

INVESTMENT ASSIGNMENT SUBMISSION

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SPARK FUND – Investment Analysis

Objective :

As an asset management company, Spark Fund would like to make smart decisions in terms of investment type, country and sector based on where other players are investing.

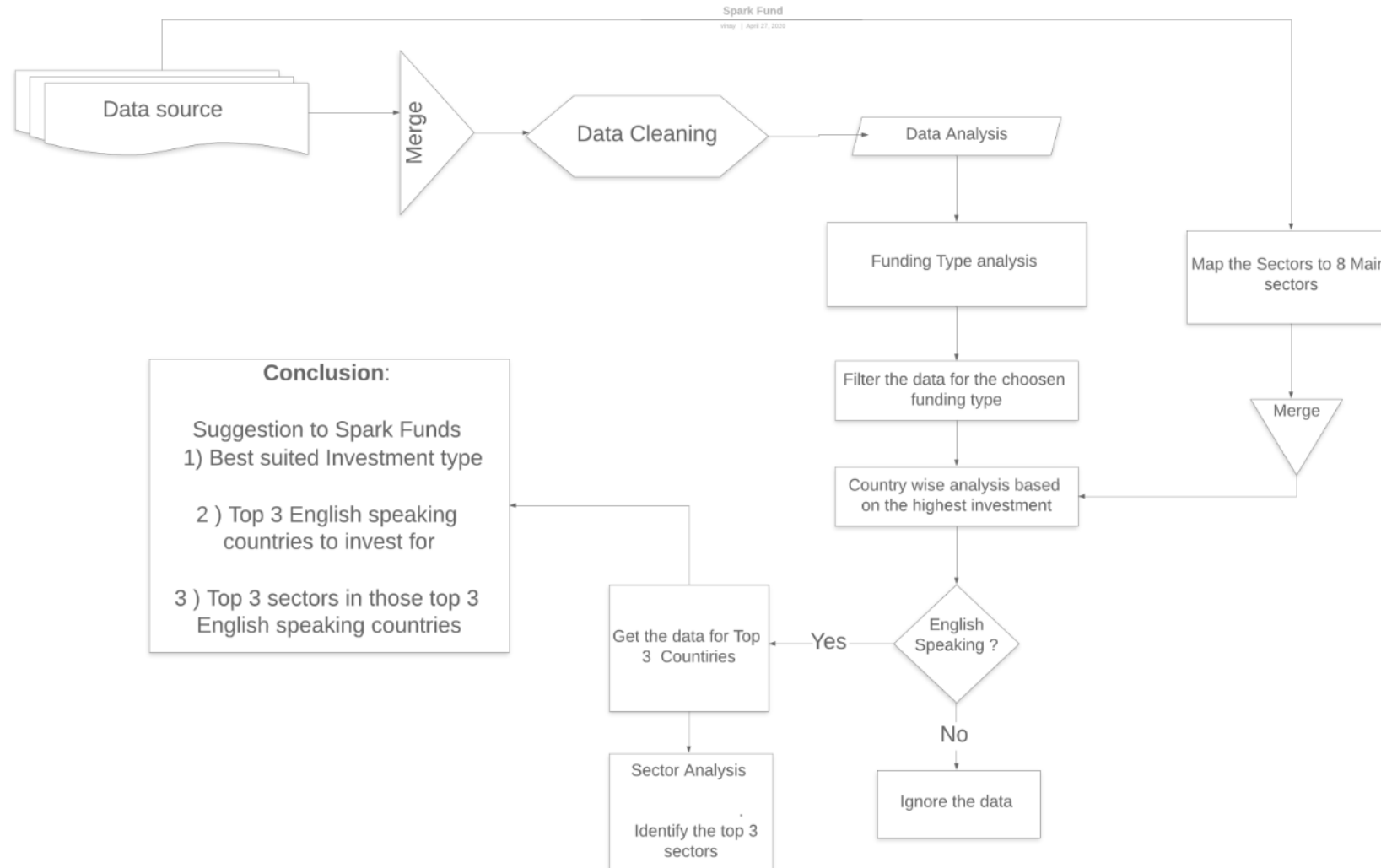
Business Constraints :

- 1) Invest between 5 to 15 million USD per round of investment.
- 2) Invest only in English-speaking countries because of the ease of communication.

Goals of data analysis:

- Investment type analysis
- Country analysis
- Sector analysis

Problem solving flow



Data analysis

Data Source : Real investment data from **crunchbase.com**

Metadata :

1. **Company details**, text file containing basic information of companies.
2. **Funding round details**, companies past investment round details.
3. **Mapping File**, maps the numerous category names of companies to 8 broad sector names.
4. External doc to identify the English speaking countries.

Data cleaning:

1. Converted the columns to lowercase values for the purpose of merging companies and rounds2 data frame.
2. Removed the columns which are not required for the analysis
3. Removed the null rows from the master_frame where the category_list and country_code are null.

