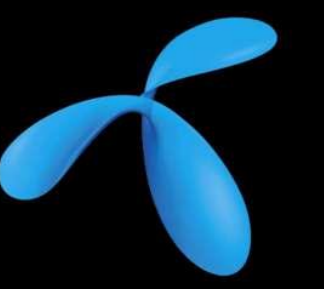# Accelerating internet growth in Asia using viral spreading

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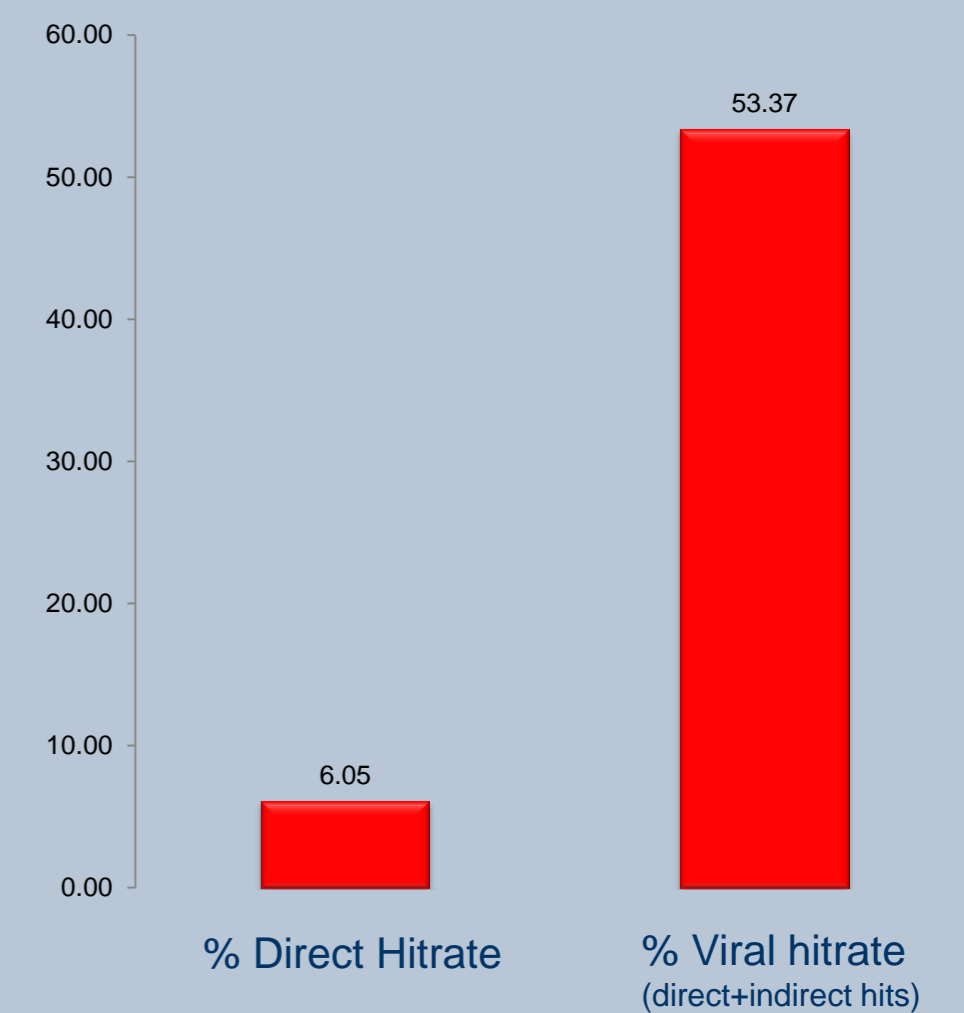[3]NorthEastern University, Lazer Lab, Boston MA 02115

