

INVESTMENT CASE STUDY

SUBMISSION

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Business Objective – Identify investment opportunities for Spark Funds

Spark Funds (an upcoming asset management company) is looking to identify investment opportunities.

The CEO of Spark Funds is looking to understand global investment trends so as to take effective and informed investment decisions

Investments constraints/conditions:

- They want to invest between 5 to 15 million USD per round of investment
- They want to invest only in English-speaking countries for the ease of communication with the invested companies

Investment strategy:

Spark Funds wants to analyse market investment trends and identify sectors, companies and countries that other investors are already successfully investing in

The strategy of the analysis is to identify the top sectors, countries, and an investment type that have received the highest investment in the past

- Goals of data analysis:

- **Investment type analysis:** Analysing different investment types to help Spark Funds identify which investment type is best fit for its strategy
- **Country analysis:** Analysing past investments received by countries; this should help shortlist countries to invest based on the investment criteria
- **Sector analysis:** Understanding the distribution of investments across the eight main sectors

Problem Solving Methodology

Data Collection

- Investment raw data (companies.txt and rounds2.csv) was collected from crunchbase.com
- Raw data was loaded into R Studio

Data Cleaning

- Necessary data cleaning techniques were followed such as:
 - removing rows that corresponds to blank sector,
 - treating NA values and
 - correcting the spellings of the column values

Data Analysis

- Funding Type Analysis – A suitable investment type was identified based on business constraints and market trends
- Country Wise Analysis – Top 3 English speaking countries based on investment amount was analyzed
- Sector Wise Analysis – Based on investment type and English speaking country, promising sector of investments were identified

Data Visualization

- Tableau software was used to visualize the data results obtained and to gain useful insights in terms of bar graphs and charts

