

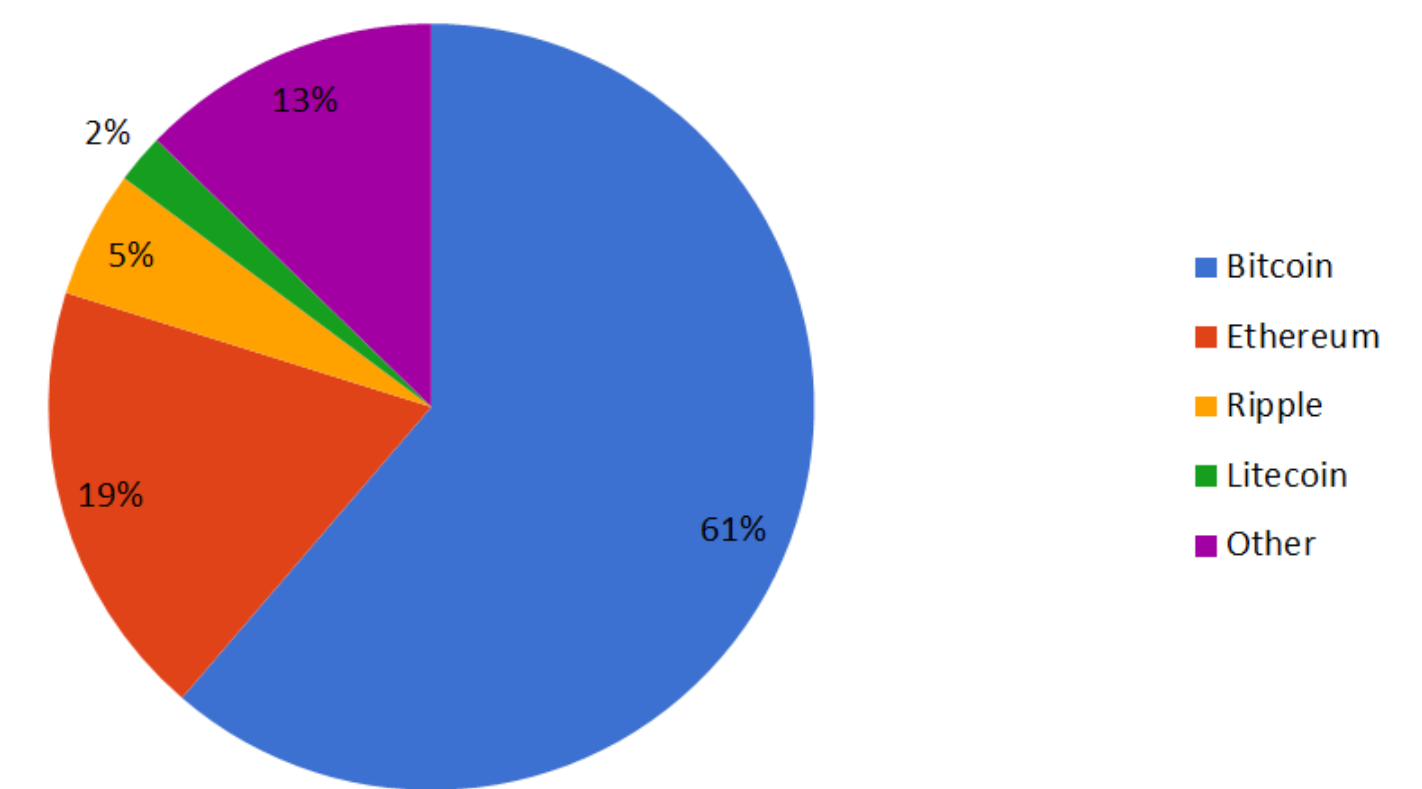
Exploring Bitcoin and the Blockchain

Project Description

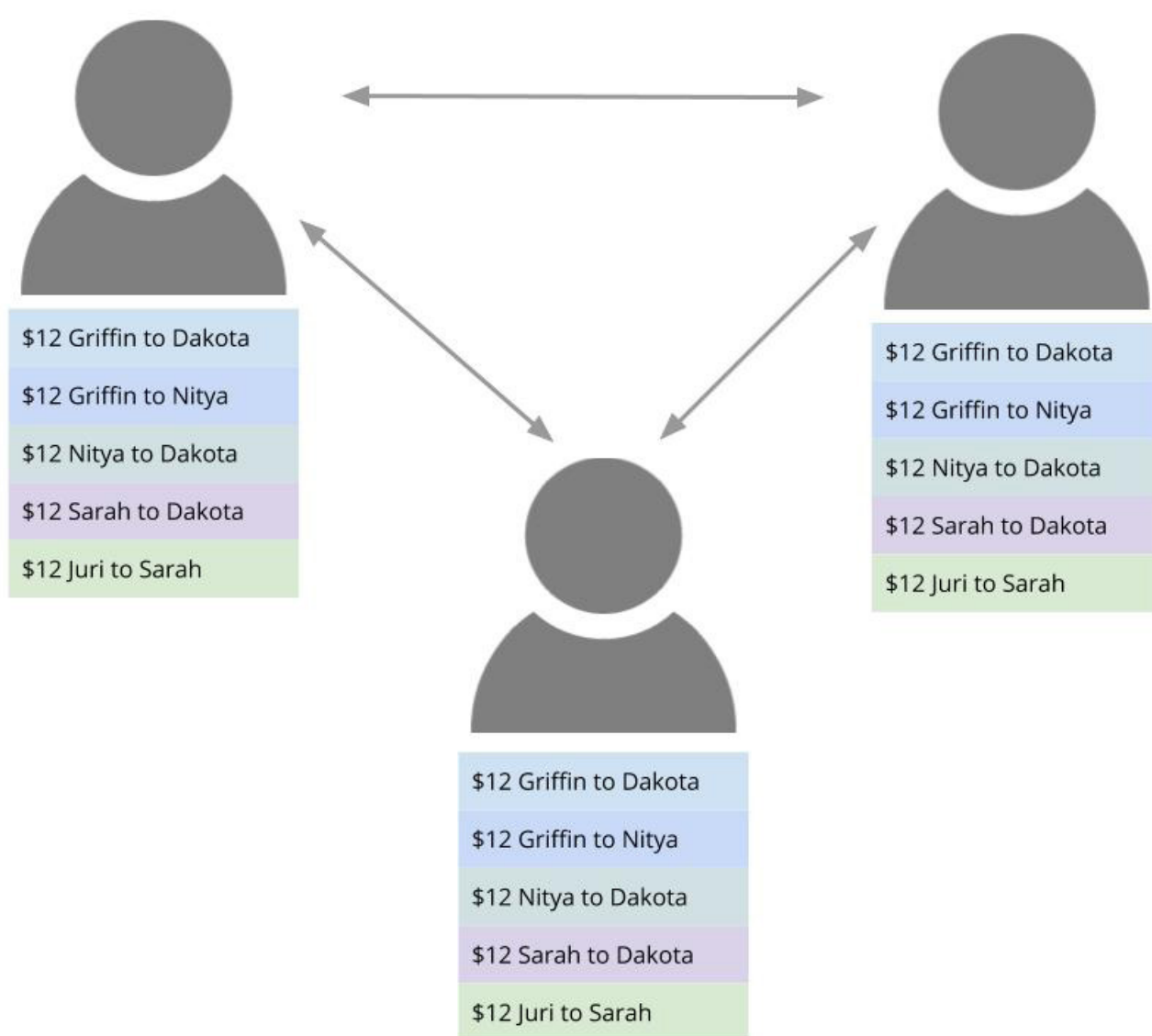
Fidelity Labs, the research and development arm of Fidelity Investments, investigates emerging technologies to help people live better financial lives. Among these technologies are Bitcoin and other blockchains. Our SCOPE team was tasked with an open-ended prompt: explore Bitcoin and blockchains to help Fidelity Labs make better-informed research and development decisions in the future.

We focused our work upon Bitcoin because it is the dominant application of blockchain technology at the moment, with two-thirds of the market share at a \$20 billion market capitalization.

Cryptocurrency Market Shares (May 2017)



\$12 Griffin to Dakota
\$12 Griffin to Nitya
\$12 Nitya to Dakota
\$12 Sarah to Dakota
\$12 Juri to Sarah



