BR.Net data and have additional pre-GRT data, to be hosted on the cloud
  - Distributed ad hoc systems with databases for individual systems
  - Plan of further increasing the databases to be hosted on cloud

- **Information Accessibility** - Limited
  - Data resides with external vendor accessible through third-party application
  - Limited query of data possible with paid ad-hoc requirements having a turn-around time of 5 days+
  - Huge cost implication as data need grows

Recommendations

- Capture and store all data from acquisition stage to payment to reap the BI & analytics benefits. Targets, Pre-GRT, rejected customers, audit, payment and other data to be captured in one database for seamless usage

- Milk the multiple and frequent touch-point nature of basis to keep gathering data of existing and past customers. Capture data of demographics, non-customers in order to derive proactive intelligence for planning and target setting in the dynamic competitive scenario.

- Eliminate data redundancy. Have a single source of truth, either with a customized package with BR.Net or a complete in-house application. Recommended to start streamlining distributed data sources and build a central data warehouse. Gradually start building in-house IT capability with outsourcing restricted to complex skill sets.

- Integrate databases and systems with control over data warehouse
  - Refer ‘Recommended Information Management structure’ section for details for suggested architecture.

- Get control of data warehouse

- Provide unlimited query and analysis capability lest people develop the “Work with whatever available” syndrome

Not required | Nice to do | Long term musts | Quick wins – To do immediately
IT Enabled Information Management - Gaps

Gaps

Efficiency & Productivity - Medium
► Data from source to MIS takes some time (2-3 days)
► Forms are not optimized for data entry, currently 100 applications per day which can be increased to 150+ per day
► First time OD gets noticed at RMO after 3-4 days
► Currently 42 registers across systems to tally and check

IT Enablement
► Good processes and systems coverage to begin with, however scalability can be an issue
► In its current state, the processes are well defined and there are significant amount of checks in the system, which are not IT enabled
► Huge collection of forms, paper work, well documented

Recommendations

► Get the forms modified to enable optimized data entry and reduce overheads and lag.
► Put IT enablement/systems in place to reduce the data capture and dissemination life cycle (Branch level entry, mobile etc.)
► Reduce paper work and align with IT to enhance productivity and reduce human error

► The processes for each department should be mapped and IT enabled as far as possible, reducing paper work and chances of human error
► Customer acquisition process flow: Pre GRT, DPN, DCN... approvals, checks etc. should happen online to save time and traceability
► Reviews and Checks should move from reviewee item to reviewer to closer via an IT enabled process e.g. Audit
► This would enable to tighten the loose ends, add to productivity and transparency
► Reduce paper-load, digitize and keep essential papers only
► Emphasize contribution towards low-carbon-footprint and ‘the first’ as a Mimo initiative
Current IT Information Management Structure

- BR.NET APPLICATION
  - Engine
  - Database
  - Reports
  - Daily Excel Dump

- MIS TEAM/BO/RO
  - DATA ENTRY
  - Business Users
  - ANALYSIS

- FUTURE/OPS APPLICATION
  - Engine
  - Databases
  - Reports
  - Hosted on cloud

- BR.NET database not accessible
- Redundancy of data, processes and reporting applications
- Data sanity might become an issue
- Scalability issues
Proposed IT Information Management Structure

**BI & ANALYTICS LAYER (WEB APPLICATION WITH OLAP FUNCTIONALITY FOR ANALYTICAL DECISION MAKING)**

**ANALYTICS APPLICATIONS**

- **ANALYTICS ENGINE**
  \[ f(x) = \alpha + \beta x_n + \chi f_n(s)/ds \]
  - ANALYTICAL MODELS
  - OLAP CUBES
  - TRIGGERS & ALERTS

**DATA WAREHOUSE**

- CUSTOMER & OPERATIONS
- GIS DATAMART
- HR & OTHERS

**PROCESS APPLICATIONS**

- **PROCESS ENGINE**
  - DATA ENTRY
  - PROCESS CONTROL
  - CLOSED LOOP

**MIS/IT TEAM**

- BRANCH/REG OFF
- OTHER USERS
Business Intelligence
Gap Analysis Report
Business Intelligence

Key Business Impact

- To track and monitor performance, risk and other metrics across key functional areas
- To benchmark the key metrics against the best in breed/targets
- To provide pro-active insights and be a lever of strategy formulation and implementation

Best Practices

A BI framework that enables business users to make informed and proactive decision is characterized by:

- On the fly accurate, availability of information with high degree of recency
- Robust analytical engine with OLAP functionality allowing top-down analysis with spreadsheet and graphical view
- Canned MIS mapped to hierarchical KPIs with fast turnaround for custom queries
- Well defined dashboards for CXOs to get a top-level view
- Trigger and Trip-wire mechanisms to catch attention and ensure response

Tools

- OLAP – Business Objects, Cognos, Brio, Third party softwares etc.

