

## Case Study – Overview & Strategy

**Objective** - Spark Funds, an asset management company, requires assistance to understand the global trends in investments and identify the main sectors and countries where they can invest with minimal risk.

**Approach** – First, the average funding type was reviewed and the most optimum funding type was considered as per the companies investment limit of 5 to 15 million USD.

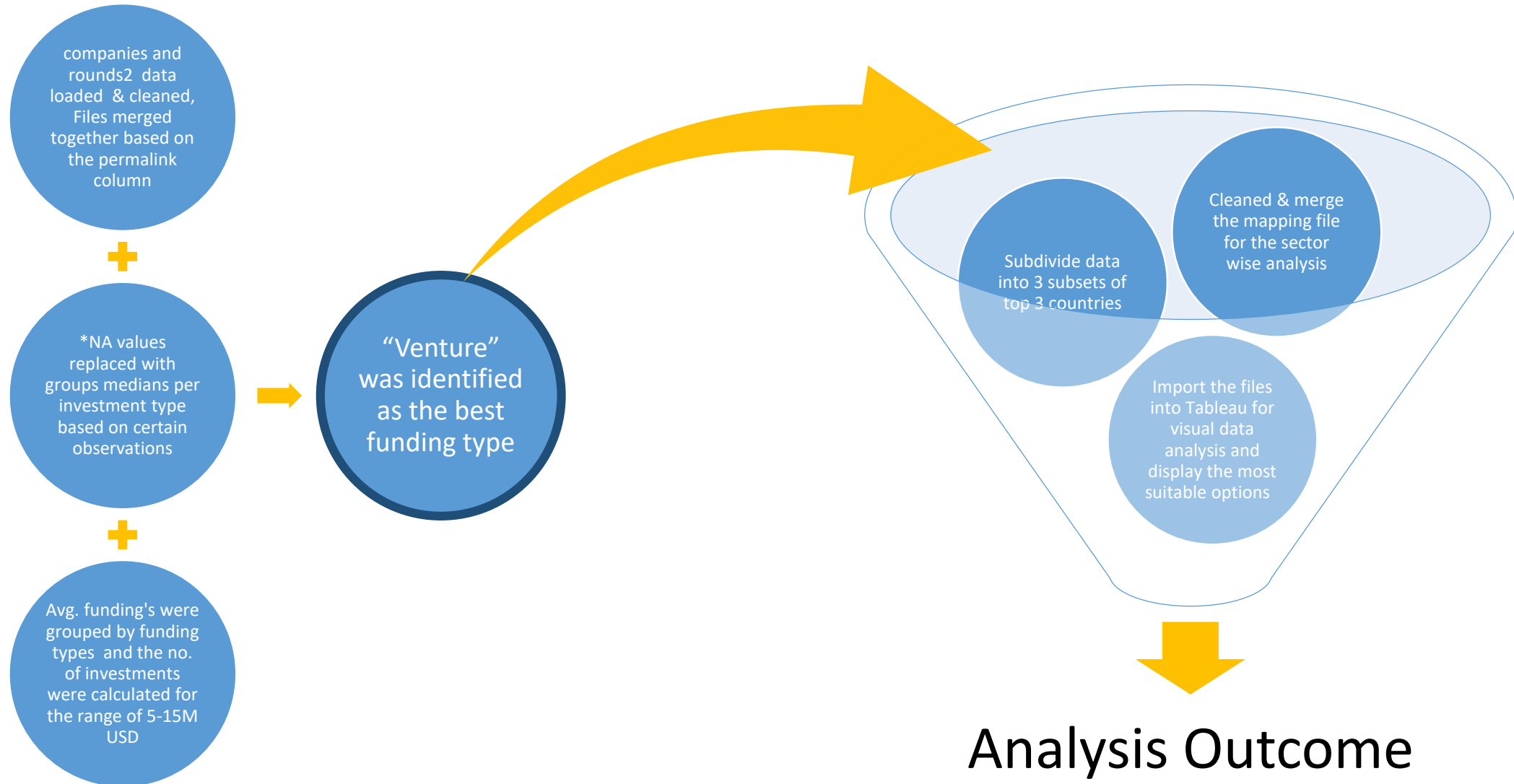
Second, the top 3 English speaking countries where maximum investments are being carried out globally were identified.

