Boosting Start-ups with Data Science

"Data science is no longer the privilege of big technology companies. It has been a part of almost all offline and online industries."

Abstract

Truly speaking, Start-ups are the greatest achievements for entrepreneurs but a bit risky to work upon – one never knows whether their idea will work out or fail. Some even say it is a matter of luck to flourish one's start-up.

But do you believe the same? I don't feel so. I feel smarter work plan with the proper guidance can only help us in succeeding our desired goal. Focusing on innovation and implementing a smarter work plan is the only way to lead our start-up towards success, and adding data science consulting would be a wise step towards it.

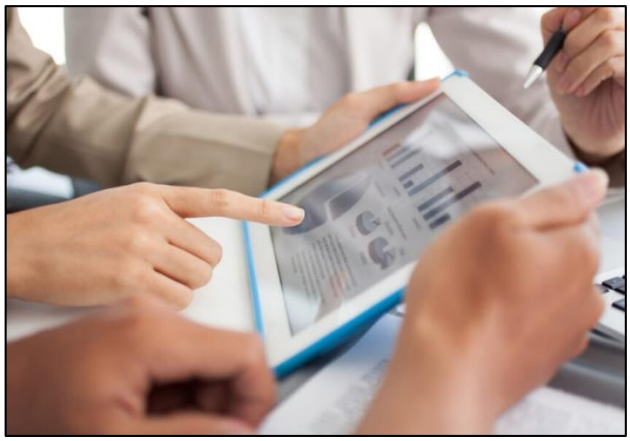
This article will speak on how data science makes start-ups successful with the specific determined goal. It will also help all professionals, founders of start-up companies and especially beginners in this field on how to implement advanced data science technologies in a start-up and provide examples of profitable data-driven solutions out there.

Introduction

Data is an integral part of almost all the industries whether it be technical or non-technical. Starting from the healthcare industry to the manufacturing industry, Data Science is quite popular nowadays. Many large scales, as well as small scale industries, are using predictive modelling for planning their business strategies. There is an abundance of data available to large scale industries but in start-ups, Data Scientists have to develop the architecture from scratch.

Throughout the world and mainly in developing countries like India, large global enterprises have long been exploiting the benefits of data analytics in their business and profiting a lot at every aspect.

For upcoming start-ups and SMEs, however, it's a different story. Based on a recent research from One Poll, it was found that 56% of SMEs rarely or infrequently check their business's data, and shockingly almost 3% have never looked at it at all. This is the only reason many innovative talents remain hidden in our using generation and we loss such youngsters by not carrying out the right path towards success.



Why is it important?

The beneficial effects of data analytics to enterprises of all sizes are well visible in the business world. It already had a profound impact on organizations' ability to better evidence their decision making capability, predict the future of their audience, pinpoint areas to cut costs, and drive profits.

Now coming for start-ups and SMEs, let's just jot down the importance for data science for boosting start-ups:

- the fundamental advantage is that it enables their faster growth in the market place with a numerous customers and profiting making platform for the team, which is the prime directive for most companies.
- business analytics can easily and accurately uncover hidden opportunities, identify trends and patterns, problem areas and successes, that ordinary people may not be able to ascertain.
- in the quest for rapid growth, it is also vital that start-ups take risks. Looking at the numbers can help greatly mitigate against these risks, and ensure they will provide some ROI and not bring down the company.

How to start with it?