Skills

- OLAP technical team
- BIU team
# Business Intelligence

## Current State

### APPLICATION: BR.NET
- MIS Reports being accessed from a third party application being used as SAAS
- Reports structured under various relevant modules as required by business users

### ACCESSIBILITY, COMPREHENSIVENESS & REDUNDANCY
- BR.NET accessibility as per the roles and restrictions
- Reports broadly cover all business areas under the following modules:
  - Client
  - Loan Module
  - MIS Reports
  - Microfinance Module
  - Customized Reports and Others including P&L, Ledger etc. (For customized reports and analyses, MIS team facilitates with BR.NET – 5 days TAT)
- Overlap of data in reports, some reports overlap to a large extent

### BI/ANALYTICAL CAPABILITY
- Simple tabular reports with no drill down, graphical facility
- Availability of filters

## Tools
- BR.NET : third party application

## Skills
- MIS Team for facilitating with BR.Net
Business Intelligence - Gaps

Gaps

User Friendliness & Accessibility: Medium-Low
- Reports are available through BR.NET application via the web
- Some reports and analysis created in excel promoting proliferation of spreadmarts
- Basic reports provide data specific to certain queries: in-depth reports required for analyses are missing
- Custom information sought takes more than five days: such delays can kill the motive for analyses and lead to “work with whatever available” approach

Comprehensiveness: Low
- Current set of reports do not comprehensively capture key metrics.
- Low emphasis on customer analysis: Complete customer information is not available for analysis and it cannot be mapped to the payment behavior: PDCA loop is missing
- Reports for transition of risk, defaulters etc. though present are not easy to analyze

Recommendations

- Comprehensive information must be made available on a button click. Create infrastructure for reports that can be readily used for analyses.
- Avoid spreadmarts lest it becomes a comfortable habit
- Reduce time required for custom information/reports to less than 1.5 days: Discuss with vendor and get direct query access to database.
- Emphasize business users to derive intelligence from reports

- Align reports by business functions and KPIs thereof. Create comprehensive information disbursement system covering all aspects of the customer life cycle including*
  - Acquisition & CRM
    - Customer analysis
    - New product analysis
  - Risk Management
    - Customer behavior analysis
    - Exposure analysis
    - Collections analysis
  - Profitability Analysis
    - Profitability analysis
    - Operational Efficiency

* These are broad & indicative report heads. See BI Framework for details.
Business Intelligence - Gaps

Gaps
- **Redundancy:** Medium
  - The reports are dispersed and in quite a few cases have overlapping information

- **Strategic & Analytical Capability:** Missing
  - Reports are tabular in nature without any interactive features allowing drill down of data from top to bottom: hampers any analytical fact finding and subsequent decisioning
  - Report structure is a bunch of reports rather than being aligned to functions/roles based KPIs
  - No dashboards, incomplete hierarchical KPI measures and missing trigger and trip-wire mechanism

Recommendations
- Merge reports which carry common data/analyses in a top-down hierarchy
- Remove reports with no data and create a clean structure in BR.NET

- Migrate from visualizing information to Business Intelligence using OLAP*
- Create a new BI structure with the following:
  - Well defined KPIs for hierarchies
  - Dashboards are per the KPIs
  - Triggers and trip-wire mechanisms
  - Reports with Drill-down, Sort, Filter feature real-time on the report
  - Ability to add/remove dimensions on the fly
  - Mix of Graphical and Cross-tab, tabular reports
- Create a group/sub-group as BIU who own and maintain the system from technical and business perspective
- Train users on usage of these tools and emphasize the value add

Not required | Nice to do | Long term musts | Quick wins – To do immediately

Confidential | Valuefy Consultants Pvt Ltd
Analytics & Scorecards
Gap Analysis Reports
Benefits of Analytics & Scoring to Mimo

An organization in the stage of transformation or in the process of scaling up can benefit from the use of Scorecards and Analytics in the following ways:

- Streamline the lending process & reach out more clients
- Improve loan officer efficiency & thus lowering the costs and enhancing the productivity
- Increase the consistency of the evaluation process
- Reduce human bias in the lending decision
- Enable the bank to vary the credit policy according to risk classification
- Quantification of expected losses for different risk classes of borrowers & managing default rates
- Reduce time spent on collections
- Improved client retention and Marketing Opportunities.
- Create new products specific to a set of clients/ geography/ demand.
Types of Analytical Scorecards – must have

Following types of Analytical frameworks can be used for decision making, mapped to various stages of Customer Development:

- Application Scoring – Used for Customer Acquisition (Approval or Rejection of an application)

- Behavioral Scoring – Used for Loan Management, Monitoring & Tracking defaults, predicting the likelihood of default of next payments for the customer.

