

SPARK FUNDS INVESTMENT CASE STUDY

Objective : To identify optimal investment strategies by identifying the best sectors, countries and a suitable investment type to make investments.

Strategy: To invest where most **other investors are investing**.

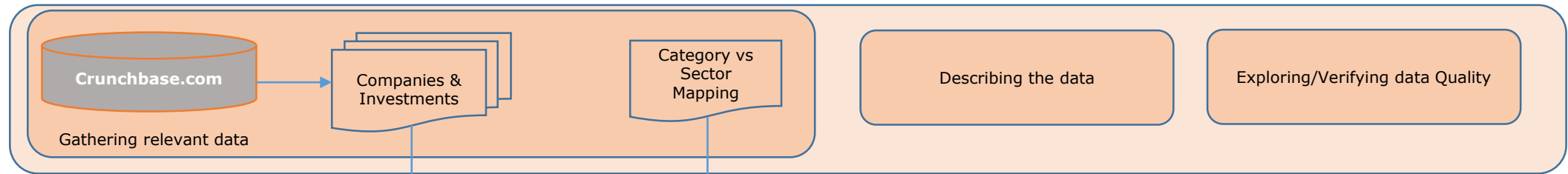
Constraints for Investments:

- Spark funds preferred investment is between **5 to 15 million USD** per round of investment.
- Invest only in **English-speaking countries** because of the ease of communication with the companies.

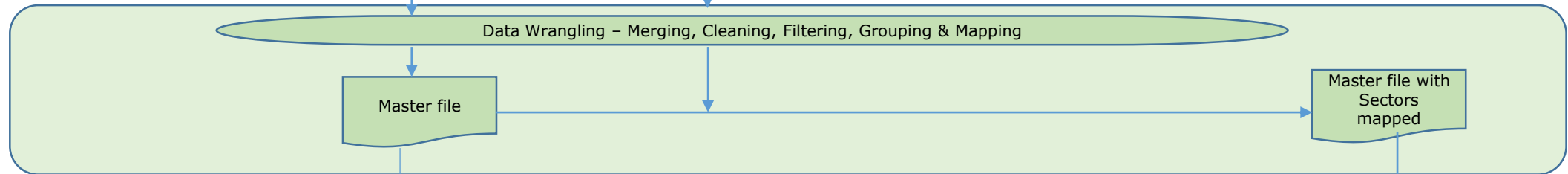
Assumptions:

- A country is considered to be English speaking only if English is one of the official languages in that country. (List of countries where English is an official language can be referenced [Here](#))
- The sector analysis is based on the category which is first in the category list column in investment file, assuming it to be the primary category of the company

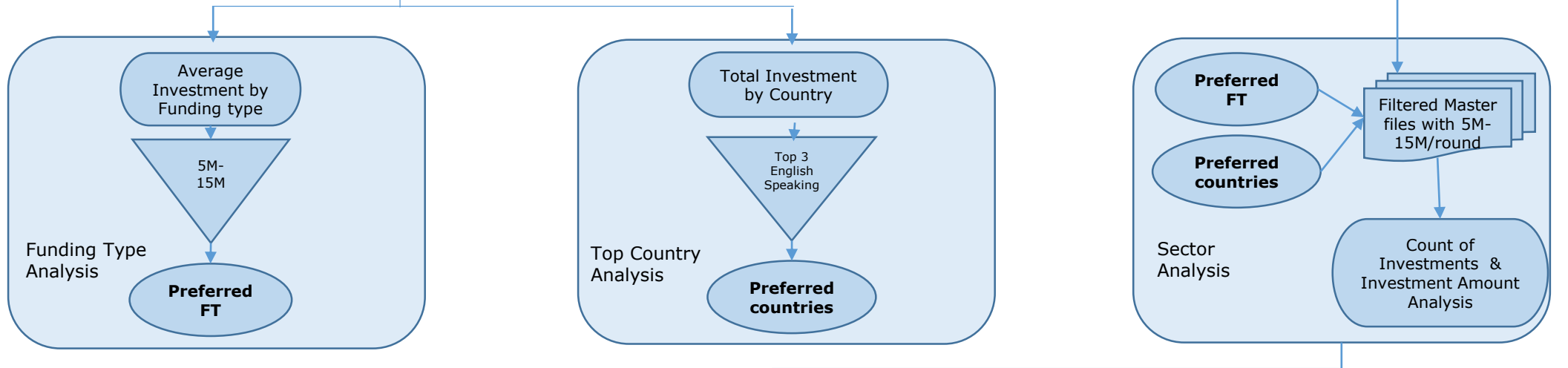
Data Understanding



Data Preparation



Data Analysis & Visualizations



Findings



Gathering relevant data:

