INVESTMENT CASE STUDY

SUBMISSION

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<Abstract>

Problem Statement:
- Spark Funds, an asset management company wanted to make investments in few companies. They devised a strategy & decided to invest where other investors are investing. Having following limitation:
    - Want to invest between 5 – 15 million USD per round of investment.
    - Want to invest in English-Speaking countries because of ease of communication.
- In order to make investment decisions efficiently, Spark Funds CEO wants to understand global trends in investment.
- Objective of this case study is to identify suitable funding type, best sector and countries to make investments.
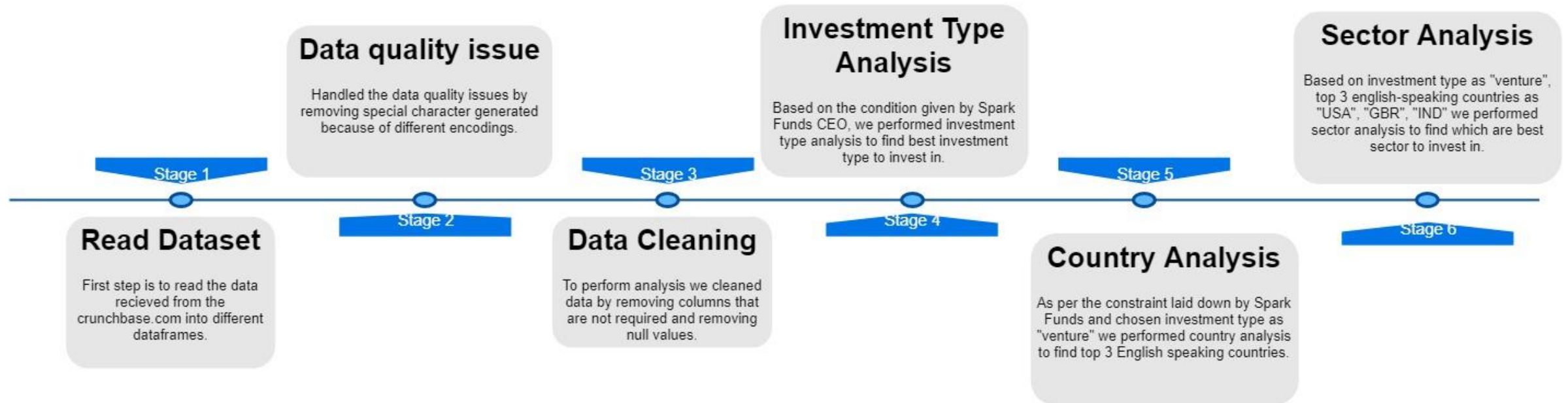
Approach:
- We worked on real investment data and prepared it into suitable form so that analysis done should be crystal clear and accurate.
- We performed investment type analysis to get the preferred investment type. And also done the analysis for countries and sectors to fine those sectors and countries where others are investing.

Conclusion
- After applying standard data analysis as per the business objective of the Spark Funds, we found best investment type, countries and sector where potential investment can be made. Detailed analysis is in upcoming slides.

<Problem solving methodology>

Use flow chart

Data quality issue

Handled the data quality issues by removing special character generated because of different encodings.

Investment Type Analysis

Based on the condition given by Spark Funds CEO, we performed investment type analysis to find best investment type to invest in.

Sector Analysis

Based on investment type as "venture", top 3 english-speaking countries as "USA", "GBR", "IND" we performed sector analysis to find which are best sector to invest in.

Stage 1   Stage 3   Stage 5

Stage 2   Stage 4   Stage 6

Read Dataset

First step is to read the data recieved from the crunchbase.com into different dataframes.

Data Cleaning

To perform analysis we cleaned data by removing columns that are not required and removing null values.

Country Analysis

As per the constraint laid down by Spark Funds and chosen investment type as "venture" we performed country analysis to find top 3 English speaking countries.

\<Analysis\>

To perform data analysis we get the data from **crunchbase.com**. Then we performed data cleaning by dropping unnecessary columns and by removing records which has no values. As a first step our aim was to identify suitable **investment type**. So we performed **investment type analysis** as follows:

1. We calculated average investment amount for each of the four funding types venture, angel, seed, and private equity so that Spark Funds can choose the type that is best suited for their strategy. And findings are as follows:

funding_round_type	raised_amount_usd
private_equity	73.938486
venture	11.724223
angel	0.971574
seed	0.747794

2. Next step was to chose suitable investment type that lies between 5 – 15 million USD. We can see from our findings that only **"venture"** comes in this range.