- Collections Scoring – Used for recovery from customers who are already in OD.

- Segmentation – Used for analyzing the existing set of customers in designing new products as per the needs of the customer.
Analytics & Modeling

Key Business Impact

- To understand customer behavior and increase customer acquisition rate, customer retention rate and customer profitability
- To carry out mass Customization, drive new product development and identify prospects accurately for target marketing
- To drive new product development
- To provide best services to most valuable customers by effective cherry picking

Best Practices

- Use of Credit Scoring System for Loan Evaluation and processing.
- Use of Behavioural Score in Monitoring the existing Customer base, cross sell opportunities, top up loan
- Use of segmentation framework to create new products, identify cross sell base and create campaigns.
- Use of collection scores/segments to prioritize the Recovery process
- Periodic use of Analytical MIS & Reports to track Portfolio performance.
- User friendly tools that aid the business users in monitoring the portfolio at various stages by various dimensions using the OLAP drill down capabilities.

Tools

- Data Mining Tools (SAS, SPSS)
- OLAP Tools

Skills

- Data Mining specialists
- Database specialists
- Business Analysts
Analytics & Modeling

Current State

- MIMO currently follows a 6-parameter evaluation statistics for approving a JLG customer, and has well defined Judgmental Scorecards for each of the three products for MESO.
- The scorecards developed by Mimo are of Judgmental in nature and have never been tracked for their effectiveness. The scorecards are assumed to keep the risk in control.
- The customer scoring is done in hard copies or excel spreadsheets.
- Post Approval, a Loan Utilization Check is conducted to figure out the purpose of loan utilization and level of utilization.
- The repeat customers (even 3rd or the 4th time customers) take a lot of time in approval due to the absence of Behavioral Score.
- For collections, the customers are divided in 3 categories – A, B, C. In determining these categories, the reason for non payment such as “absconding” are of prime importance.

Tools

- Excel Spreadsheets

Skills

- Well trained and experienced staff
Analytics & Modeling - Gaps

**Gaps**

**Acquisition**
- Current Scorecards used for the evaluation of Customers are not adequate
  - Almost 90% of the reported delinquency is due to Operation Staff
  - Inadequate historical data for statistical credit scoring.
  - Only Housing Index is some kind of objective evaluation criteria for JLG customers.
  - For Meso Operations, there are different judgmental scorecards for different products
- The current scorecards are not back tested for performance.
- The current scoring mechanism is carried out in excel spreadsheets by the Credit Officer

**Monitoring/ Tracking**
- There is no mechanism to track the customer behavior, i.e. a customer having x days of arrear moving into y days of arrear
- Only Loan Utilization Check is some kind of Post Acquisition monitoring of a customer.

**Recommendations**
- Include the Field Officer Rating/ Branch Rating as one of the parameters in the Scorecard.
- Capture additional data fields for JLG clients similar to MESO clients
- Capture the data on Reject applicants in the system.
- As the data starts building, back test the Scorecard parameters for their effectiveness in Credit Appraisal
- Need to arrive at an optimum level of bad rate vs. approval rate using the current application scorecard. Mimo needs to evaluate the extent of additional loss it can bear for a particular increase in approvals to maximize profitability
- Move from Judgmental Scorecard to Statistical Scorecard
- Integrate the Scorecard with the IT Systems so that the information of scorecard characteristics is stored in the database for Scorecard Tracking & Quick Turn around.

- A roll rate analysis needs to be done to identify what % of customers migrate over x days OD to y-days OD
- Identify Branches, products & other characteristics where the movement from lower arrears to higher arrears are the highest.
- Develop a Behavioral Scorecard based on the various parameters to track the behavior of a customer post acquisition.
Analytics & Modeling - Gaps

**Gaps**

**Collections/ Recovery**
- Scorecards used in the area of recovery are not able to Quantify and are based on the reasons of not payment.

