Spark Funds – INVESTMENT CASE STUDY

SUBMISSION

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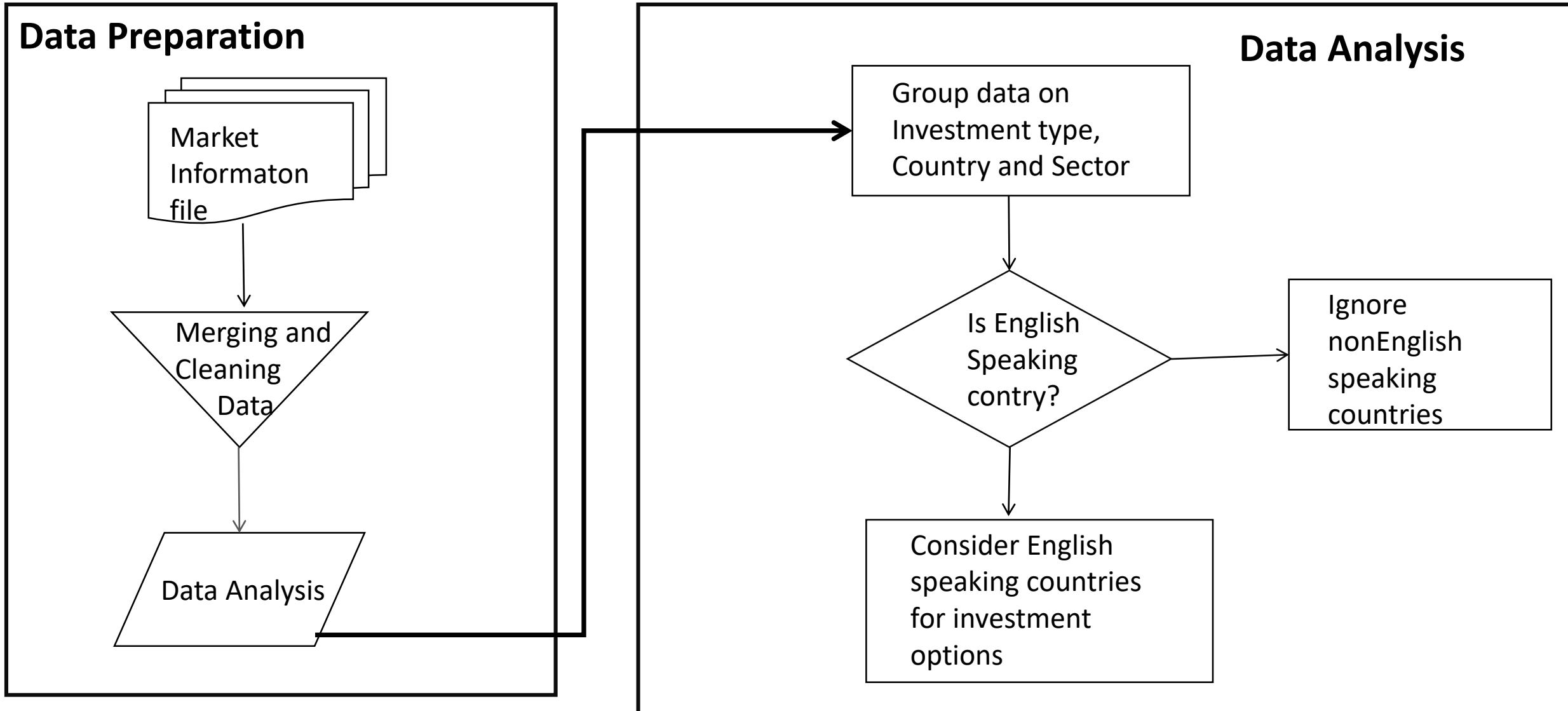# Spark Funds – Investment Strategy

- Spark funds, an asset management company, is looking for a strategic investment options based on global trends.

- A solution needs to be drawn keeping below limitations and business objectives in mind.

Business Objectives:

- Identifying best sectors, countries and investment type for making investment.

- Extensive analysis of Investment type, sector and country needs to be done.

