




GeM
General Management
E-Magazine

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 **N. L. Dalmia Educational Society**

TEAM GeM

“Data is the new oil”

The quote credited to the Mathematician Clive Humby, written in 2006, has recently picked up steam after the Economist published a report titled “*The world’s most valuable resource is no longer oil, but data*” in 2017.

This quote is significant in multiple ways; the reality about oil is the fact that it has a limited supply and finite uses. The reality about data is, as long as there are humans around, we will always create more data.

Harnessing the data humans create every time they open their browsers and analysing it successfully to understand customer behavioural patterns for optimum profits has become a matter of life and death. If companies want to keep crossing their breakeven points and brands want to continue being relevant, they need to focus on the data readily available at their fingertips.

Keeping this current scenario in mind, we at team GMC- The General Management Committee Magazine of N. L. Dalmia Institute of Management and Research, have given an opportunity to the young leaders across B- Schools to share their views on the topic, “Data is the New Oil” which has created an uprising across the entrepreneurship horizon.

On this note, we present to you The General Management Committee Magazine Edition 1.0.

Hope you enjoy this short yet insightful edition!



DIRECTOR

Prof. Vijay Ramachandran

Oil is oil. Data is data. I suppose the parallels between the two are a/the value of the commodities, and b/the fact that both reward handsomely the countries, companies, and individuals who control them.

Oil was largely controlled by the countries that produced it, that were blessed with natural reserves, and that had the technical know how and resources to exploit those resources. The same applies for data, except that it is much more deeply rooted in the way the world works today.

Just having data is not the preserve of countries any more. It is owned by corporations, most of whom are not particular about how they monetize the data. All the liberal democratic protection of the rights of the individual matters less to these corporations than the generation of vast amounts of profit for themselves and their shareholders.

Like oil, how the collection and use of data is regulated will have vast implications for all of us. Governments, who know a good thing when they see it, will step in with Commissions and regulators. Some will use (or misuse) the data, and the help of the corporations that own it, to influence policy and elections.

Some will try and stay away, believing that the free market should operate independently to regulate it. Neither will be unaffected.

I hope you get some interesting insights from the various viewpoints presented.

Thanks and regards!



Just having data is not the preserve of countries any more. It is owned by corporations, most of whom are not particular about how they monetize the data.



HOD, GENERAL MANAGEMENT

Dr. Vaishali Kulkarni

I commend the GMC team for selecting a very relevant topic in this emerging business era : Data the new oil!

Just like oil which gains extra worth when transformed into more constructive objects; when data is processed, analyzed and utilized efficiently and instantly, it will have much of a great value.

Digital innovation is reshaping the way most industries and businesses are functioning today. Robotics, augmented/virtual reality sensor technology, IOT, Machine learning and other disruptive technologies are poised to transform businesses.

By 2030, data collection and analysis will become the basis of all future service offerings and business models.

I hope you will enjoy the GMC magazine articles and gain new insights about emerging technologies.



FACULTY IN CHARGE

Dr. Durba Chakrabarty

Where are we as a “Nation” standing right now? Given the challenging times of Covid-19 which is yet not over, and might persist for some more years, we still have a ray of hope. India as a nation can keep striving for the best by utilizing our resources in the most efficient manner. It reminds me of the words of Jeffrey Fry, "Sometimes life seems a dark tunnel with no light at the end, but if you just keep moving forward, you will end up in a better place." We as a nation are moving in the right direction, with massive vaccination drives, large scale testing, and right dose of initiatives taken by government, monetary authority, corporates, and the general masses who are toiling hard to put India back to the path of recovery and economic growth.

In this current scenario, our general management students have once again proven their mettle in going a one step further to move from a newsletter to a magazine. It gives me immense pleasure to release the first edition of General Management e-magazine, titled GeM and the theme is “Data is the New Oil”. I would like to congratulate each and every member of this young & dynamic team of students who have put their minds, soul and energy in creating this beautiful magazine. I am sure our readers will enjoy this edition as it has a perfect blend of articles from junior and senior students to even alumni.

Kunal Sodhani



Data is the New Oil



“Data is the new raw material for any business.” Data is increasing at a rapid pace and the rate of growth of information is very high. “The goal now remains to turn data into information and information into insights.” But there has been a huge difference between data then and data now. Now, it is about hacking human minds. Two important elements contribute towards the same i.e., a lot of computing power and a lot of biometric data. Until now, we didn’t have enough data to suggest what is happening inside our body and brain. Advances in computer science, especially the development of machine learning and artificial intelligence are giving us the necessary computing power. At the same time, advances in biology and brain science are giving us the necessary understanding of what is happening inside the brain and body of humans.