The Decentralized Data Problem

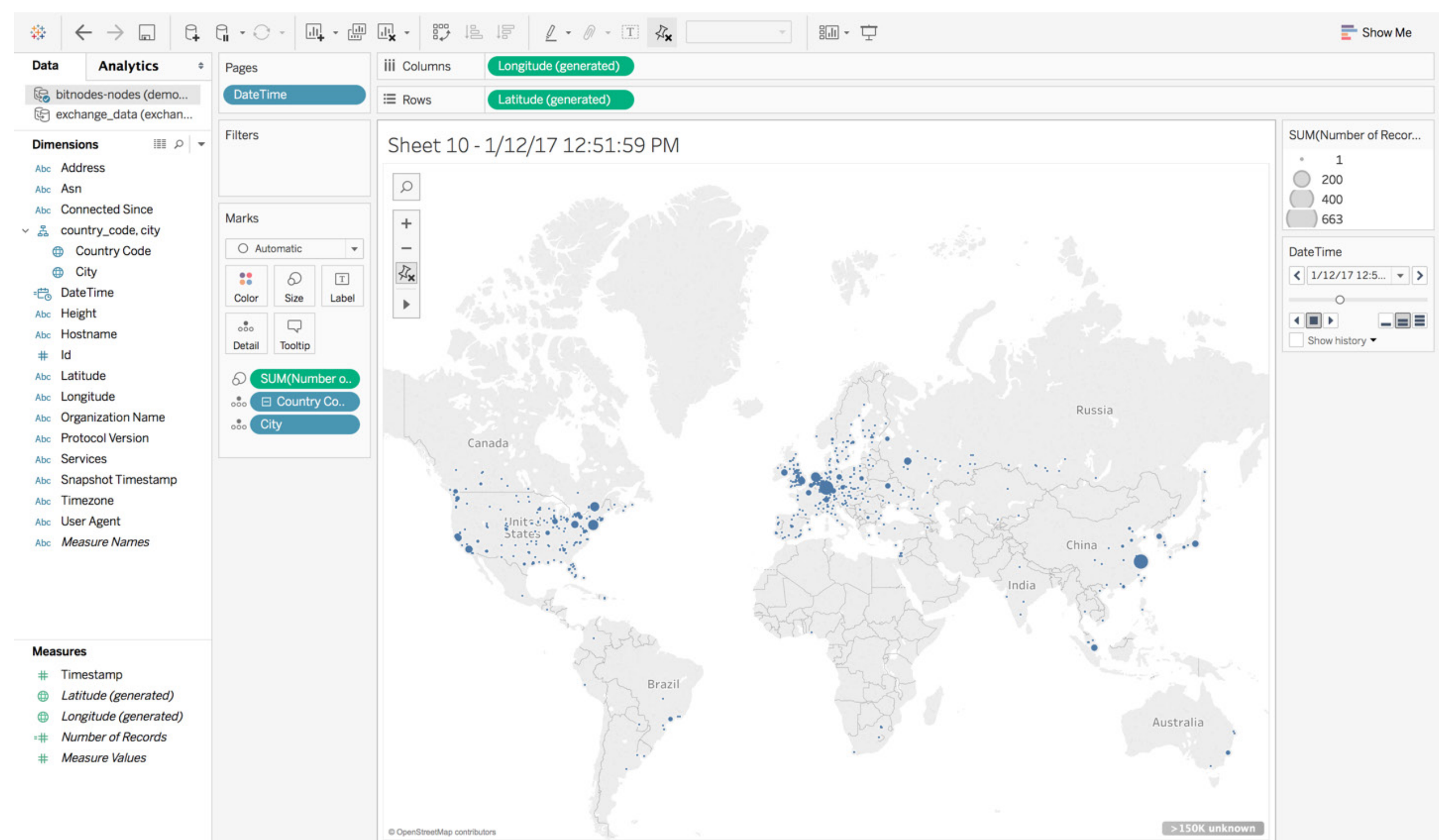
The financial world runs on data. Financial institutions rely upon data for everything from investment portfolio management to arbitrage. In today's financial system, data is centralized and therefore easily accessible to the institutions which rely upon it. For instance, every bank maintains a ledger which keeps track of who owns what and who owes what. Similarly, every bank has centralized infrastructure and employs engineers to monitor it and maintain it.

Financial institutions are hesitant about Bitcoin in part because they rely upon data to understand financial systems, and Bitcoin data is hard to access. In contrast to banks' centralized ledgers, each computer which participates in the Bitcoin network maintains its own ledger, and the Bitcoin protocol keeps the individual ledgers in consensus. Unlike banks' centralized infrastructures, Bitcoin's blockchain infrastructure relies on the health of every computer which participates in the network and the health of each connection between computers. Bitcoin data is available to the public, but it is decentralized and difficult to access.

Our Solution: Galapagos

The software we designed and built, Galapagos, solves the problem of decentralized data. Galapagos aggregates multiple data sources and organizes it into a single, easy to use database. Galapagos makes it possible not only to access data with ease but also to examine relationships between disparate data sources.

Without Galapagos, it might take an analyst or engineer at a financial institution days of tedious data sourcing to answer a question about Bitcoin; with Galapagos, it takes minutes.



TEAM

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The views on this poster are those of the Fidelity Labs SCOPE team, and not necessarily of Fidelity Labs or Fidelity.