# Adoption and Diffusion of Information in Social Networks

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## The Challenge

**Cause: Generational Poverty**

- Inheritance and Inherited Data
- Unemployment and Inherited Data
- Inheritance and Inherited Data

People recover from poverty but keep falling back because of:

- Health problems
- Financial setbacks
- Unavailability of any risk mitigation options

## The Opportunity

**Accessibility to Financial tools**

- Move away from cash economy
- Assist in making economic gains
- Risk mitigation through reliable access to credit
- Delivering aid without corruption

## The Solution

**Geospatial Map with overlay**

- Show spread of mobile money adoption through Afghanistan
- Intuition about user engagement by visualizing changes in transactions/user over time
- Allow users to see the above trends for each province

**Chord Diagram for hierarchical data**

- Shows users the different MPAISA services in use
- Allows users to understand what the different services mean via sub groupings
- Gives intuition about who uses these services

**Sunburst Diagram**

- Chronological adoption of different MPAISA services over time by different users
- Helps in discovering adoption mechanisms
- High percentage chronologies might reveal interesting behavioral patterns

**Force Directed Graph over time**

- User stories - Tracking the lineage of MPAISA adoption to verify if newer adopters received recommendations from existing users in their call network.
- Assists in verifying word of mouth adoption patterns

## Data Pipeline

<table>
<thead>
<tr>
<th>Raw, unstructured data</th>
<th>Anonymized data</th>
<th>Parsed, structured data</th>
<th>Aggregation &amp; Pairing</th>
</tr>
</thead>
</table>

## Technologies Used

- Hive
- Spark
- Java
- MongoDB
- Scala
- DB
- redhat

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