Funding type analysis

Total types of investments : 14

Avg amount of investment in each funding type

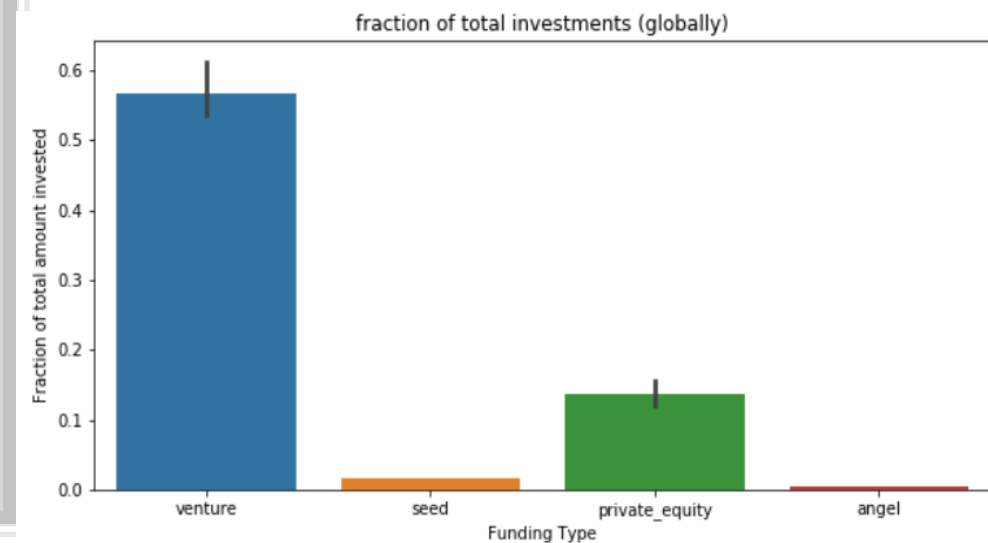
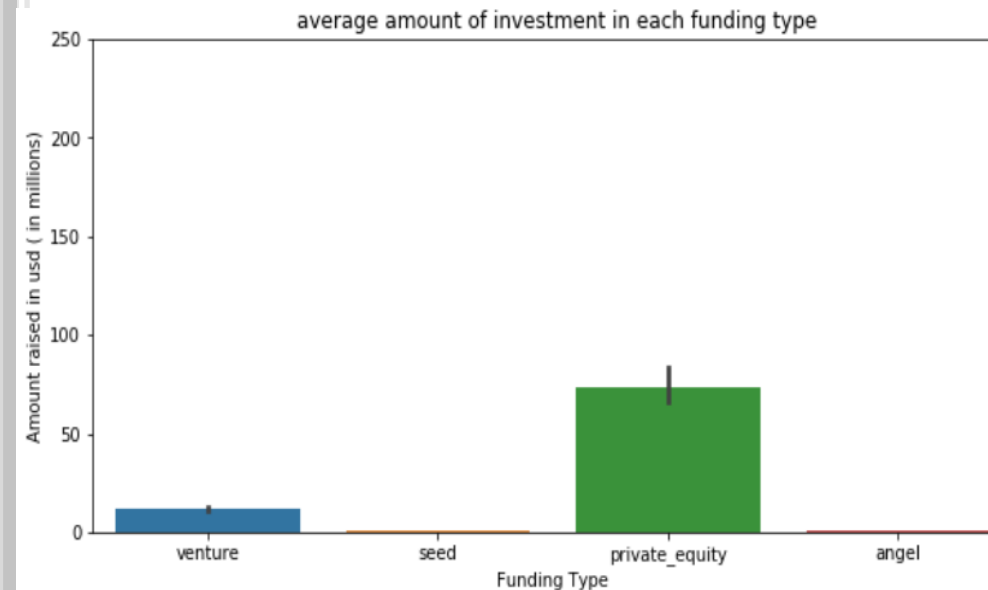
As per the business, we need to choose one of below the 4 investment types and between 5M – 15M

- 1) Venture
- 2) seed
- 3) Private equity
- 4) Angel

Fraction of investment of total investment made in 4 investment types are :

- 1) Venture : 0.566
- 2) seed : 0.016
- 3) Private equity : 0.136
- 4) Angel : 0.004

Conclusion : After plotting the bar plot for the Funding type v/s amount raised, suggest to choose **Venture** type of investment.