**CRM Analytics**
- Skill sets in the area of building, recalibrating and tracking the effectiveness and validity of the models need to be supplemented
- Sales & Marketing department is faced a problem with problem of attrition from the Competition.
- Sales & Marketing also faces challenges in creation of new products for increasing the business.
- Absence of structure and framework to support any Retention, Activation, Usage, New card Acquisition Strategy

- No quantifiable Customer score available to gauge the value of a particular customer

**Recommendations**

- Employ recovery scorecards/ segments with different level of recovery efforts.
- Resources need training on the following
  - Modeling
  - Recalibration
  - Monitoring and Tracking models
  - Usefulness of models
  - Incorporation of models into decision making
- Modeling needs to be done to predict attrition
- Leverage huge JLG customer base by cross selling Individual (MESO) loans by segmenting them on different dimensions.
- Capture the demographic details, socio-economic details in the GIS Project to create the area specific products.
- Run campaigns for customer development and product penetration.
- A repeat customer should have lesser processes and the case load for repeat cases should increase
The 3Ps: People, Policies, Processes
Gap Analysis Report
People, Policies, Processes: The 3 Ps

**Business Objective**

➤ To create an organization with committed people aligned to organizational goals, with policies as business enablers supported by scalable processes that can detect and reduce malfunctions.

**Best Practices**

➤ Well defined organization structure mapped to business objectives and functions
  ◦ Non-overlapping roles & responsibilities
  ◦ Directionally Aligned (Risk & Marketing should not be under the same head)
  ◦ Clear ownership

➤ Capable team to implement the organization strategy

➤ Clear and comprehensive policies for each business functions
  ◦ Policies should be comprehensive to plug-in various gaps
  ◦ Should have a closed-loop to ensure that what is achieved was what was aimed

➤ Robust and efficient processes to reduce overheads
  ◦ Processes to ensure policies are adhered to
  ◦ IT enablement to reduce human bias, dependency and ease of tracking

**Tools**

➤ Policy documents
➤ IT enabled processes

**Skills**

➤ As per business functions/units

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People, Policies, Processes: The 3 Ps

**Current State**

**Organization Structure & People**
- Excellent and committed team with ownership and understanding of responsibilities
- Operations team structure by asset type (JLG & MISO) and functions (Planning, Audit, Vigilance, MIS, IT)
- Meso person handling the Sales, Payment and Risk himself
- Planning and Monitoring clearly involved at Acquisition stage
- Vigilance oversees the payment and delinquency
- Capable team with innovative mechanisms and plug-ins to processes (FEs transfer, people planted etc.)

**Policies**
- Well laid out policies, non-compromising and adhered to

**Processes**
- Robust processes to support the policies and people
- A good amount of human intervention
- Significant paper work (42 registers overall including collections, OD)
- Low IT enablement of processes
- Closed loop missing

**Tools**
- Policy documents in place

**Skills**
- Skilled & Dedicated teams
- Understanding of business
- Shortage of team (one man army)
People, Policies, Processes: The 3 Ps - Gaps

Gaps

- **Role Overlap/Directional Alignment** – Scope for Improvement
  - Planning and Monitoring department is involved in acquisition, disbursement and collections. Since the FE doing the sale and collections is same, bias can creep in as the scale grows and monitoring becomes difficult
  - MIS is only facilitating the ad hoc reporting and does data entry. IT looks after new projects.
  - MESO: single person responsible for sales, default management and risk; not very scalable

- **Processes** – Slight overhead
  - Huge amount of paper work involved with human intervention

- **Closed Loop** - Low-Medium
  - Risk mapping at acquisition stage not mapped with payment behavior to validate risk policies
  - Unilateral audit process not closed with BM/FE and not tracked against territory performance
  - No clear process for indentifying demographic dynamics and pass on information for planning & new products

Recommendations

- Since the business structure would remain the same, a very strong and efficient process is required to ensure risk control
  - Process to track attendance, and not just amount, on a daily basis at collection centers is a must, else FE bias/judgment might result in the delinquency creep in getting noticed at a delay
  - Merge IT & MIS into one as the IT department. Create a separate BIU (Business Intelligence unit) as the data maturity and analytics maturity grows in organization
  - Bring MESO risk under Vigilance/Risk Dept. which should be solely responsible for risk
  - Strengthen the processes with IT backbone to minimize paper work and human involvement
  - Reduce faxing documents, manual checking wherever possible and align with IT systems with appropriate triggers based actions

- Important to have a closed loop mechanism for all policies to ensure that the policies are right
  - Regularly check performance of clients with their screening score to uphold/modify the screening parameters
  - Allow BM/FE to play a role in audit ratings
  - Allow system to capture demographics, competition etc. information to leverage the ‘frequent touch point’ nature of business

Not required | Nice to do | Long term musts | Quick wins – To do immediately
Credit Scoring
Steps to Implement a Credit Scoring System

- **Segment Definition:**
  - Identify the type of customers and products for which the scoring model will be used

- **Type of Scorecard:**
  - Judgmental: structured from expert judgment and institutional experience
  - Statistical: A statistical model score predicts the probability of default for an individual borrower. This degree of precision makes it the most powerful scorecard type for risk management, pricing and provisioning.
  - Hybrid: A hybrid model can be back-tested on all historic cases to define historic probability of default at various score levels.

