New Type of Lending

FinTech Applications Practice in China
Banks Think About This…

VIP Clients

Unhappy Clients

Digital Clients
FinTech is About This…

- 7 BILLION PEOPLE
  - 430 million are unemployed
  - 577 million are older than 64
  - 800 million work industrial jobs
  - 1.4 billion work in agriculture
  - 1.7 billion work in services
  - +400 million entrepreneurs
  - 1.9 billion too young to work (age 0-15)
  - 1.7 billion too young to work (age 0-15)
Structural Imbalances - Funds

Deposit vs. investment
Too much deposit

- Deposit levels high due to cultural attitudes and few investment options
- New products pushing money into investments but still emerging

Cash deposits-to-GDP
China vs. US, %, 2014

China: 80%
US: 54%
Structural Imbalances – Asset (MSE Example)

Large vs. Small enterprise (MSE) - Too little support for MSEs

• MSEs are 90%+ of total Chinese firms …
• … represent 80% of total Chinese employment …
• 60% of total GDP and 50% of total tax revenues

% of companies w/ bank line of credit
China vs. US, 2014

-15%
Online Market Place

Tech Driven One-Stop Solution

Low Risk
Low Return
Expected APR 7%

High Risk
High Return
Expected APR 9%

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<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Risk</td>
<td>81%</td>
<td>2%</td>
<td>7%</td>
<td>8%</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Expected APR</td>
<td>7%</td>
<td>2%</td>
<td>7%</td>
<td>8%</td>
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<tbody>
<tr>
<td>High Risk</td>
<td>20%</td>
<td>6%</td>
<td>39%</td>
<td>32%</td>
<td>1%</td>
<td>0%</td>
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<tr>
<td>Expected APR</td>
<td>7%</td>
<td>2%</td>
<td>7%</td>
<td>8%</td>
<td>1%</td>
<td>1%</td>
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IMF-JFSA-BOJ Conference on FinTech - Tokyo 2018
Online Loan Business – Consumer Finance
“90% of the data in the world today has been created in the last two years alone”
Traditional Method: Simple Logic from Strong Deterministic Features

Without using heuristic features from new data, a simple system’s performance is severely limited.

- Strong Deterministic Features From Traditional Data
- Untapped Heuristic Features From New Data
  - Industry Data
  - Internet Data
  - Legal Records
  - Credit Data
  - Travel Records
  - E-Commerce
  - Phone Records
  - Social Networks

Suboptimal prediction precision
Massive volume of unused data • Manual model updates at large intervals
A Smart Solution to Unstructured Data

90% of all data is unstructured: incomplete, noisy, and inconsistent

**STRUCTURED**
Stored in organized databases, easy to search

**VOLUME**
The huge amount and growth of unstructured data can overtake traditional risk solutions

**UNSTRUCTURED**
Email, video, text, conversations, clicks, website actions, social networks, professional networks

**VARIETY**
Traditional risk management can’t handle with the changeable nature of big data

**VELOCITY**
Data is generated at an ongoing flow, making it harder to manage
<table>
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<th>Online Loan Business – Data Infra</th>
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</thead>
<tbody>
<tr>
<td><strong>Data Collection and Processing</strong></td>
</tr>
</tbody>
</table>
| **Data Gatherer**  
  Collect, clean, and structure data |
| **Zeppelin**  
  Unstructured data to relational tables |
| **Risk Control and Predictive Modeling** |
| **Fraud Detection**  
  First cut to weed out criminals |
| **Rule Engine**  
  AI engine identifies most important data points |
| **Knowledge Graph**  
  Search graph network for warning flags |
| **Risk and Price Setting** |
| **Credit Scorecard**  
  AI scorecard makes high-precision risk assessments |
| **Risk-Based Pricing**  
  Pricing mechanism adaptable for wide range of products |
AI-Powered Rule Engine Assesses Risk

Decision trees built from n-dimensional features improve precision, automatically updating and improving themselves.

**Input Data**
- n-dimensional preprocessed borrower data

**Rule Engine**
- Stored as decision trees
- 300+ rules
- 1,000+ customizable parameters

**Output Results**
- Risk assessment results

AI extracts rules and policies from data to provide insight on how precise predictions are made.
Knowledge Graph Searches for Warning Flags

Graphically store borrower information and scan for questionable patterns.

<table>
<thead>
<tr>
<th>Application</th>
<th>Name</th>
<th>Bank Card</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>00000001</td>
<td>Zhang San</td>
<td>6222**5672</td>
<td>Originated</td>
</tr>
<tr>
<td>00000002</td>
<td>Li Si</td>
<td>6222**2131</td>
<td>Pending</td>
</tr>
<tr>
<td>00000003</td>
<td>Wang Wu</td>
<td>6232**2348</td>
<td>Rejected</td>
</tr>
</tbody>
</table>

Three different people apply for loans with the same bank card.

One of these loans has already been originated.
Next: Deep Learning Enables Pattern and Feature Discovery at Speed

Deep learning applied to automatic feature extraction from raw data and pattern identification in networks

Smart feature extraction identifies the most important elements from raw data
Online Loan Business – Supply Chain Financing

The story starts from here

2,000 Employees
40 million SME’s in China that need working capital continuously
The Problem in Supply Chains

Only tier one suppliers are well funded

85% of the supply chain MSB are not well funded
Our Solution Based on DLT – Trusted AP

- A supplier can hold, pass down or financing anytime when he receives a tokenized AP.
- Trust AP is a blockchain based digital document that allows us to pass it around safely between different suppliers without the risk of being altered or faked.
- Trust AP will be registered with the local authorities every time it is tokenized.
The DLT Ecosystem for Supply Chain Financing
FinTech Strategy in CSCI – MSB Financing


For middle size anchor / Factoring

Tokenized APs to achieve cross platform trading

Credit Enhancement

Market Place

Sources of Funding

Horizontal: FinTech Cloud

Multi-Tenant Application

Growth Hacking

ABS Cloud

Smart Collection

Reg-Tech

E-court / Evidence Chain

e-contract

Data Engine

DLT Infrastructure

Credit Enhancement Service

Cloud

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