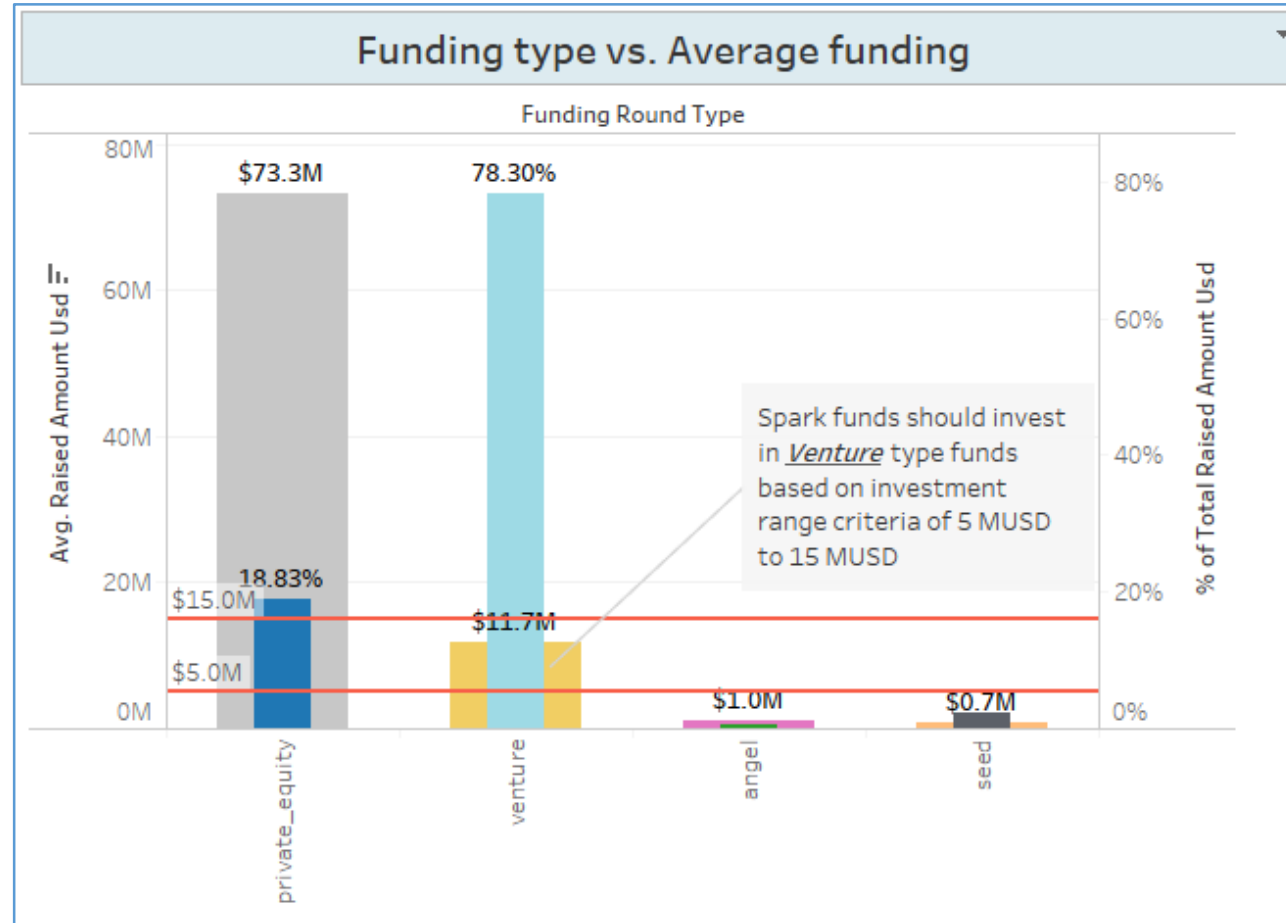
Funding type analysis

Funding type analysis in R:

- a) Created a consolidated dataset using the investment transactions and companies (company information) dataset
- b) Basic data validation and manipulation operations were performed – checking for NAs, conversion of key columns to lower case etc.
- c) Post performing aggregation on the funding types, analysis was performed for the **4 investment types – angel, seed, private equity and venture**