- Companies and investment details with structured data from crunchbase.com were used as data files for this case study.
- An additional mapping file with company categories mapped to 8 main sectors was used to simplify the analysis into eight sector buckets, rather than trying to analyze hundreds of categories. Note: Sector “Others” is considered as one of the major sector.

Describing the data

- Some key fields that were considered for the analysis are Unique ID of company, Country Code, Category/Sectors to which a company belongs, Round of funding (round A, B etc.), Money raised in funding (in USD) .

Companies

Attribute	Description
Permalink	Unique ID of company
name	Company name
homepage_url	Website URL
category_list	Category/categories to which a company belongs
status	Operational status
country_code	Country Code
state_code	State

rounds2

Attributes	Description
company_permalink	Unique ID of company
funding_round_permalink	Unique ID of funding round
funding_round_type	Type of funding – venture, angel, private equity etc.
funding_round_code	Round of venture funding (round A, B etc.)
funded_at	Date of funding
raised_amount_usd	Money raised in funding (USD)

- The total no. of observations in Companies file is **66,368** and rounds2 file is **1,14,949**.

Exploring/Verifying data Quality and Data preparation steps taken to improve data quality

- Approximately 9% of the total number of companies are in closed status.

Data Preparation: Analysis was done and the results were compared including and excluding the closed companies. However Inclusion or exclusion of closed companies did not impact the decisions made regarding the preferred funding type, preferred countries, or the final decisions related to top Sectors or top Companies. Hence these closed companies were used as is for final analysis.

- Approximately 11% of the observations in Companies file had no information on Countries.

Data Preparation: These rows were ignored when calculating the final numbers.

- Approximately 17% of the observations in the Investment(rounds2) file had no details on the Money raised in funding.

Data Preparation: These records were excluded during the aggregate calculations such as when calculating average/sum.

- The category list in the companies file is a list of multiple sub-sectors separated by a pipe (vertical bar |). For example, one of the companies' category_list is Application Platforms|Real Time|Social Network Media.