“When you merge the revolution in InfoTech with the revolution in biotech, you get the ability to hack humans.”

The below pictures depict the reality: (Key to Win: Summation of Info and Bio Tech Data)

Data is the new Oil in several ways:

Once spilled it is impossible to put back into a barrel, same as once data is leaked, almost impossible to get it mended. Example: Facebook

Energy can be extracted from oil, whereas valuable information can be extracted from data.



More oil is more proportional to revenue, in the same manner more you know is more proportional to the data what you have.



Businesses around the globe has been using data for create a niche and have an edge against their competitors: Data helps them in:

- 1.Improving efficiency
- 2.Market Understanding
- 3.Cost Reduction
- 4.Better Decision Making
- 5.New Products/Services
- 6.Industry Knowledge
- 7.Finding new opportunities
- 8.Improving existing Processes
- 9.Understanding Consumers and their changing needs

We have all turned spies on each other, we no longer need security cameras. Big data is creating pictures of our lives and our behaviours every day, just like the camera of your smart phone does. Big corporations and institutions are gathering all the data, putting them together and creating detailed pictures of our lives. The social media websites we visit are all reading you, your behaviour, and your likes and dislikes every single moment and the companies are making immense investments to understand your behaviour to suggest and give you what you want. Companies are converting this data into intelligent action.

Data is going to have more value in the future. We are going to build economies based on our data. Data will become a currency aid. Companies like Apple and Google are doing the right thing by protecting their data which acts as their secret sauce. Today, as access to data and data analytics is the key, Data privacy is more important both on personal and professional front. Every country needs to have their data privacy laws and also need a global conduct for the same. You just can’t talk about big data without talking about things like privacy and ownership. To conclude, I would like to say the world will torture the data and it will confess to anything.

Vasim Shaikh



Building Data-Driven Organization

"Data-drivenness is about building tools, abilities, and, most crucially, a culture that acts on data."

- Carl Anderson, Author of Creating a Data-Driven Organization

A data driven organization is one that recognizes the importance of data in decision making. It involves encouraging a culture that promotes the use of data over gut feeling. Decisions backed with facts and data are chosen rather than the decision maker's designation.

Researches have shown that organizations with a data driven culture bring improved performance, both in the financial and operational aspects of the business.

The Economist Intelligence Unit found that around 70% of executives consider data as important for their company's competitive advantage. (2) We find similar views in the MIT Center for Digital Business. (2)

Having a data driven culture brings significant benefits, but building one is a difficult task. A PricewaterhouseCoopers (3) study found almost half (43%) of companies "obtain little tangible benefit from their information," and 23% "derive no benefit whatsoever."

In this article, we identify five critical and important ingredients to build an efficient data driven organization.

1) Build a strong and reliable team

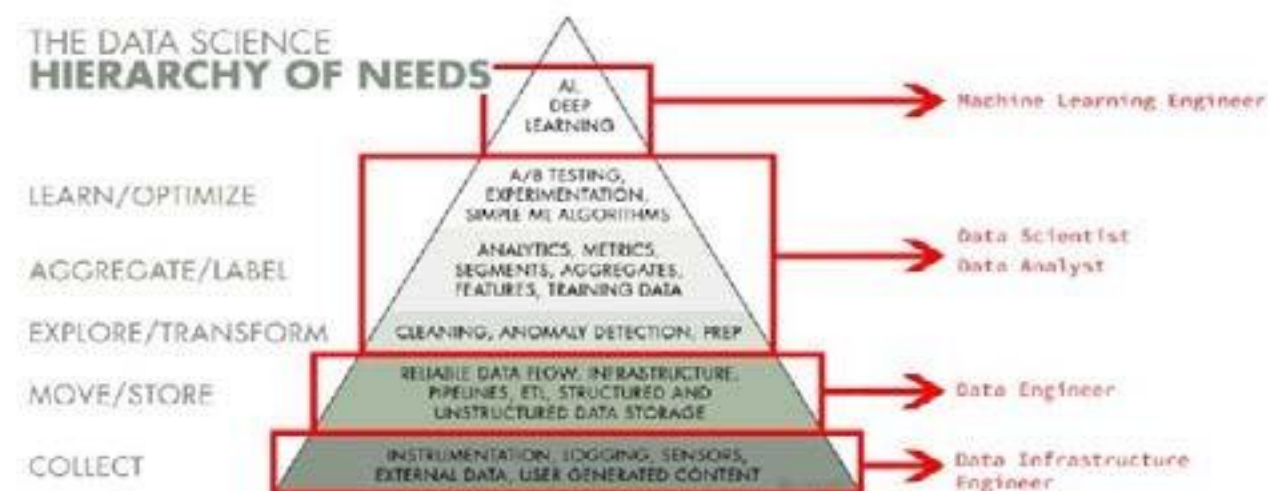
Building a data-driven culture is not an individual's responsibility, it requires a dedicated and motivated team. It is important that we identify the exact role, hire, and retain the right talent. Some of the important roles are data analyst, business intelligence analyst, and data scientist. On the engineering front, we will need an infrastructure engineer, a data engineer, or an ETL developer.

