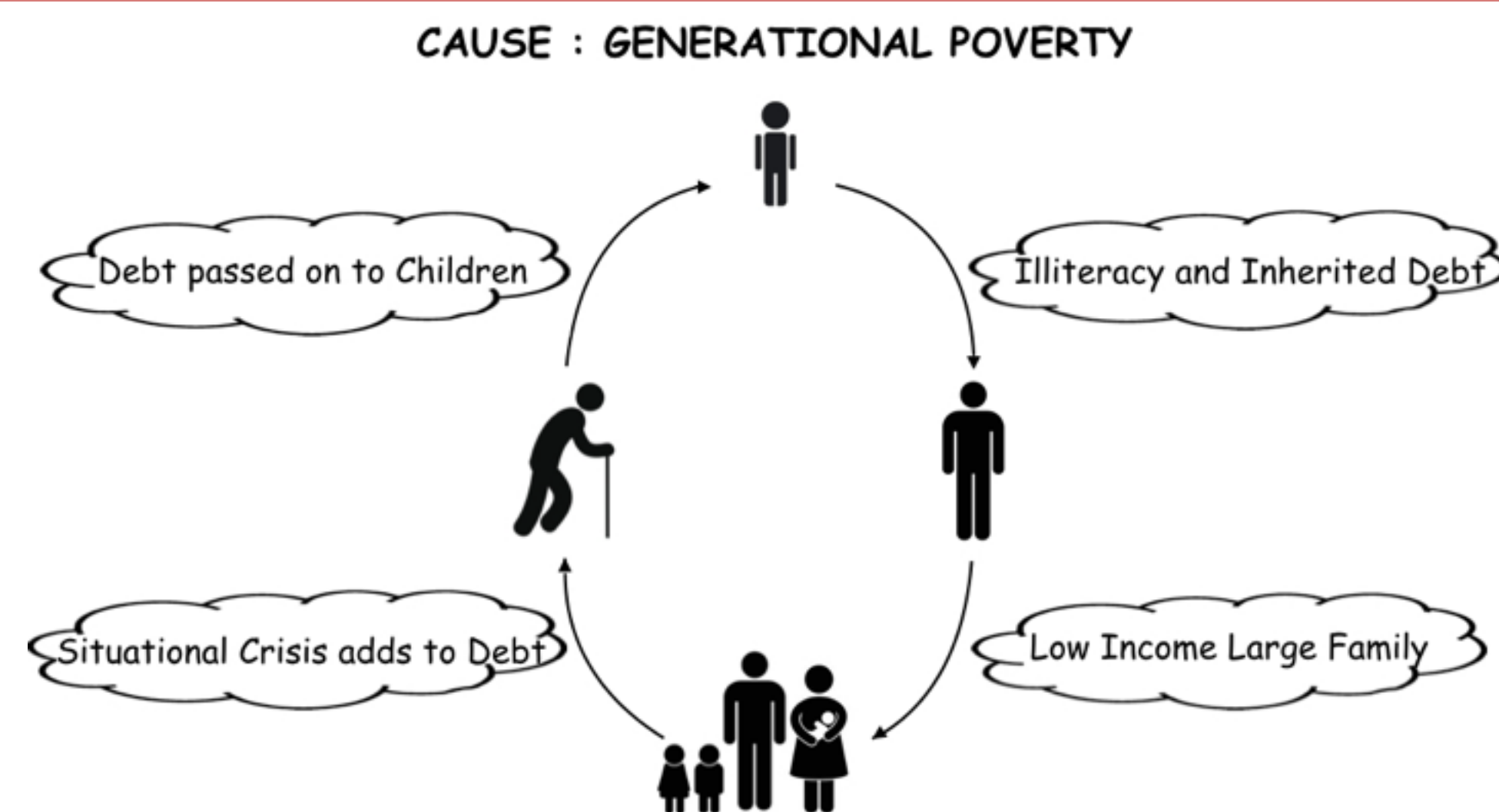# ADOPTION AND DIFFUSION OF INFORMATION IN SOCIAL NETWORKS

Anikate Singh – Joshua Manoj – Chitra Raman – Devin Luco – Yan Guo   Supervised by Joshua Blumenstock