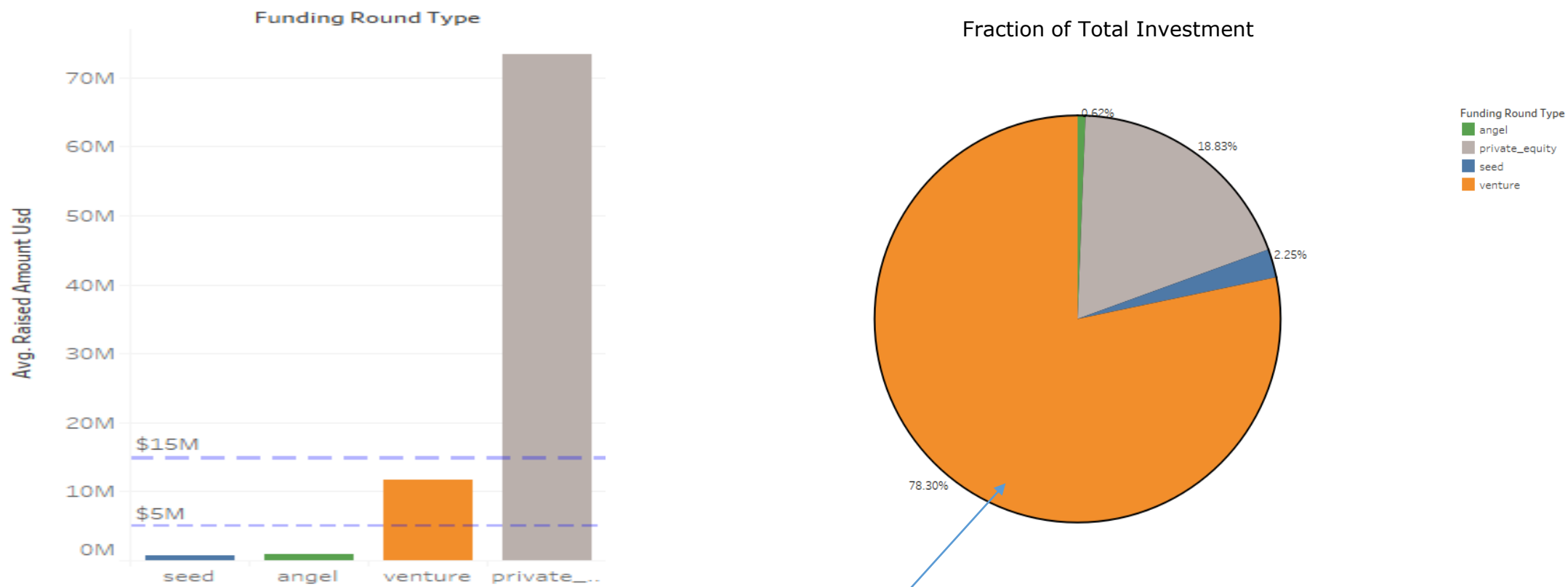
Data Preparation: As agreed, a business rule was used so that the first string before the vertical bar will be considered as the primary category. In the example above, 'Application Platforms' will be considered the primary category. This primary category was then mapped to one of the 8 main sectors available in the mapping file.

- A very few records could not find a match on sector based on the primary category but they are very negligible when compared to the total volume of records.

Data Preparation : No match observations on Sector were ignored during the final analysis.

Preferred Funding Type

(Based on Average Investment amount and Fraction of Total Investment)



Preferred Funding Type: **Venture**
 Avg. Investment Amount: **\$11,748,949**
 which is between **5M to 15M** and has
78.30% share of the total investment
 among the 4 Fund types