Limitations:

- 5 to 15 million USD will be investment per round.

- Investment will be only in English speaking countries for ease of communication.

Strategic Investment Decision – Flow Chart

Understanding Data:

- Companies – this dataset has information about companies and their categories

- Rounds – Investment preferences of the companies. Like amount, investment type, etc.,

On high level following are stages in the workflow:

- Gather data for the analysis

- Clean the data for readability

- Collate data in to a model

- Filter model based on Investment type, Country and Sector

- Identify best possible investment options

- Plot on the option for graphical representation.

Tools for the workflow:

- Python Language is used for data cleansing and modelling by using Anaconda IDE.

- Tableau is used for plotting the results

Data Model Analysis

Data quality is crucial for this step. We have companies, rounds and mapping information in files. This needs to be cleansed and built into a model.

Building model Python-Pandas is extensively used and following stages are addressed in building model:

• Data Import – Import data from Companies.txt and rounds2.xlxs.

• Data Cleansing –Removing or correcting dirty data. Handling of NA values.

• Data Merging – Merge companies and investment round data to get fully readable dataframe based on unique key company parmalink field.

• Data Mapping – Mapping dataset for identifying sectors and investment preferences and also define the missing mappings by mapping the primary sectors to the nearest logical main sector.

• Filtering – To identify preferred investment options for Spark Funds to invest.

• Exporting Data – For tableau plotting data is exported.

• Floating data - To identify funding types,countries and sector.

Model Objectives – based on above model following are the primary goals.

• Investment type analysis: ability to identify best suited categories for the investment.

• Country Analysis: list out countries having most investment in the past.

• Sector Analysis: understanding investment distribution among sectors.

Result Analysis

Based on the bussiness model, below are the representations done. Spark Funds can easily deduce required results form the mode.

1. Data cleaning : Identify unique companies and handle NAN values for raised_amout_usd and fix encoding issue.

2. Funding type analysis : List average funding for each of investment types. (Venture, Angel, Seed and Private Equity type) and figure out highest funding type based on Spark's funding amount limitation.

3. Country wise analysis : Country-wise funding in sectors for any chosen investment type. List top 9 countries for investment type chosen and Listing the top 3 English speaking countries for identifying investment-friendly options.