THE CHALLENGE

CAUSE : GENERATIONAL POVERTY

Debt passed on to Children

Illiteracy and Inherited Debt

Situational Crisis adds to Debt

Low Income Large Family

People recover from poverty but keep falling back because of
- Health problems
- Financial setbacks
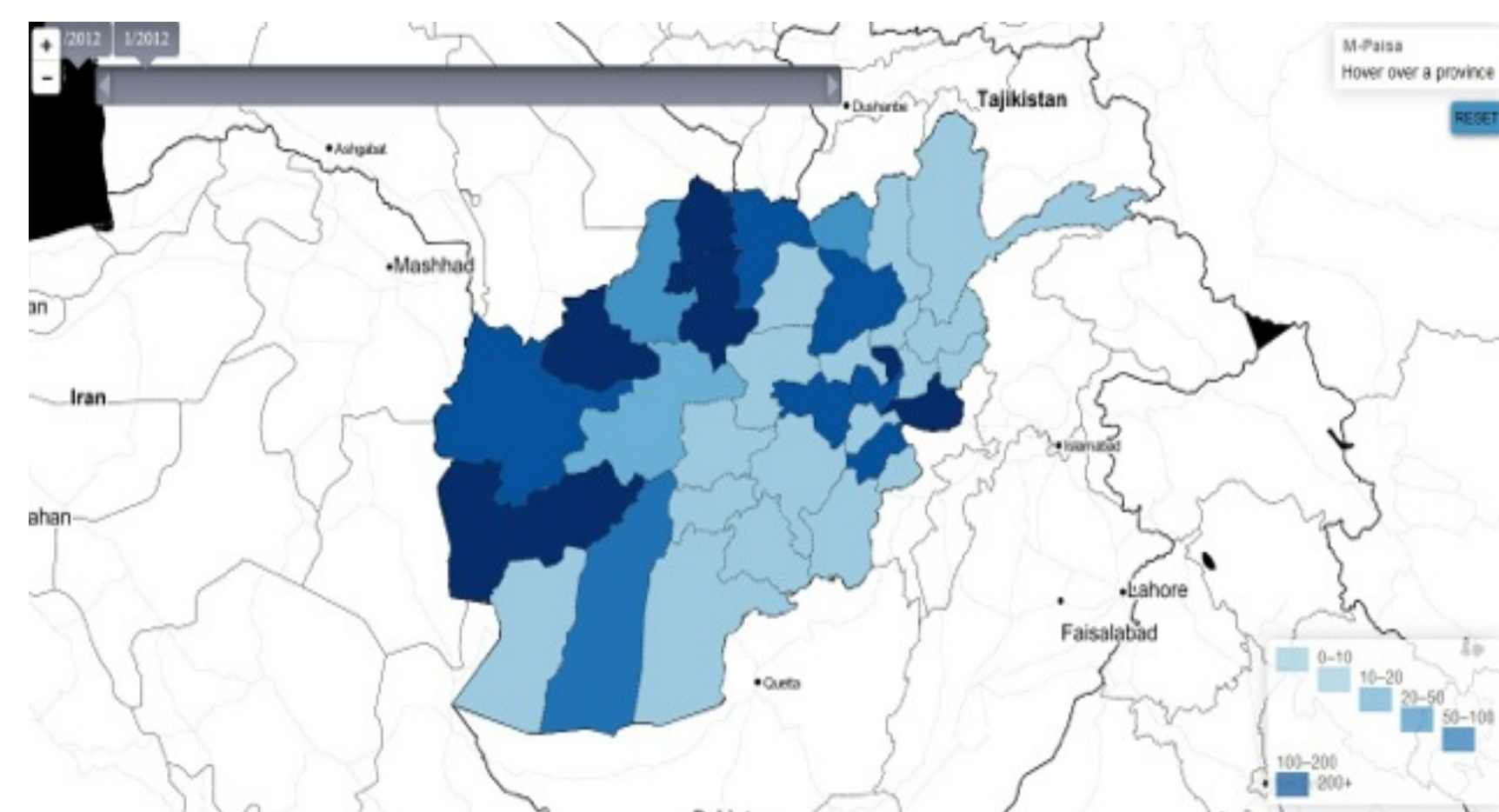- Unavailability of any risk mitigation options

