

# INVESTMENT CASE STUDY SUBMISSION

**Group Name: Scooby Data Doo**

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## Spark Funding Investment Proposal



### OBJECTIVE

To make investment in companies, Spark Funds wants to identify-

- Suitable Investment Type
- Best Countries to invest in
- Best Sectors there of



### STRATEGY

- Spark Funds wants to choose the best investment type, best countries and best sectors for each potential investment.
- To achieve this goal, it wants to follow the lead of other profitable investors.



### CONSTRAINTS

- Range of Investment - **5 to 15 million USD** per round of investment.
- Investment only in **English-speaking countries**.

## PROBLEM SOLVING METHODOLOGY

### Investment type Analysis:

Understanding investments in the venture, seed/angel, private equity categories and find out the best suited funding type for its strategy.

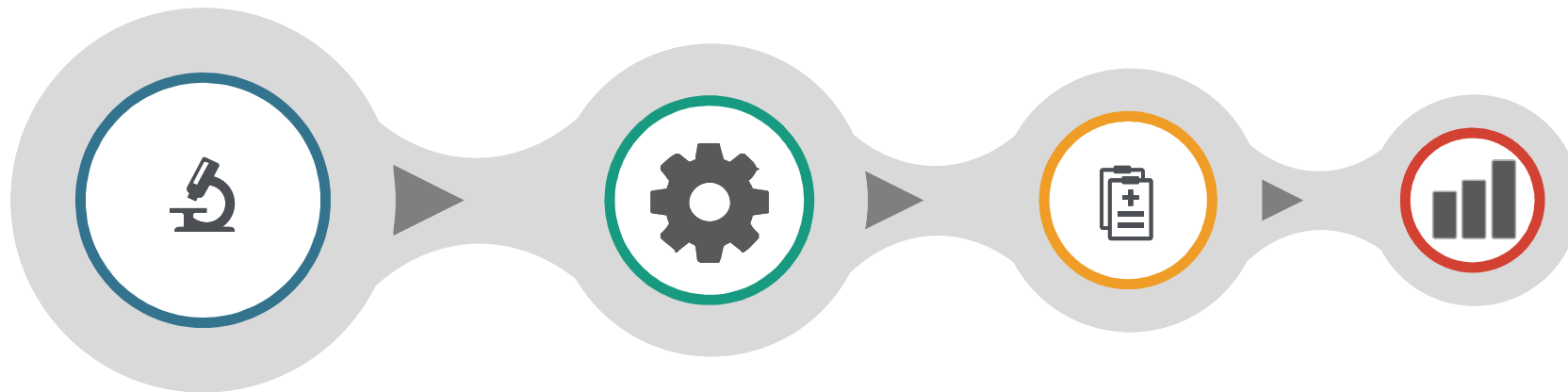
### Country Analysis

Understanding which English speaking countries have had the most investments in the past.

### Sector Analysis:

Understanding the distribution of investments across the eight main sectors.

# DATA FLOW



## DATA UNDERSTANDING AND PREPARATION

(Identifying unique keys for given data frames, Collating files and checking for Data Quality issues)

## DATA CLEANING

(Data Correction, Data Conversion and Data Manipulation)

## DATA COMPUTATION

(Computing Average Values of Investments for venture, seed, angel and private equity Funding Types and finding best investment type)

## DATA ANALYSIS

(Analyzing Top 3 English-Speaking Countries which has received the highest funding and for these countries finding out sector-wise total count and total amount of investment)

## Data Cleaning:

We have identified the unique keys and number of unique entries in the given data sets and collated different files into single master file.

Table-1.1		
Understand the Data Set		
Sl. No	Questions	Answer
1	How many unique companies are present in rounds2?	66368
2	How many unique companies are present in the companies file?	66368
3	In the <b>companies</b> data frame, which column can be used as the unique key for each company? Write the <b>name of the column</b> .	permalink
4	Are there any companies in the rounds2 file which are not present in <b>companies</b> ? Answer <b>Y/N</b> .	N
5	Merge the two data frames so that all variables (columns) in the <b>companies</b> frame are added to the <b>rounds2</b> data frame. Name the merged frame <b>master_frame</b> . How many observations are present in <b>master_frame</b> ?	114949



# ANALYSIS



## Investment type Data Analysis:

- We are calculating average investment amount for venture, seed, angel and private equity funding types.
- Seed/angel funding refer to early stage startups whereas venture funding occurs after seed or angel stage/s and involves a relatively higher amount of investment. Private equity type investments are associated with much larger companies and involve much higher investments than venture type.
- Considering the constraints of Spark Funds, **Venture is the most suitable funding type.**

Average Values of Investments for Each of these Funding Types		
Sl.No	Questions	Answer
1	Average funding amount of venture type	11748949
2	Average funding amount of angel type	958694
3	Average funding amount of seed type	719818
4	Average funding amount of private equity type	73308593
5	Considering that Spark Funds wants to invest between <b>5 to 15 million USD</b> per investment round, which investment type is the most suitable for them?	Venture

## Country type Data Analysis:

- Investment need to be done in countries with the highest amount of funding for the venture investment type.
- We have computed top nine countries which have received the highest total funding.
- According to constraints, we have considered only top three English speaking countries.