- **Scorecard Design:**
  - **Bad Definition:** A precise, quantitative definition of “bad” is crucial for deriving numeric relationships between each risk measure and the “bad” loans. It is must have for a statistical scorecard, judgmental scorecard can be built without this, but for back testing it is required. A “bad” may be a client who might have been 15 days late in paying installment.
  - **Characteristic Selection:** Exploratory analysis of characteristics to consider for inclusion in the model and a basic understanding of the shape of the relationship between each characteristic and repayment risk. For a judgmental scorecard no advanced statistical knowledge or software is necessary except for Statistical/ Hybrid Scorecards.
  - **Development:** Development involves applying weights to the selected model factors and creating a scorecard. Statistical model weights are taken directly from the statistical outputs, such as a regression equation, while judgmental model weights are set manually based on the perceived importance of individual factors and the implications of their interactions. Hybrid scorecards combine the statistical and judgmental techniques explained above. One potential “hybridization” is the combination of a statistically derived score, such as a bureau score, with a judgmental score using a matrix approach.
Steps to Implement a Credit Scoring System

- **Scorecard Testing & Monitoring**
  - Back tests present the scorecard’s classifications for the entire set of data used to develop the card. For judgmental models, we can perform similar analysis if we can gather a sample of data on repaid loans for which we know whether the client was always good or at any point became bad.
  - A pilot testing of scorecard where the scorecard is run parallel with the existing system of Loan Approval is done.
  - The end users should be trained on the usage of scorecards & its application, cut-offs, etc.
  - A scorecard can be deployed most effectively as an additional module to an existing software platform. The maturity and flexibility of IT systems will influence how best to integrate the scorecard.

- **Model Management**
  - Scorecard management is a long-term process that must live well beyond the initial development and implementation. It requires checking for whether the Scorecard is able to classify the Good/ Bad Loans, checking of individual parameters and their attributes in terms of classification power.
Challenges in Implementing a Credit Scoring System

- Collecting the accurate and comprehensive data necessary to develop a scorecard
  - As per the current state, the data is being stored at BR.NET. The system currently stores certain information with respect to normal processing, accounting, tracking etc. But the Credit Scoring details are not being fed into the system. This limits the availability of the data to track, monitor or create any Scorecard.

- Investment in developing an MIS platform that can store the needed data and produce a result (integration)
  - The MIS system currently is not integrated with the Application screening system.

- Large enough sample for creating “Bad”, “Good”, “Reject” clients.
  - In order to build a robust application scorecard, industry norms suggest that there need to be 1,800 good accounts, 1,800 bad accounts, and 1,800 rejected applications over an 18-24 month period. At Mimo, the information on rejects is not being captured at all. Very few number of bad cases again limit the creation of a Statistical Scorecard.

- The data used to produce scorecards needs to be accurate to create accurate results. However, it doesn’t need to be perfect, as the data will always have some errors and randomness.
  - At times due to staff the data being captured is not accurate enough, for ex: reasons for OD – whether default from a client or staff is not being maintained and accuracy of some of the other information. The cases of such instances are not huge. Hence creating a statistical scorecard can be weighted towards subjective evaluation until the data quality is sufficiently improved.

- Buy in from the staff
  - The staff (Credit Officer) is currently using an expert scorecard and hence the buy in from using Analytical Decision Making system is there but the same needs to be spread across others to scale up things.
Progressive Scorecard Development

Data Collection & IT Systems Maturity

Judgmental Scorecard
- Incorporation of Additional fields in Credit Scoring framework
- Expert Scorecard System with Few attributes
- Data Standardization & Capturing additional fields for Credit Scoring

Hybrid Scorecard
- Historical Database with Customer Characteristics
- Recalibration of Judgmental Scorecard
- Testing of Predictive Power of the Scorecard Attributes