THE OPPORTUNITY

Government Aid

Bank

Salary Payment

Savings

Healthcare

Credit /Loans
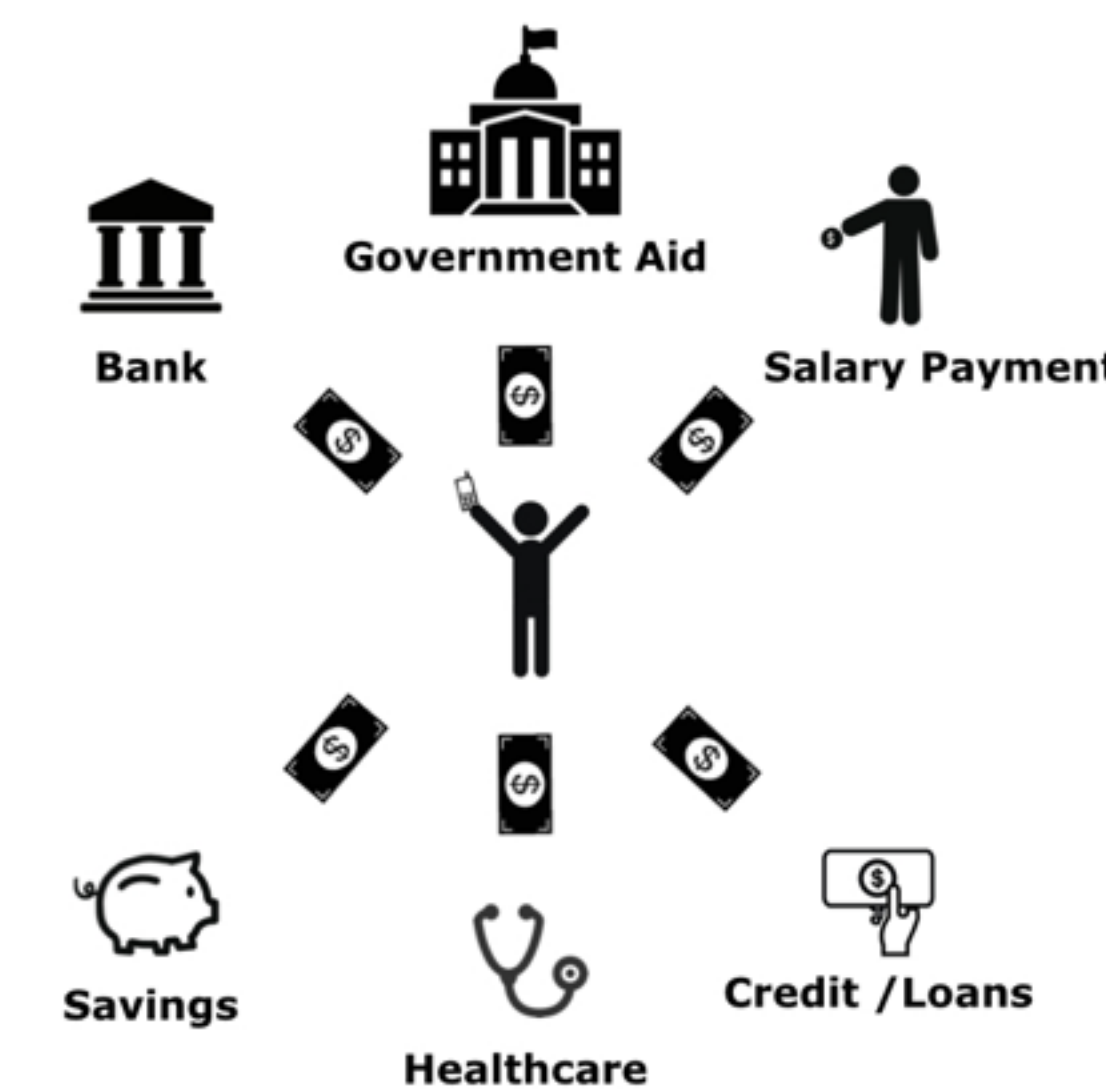
Accessibility to Financial tools
- Move away from cash economy
- Assist in making economic gains
- Risk mitigation through reliable access to credit
- Delivering aid without corruption