Country Analysis

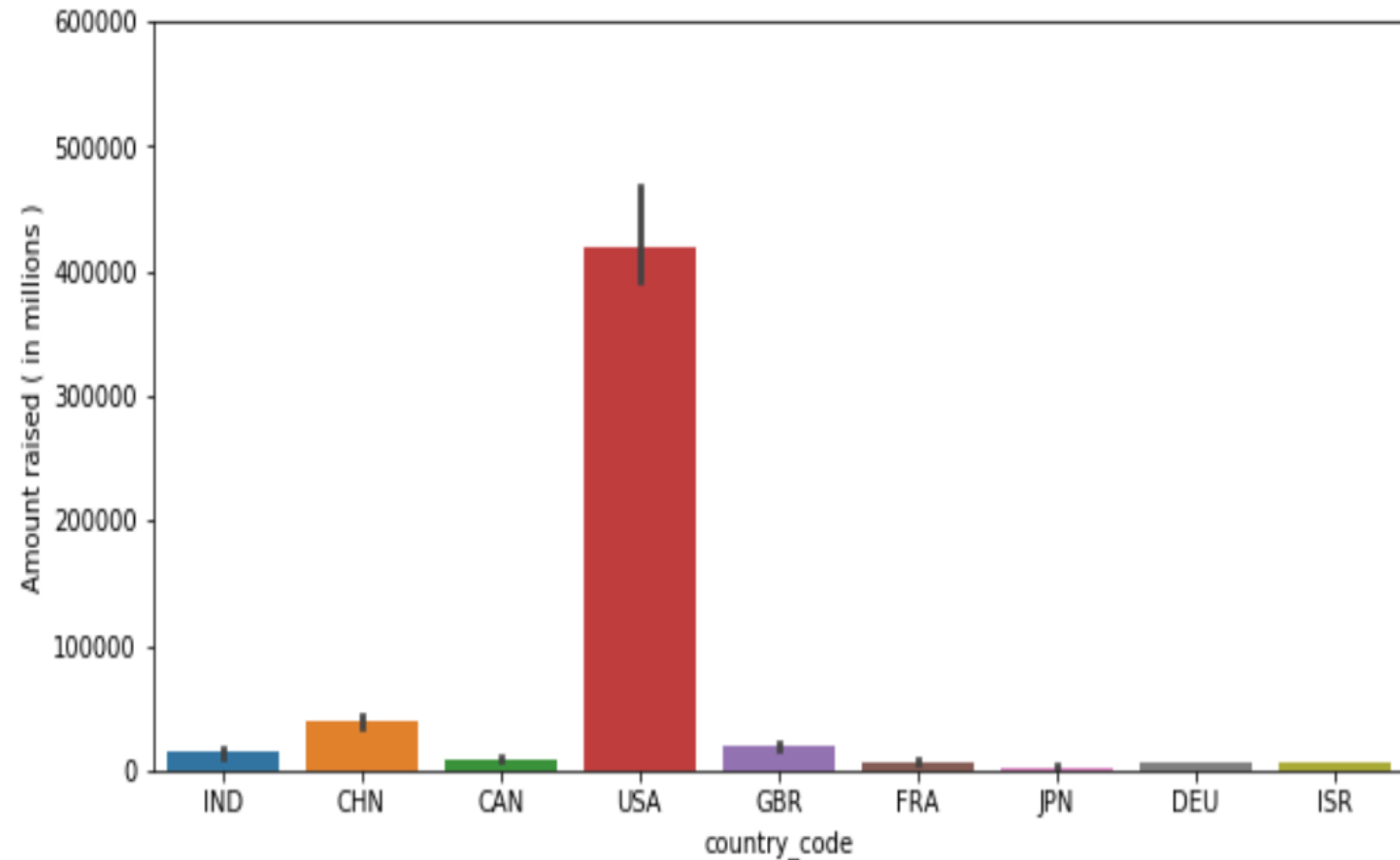
1) Highest total amount invested is in **USA**
i.e 420068.029 millions.

2) Second highest is **China** but **not** a English speaking country.

3) **GBR** (Great Britain) and **INDIA** are among top 3 countries to attract investment after USA.

4) Rest are the other top 9 invested companies.

Note : This is for the investment type Venture only



Country Analysis

Investment Type : Venture	
Country	Amount invested (millions USD)
USA	420068.029
CHN	39338.919
GBR	20072.813
IND	14261.509
CAN	9482.218
FRA	7226.851
ISR	6854.35
DEU	6306.922
JPN	3167.647