4. Sector Analysis : Sector-wise investment in each country. Total number of investments and total value of investment in USD. Top, second and third best sectors based on count of investments. Number of investments in top, second and third best sectors. Which companies received highest investment in top and second best sectors.
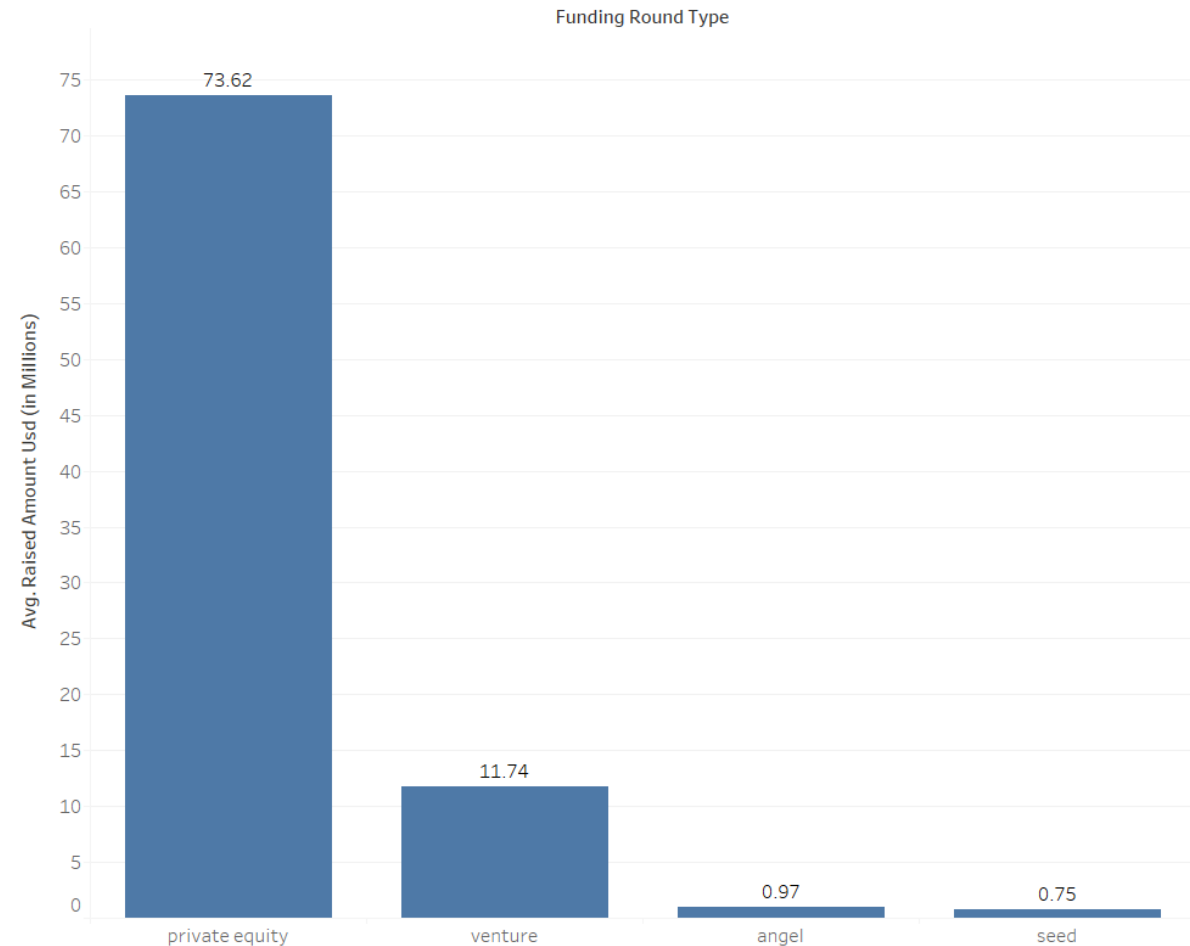
5. Ploting the Graph : Graphical representation done in Tableau and displayed in next sections of the presentation and Data Cleaning.

Investments based on Funding Type

Bar chart showing the fraction of total investments (globally) in venture, seed and private equity and the average amount of investment in each funding type.

Conclusion: Considering investment constraints for Spark funds of the range 5-15m USD, turns out "**Venture**" is the best suitable investment type.