Statistical Scorecard
- Creation of Statistical Scorecard
- Out of Time Testing of the Statistical Scorecard
- Roll out the Statistical Scorecard at Branch level

Implementation Timelines
## Judgmental Scorecard Parameters – Borrower’s Characteristics

### Demographics
- Gender
- Age
- Marital status
- Has telephone at Resi
- Education

### Family Details
- Target Segment
- Family Type
- Family size
- Dependents

### Business Characteristics
- Salaried/ Self Employed
- Time at salaried job
- Runs Buss from the home
- Type of business
- Years in current business
- Experience in curr activity
- Has telephone at buis
- Number of employees
- Sector

### Credit Capacity
- Income pattern
- Stability in current service
- Gross Income of Client
- Net Savings of Client
- Other Earning member
- Net Savings of family
- Vehicle owned
- Monthly sales
- Monthly expenses
- Other busi income
- Other busi expenses
- Household income
- Household expenses
- Monthly free cash flow
- Cash on hand and banks
- Inventory
- Fixed assets
- Accounts receivable
- Accounts payable
- Debts
- Other liabilities
- Rent Payment

### Credit Character
- No of Loans Taken
- CIBIL check
- Repayment History all
- Current Loan O/s (Rs.)
- Behavior/attitude of client
- Guarantor’s credibility
- Guarantor’s opinion about
- Neighborhood Reference
- Months since first disb
- Days in arrears per install
- Longest spell of arrears
- No of spells of arrears

### House Details
- Type of House
- Roof type
- Stability in current
- Ownership Name
- Ownership Proof
- House accesibility
- Present value of house &
- No. of rooms
- Condition of house
- Electricity

- Home owner status
  (owner, renter, other)

- The parameters presented here represents various dimensions of borrower which should be captured for Credit Scoring

- The fields marked in Red are the fields which are not being captured as of now.

- We see that Customer demographics and Business characteristics are being missed out in Credit Scoring which can be the potential parameters for Application Screening.

- We recommend these fields to be captured as to make a robust Credit Decisioning system going forward.
Judgmental Scorecard Parameters – Other Characteristics

- **Loan Characteristics**
  - ✔ Type of Loan
  - ✔ Month of disbursement
  - ✔ Amount Requested
  - ✔ Borrower’s contribution to financing
  - ✔ Tenor
  - ✔ Inst to Income ratio

- **Product Specifications**
  - ✔ Purpose of construction
  - ✔ Current rented out rooms
  - ✔ Expected rent income
  - ✔ Total Project cost
  - ✔ Personal contribution
  - ✔ Actual Utilization of loan

- **Lender Characteristics**
  - ✔ Branch Rating
  - ✔ Loan officer Rating
  - ✔ Loan Officer Experience

- Apart from Borrower’s characteristics, there are other dimensions which significantly impact the propensity of default:
  - Loan Characteristics: such as Tenor, IIR can capture the re-paying capacity of a borrower and evaluate an applicant. These characteristics are not being captured as of now.
  - Product Specifications: These characteristics are being captured. These Characteristics vary as per the product – Business Loan, Home Improvement Loan, Dairy Loan. As and when new products are created, similar characteristics should be captured for evaluation.
  - Lender Characteristics: Lender’s rating, experience help in deciding the cut-off at an Organization level and keep portfolio risk at check. As most of the defaults happen due to FE than the customer, incorporating such parameters will be of prime importance.
Business Intelligence Framework
Key Performance Indicators, Metrics & OLAP Structure
Customers & Acquisition

Key Questions

The BIG Ys

- What has been the growth in customers?
  - Have we met targets?
  - Is my growth concentrated?
  - How many repeat customers do we have? Which cycles?
  - How many customer who completed the cycle in last n months are my customers?
  - How many customers switched to competitors?
  - Are the customers going to competitors for their 1+ term? Why?

- Where is the opportunity?
  - How many customers are completing the cycle in coming n weeks? What is the monetary value of the opportunity?
  - What is the opportunity that we captured in past 3 months?

- Is there a product gap?
  - Has any of my customers met an event? (poultry, cattle, house, shop, marriage, kid etc.)
  - Is there a demographic transition?
  - What is the need generated by the transition?

Key Metrics

Customer #, Total Amount, Growth % (Actual vs. Planned)
The growth in number of customers by number, loan amount on rolling basis.

Funding Requirement
Funds required for disbursals for applications in progress.

Opportunity (Size & Harnessed)
The amount of disbursed loan that is maturing in the next 4 weeks, clients captured from the matured ones in past 3 months.