Third, the best main sectors of investments for each of the top countries were identified by considering the total number of investments done in each company per sector.



### Team Members:

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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 name of the column.	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

- Encryption Format UTF-8 is used for rounds2 and companies data sets and it is observed that same 66368 unique are listed in both data sets.
- Unique key 'Permalink' is present in both 'rounds2' and 'companies' data sets
- No rogue entries are observed while comparing both data sets.
- Total of 114949 observations are obtained after merging 'companies' data set in 'rounds2'

Sl. No	Questions	Answer
1	Average funding amount of venture type	\$ 1,11,08,520
2	Average funding amount of angel type	\$ 8,45,562
3	Average funding amount of seed type	\$ 6,18,960
4	Average funding amount of private equity type	\$ 6,51,66,493
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

- During Analysis it was observed that 9%, 20%, 22% & 15% of values were found to be missing in Venture, Angel, Seed and Private Equity funding types respectively. Outliners were also observed during intermediate check plots due to which, for missing values, imputation by respective group medians is performed & considered for Analysis in order to maintain data integrity.
- Based on Spark Funds investment limit being between 5 to 15 million USD per investment rounds, '**VENTURE**' type funding is identified as the most suitable.

## Analysis for Top 3 English speaking countries

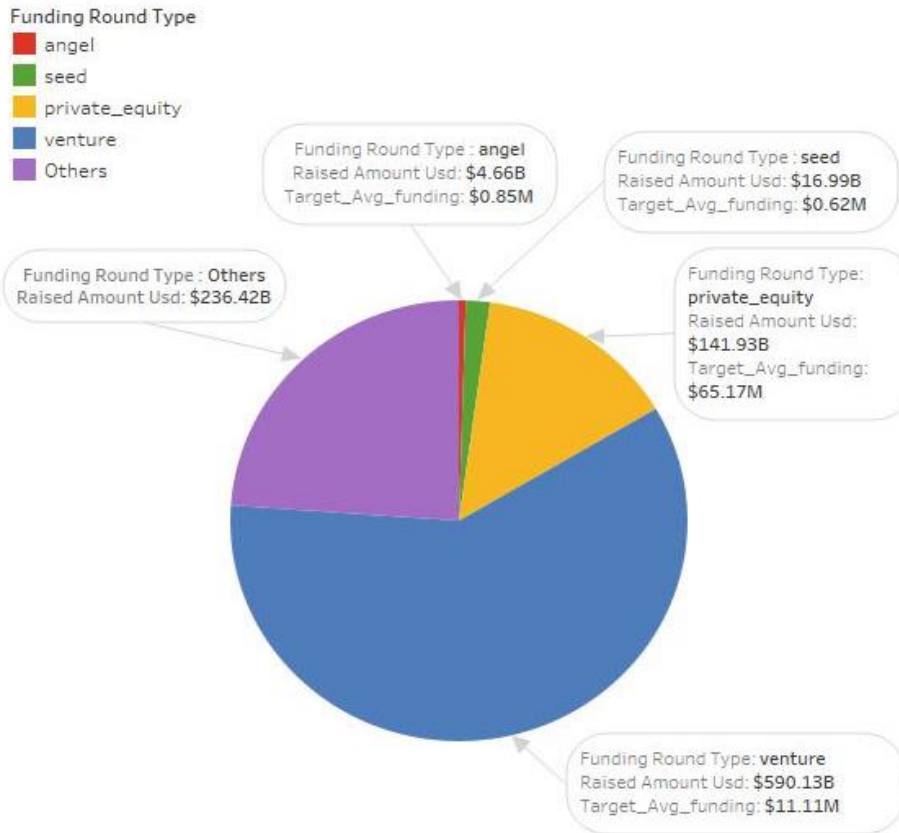
Sl.No	Questions	Answers
1	Top English speaking country	
2	Second English speaking country	
3	Third English speaking country	