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
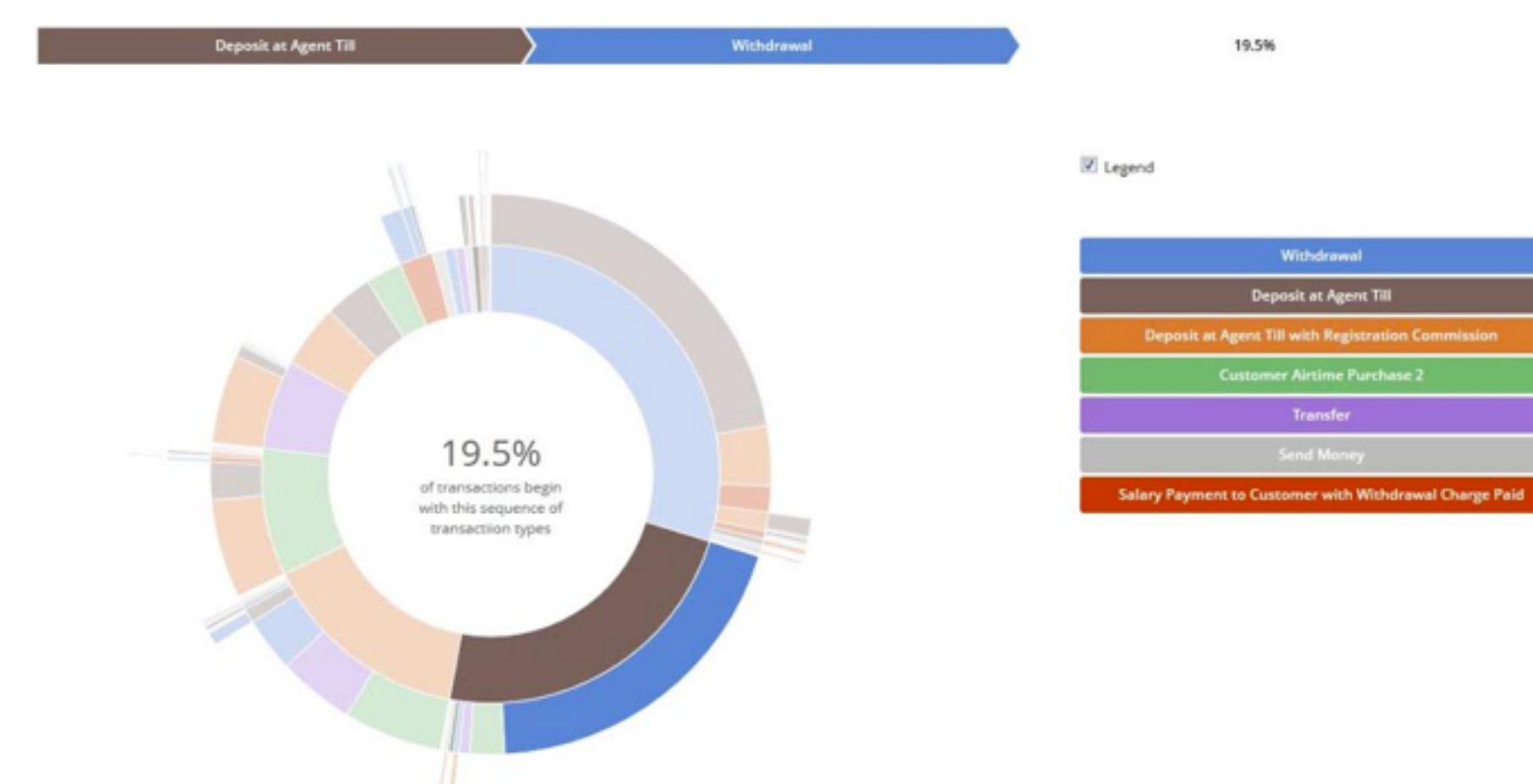- Allow users to see the above trends for each province
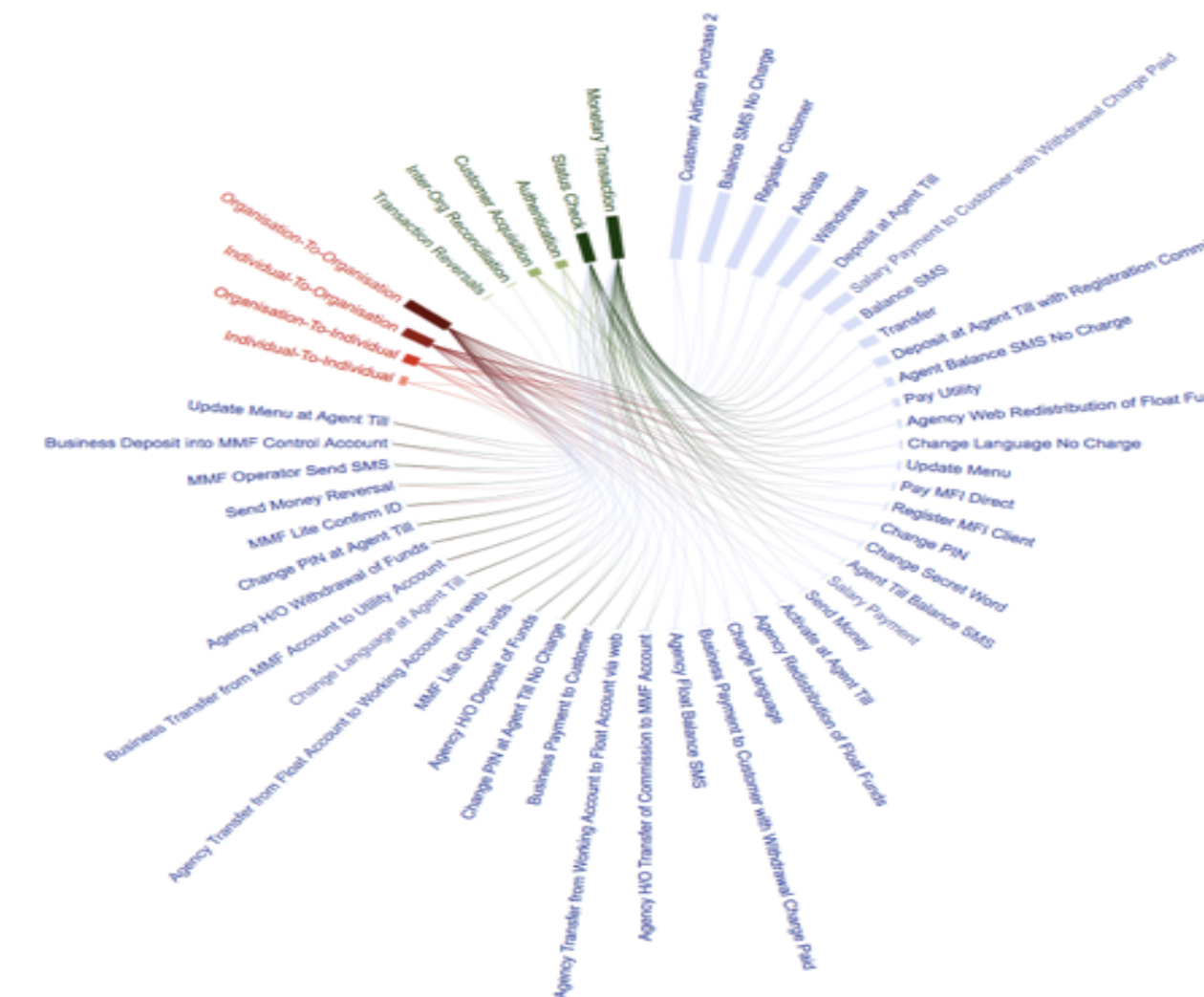
Chord Diagram for hierarchical data