2) From multiple sources to a single source of truth

Data is generated across business units and hence needs a "single source of data truth". A single source of truth is a destination such as a data lake or data warehouse where data is blended, stored, and maintained. This single source of data truth is the enabler of data culture. It will be often used by data analysts, data scientists, and business executives to analyze data, discover patterns, and derive data driven business decisions.

3) Data Literacy

Traditionally data were used in silos (held by a central team). One of the biggest challenges in data initiatives is to connect the right employee to the right data, thus creating synergies and generating value for the business. Companies build data dictionaries, graphical representation, and data discovery (4) tools to help employees discover data.



These tools help people across the organization to find relevant data, identify its authenticity, understand description and its frequency of usage.

4) Change Management

A data insight leads to change, more specifically a change in action. An appropriate change mechanism should be planned to ensure a smooth transition. A detailed plan, vision, and benefit need to be communicated to every team involved or affected due to the change.

Resistance is one of the major barriers during change. We must build confidence and gain the trust of our employees while making the change. Driving a data culture is a long-term strategy for the business.

5) Data Security

Data access across organizations brings its own challenges such as adherence to compliance and data security. As a part of governance, the leadership team needs to ensure that there are standard policies, procedures, and metrics in place to monitor compliance and data security. A 2018 survey found "A 53% majority have confirmed insider attacks against their organization in the previous 12 months" (5). We should invest appropriately in training employees, encrypting data, and appropriate preventive systems.

The ingredients mentioned above are not exhaustive but generalized in nature. Based on my experience I consider them crucial to use data in the form of new oil, what do you think?

Shankar Raj Purohit



Building Data-Driven Organization

Title - "In 2021, without data, you're simply one more individual with a mere opinion."

"Data is the new oil. Like oil, data is significant and in case if it's in a raw form, it can't actually be utilized. It must be changed into a usable, structured & conclusive form, and thus becomes a vital element that drives beneficial action in business. This well-known term, comparing data with the most traded commodity - oil, was given by a British mathematician Clive Robert Humby who is an entrepreneur in the field of data science and client-driven business systems. This quote makes more sense now in the corporate world. With the business elements changing, Leaders across the world are currently more leaned towards upgrading business capacities by successfully using the Data.

Some Interesting Big Time Big Data Statistics 1

The big data analytics market is set to reach \$103 billion by 2023.

Poor data quality costs the US economy up to \$3.1 trillion yearly. In 2020, each individual produced 1.7 megabytes in a second. Internet users generate about 2.5 quintillion bytes of data each day.

95% of businesses cite the need to tackle unstructured data as a problem for their business.

97.2% of firms are betting huge in big data and AI.

Using big data, Netflix saves \$1 billion per year on customer retention. Before you can comprehend the manners in which enormous data is utilized in your regular daily existence, you should have a fundamental idea of what huge data is and how it is accumulated. Studies show that 2.5 quintillion bytes of data are made every day as our numerous web-associated gadgets track, produce, and store data. That number is relied upon to keep on expanding as web access and use improve and grow all throughout the planet.



The world has never seen this measure of data gathered so quickly. So, data is all over the place. Enormous gatherings of data are absorbed and afterward broken down for experiences into human conduct, past, present, and future. Specialists of numerous sorts are attempting to apply the information acquired from enormous data in an always developing number of ways. Huge data is changing the way individuals carry on with their lives as it is applied to fields, for example, quite possibly the most evident and individual way huge data influences your own life is through the diversion and media you burn through. This incorporates music real-time features just as TV and film stages. Streaming has altered the music business, and the vast majority utilize at least one of the most famous music real-time features. Organizations like Spotify and Pandora depend intensely on enormous data, following what music you pick and like to divert your involvement with ongoing.

Large data additionally impacts two of the essential sectors that will shape your future: education and employment processes. College admissions and hiring practices both follow the assortment and utilization of enormous data.

