

INVESTMENT CASE STUDY

SUBMISSION

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Abstract of Spark Funds Investment Study

Spark funds is an asset company and looking for investment into best profitable and demanding market. Being a startup company, it needs a market research and accordingly invest the money only where most other companies are investing.

Spark funds is specific with requirements in two areas: the amount of investment should be between 5 to 15 million USD and the country of prospective investment should be English speaking.

The case study done here is extensively done on market trends with real-time data. The data has been taken from crunchbase.com

The analysis on this case study is primarily done by taking into consideration the top English speaking countries, best funding type, best sector and set investment amount.

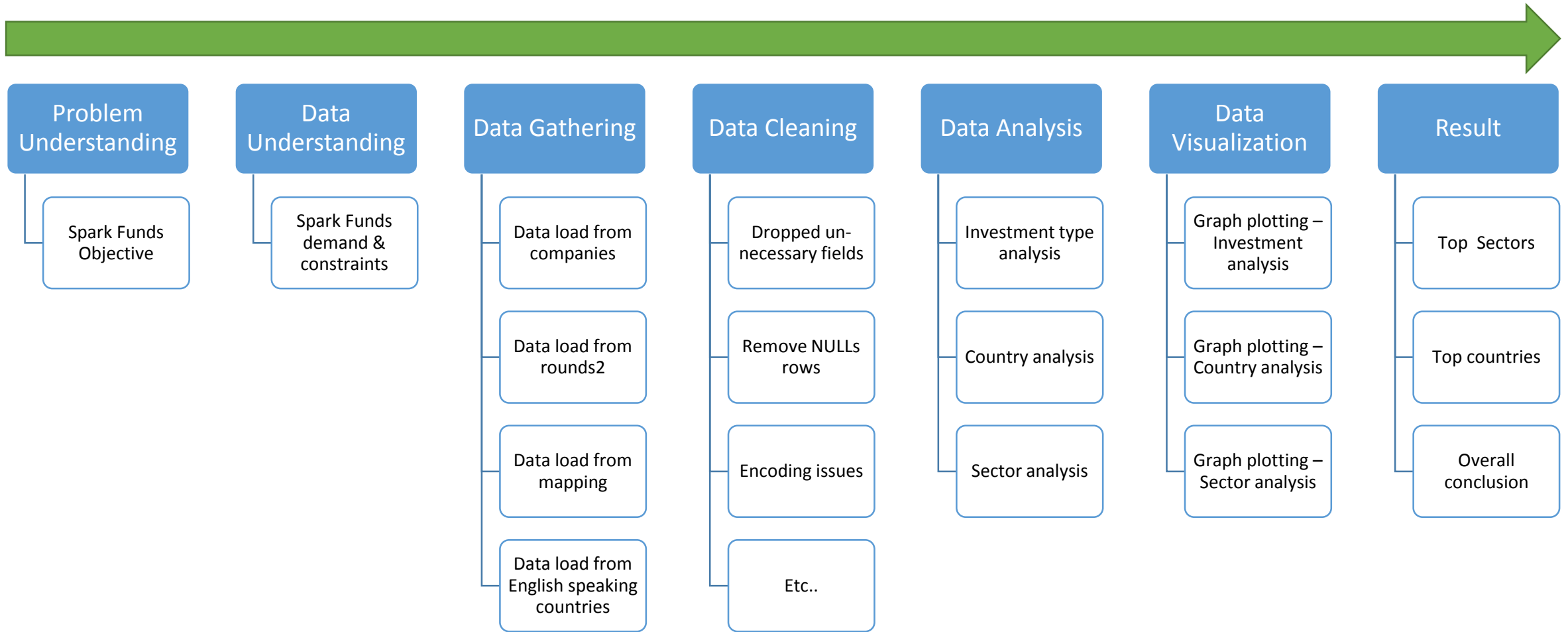
All the activities for the case study was divided into different set of operations. And each set of operations narrowed down the data for identifying the best desired result.