Customer Wait Days
Average no of days from Customer entry into the system to disbursement. On The dashboard this would be the weighted average figure for past 3 months. A figure above planned 10 days should demand probe/action.
**Key Questions**

**The BIG Ys**

- How effective is my customer acquisition?
  - What is the duration of my customer acquisition cycle?
  - Which stage takes the longest? (Intr., GRT, Funding...) is it a bottleneck? Why?

**Key Metrics**

**Customer Retention Ratio**
No of customers who are with Mimo in their second term if they have taken the second term from any provider (matured in past n months).
This would require additional data capture by FEs.
Customers & Acquisition

The OLAP Cubes

**FACTS**
- # of Customers (Actual, Planned)
- Amount Disbursed (Actual, Planned)
- # of Applications in Process
- Notional Amount in Process (Final disbursable amount for applications)
- Time Elapsed in Stage

**DIMENSIONS**
- Branch
- Region
- Center
- Group
- Gender
- Purpose
- FE
- Age
- Literacy Level
- Occupation
- Repeat Customer
- Status (Active)
- Cycle Number
- Application Stage
- MMYY
- QQYY
- YYY
- Cycle Start MMYY
- Cycle End MMYY
- Product
Customers & Acquisition

Analysis Reports

**Targeted vs. Achieved**

- # of customers, amount disbursed, targeted vs. achieved, new vs. renewed customers
- Analyze by: Geography: Drilldown -> Overall -> Region -> Branch -> FE. *Time*: Year, Quarter, Month. *Product*

**Customers in Process**

- # of customers, amount to be disbursed, Time in process
- Analyze by: Geography: Drilldown -> Overall -> Region -> Branch -> FE. *Time*: Year, Quarter, Month. *Application Status*, *Product*

**Customer Profile**

- # of customers, amount disbursed
- Analyze by Geography: Drilldown -> Overall -> Region -> Branch -> FE. *Profile*: Age, Gender, Occupation, Recent Event. *Ever Defaulted* Status: Active, Complete. *Disbursement Cycle*, *Product*

**Acquisition Efficiency**

- # of customers, amount disbursed, Stage, Weighted aggregated Time taken
- Analyze by: Geography: Drilldown -> Overall -> Region -> Branch -> FE. *Time*: Year, Quarter, Month. *Product*
Customers & Acquisition

Analysis Reports

Opportunity Size
# of customers, amount disbursed maturing in the next 1,3, 6 months
Analyze by Geography: Drilldown -> Overall -> Region -> Branch.
Profile: Age, Gender, Occupation, Recent Event, Ever Defaulted, Product

Opportunity Harnessed
# of customers, amount disbursed to customers who matured in past 1,3, 6 months
Analyze by Geography: Drilldown -> Overall -> Region -> Branch.
Time: Year, Quarter, Month, Product
Risk Management

Key Questions

➡️ What is my Risk?
   ➞ What is my total exposure?
   ➞ What amount of the payment due, has not been paid?
   ➞ What is the corresponding total outstanding, PaR?
   ➞ How old are the dues? Are they all concentrated?

➡️ How is my Risk profile changing?
   ➞ Am I at lesser risk now as compared to some time back?
   ➞ How much amount is added additionally to OD in past n months? What is the growth rate of OD/PaR?
   ➞ Can I know pro-actively know about defaults/ODs?

➡️ Why am I at risk?
   ➞ Are my risky customers concentrated? How? By geography, profile, FE?
   ➞ Is there a relation between a customer profile and default behavior?
   ➞ Do defaults happen with some trend/event/month? E.g. client event, FE movement, festival month etc.

Key Metrics

Total Loan Amt, Exposure and growth
Loan amount, Outstanding Amount, Growth over 3 months

Portfolio At Risk (PaR)
Number of customers, loan amount under default.

PaR Growth Rate
Change in PaR as compared to past 1 month. Should be negative ideally.

Weighted Organization DPD (WOD)
The amount of unpaid amount with respect to the DPD. Weighted average DPD.

Client Interaction Ratio(% Attendance)
% attendance of clients in the past 1 month. Reducing attendance might be a sign of impending default.
At RM/BM level watch the no of clients absent more than once/twice in past 3 months.
Risk Management

Key Questions

The BIG Ys

How healthy is the collection/recovery scenario?
- Are we collecting on time?
- How is the OD profile changing?
- Are larger part of my ODs recent or relate to earlier defaults?
- How good is the collection from ODs?