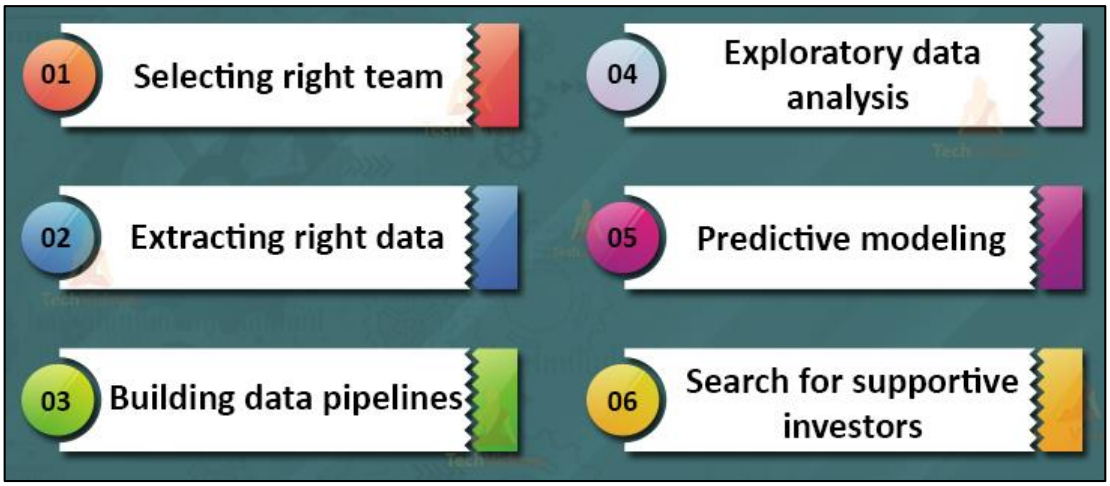
From the above content, we have got a minimum idea on why we should take data science into our consideration for faster and successful growth of our start-ups. But the main fact lies on the way of how to start with it. Keeping it into mind, let's continue our discussion more further.

The vision of a start-up's success is the idea by which it will display itself in the market world and finally, the smart work towards it. Every start-up founder thinks they've got a good unique idea, but the sad reality is that the majority don't end up with so, which is why so many tend to fail in the initial stages and some get lost within 1-2 span of years. A very few finally reach the goal.

Realizing this is never easy though, and according to me, it is only through extensive market research that we can gauge whether the consumer demand is there to make the whole project worthwhile.

- Start-ups first need to understand their markets, products, and customers, and data analytics.
- They need to know who are there target audience, their age group and finally their taste/choice of things.
- In the early stages, it is vital to look at engagement metrics and feedback from users. This can be done using free tools like Google Analytics.
- The next most important step is to bring data science into picture and hire a data analyst who will contribute the most for a successful company.
- A data scientists will only have all the proper knowledge of the various data science technologies that will help us to utilize the power of data.

So, let’s see what are the various factors that a data scientist takes into his task while implementing data science tools for succession of the project more.



Explaining every step in the above picture one by one will guide all on how we can boost our start-ups and give a clear result of importance of data science.

So, let us have a look at the various responsibilities that should be fulfilled in Start-ups to work hand-in-hand with Data Science.

1. Selecting the right team:
   Understanding the main theme behind our business or activity that our start-up is based on is the major part in ensuring its success and the first phase of any sound project. Defining the what, the why, and the how of our project for the growth of a company is the foremost task, along with a right team of efficient members, who are dedicated enough to spend all their skills and knowledge for the betterment and a definite timeline for every step is always mandatory.

2. Extracting the right data:
   Finding and getting access to the right data needed in our project is the next vital step. Mixing and merging the data from as many data sources as possible is what makes a start-up project great, so look as far as possible. The more precise data we can extract, the easier it is to work upon with. This data is either found within the company or retrieved from a third party.

3. Building data pipelines:
   After the collection of data, we generally need to process the data for extracting actionable insights and generating meaningful results. This dreaded data preparation process typically takes up to 80% of the time dedicated to our data project. Checking and remediating data errors, removing duplicate data, dropping the null values, enriching the data with data from other data sources, and transforming it into a suitable format for our models are the main look-overs.

4. Exploratory data analysis:
   Now that we have cleaned our data, it's time to manipulate it in a fair manner in order to get the most value out of it. From this data, we can actually now get a draft idea of what are we actually planning for our start-up, what are the domains to mainly focus on and who will be our target audience.