Top nine countries
United States
China
United Kingdom
India
Canada
France
Israel
Germany
Japan

Analysing the Top 3 English-Speaking Countries		
Sl.No	Questions	Answers
1	Top English speaking country	USA
2	Second English speaking country	GBR
3	Third English speaking country	IND



# ANALYSIS



## Sector wise Data Analysis

- We have considered 8 main sectors(Automotive...Sports, Cleantech...Semiconductors, Entertainment, Health, Manufacturing, News..Search.and.Messaging, Others, Social..Finance..Analytics..Advertising).

### Assumptions:

- First string before the vertical bar will be considered as primary sector.
- Blanks and NA's wont be considered in main sector.

Sector-Wise Investment Analysis

Sl.no	Questions	C1	C2	C3
1	Total number of Investments (count)	12063	621	328
2	Total amount of investment (USD)	107757097294	5379078691	2949543602
3	Top Sector name (no. of investment-wise)	Others	Others	Others
4	Second Sector name (no. of investment-wise)	Social Finance Analytics Advertising	Social Finance Analytics Advertising	Social Finance Analytics Advertising
5	Third Sector name (no. of investment-wise)	Cleantech Semiconductors	Cleantech Semiconductors	News Search & Messaging
6	Number of investments in top sector (3)	2950	147	110
7	Number of investments in second sector (4)	2714	133	60
8	Number of investments in third sector (5)	2350	130	52
9	For point 3 (top sector count-wise), which company received the highest investment?	Virtustream	Electric Cloud	FirstCry.com
10	For point 4 (second best sector count-wise), which company received the highest investment?	SST Inc (Formerly ShotSpotter)	Celltick Technologies	Manthan Systems

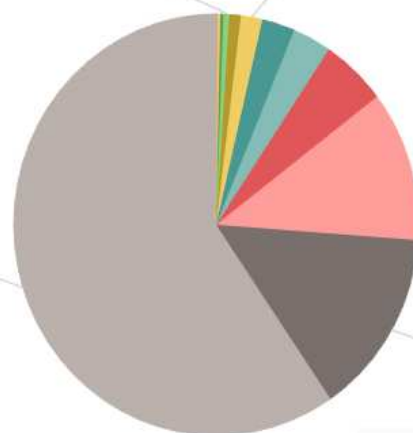
# RESULTS:PLOT 1

## SparkFunds\_Best Funding Type

Funding Round Type: **angel**  
 Fraction of total investments (globally): **0.47%**  
 Avg. Raised Amount Usd: **958,185**  
 Best Investment: **Not Suitable**

Funding Round Type: **seed**  
 Fraction of total investments (globally): **1.72%**  
 Avg. Raised Amount Usd: **719,510**  
 Best Investment: **Not Suitable**

Funding Round Type: **venture**  
 Fraction of total investments (globally): **59.54%**  
 Avg. Raised Amount Usd: **11,714,650**  
 Best Investment: **Suitable**



Funding Round Type: **private\_equity**  
 Fraction of total investments (globally): **14.29%**  
 Avg. Raised Amount Usd: **73,385,016**  
 Best Investment: **Not Suitable**

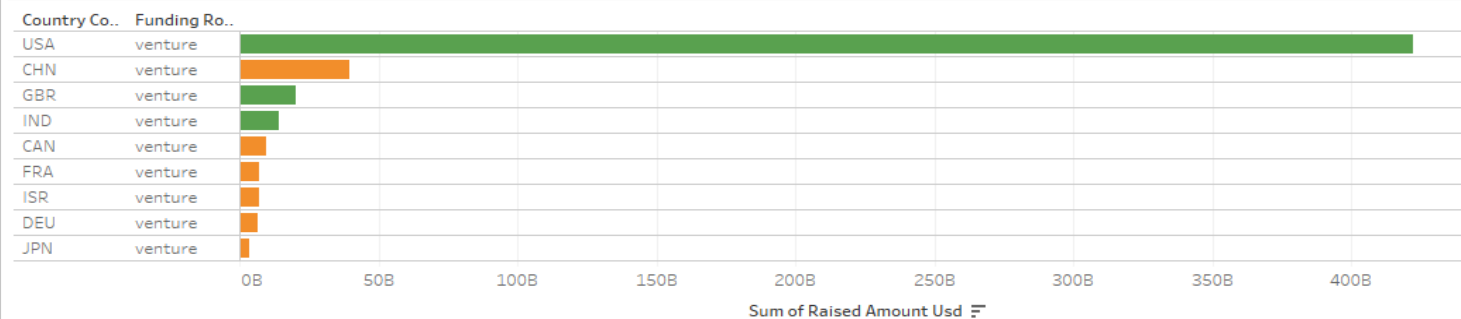
Funding Round Type

- non\_equity\_assistance
- product\_crowdfunding
- equity\_crowdfunding
- convertible\_note
- secondary\_market
- angel
- grant
- seed
- post\_ipo\_debt
- undisclosed
- post\_ipo\_equity
- debt\_financing
- private\_equity
- venture