The case study results are clearly able to identify the best suited target for the Spark Funds for their investments. The company can invest in sector 'Others' in USA where most investments are occurring. There are two other sectors 'Social, Finance, Analytics, Advertising' & 'Cleantech / Semiconductors' which can be second option with Spark funds to invest as next investment area.

For this case study, technology used for data gathering , data manipulation and performing analysis is Python and Tableau.

The more details on specific methods and operations are explained in subsequent sections.

Problem solving methodology



Investment Type Analysis

- Data loaded from 'companies' and 'rounds2' data files which is been extracted from crunchbase.com database.
- The companies file data loaded in data frames 'companies'
- The rounds2 file data loaded in data frames 'rounds2'
- Data cleaning from companies and rounds2 data frame
 - These data had encoding issue which is fixed
 - The companies permalink were having different cases (lower/upper), converted to lower uniformly to use for better result
- Both these data frame merged and named as master_frame
- Cleaning the data from master_frame
 - Dropped un-necessary fields , not required for analysis
 - Removed NULLs
 - Fixed encoding issues
- Identified the best funding type based on calculating average investment amount of all the given funding types and investment amount between 5 to 15 million USD
- Result came as **venture** most suitable funding type

Country Analysis

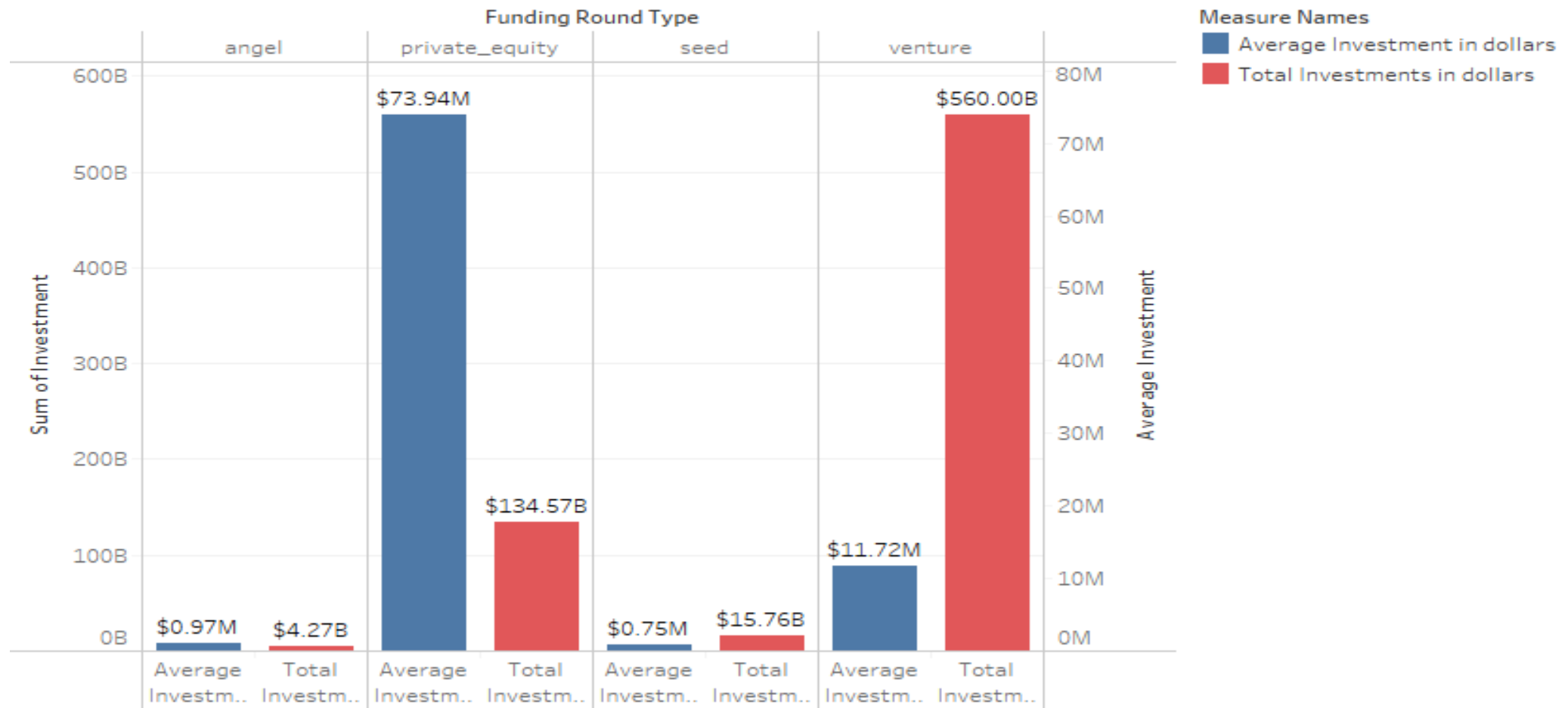
- Spark Funds wants to see the top nine countries which have received the highest total funding
- Extracted the top 9 countries from master_frame based on total funding amount
- Loaded country information from a CSV file (manually created) which list country code and country name and store into data frame 'countryinfo'
- Loaded the English speaking countries in data frame 'EnglishSpeakingCountry'
- Joined countryinfo and EnglishSpeakingCountry to get the country code in EnglishSpeakingCountry data frame , so it could be joined with master_frame as master_frame has only country code stored, no country name
- master_frame is joined with EnglishSpeakingCountry which in turn resulted the data with english speaking countries
- To identify the top 3 English speaking countries from top 9, master_frame is joined with top 9 data frame.
- This listed the countries from top 9 data frame which is having English as official language
- ta frame top9, found the top 3 English speaking countries with highest investment amount
- Top 3 English-Speaking Countries resulted is
 1. USA
 2. GBR
 3. IND