- Shows users the different MPAISA services in use
- Allows users to understand what the different services mean via sub groupings
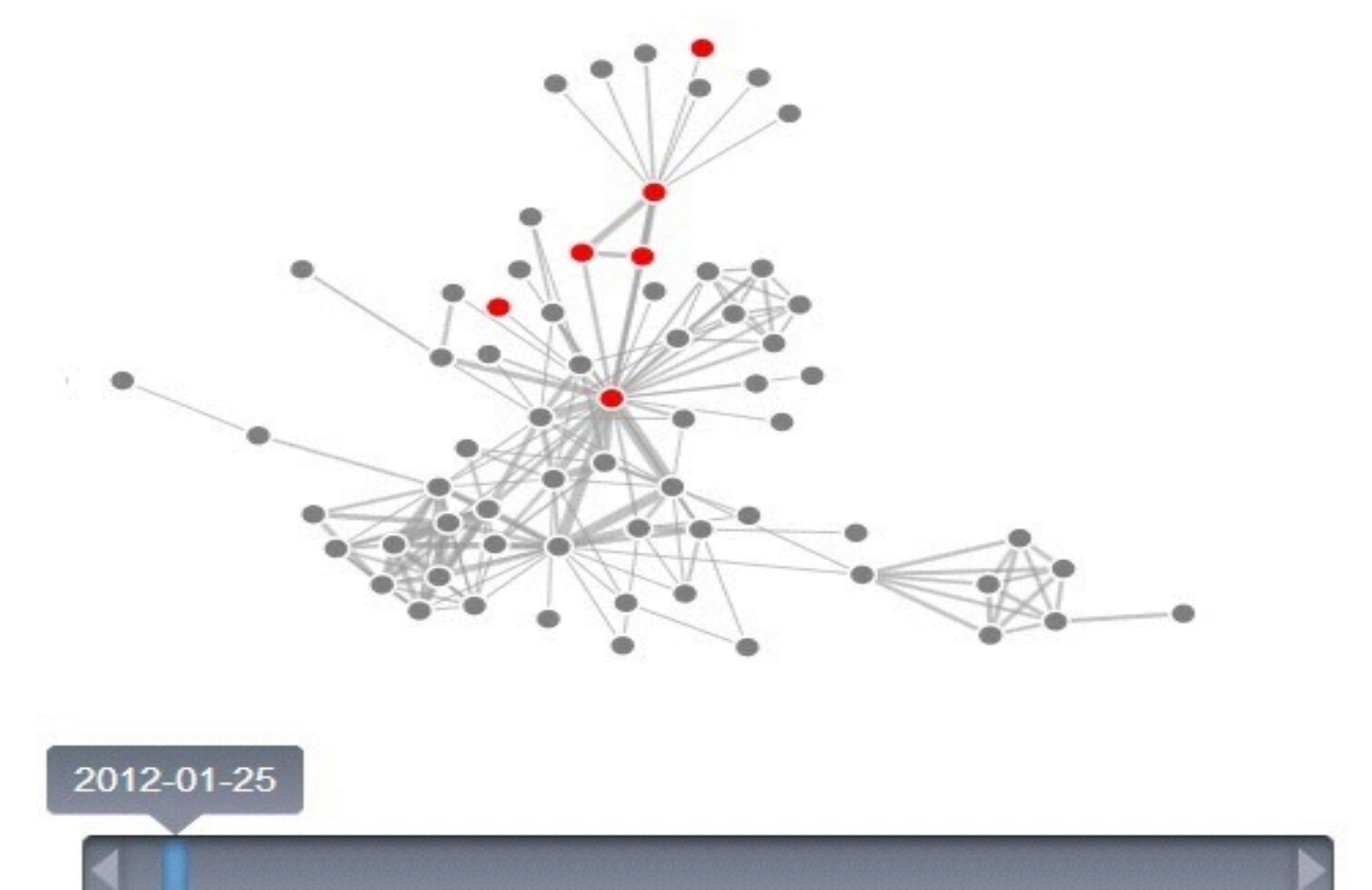- Gives intuition about who uses these services