Key Metrics

Collection Target
Collection Target for the next 1 month.
(1 week/day for RM/BMs)

Batting Average (% Collection)
Collection as a % of target in the past 1 month. (1 week/day for RM/BMs)
Risk Management

The OLAP Cubes

FACTS

- # of Customers
- Loan Amount
- Outstanding Amount
- Paid Amount/Collection
- Overdue Amount
- First Default Date, Recent Default Date

DIMENSIONS

- Branch
- Region
- Center
- Group
- Gender
- Purpose
- FE, Product
- Age
- Literacy Level
- Occupation
- Repeat Customer
- Status (Active)
- Cycle Number
- Application Stage
- MMYY
- QQYY
- YYYY
- Cycle Start MMYY
- Cycle End MMYY
- OD Status (Current/Ever)
- DPD Buckets
Analysis Reports

**Exposure Analysis**
- # of customers, Amount Disbursed, Total exposure, Growth %
- Analyze by: **Geography**: Drilldown -> Overall -> Region -> Branch -> FE.
- **Time**: Year, Quarter, Month, As On Date. **Product**

**Risk Analysis (OD)**
- # of customers, Overdue Amount, Total Exposure (PaR), Total Loan Amount, Weighted DPD,
- First/Recent Default Date
- Analyze by: **Geography**: Drilldown -> Overall -> Region -> Branch -> FE.
- **Profile**: Age, Gender, Occupation, Literacy, Purpose, House Quality, Application Score
- **Time**: Year, Quarter, Month, As On Date. **DPD Buckets. OD Status. Event. Product**

**Risk Analysis (OD Transition)**
- # of customers, Overdue Amount
- Analyze by **Geography**: Drilldown -> Overall -> Region -> Branch -> FE.
- **Time**: From/To on 2 axes. **DPD Buckets** (Report in Matrix Format to analyze transition)
- **Event. Product**

**Risk Analysis (Proactive)**
- # of customers, Exposure, Attendance (No of absents)
- Analyze by **Geography**: Drilldown -> Overall -> Region -> Branch -> FE.
- **Profile**: Age, Gender, Occupation, Literacy, Purpose, House Quality, Application Score
- **Time**: Year, Quarter, Month, As On Date. **DPD Buckets** (Filter and analyze FE switch cases).
- **Product**
Risk Management

Analysis Reports

Collections: Target and Achieved
# of customers, Amount Disbursed, Total exposure, Target Collection, Achieved Collection,
Batting Average
Analyze by: Geography: Drilldown -> Overall -> Region -> Branch-> FE.
Time: Year, Quarter, Month, As On Date. Product

Overdue Collections Efficiency
# of customers, Exposure, Overdue Amount, Collected Amount, Total Exposure (PaR), First/Recent Default
Date, Efficiency
Analyze by: Geography: Drilldown -> Overall -> Region -> Branch-> FE.
Profile: Age, Gender, Occupation, Literacy, Purpose
Time: Year, Quarter, Month, As On Date. DPD Buckets. Product
Profitability & Productivity

Key Questions

The BIG Ys

- **What is my Profitability?**
  - How uniformly the profitability distributed across dimensions?
  - Which heads are causing the difference across regions and over time?
  - Is there any anomaly in cost distribution?
  - Are this not-profitable regions/branches strategic with expectation of profitability in future?

- **What is the organizational efficiency?**
  - How many customers, amount is a FE handling?
  - Is the ratio of employees, customers, amount across geographies consistent?

Key Metrics

**Profitability**
Quarterly - Overall, Region, Branch/Cluster

**Case Load Efficiency**
Number of customers, loan amount per FE.

**Case Load Efficiency Deviation**
Difference between Maximum & Minimum CL.
Profitability & Productivity

The OLAP Cubes

**FACTS**
- # of Customers
- Amount Disbursed
- Exposure
- # of Applications in Process
- Revenue, Expenses, Profitability

**DIMENSIONS**
- Branch: MMYY
- Region: QQYY
- Center: YYYY
- Group: Cost/Revenue Heads
- Purpose: Product
- FE
Profitability & Productivity

Analysis Reports

Profitability Analysis
# of customers, Amount Disbursed, Exposure, Revenue, Expenses, Profitability, Ratio to Customers
Analyze by: Geography: Drilldown -> Overall -> Region -> Branch/Cluster
Time: Year, Quarter, Month. Cost/Revenue Heads. Product

Productivity Analysis
# of customers, Exposure, Overdue Amount, Collected Amount, No. of FE, Ratio to Customers
Analyze by: Geography: Drilldown -> Overall -> Region -> Branch-> FE.
Time: Year, Quarter, Month, As On Date. Product