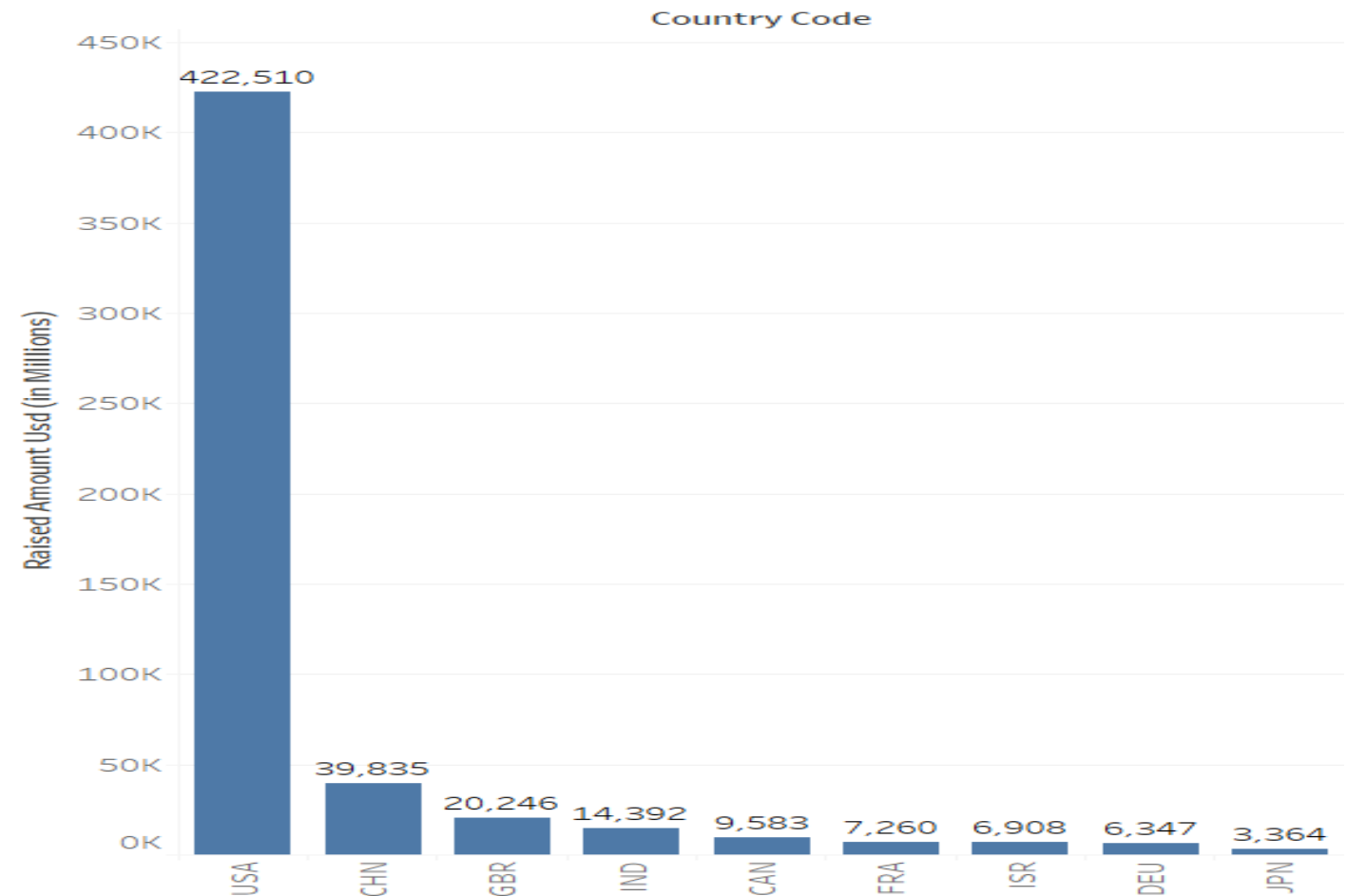
Investments on Funding Type

Funding Round Type

Average of Raised Amount Usd for each Funding Round Type. The view is filtered on Funding Round Type, which keeps angel, private equity, seed and venture.

Total amount of investments among top 9 countries

Bar chart showing top 9 countries against the total amount of investments & funding type "**Venture**".

Conclusion: Considering Spark Funds decision to invest only in English speaking countries, turns out **USA, GBR** and **IND** are the **TOP 3** suitable markets in terms of total investments by other companies.