- USA was identified as the top investment friendly country followed by United Kingdom & INDIA

Sl.no	Questions	C1	C2	C3
1	Total number of Investments (count)	14154	845	493
2	Total amount of investment (USD)	\$ 1,18,21,20,97,294	\$ 6,49,90,78,691	\$ 3,77,45,43,602
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.and.Messaging
6	Number of investments in top sector (3)	3403	211	158
7	Number of investments in second sector (4)	3290	193	106
8	Number of investments in third sector (5)	2622	154	76
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)	Zopa	Manthan Systems

- Based on our Analysis, **USA** has the maximum number of investments with total investment amount being approx. **118 billion USD** followed by **UK** with total investment amount being approx. **6.49 billion USD** and lastly India with total investment amount being approx. **3.77 billion USD**.
- For USA the top 3 main sectors are **“Others, Social/Finance/Analytics/Advertising & Cleantech/Semiconductors”** respectively. Within the top 2 main sectors, the top companies receiving highest investment are **‘VIRTUSTREAM’ & ‘SST Inc.’** which fall under primary sectors **‘enterprise software’ & ‘analytics’** respectively.
- For UK the top 3 main sectors are **‘Others, Social/Finance/Analytics/Advertising & Cleantech/Semiconductors’** respectively. Within the top 2 main sectors, the top companies receiving highest investment are **‘ELECTRIC CLOUD’ & ‘ZOPA’** which fall under primary sectors **‘software’ & ‘finance’** respectively.
- For IND top 3 main sectors are **‘Others, Social/Finance/Analytics/Advertising & News/Search and Messaging’**. Within the top 2 main sectors, the top 2 companies receiving highest investment are **‘FIRSTCRY.COM’ & ‘MANTHAN SYSTEMS’** which fall under primary sectors **‘e-commerce’ & ‘analytics’** respectively.

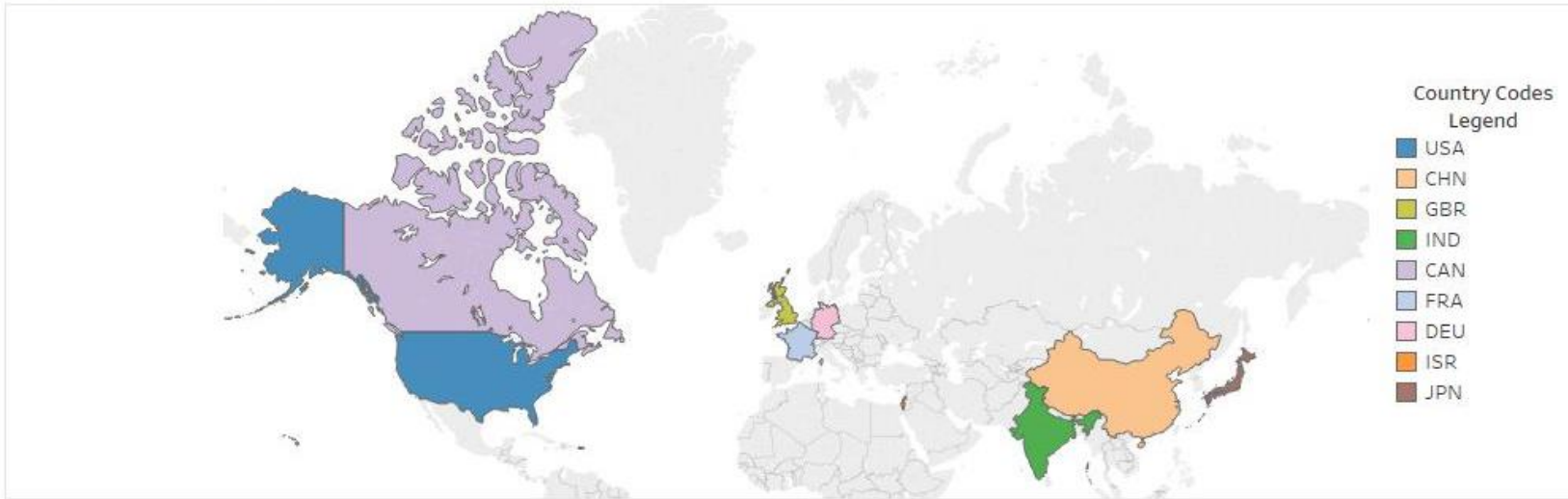
Global Investment aggregates of Target Investment types