Introduction

For many in Asia, the mobile phone is their only gateway to the Web. The penetration of internet in these countries is nevertheless very small, causing a large digital discrepancy between more and less developed countries - the so called digital divide. Increased mobile internet adoption may help to bridge this gap.
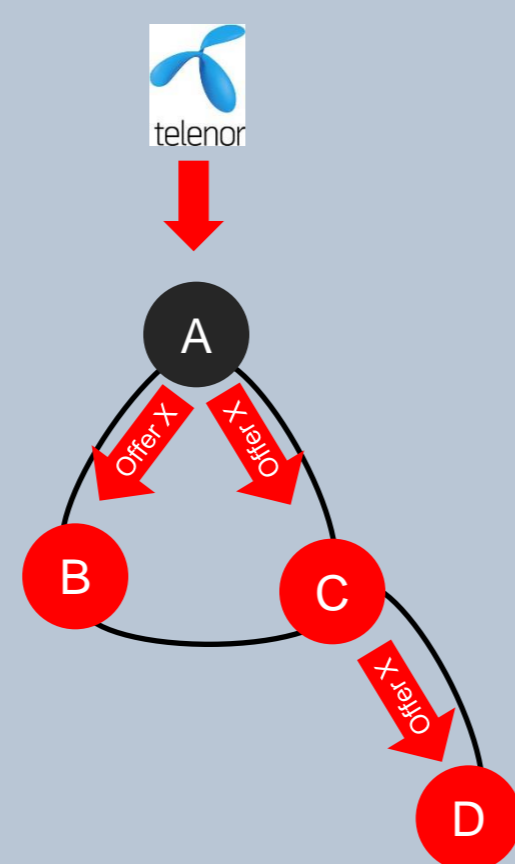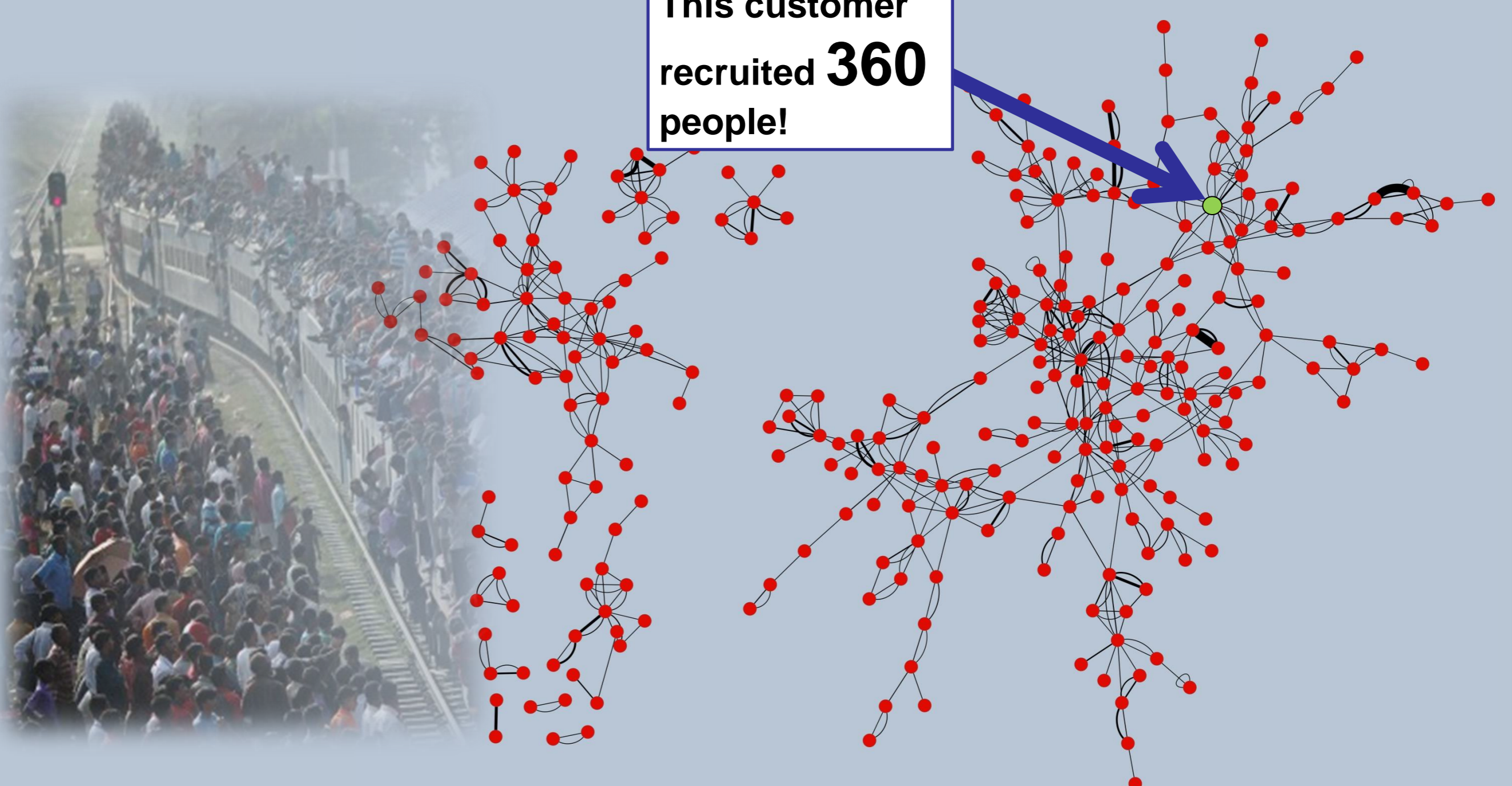
Method