3. So during our investment type analysis we found that **"venture"** is the most suitable investment type for Sparks Funds.

<Analysis>

After getting suitable investment type next step was to find countries which have been the most heavily invested in the past. For that we performed **Country Analysis** as follows:

1. We calculated total amount of funding for all countries across all sectors for chosen investment type **"venture".**

    Spark funds wanted to know about top 9 countries which have received the highest total funding. For that our

    findings are as follows:

2. Spark Funds wants to invest in countries with the highest amount of funding for the chosen investment type venture.

	country_code	raised_amount_usd
94	USA	420068.029342
15	CHN	39338.918773
29	GBR	20072.813004
39	IND	14261.508718
12	CAN	9482.217668
28	FRA	7226.851352
42	ISR	6854.350477
21	DEU	6306.921981
45	JPN	3167.647127

3. So during our country analysis we found that **USA(United States), GBR(United Kingdom) and IND(India)** are three most investment-friendly English-speaking countries suitable for Sparks Funds to invest.

4. Although **CHN(China)** is at second position but since it does not have English as official language so we did not considered CHN as English-speaking country and did not consider it in our analysis & finding.

\<Analysis\>

After getting suitable investment type & countries next step was to find best sector across the eight main. For that we performed **Sector Analysis** as follows:

1. As per the business rule decided with CEO of Spark Funds we extracted primary sector of each category list from the given data. Then we performed mapping for each primary sector to 8 main sector for each company.

2. Based on the findings from previous analysis i.e. investment type as venture, countries as USA, GBR and IND and with limitation of 5 – 15 million USD per round of investment we found most heavily invested main sectors in each of the three countries. Findings are as follows:

main_sector	count	sum
Others	2950	26321.007002
Social, Finance, Analytics, Advertising	2714	23807.376964
Cleantech / Semiconductors	2300	21206.628192
News, Search and Messaging	1582	13959.567428
Health	909	8211.859357
Manufacturing	799	7258.553378
Entertainment	591	5099.197982
Automotive & Sports	167	1454.104361

USA(United States)

main_sector	count	sum
Others	147	1283.624289
Social, Finance, Analytics, Advertising	133	1089.404014
Cleantech / Semiconductors	128	1150.139665
News, Search and Messaging	73	615.746235
Entertainment	56	482.784687
Manufacturing	42	361.940335
Health	24	214.537510
Automotive & Sports	16	167.051565

GBR(United Kingdom)

main_sector	count	sum
Others	110	1013.409507
Social, Finance, Analytics, Advertising	60	550.549550
News, Search and Messaging	52	433.834545
Entertainment	33	280.830000
Manufacturing	21	200.900000
Cleantech / Semiconductors	20	165.380000
Health	19	167.740000
Automotive & Sports	13	136.900000

IND (India)