- d) Average funding per funding type is as seen below

Funding Type		Average Funding
Private Equity	\$	73,308,593.03
Venture	\$	11,748,949.13
Angel	\$	958,694.47
Seed	\$	719,818.00

Funding type results



Based on our analysis in R and Tableau our recommendation to Spark funds is to invest in **Venture** funding type based on their investment criteria of 5 MUSD to 15 MUSD

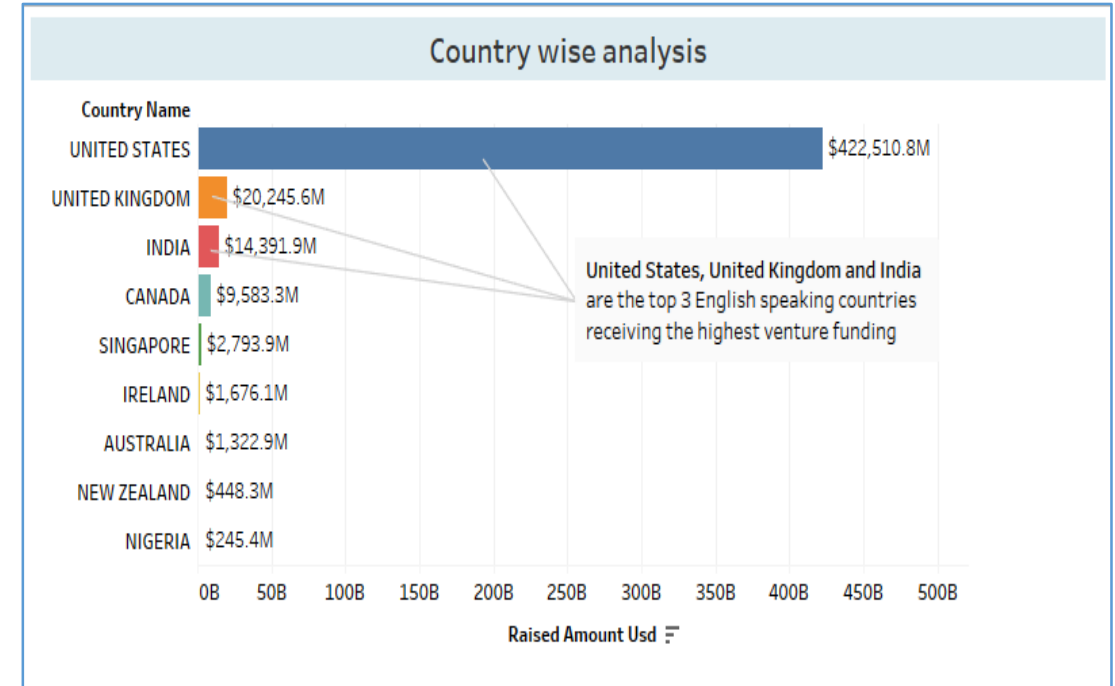
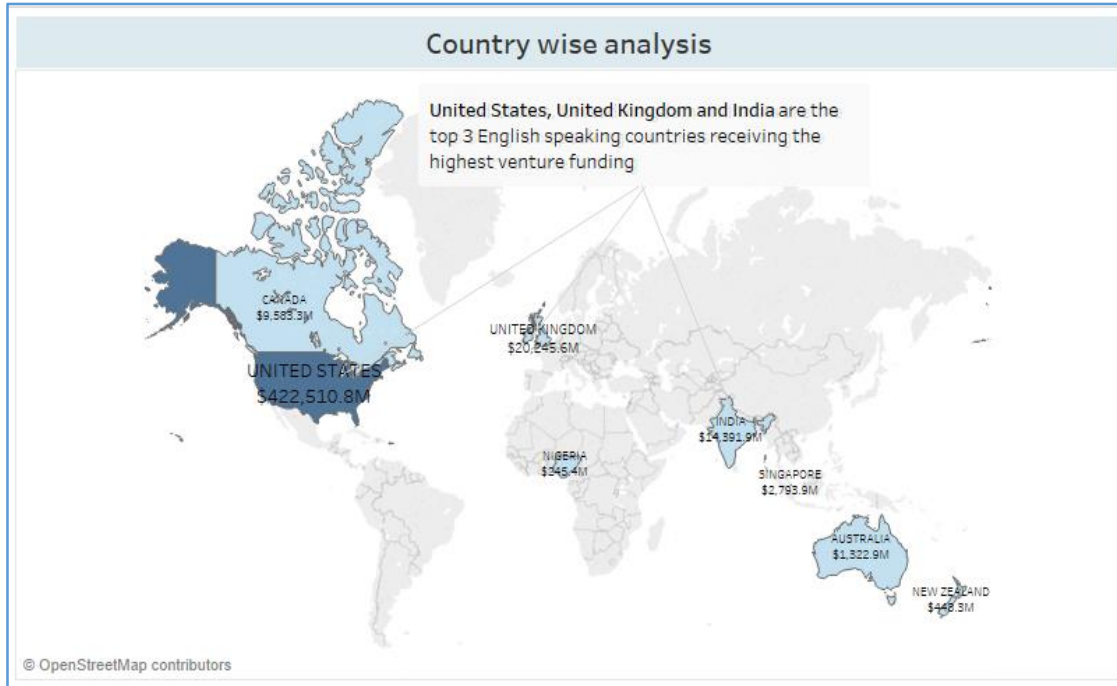
Country wise analysis