- We examine how viral campaigns can boost the mobile internet adoption in one developing Asian country.
- The most likely adopters are selected by a simple machine learning model
- By sending a unique offer code to 70 000 people, forwardable to friends, we are able to observe how the offer spreads from customer to customer.
- The spreading can be observed by coupling adoption data with call data records, which can provide a good proxy for the social network.
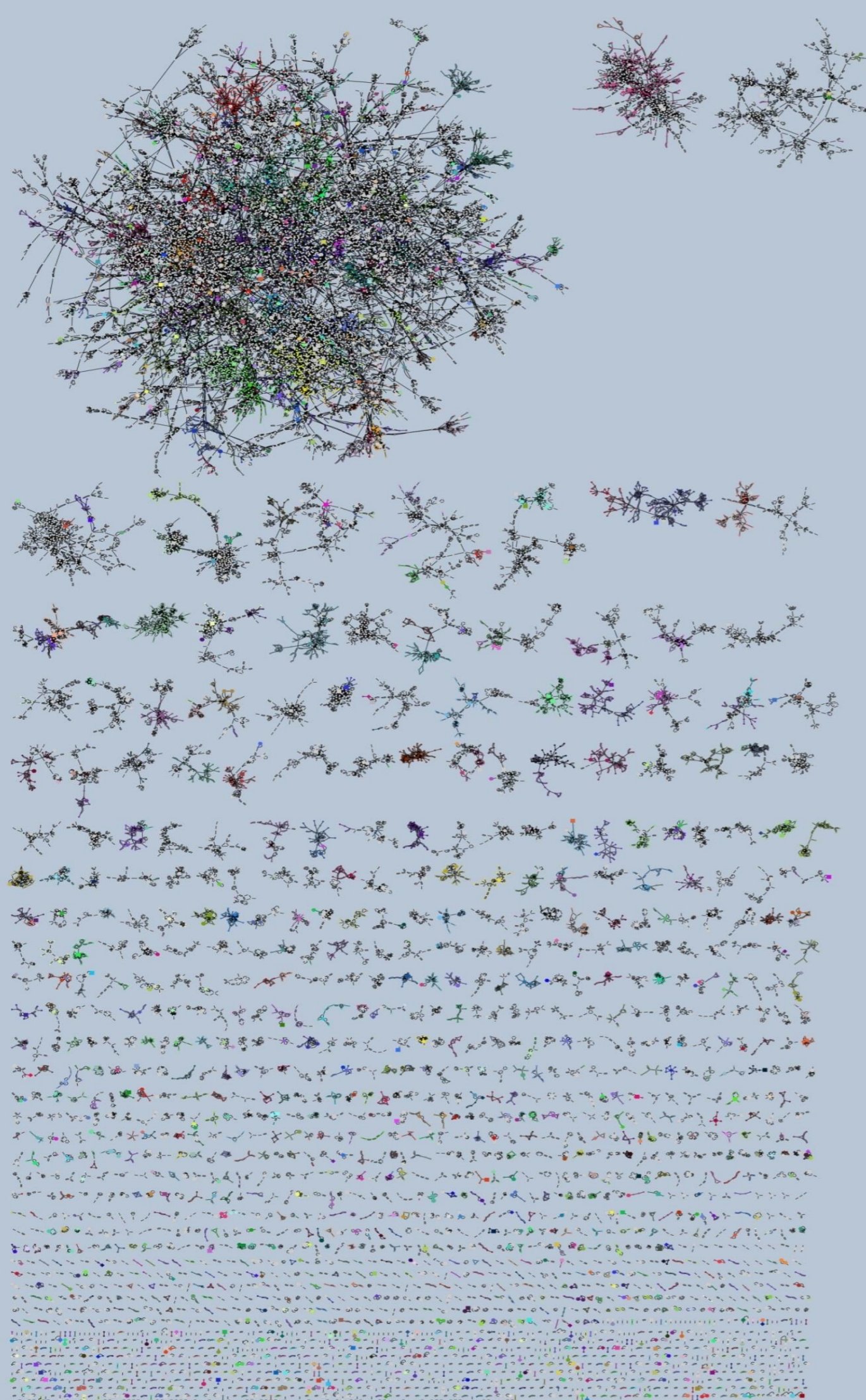
The social network among adopters