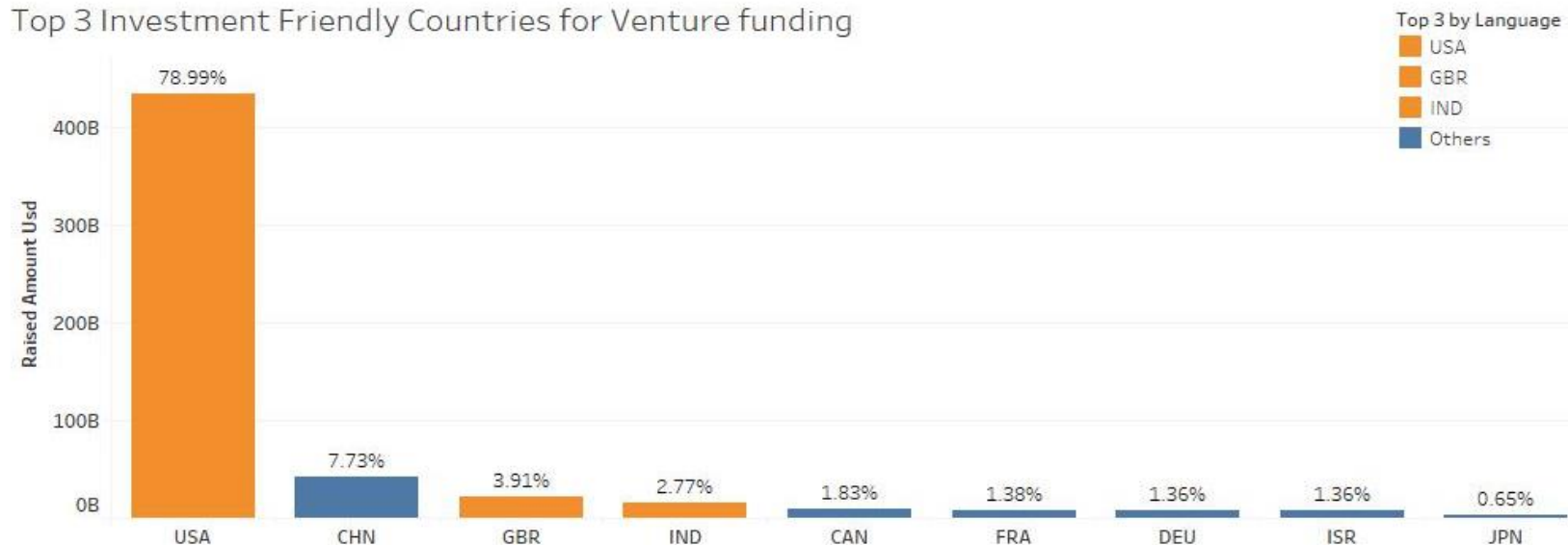
Best Suited Investment type



Top 9 Countries by Total Investment for Venture Funding

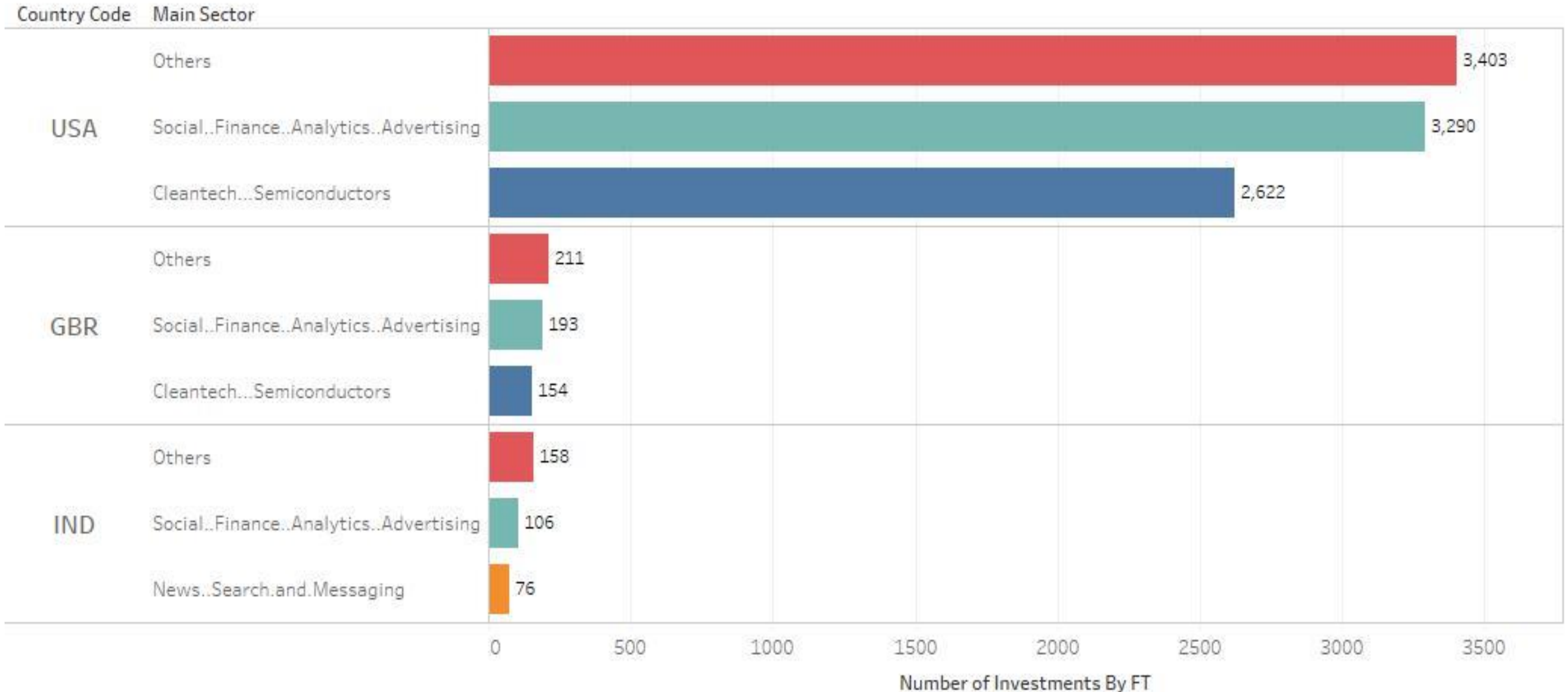


Top 3 Investment Friendly Countries for Venture funding





Top 3 sectors against Number of Investments by FT for Top 3 countries





To ensure Spark fund investments get the maximum returns , the detailed analysis was done on the historical data of various companies across different Funding Types against Investment sectors. Certain conclusions were drawn and following are the recommendations.

➤ *Best Investment Type for 5 to 15 million USD:*

i. **Venture**

➤ *Top 3 Investment friendly Countries to invest in, in a descending order:*

i. **USA**

ii. **GBR**

iii. **INDIA**

➤ *Top 3 Recommended Sectors across Top 3 countries:*

Sr. No.	USA	GBR	INDIA
1	Others	Others	Others
2	Social / Finance / Analytics / Advertising	Social / Finance / Analytics / Advertising	Social / Finance / Analytics / Advertising
3	Cleantech / Semiconductors	Cleantech / Semiconductors	News/Search and Messaging

➤ *Top 2 Recommended companies with highest investment across Top 3 countries: (& respective primary sectors)*

Sr. No.	USA		GBR		INDIA	
	Company name	Primary Sector	Company name	Primary Sector	Company name	Primary sector
1	Virtustream	Enterprise Software	Electric Cloud	Software	FirstCry.com	E-commerce
2	SST Inc. (formerly ShotSpotter)	Analytics	Zopa	Finance	Manthan Systems	Analytics