5. Predictive Modelling:
   Using machine learning and statistical techniques is the step to further achieve our project goal and predict future trends. By working with clustering algorithms, we can build models to uncover trends in the data that were not distinguishable in graphs and stats. These create groups of similar events (or clusters) and more or less explicitly express what feature is decisive in these results.

6. Search for supportive investors:
   Investors play an important role in the growth of our start-up. Supportive investors can motivate us and guide us in various ways. Some investors might prefer an experienced team of Data Scientists but it is our duty to find the investors who understand us and our start-up. Fundraising is an important part of successful start-up growth. After getting enough financial support from investors, it is crucial to set all fears away and strive for better move.

   Summarising all the above six points, we can easily draw the conclusion of how the involvement of data science is so very important for our startup and how we can start the journey of consulting data scientists for the benefits of our start-ups and how can they really turn out to be so fruitful.

Although the implementation of the above described features requires a strong focus and hard work on the data analysts, the results are worth the effort. Based on the predictions about our target customers, our small idea can finally become profitable way faster. Armed with the knowledge, we will slowly start to know how to use time and financial resources further. As, the best start-up products become acquired by giant tech companies for billions of dollars.

Till now, we have seen what is actually data science, its importance in boosting our start-ups, how one can start the journey of considering data science in the initial stage of their start-up and finally, the role of a data scientists and his different responsibilities.

Now, in the later part of this article we shall see how data science has really helped some start-ups to boost themselves; in other words, applications of data science in start-ups and finally, its role in our country and briefing out few of the job opportunities available in the data science domain.

Real – time applications

As a part of this article, we have tried to collect few well-known start-ups who have managed to win investors and become successful. However, the list of such start-ups is a more extended one, but we have focussed only in a few of them as the goal here is to highlight how data science makes ideas real and profitable

Retail Store Shoppermotion:

- Shoppermotion is an US-based start-up that offers offline retail stores to use the power of big data, machine learning, and geo-location to increase sales.
- All these technologies help track customer behaviour inside the store, watch and analyse customers' interaction with goods
- It helps to make decisions to predict about future behaviours of the customers buying products based on the past ones.

Healthcare Sector Babylon:

- This British start-up worked on the implementation of AI technologies.
- Its functionality is to make a diagnosis via the app based on the patient's indicated symptoms.
- In this app, networks can compare different symptoms and other patient's data like U/S or MRI with the ones already present in its base, and then identify a disease.

Beauty app Hi Mirror:

- Hi Mirror app is a smart mirror user friendly application that provides tips on skincare based on its look and the information about the user's make-up products.
- The "smart" part of this app is that it analyzes the state of different skin areas and makes a conclusion about what kind of skincare a person needs at the moment.
- The app is developed in such a manner that it is affordable for every family with an average income in a developed country.

Entertainment in MSQRD:

- MSQRD (or Masquerade) is a Belarusian start-up which is based on face recognition technology of its users that allows people to use different face filters and take photographs.
- In 2016, Facebook acquired this video filters app.
- It serves as a part of the bigger service rather than a single application.

Security of Darktrace:

- Darktrace is a start-up product that predicts possible cyberattacks on the Internet.
- Darktrace AI, also known as Antigena, reacts in the right time to eliminate an imminent threat.
- At the same time, it also offers the so-called Enterprise Immune System – an unsupervised machine learning technology for trapping threats in complex enterprise systems and destroying them.

Thoucentric:

- This data analytics startup creates process-based technology solutions for complex business problems.
- They make the use of all major analytics methodologies like predictive, prescriptive and cognitive analysis to resolve all kinds of operational issues.
- Their range of solutions include a ‘demand sensing platform’ which predicts short-term demand forecast and has till now reduced man-hours adequately for all their clients.