The social network among the mobile internet adopters 5 days after campaign launch. 45% of the connected adopters can be found in the largest connected component. The connections are based on voice + SMS communication.

Results

- By counting both direct and indirect hits we observe a strong adoption rate of **53%.** Indirect hits are customers who have been recruited by other customers.
- On average we find that each person recruits 8.3 other customers, while the most extreme people recruit over 360 others.

The extreme case

This customer recruited 360 people!

The extreme case where one single customer (in green) recruits 360 other customers. The missing links indicate that the offer is also spread via other channels (which our call data does not pick up)

Molecular targeting

- We also introduce molecular targeting - where we aim to reach socially connected pairs of people.
- Our results indicate that individuals in these 'molecules' adopt more often together than expected from the single-individual hit rate - leading us to believe that the neighbours boost each other's awareness of mobile internet, due to complex contagion or an "up-in-the-air effect" where people discuss the offer.
- Early results also indicate that this approach increases the overall spreading as measured by the indirect hitrates.
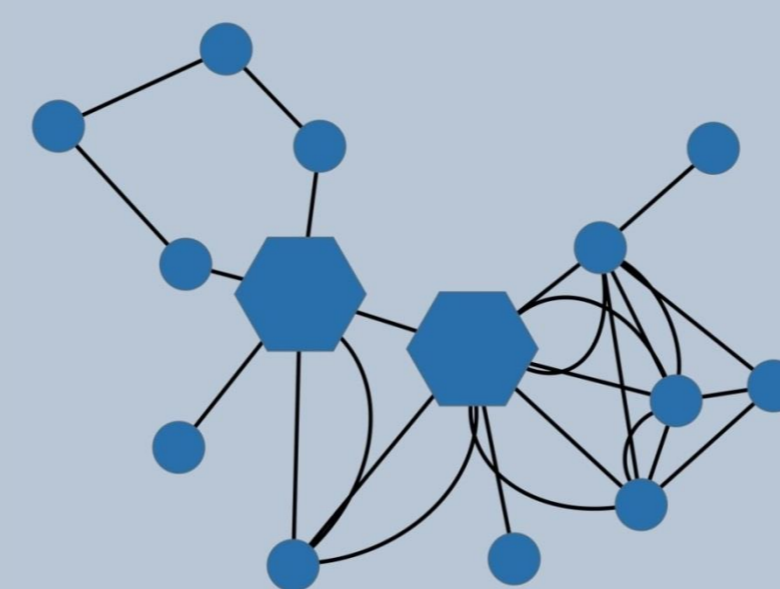
A component where two customers (hexagons) are targeted with an offer. They both adopt, and also recruit 12 other customers.