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
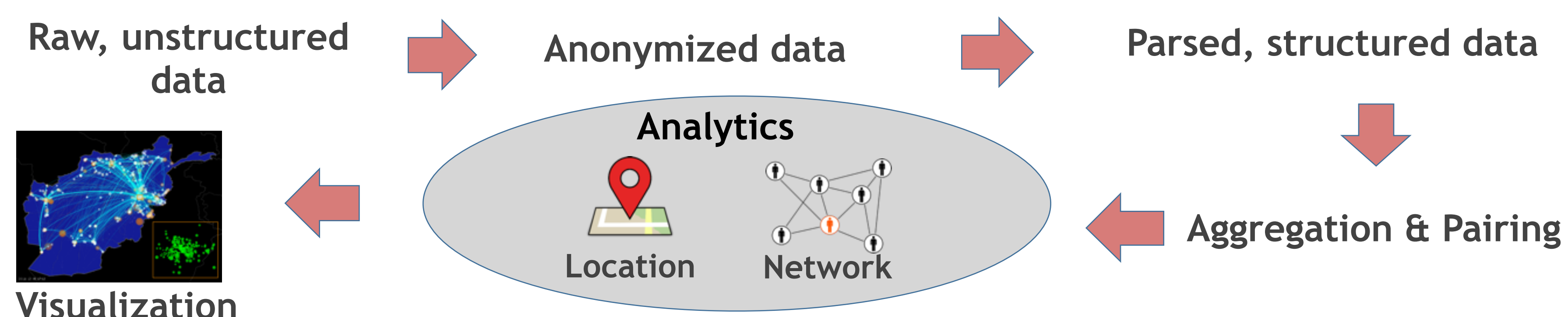
19.5%
of transactions begin with this sequence of transaction types

Legend
Withdrawal
Deposit at Agent Till
Deposit at Agent Till with Registration Commission
Customer Airtime Purchase 2
Transfer
Send Money
Salary Payment to Customer with Withdrawal Charge Paid

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

2012-01-25

DATA PIPELINE

Raw, unstructured data

Anonymized data

Parsed, structured data

Analytics

Location   Network

Aggregation & Pairing

Visualization

TECHNOLOGIES USED

HIVE   Spark   Java   mongoDB

hadoop   Scala   D3   redhat