Top 9 countries

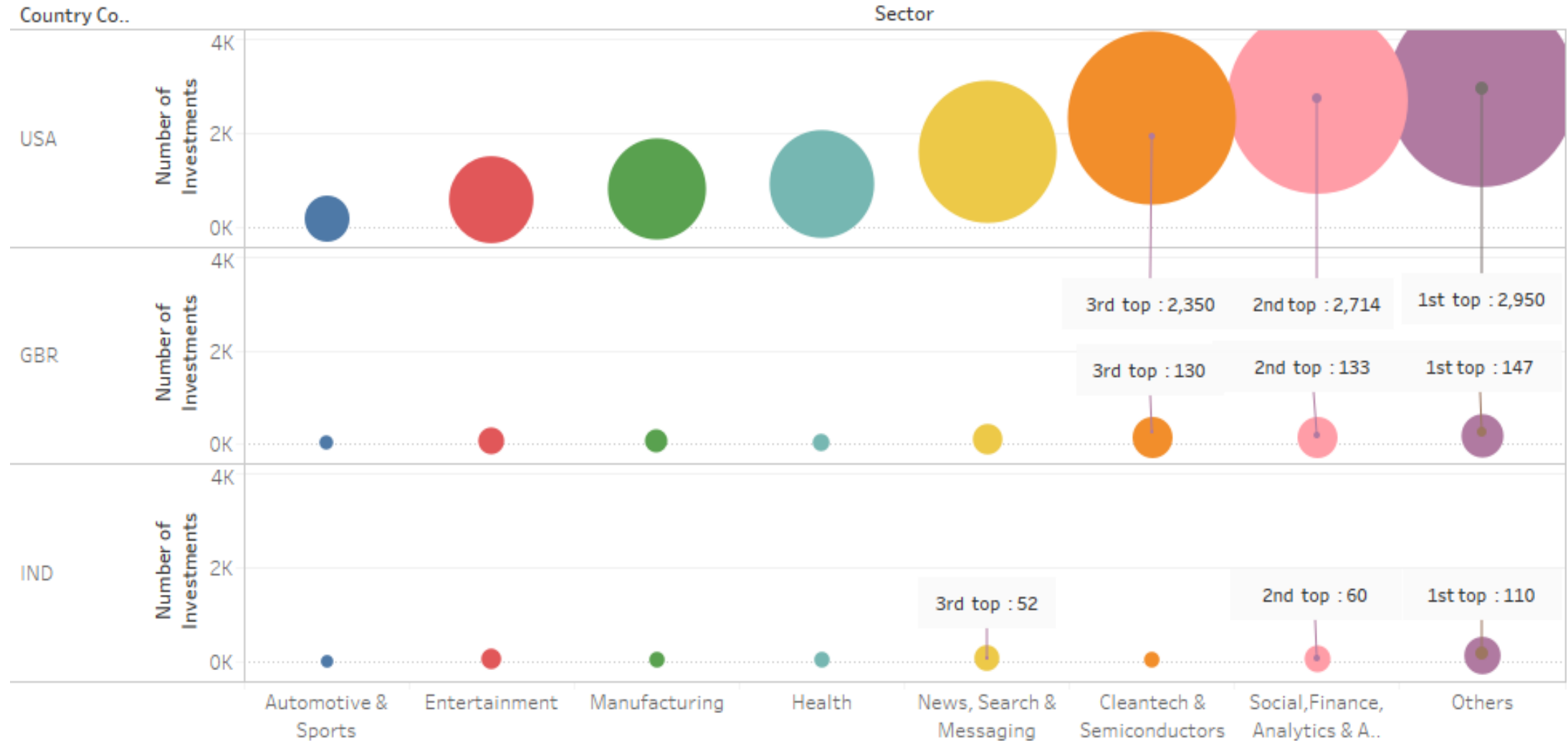
(Based on Total Investment amount
For 'Venture' Funding type)



Top 3 English Speaking Countries: **United States of America, United Kingdom, India**

Country - Sector Analysis

(Based on number of investments for 'Venture' Funding type)



United States of America(USA)

United Kingdom(GBR)

India(IND)

Others

BTI Systems Taulia
Arena Solutions Blazent Colubris Networks
Aryaka Networks AirTight Networks Bit9
Vormetric Elemental Technologies Redfin Five9
Change Healthcare Approva Black Duck Software
deCarta Virtustream Convio Capella Photonics
Zilliant 3VR

Tribold
EnvironmentIQ Azure Solutions
Enigmatec Cambridge Broadband Networks
MyOptique Group Eglue Business Technologies
ip.access SilverRail Technologies ACS Clothing
Electric Cloud Notonthehighstreet Lyst
SenSage OpenCloud Aepona
Alfresco Njini

CaratLane
Comat Technologies CommonFloor
NxtGen Data Center & Cloud Services
Maharana Infrastructure and Professional
Services Private Limited (MIPS)
ItzCash Card Ltd. FirstCry.com
Pepperfry.com Myntra
Roposo LimeRoad

Social Finance & Analysis

YuMe INRIX Vuclip Turn
Jaspersoft Damballa Hightail InstaMed Xactly Corp
Demandbase edo Interactive NetBase Solutions
SST Inc. (Formerly ShotSpotter) Zoove
Inklings Systems Visible Measures
FirstRain Lotame OpTier ChoiceStream
Intacct ChaCha Univa

Crowdcube Garlik
OpenGamma SumUp Troux Technologies
myThings Livebookings Holdings Ltd.
Celltick Technologies Neul
Coco Communications MarketInvoice
VisualDNA Zopa Kantox Sport Pursuit
Amplience Victor
SimilarWeb

TravelGuru BankBazaar.com
ShopClues.com Eka Software Solutions
Qyuki Financial Information Network & Operations Pvt
inTarvo Manthan Systems
Microland Grameen Financial Services
Komli Media Apna Paisa Shriram Credit