Sector Analysis

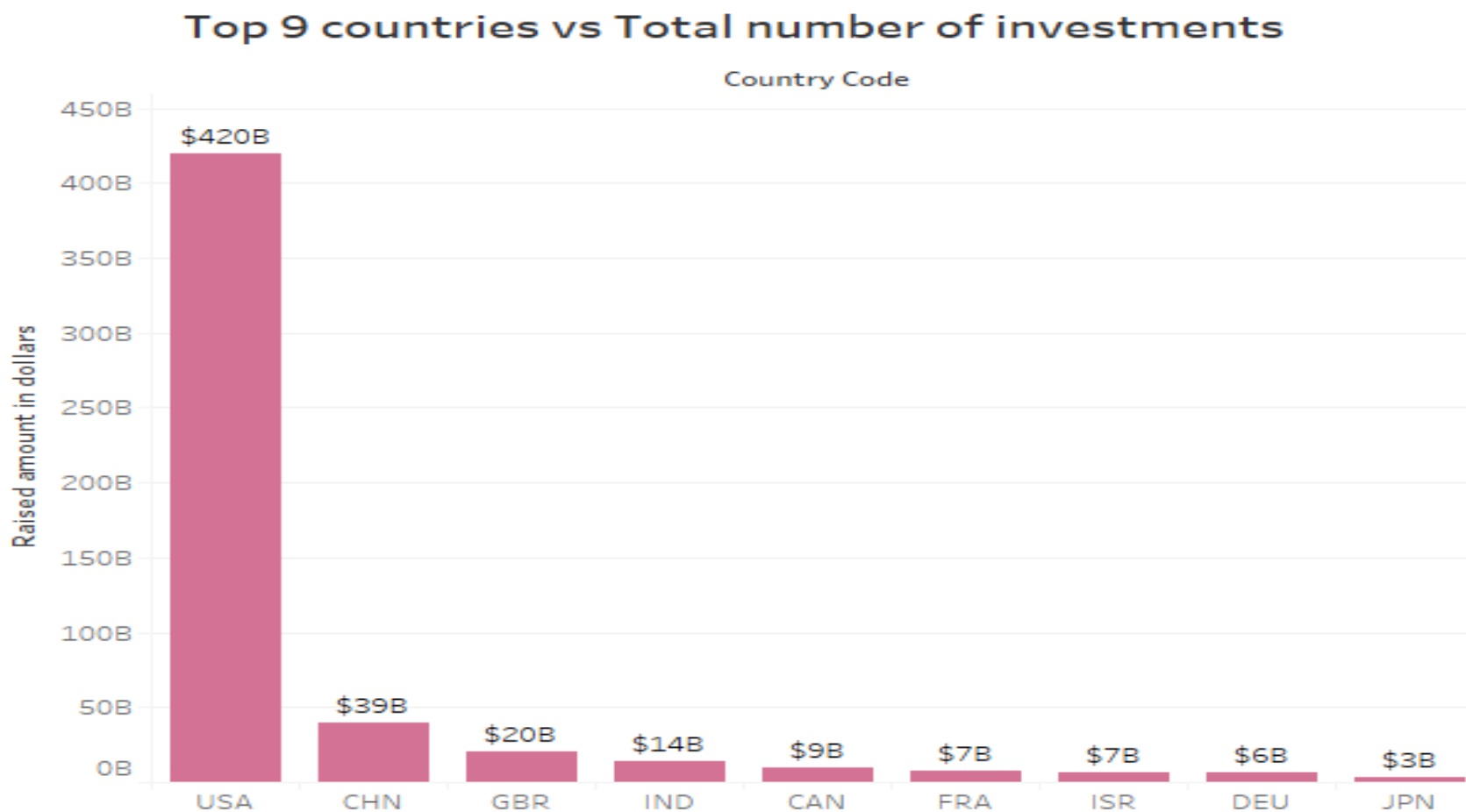
- Data loaded from the mapping.csv file in 'mapping' data frame.
- Data Cleaning from mapping data frame
 - Removed NULL record
 - Fixed issue with strings having na instead of 0 e.g., A0lytics (s/b Analytics)
- mapping data frame is into matrix format, converted to proper format to read sectors
- Extraction of primary sector from master frame
- master_frame and mapping data frame joined to have proper relation of main sector and primary sector
- For top 3 English speaking countries, three different data frames created named with D1, D2, D3 (USA, GBR, IND resp.)
- From these 3 data frames, top 3 sectors are identified based on investment
- Result appeared as
 - USA → 1. Others 2. Social, Finance, Analytics, Advertising 3. Cleantech/Semiconductors
 - GBR → 1. Others 2. Social, Finance, Analytics, Advertising 3. Cleantech/Semiconductors
 - IND → 1. Others 2. Social, Finance, Analytics, Advertising 3. News, Search & Messaging's