Top 9 countries with highest total investments
Country Code

Sum of Raised Amount Usd for each Country Code. The data is filtered on Funding Round Type, which keeps venture. The view is filtered on sum of Raised Amount Usd, which ranges from 3,363 to 422,510.
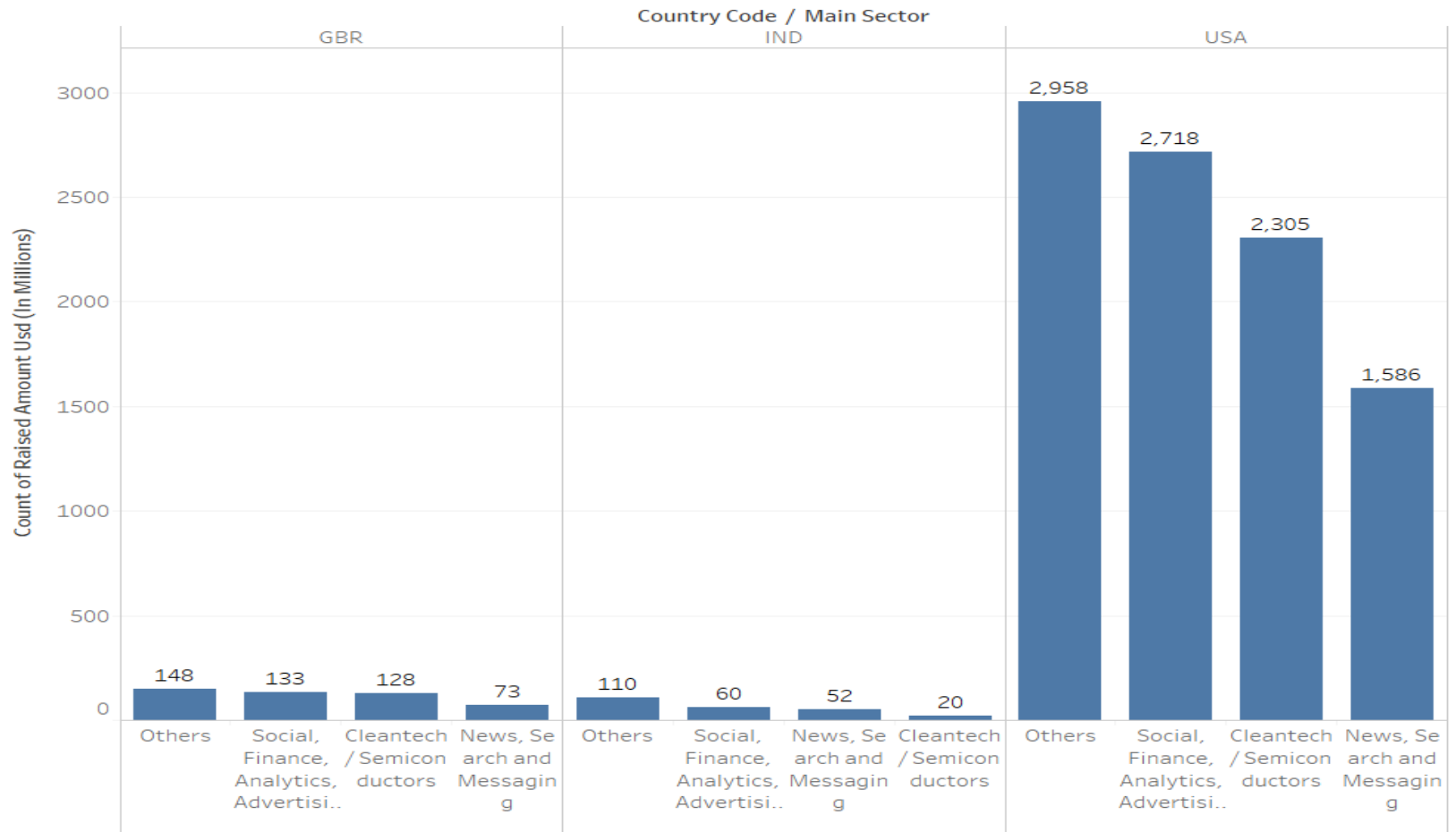
Number of Investments in top 3 sectors among preferred countries

Bar chart shows the number of investments in the top 3 sectors of the top 3 countries on one chart (for the chosen investment type-"**Venture**").

Conclusion: Top 3 sectors in terms of investment in **USA, GBR** and **IND** are –
USA and GBR – "**Others**", "**Social, Finance, Analytics, Advertising**" and, "**Cleantech/Semiconductors**".

IND – "**Others**", "**Social, Finance, Analytics, Advertising**", "**Advertising, "News, Search and Messaging**".

Country wise investment numbers in top 3 sectors

Count of Raised Amount Usd for each Main Sector broken down by Country Code. The data is filtered on Raised Amount Usd, which ranges from 5 to 15. The view is filtered on Main Sector, which keeps Cleantech / Semiconductors, News, Search and Messaging, Others and Social, Finance, Analytics, Advertising.

Inferences

Based on analysis, Spark fund should invest in the following sectors in the below countries:

Invest in countries	Investment Sectors
USA	• Others • Cleantech/Semiconductors • Social/Finance/Analytics/Advertising
GBR (Great Britain)	• Others • Social/Finance/Analytics/Advertising • Cleantech/Semiconductors
India	• Others • Social/Finance/Analytics/Advertising • News, Search and Messaging