Cleantech / Semiconductors

Stretch Xceive Athenix
Aviir Tigo Energy DNAexus Tocagen
Biodesix Vitae Pharmaceuticals Catabasis Pharmaceuticals
ClariPhy Communications Novomer Danotek Motion Technologies
SCLenergy Cambrios Technologies Ocular Therapeutix
ALung Technologies iRhythm Technologies SoloPower
ForSight Labs Metabolon Splashtop Zenverge eASIC
Gridco Akros Silicon Stemgent
Rheonix

Xention
i2O Water Anadigm Oxitec
Oxford Photovoltaics MicroEmissive Displays Group
Takeda Cambridge Immune Targeting Systems
Elixent F-star Biotechnology Limited
EUSA Pharma Horizon Discovery
Imagination Technologies Autifony Therapeutics
Plaxica CamSemi




News Search & Messaging

Four Interactive Webshastra
PepperTap Bharat Matrimony hike Bluestone.com
One97 Communications Just Dial Mobile2Win India
Roadrunnr Matrimony.com SMS GupShup
IMImobile UrbanClap GupShup Babajob
Money On Mobile TeleDNA Quikr
Guruji

- **Preferred Investment type** : Venture funding type
- **Preferred top 3 English Speaking countries** : United States of America, United Kingdom, India
- The top 2 sectors ('**Others**' & '**Social Finance & Analysis**') remains the same for all the 3 countries.
- The 3rd top sector ('Cleantech & Semiconductors') is the same for USA and UK whereas in India the sector that ranks 3rd is 'News, Search & Messaging'.

Preferred top 3 Sectors and Companies in the top 3 Countries

Sectors	Top Company		Sectors	Top Company
	USA(1 st)	UK(2 nd)		India(3 rd)
Others (1 st)	Virtustream	Electric Cloud	Others (1 st)	FirstCry.com
Social, Finance, Analytics, Advertising (2 nd)	SST Inc. (Formerly ShotSpotter)	Celltick Technologies	Social, Finance, Analytics, Advertising (2 nd)	Manthan Systems
Cleantech / Semiconductors (3 rd)	Biodesix	EUSA Pharma	News, Search and Messaging (3 rd)	GupShup

United States of America 	Great Britain 	India 
<p>Virtustream provides cloud computing management software and infrastructure as a service to enterprises, governments and service providers.</p> <p>Number of Funding Rounds 6 Total Funding Amount \$64.3M</p>	<p>Electric Cloud, Inc. is a DevOps optimization software company based in San Jose helping organizations deliver better software faster by automating & accelerating build, deployment and release processes.</p> <p>Number of Funding Rounds 4 Total Funding Amount \$37M</p>	<p>FirstCry.com is Asia's Largest Online Portal for Baby Products and Toys. They have over 20000+ items from 250+ top International and Indian brands</p> <p>Number of Funding Rounds 3 Total Funding Amount \$39M</p>
<p>ShotSpotter is the leader in gunshot detection solutions that helps law enforcement officials and security personnel identify, locate and deter gun violence</p> <p>Number of Funding Rounds 7 Total Funding Amount \$67.9M</p>	<p>Celltick Technologies creates and manages mass OTT market mobile solutions that close the loop between mobile marketing and mobile commerce.</p> <p>Number of Funding Rounds 4 Total Funding Amount \$37.5M</p>	<p>Manthan Software Services is a leader in advanced analytics and big data for consumer industries.</p> <p>Number of Funding Rounds 4 Total Funding Amount \$50.7 M</p>
<p>Biodesix is a molecular diagnostics company engaged in the development of innovative products for personalizing medicine</p> <p>Number of Funding Rounds 8 Total Funding Amount \$75.3M</p>	<p>EUSA Pharma is a pharmaceutical company developing and licensing late-stage oncology, pain control, and critical care products</p> <p>Number of Funding Rounds 4 Total Funding Amount \$54.2M</p>	<p>Gupshup is one of the world's largest Enterprise messaging platforms being used by over 30,000 businesses including leading companies such as FlipKart, OLA, Facebook, Twitter, ICICI, HDFC and ZeeTV to engage and retain consumers</p> <p>Number of Funding Rounds 2 Total Funding Amount \$33M</p>