Zendrive:

- Colleagues from Google came together to address global issues with transportation systems.
- This data analytics startup created a state-of-the-art technology platform to leverage mobile sensor data and gather insights.
- These insights proved to be crucial in averting road accidents and by extension, road traffic deaths.
- They evaluate this data to understand driver behaviours and road risks, to reduce chances of collisions.
- The technology they use is AI-powered and data-driven to offer behaviour analytics solutions to customers.
- Their biggest achievement is that their algorithm predicts collision risks six times more accurately than competitors.

Turing Analytics:

- Turing Analytics has resorted to Machine Learning as the main technology to provide business solutions across the globe.
- With a team of 7+ intellectuals, Turing Analytics has successfully established big data analytics solutions for national clients, like Shopclues, and global clients such as Tata, Kimberley Clark, etc.
- The founders believe that visual search is the next generation of search, users will interact with retail platforms visually in the future.

Turing Analytics

Data Science in India

Truly, Data science has enabled numerous start-ups and small enterprises throughout the country to bring distinctive offerings making improvements in the business landscape as well as people's lives.
Our entering of 2020 meant a new beginning of technological advancement and information augmenting the business landscape globally. Businesses that possess information are looking to make intelligent use of this otherwise junk data.
India has undeniably became one of the cornerstones and major hub of the IT industry today. Enterprises today leverage the power of data to hire, train, and improvise functions within organisations. At the same time, only the collection of data is not enough. The involvement of highly skilled data scientists is most vital and so, the rapidly increasing demand for data scientists and experts can't be ignored.
IBM has predicted that the demand for data scientists will soar 28 percent by 2020. It is the very need of the hour for organisations to hire employees armed with data science to create relevancy with the market requirements and sustain in the competitive business environment of the present and the future.

The best career options of data scientist in countries like India are as follows:

- Data Analyst:
  A Data Analyst interprets data and turns it into information which can offer ways to improve a business, thus affecting business decisions. The main responsibility of a data analyst is to gather information from various sources and interpret patterns and trends.
- Business intelligence (BI) developer:
  The Business Intelligence Developer is responsible for aggregating data from multiple sources in an efficient data warehouse and designing enterprise-level solutions for very large multidimensional databases. Debugging, monitoring and troubleshooting BI solutions, creating and deploying reports are the main duties.
- Data architect:
  A data architect is a practitioner of architecture and data management discipline concerned with designing, creating, deploying and managing an organization's data architecture. It is closely allied with business architecture and is considered to be one of the four domains of enterprise architecture.

- Applications architect:
  In the world of technology, an Application Architect plays an important role in the design and analysis of software projects. They create new applications or improve existing applications, run software tests, develop product prototypes and create technical documents and manuals relating to application development.
- Infrastructure architect:
  Infrastructure Architects design and implement information systems to support the enterprise infrastructure of an organization. They ensure that all systems are working at optimal levels and support the development of new technologies and system requirements.
- Enterprise architect:
  An enterprise architect is someone who is responsible for making sure that a company's business strategy uses proper technology systems architecture to achieve its goals. Enterprise architects have an enormous degree of responsibility, and typically report directly to the chief information officer (CIO).
- Machine learning scientist:
  Machine learning engineers/scientists are able to work with (and sometimes sit on the same teams as) engineers who maintain production systems. They understand software development methodology, agile practices, and the full range of tools that modern software developers use: everything from IDEs like Eclipse and IntelliJ to the components of a continuous deployment pipeline.

Final Words

Soon, the technology world will witness significant improvements in NLP for making human interaction with products even more personalized.

Self-driving and flying cars will become our usual transport, and scientists will invent more new features to improve businesses. Both online and offline businesses will become smarter and new ways of data security are about to be developed.

In a decade or so, these technologies will become usual, but now data scientist skills are in high demand worldwide.

While AI and neural networks still surprise people, it's a good time to start getting our benefit out of data science.

So, if us have an idea and can share it with the world, make it successful with data science.

In this article, we have seen the various aspects of Data Science for start-ups.

If you are also an aspiring Data Scientist and planning for a start-up, then this article will definitely help you.