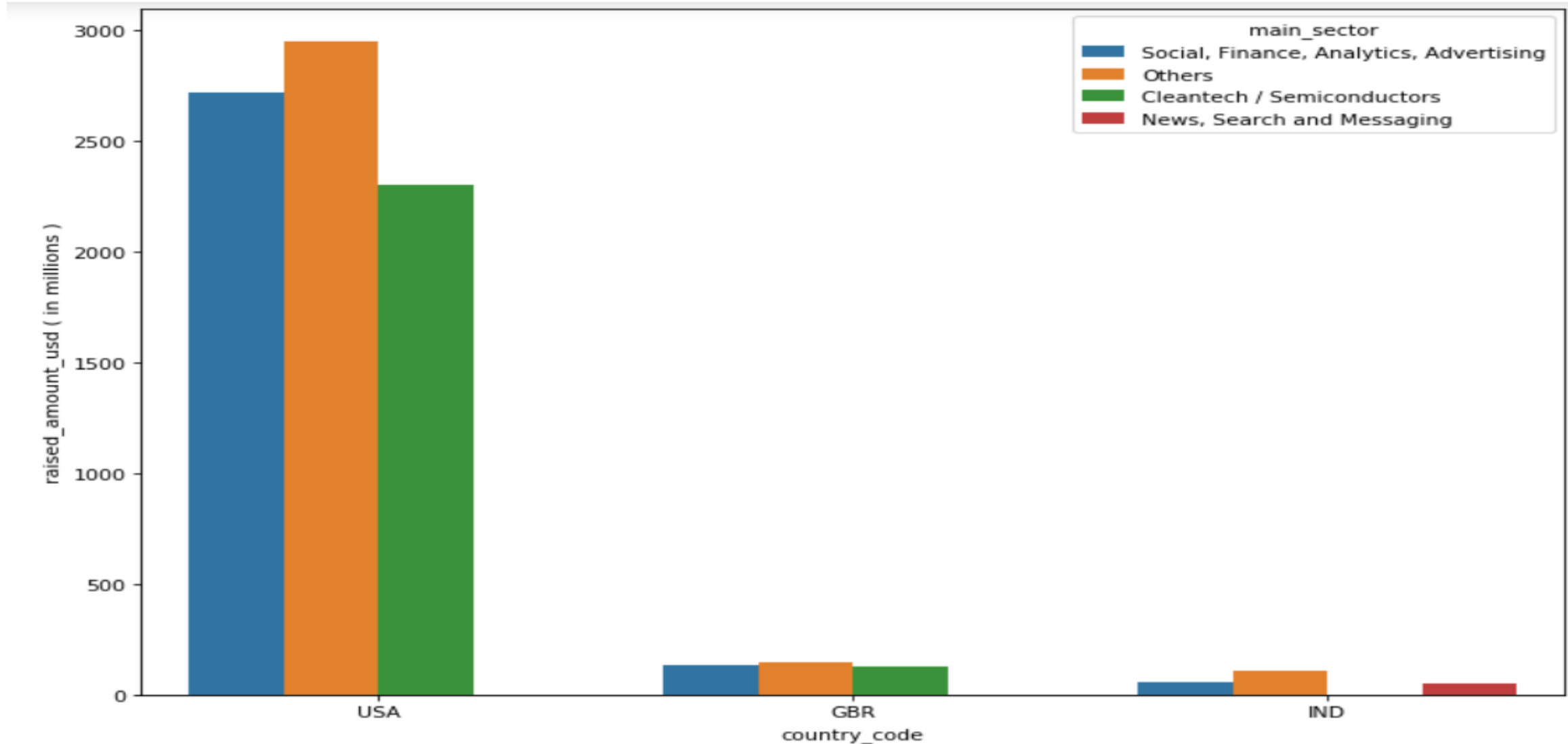
- Top 3 among the top 9 English speaking countries are based on the investments.
 - **USA**
 - **GBR**
 - **IND**
- USA received the highest investment amount i.e 420068.029 millions USD

Sector Analysis

Top3 English speaking countries along with their top 3 investment sectors

Country	Top 3 sectors to invest	Total no of investments	Highest investement received companies
USA	Others	2950	Virtustream
	Social, Finance, Analytics, Advertising	2714	SST Inc. (Formerly ShotSpotter)
	Cleantech / Semiconductors	2300	Biodesix
GBR	Others	147	Electric Cloud
	Social, Finance, Analytics, Advertising	133	Celltick Technologies
	Cleantech / Semiconductors	128	EUSA Pharma
IND	Others	110	FirstCry.com
	Social, Finance, Analytics, Advertising	60	Manthan Systems
	News, Search and Messaging	52	GupShup

Number of Investment in top 3 Sectors among the top 3 countries.



Conclusions

Based on the analysis Spark Fund can consider the below outcomes for their investment decisions.

1) Investment Type : **Venture**

2) Country wise analysis of investment

Country	Top 3 sectors to invest	Top companies in each sector
USA	Others	Virtustream
	Social, Finance, Analytics, Advertising	SST Inc. (Formerly ShotSpotter)
	Cleantech / Semiconductors	Biodesix
GBR	Others	Electric Cloud
	Social, Finance, Analytics, Advertising	Celltick Technologies
	Cleantech / Semiconductors	EUSA Pharma
IND	Others	FirstCry.com
	Social, Finance, Analytics, Advertising	Manthan Systems
	News, Search and Messaging	GupShup