Best Funding Type

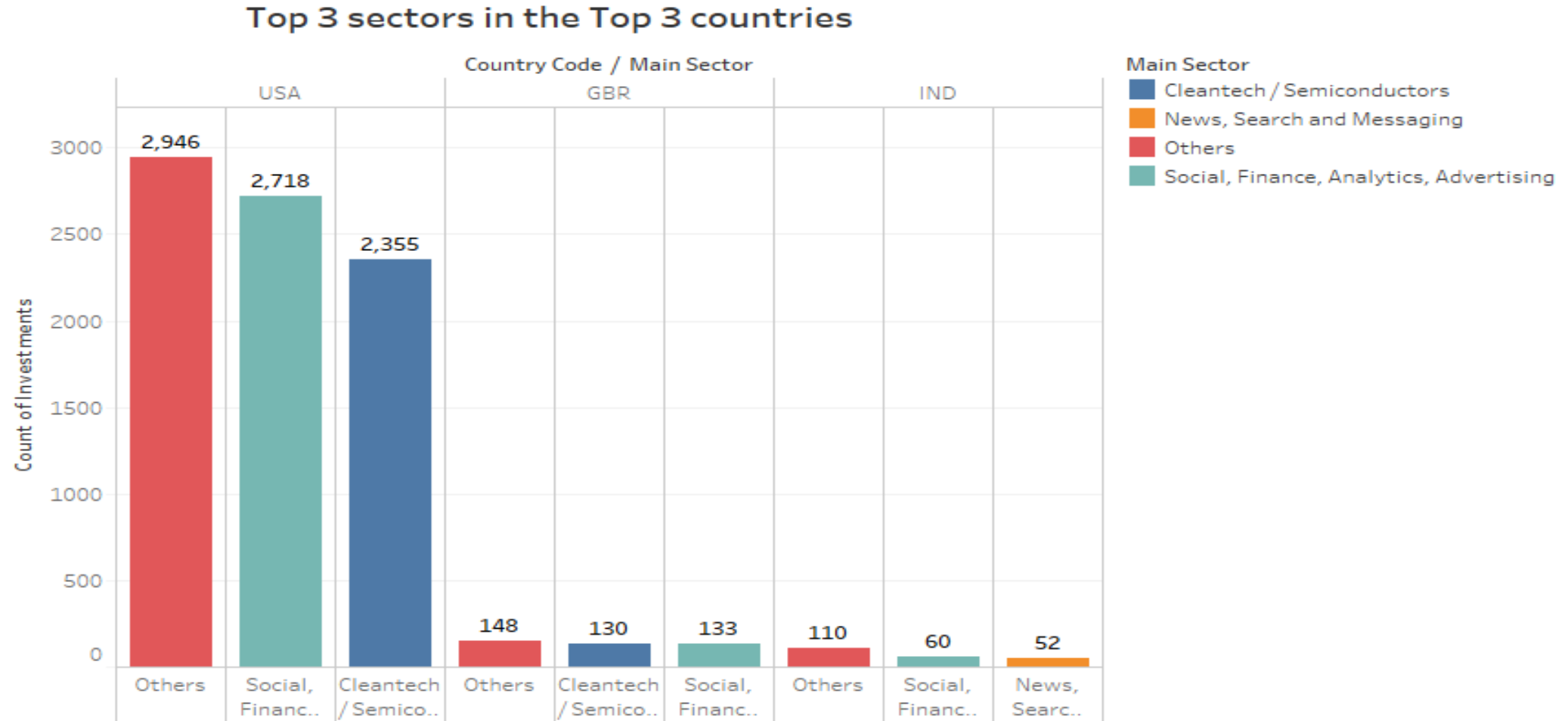
Total and Average Investments v Funding Type



Top 3 Country for Investment



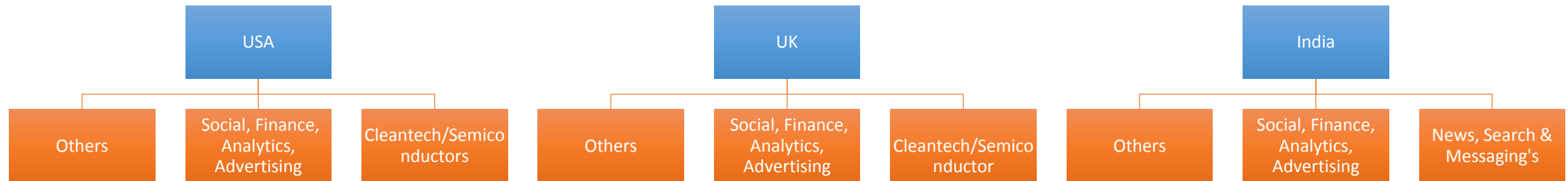
Top Sectors for Investment



Conclusion

Based on the analysis done in the previous slides, the following conclusions can be drawn:

- Since the constraint on the investment amount set by Spark Funds is 5 to 15millionUSD, the funding type that will be best suitable is ‘Venture’ type. It is clear from the results that Venture type companies are most sought after for investments.
- The other constraint set by Spark Funds is to choose only the English Speaking Countries. The results show that the Top 3 countries where most of the investments are being done as a Venture type are USA, UK and India. Hence, Spark Funds may choose one or all among these three countries for the investment.
- The Top 3 sectors in the above mentioned Top 3 Countries are as follows:



→ Looking to all considerations, Spark Funds can select either of top countries **USA, GBR or IND** respectively with best investment sector options as corresponding sectors for investment e.g. ‘**Others,**’ ‘**Social, Finance, Analytics, Advertising,**’ ‘**Cleantech/Semiconductors**’...

*This conclusion is as per the data considered for end to end analysis.