Customer analysis in R:

- a) Created a dataset of the venture level transactions for all companies
- b) Also created datasets for master list of Country and English speaking status
- c) Post merging of the transactional and country master list, analysis was performed for the **top 9 English speaking countries** for venture funding type
- d) Total funding for the top 9 English speaking countries receiving venture type funding is as seen below

Country Name	Raised Amount (USD)	
UNITED STATES	\$	422,510,842,796.00
UNITED KINGDOM	\$	20,245,627,416.00
INDIA	\$	14,391,858,718.00
CANADA	\$	9,583,332,317.00
SINGAPORE	\$	2,793,917,856.00
IRELAND	\$	1,676,131,350.00
AUSTRALIA	\$	1,322,934,948.00
NEW ZEALAND	\$	448,316,383.00
NIGERIA	\$	245,440,000.00

Country wise results



Based on our analysis in R and Tableau our recommendation to Spark funds is to invest in **United States, United Kingdom and India** based on their investment criteria to pick the top 3 English speaking countries receiving highest venture funding

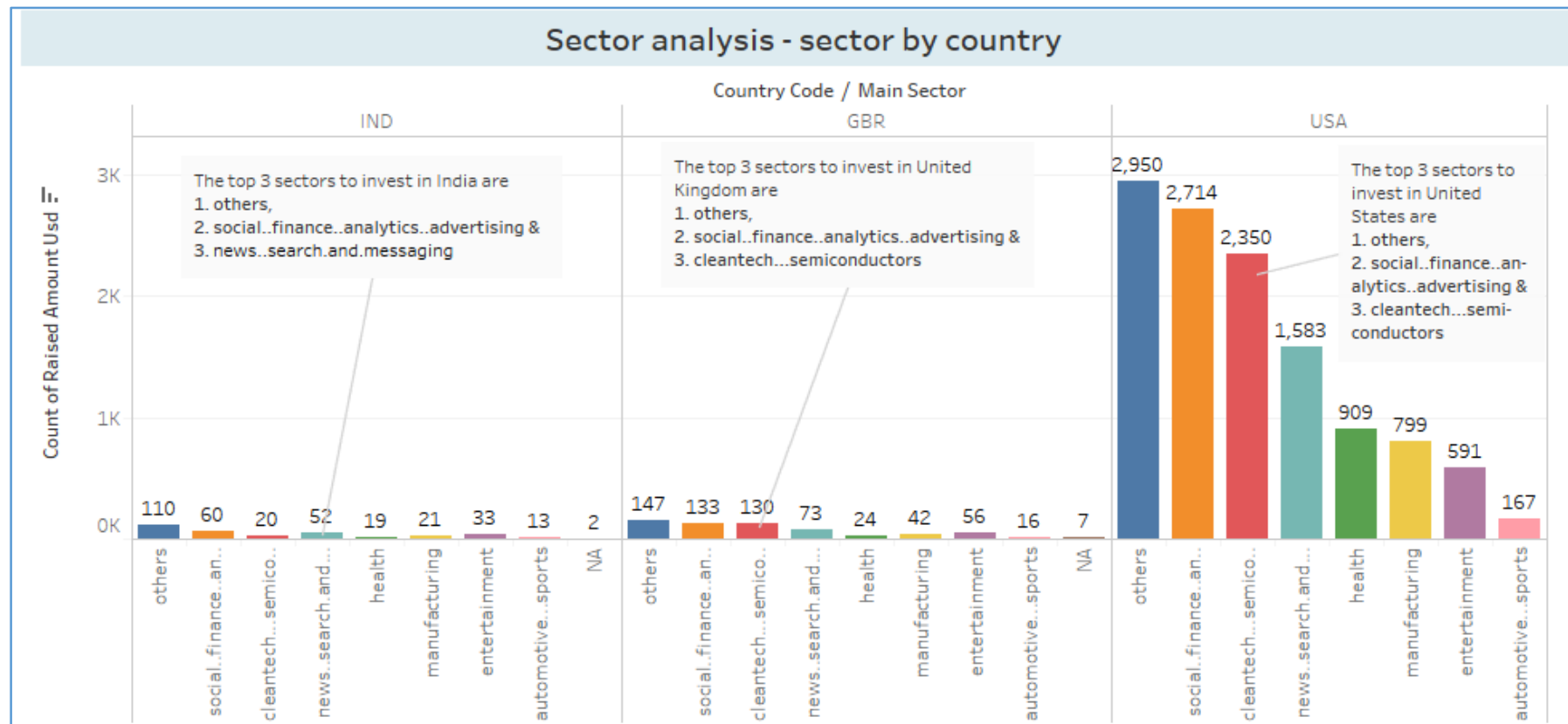
Sector wise analysis

Sector wise analysis in R:

- Performed mapping operation of identifying the Main sector based on the primary sector for each investment transaction
- Created datasets of the venture funding transactions for top 3 countries namely – Unites States, United Kingdom and India
- Following which analysis was performed by country to identify the **top 3 sectors receiving the highest number of investments**
- Top 3 sectors receiving highest number of funds by country is as seen below:

Country	Main Sector	No. of Investments	Country	Main Sector	No. of Investments	Country	Main Sector	No. of Investments
United States	others	2950	United Kingdom	others	147	India	others	110
United States	social..finance..analytics..advertising	2714	United Kingdom	social..finance..analytics..advertising	133	India	social..finance..analytics..advertising	60
United States	cleantech...semiconductors	2350	United Kingdom	cleantech...semiconductors	130	India	news..search.and.messaging	52

Sector wise results



Based on our analysis in R and Tableau our recommendation to Spark funds for sector wise investment is as listed below:

USA – **others, social..finance..analytics..advertising & cleantech...semiconductors**

United Kingdom – **others, social..finance..analytics..advertising & cleantech...semiconductors**

India – **others, social..finance..analytics..advertising & news..search.and.messaging**

Analysis recommendations

- Based on the investment criteria of Spark Funds below are our investment recommendations
 - **Investment type analysis:**
 - Our recommendation is to invest in Venture funding type based on their investment criteria of 5 MUSD to 15 MUSD for each cycle
 - One observation we want to highlight is that even though Private equity received the highest funding the %age of total funding is higher for venture funds
 - **Country analysis:**
 - Our recommendation is to invest in United States, United Kingdom and India based on their investment criteria to pick the top 3 English speaking countries receiving highest venture funding
 - **Sector analysis:**
 - Our recommendation for sector wise investment in each of the top 3 countries is as listed below:
 - USA – others, social..finance..analytics..advertising & cleantech...semiconductors
 - United Kingdom – others, social..finance..analytics..advertising & cleantech...semiconductors
 - India – others, social..finance..analytics..advertising & news..search.and.messaging