<Results>

Plot 2
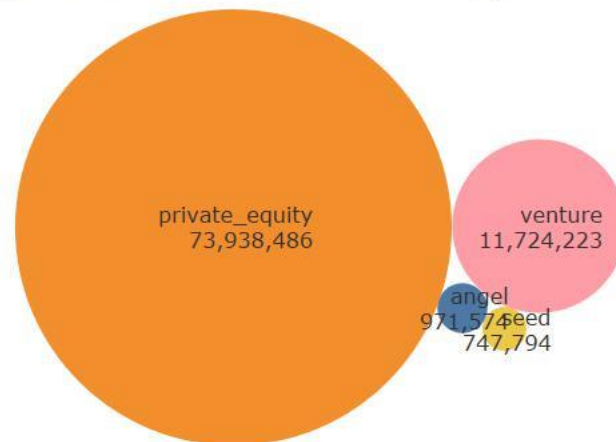
Country Analysis

Country Code

Country Code
USA
CHN
GBR
IND
CAN
FRA
ISR
DEU
RUS

<Results>
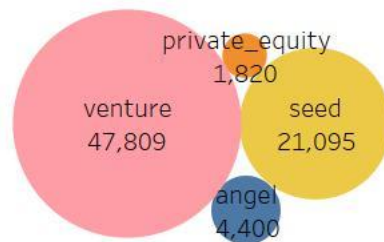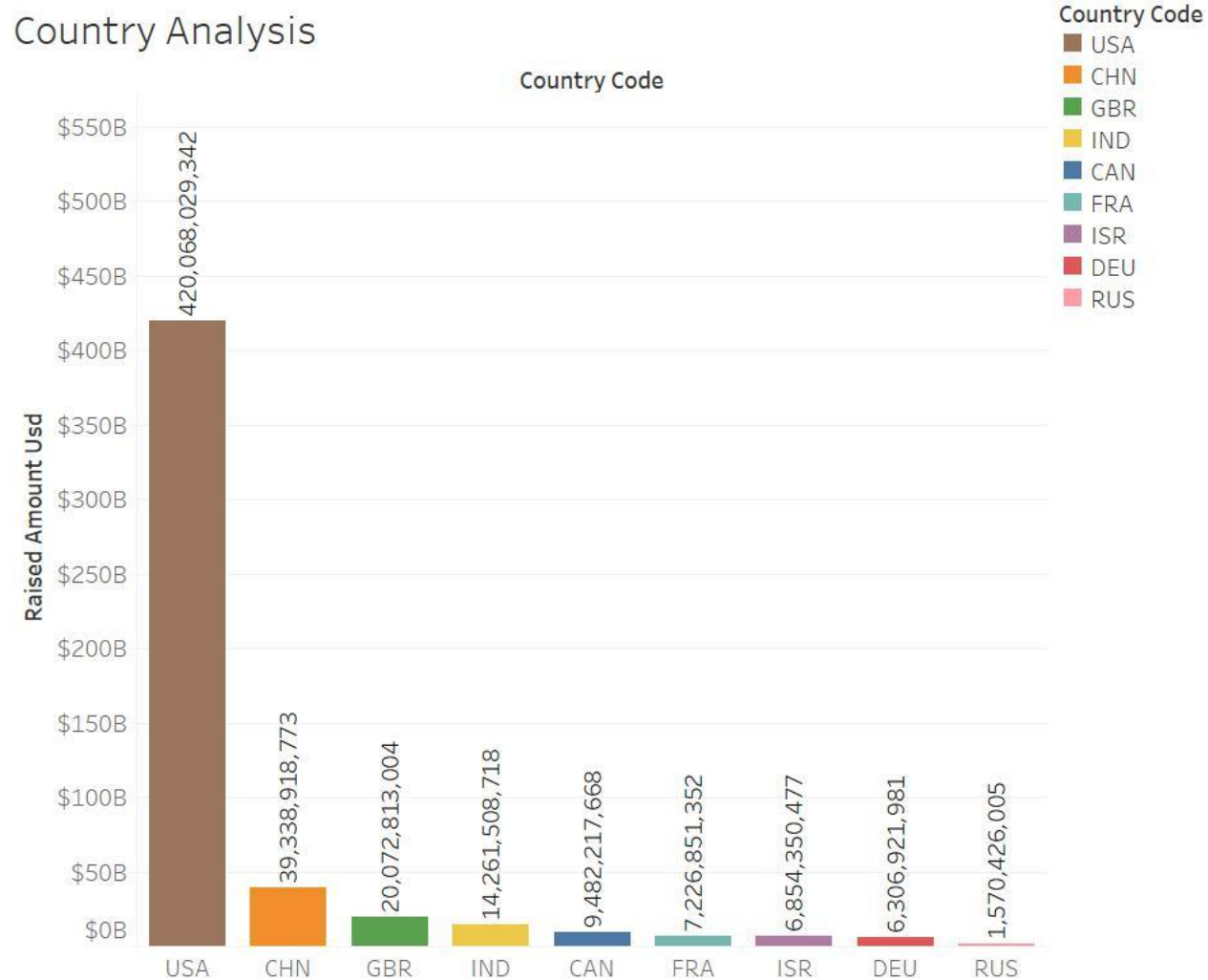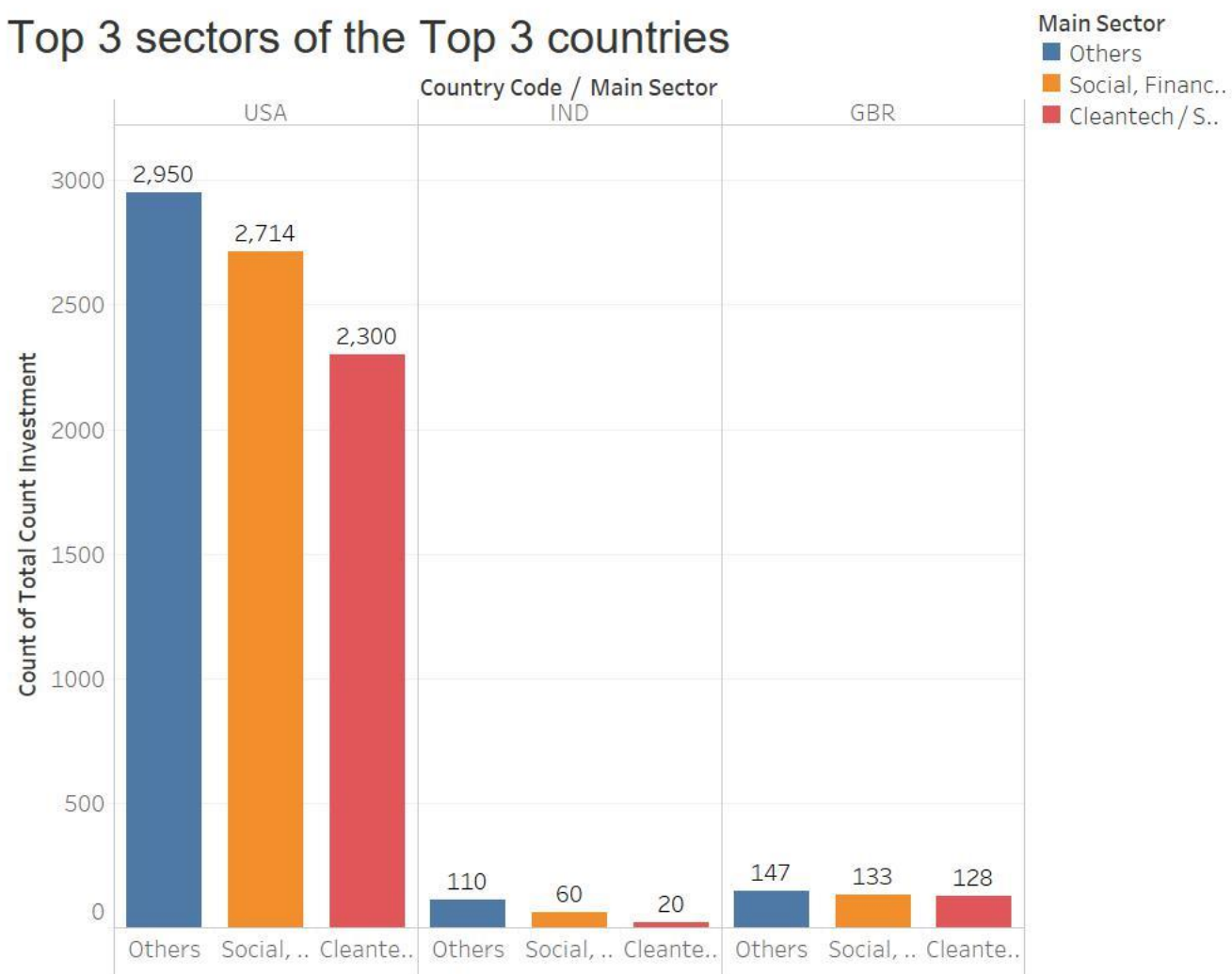
Plot 3

Top 3 sectors of the Top 3 countries

<Conclusions>

To help Spark Funds to make decision for investment, as per the objectives we performed data analysis to identify the best sectors, countries, and a suitable investment type for making investments. Below are the conclusion:

1. As per the condition given by Spark Funds most suitable investment funding type is – **"Venture"**

2. Since they want to invest only in English-speaking countries so top English-speaking country found suitable are
   1. **USA (United States)**
   2. **GBR (United Kingdom)**
   3. **IND (India)**

3. Spark Funds focus was find 'best' sectors 'where most investors are investing'. So country wise top three sectors are as follows:

	USA(United States)	GBR(United Kingdom)	IND(India)
Sector 1	Others	Others	Others
Secotr 2	Social, Finance, Analytics, Advertising	Social, Finance, Analytics, Advertising	Social, Finance, Analytics, Advertising
Sector 3	Cleantech / Semiconductors	Cleantech / Semiconductors	News, Search and Messaging