## RESULTS:PLOT 2

TOP 9 COUNTRIES AGAINST THE TOTALAMOUNT OF INVESTMENTS OF VENTURE FUNDING TYPE



3 English Speaking ISO

GREEN-English Speaking

ORANGE-Non English Speaking

Spark Funds\_BestFT

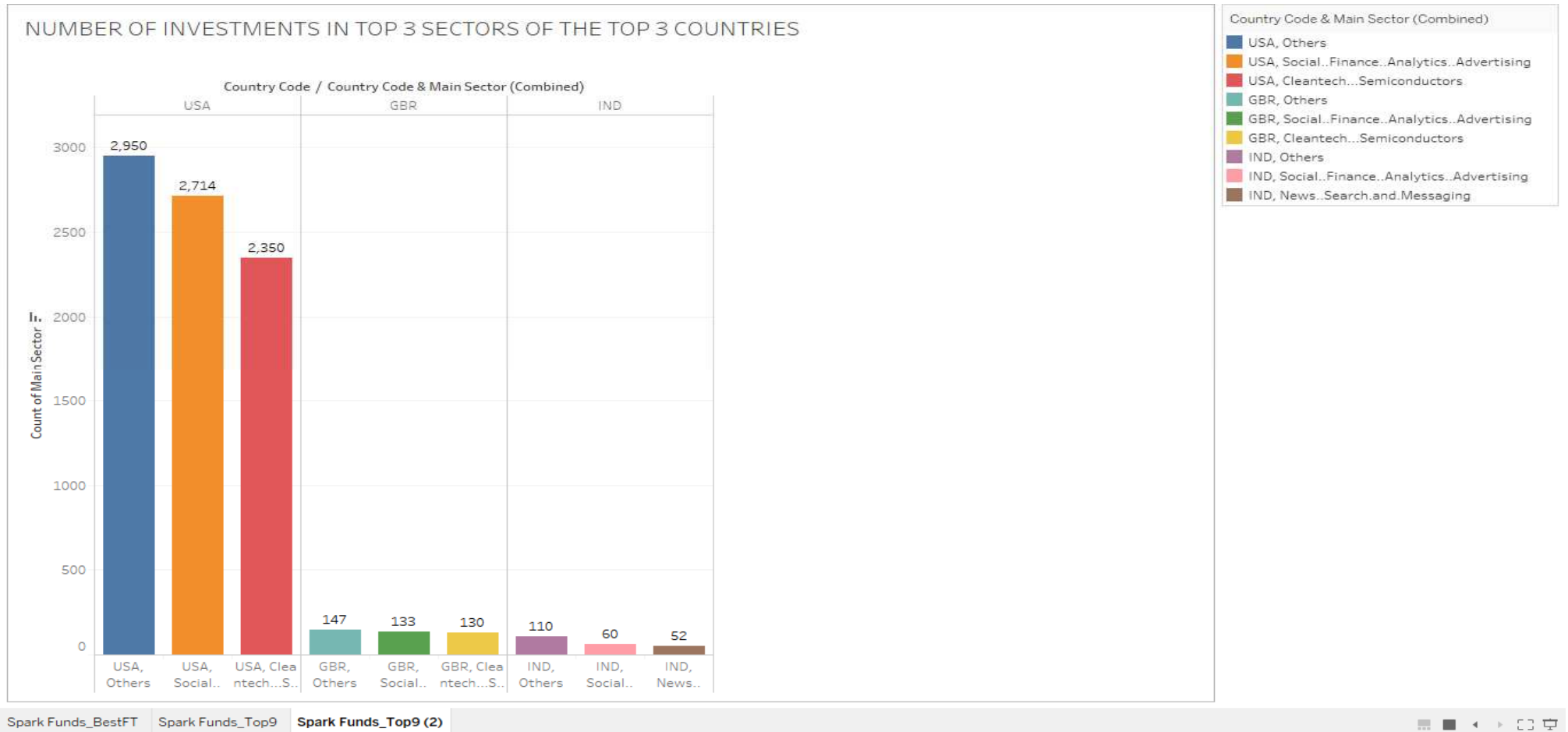
Spark Funds\_Top9

Spark Funds\_Top9 (2)





# RESULTS:PLOT 3





## CONCLUSION

- Suitable Funding Type: **Venture**
- Best English Speaking Countries to invest in: **USA, UK, INDIA**
- Best Three Sectors Country Wise:
  - USA - **Others, Social Finance Analytics Advertising, Cleantech Semiconductors**
  - UK - **Others, Social Finance Analytics Advertising, Cleantech Semiconductors**
  - INDIA - **Others, Social Finance Analytics Advertising, News Search & Messaging**
- Best Two Companies which received highest investments-
  - USA - **Virtustream, SST Inc. (Formerly ShotSpotter)**
  - UK - **Electric Cloud, Celltick Technologies**
  - INDIA - **FirstCry.com, Manthan Systems**