Numerous schools and colleges presently depend on measurable projects intended to distinguish and draw in understudies who empower the foundations to meet inner objectives. For instance, schools' benefit from higher paces of enlistment among conceded understudies and from further developed graduation rates. Confirmation's choices regularly incorporate work with data intended to foresee accomplishment for the two understudies and instructive establishments

Thus, Data predominantly helps you with continuing with your life even more successfully and organized in this tangled world. It will be really interesting to see what the future holds as data is now taking ahead of our economy in every space.

Reference -

<https://techjury.net/blog/big-data-statistics/#gref>

Vinod Raisinghani



Data: The New Oil

The phrase reminds me of the sci-fi Netflix series ‘Black Mirror’ wherein it majorly covers parts of our lives that could be controlled by Data, Robotics or AI. One such episode deals with the scenario of the protagonist dealing with her experiences of having live public approval ratings based on her Social behavior and how it could affect her life. Scary! Isn’t it?

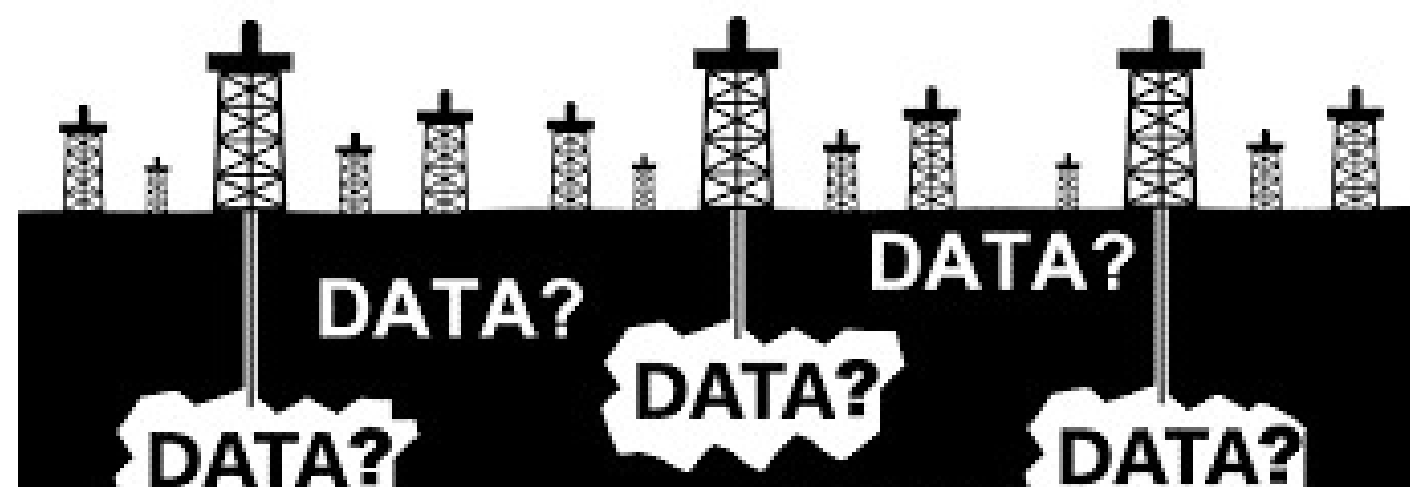
Not franchising the above thought or to the fictional curiosity of the writers. Data can be quite useful as well. It could be the lease that Mankind is looking for the past many centuries. Information can be extracted from Data as energy can be extracted from Oil. Data is an essential resource that powers the information economy in much the way that oil has fueled the industrial economy. Today, we see a lot of data and analytics being used for Climate Challenges, Elderly and Medical Care, Stock Markets or even by the governments for various Public benefit policies.

The concept behind ‘data’ is just like ‘oil’. Raw data is not valuable in and of itself, but, rather, the value is created when it is gathered completely and accurately, connected to other relevant data, and done so in a timely manner. When properly refined, usable data quickly becomes a decision-making tool – information – allowing organizations and governments worldwide to react to market forces and be proactive and intentional in their decision-making. It reduces the uncertainty by a good margin.

Countries that have oil are not the richest but those with super-intelligent capacity to refine. This is why a country like ours will pay so much for refined oil. Data is a similar asset which has its valuation already soaring high in some sectors and has the capacity to increase the reach as well as value that it produces.

Five most valued companies today have basically commodified data and have taken over their respective sectors by selling – access. In most of them their recommendation or paid advert engines are responsible for 35% to 40% of their revenue. These giant data keepers gather information about various aspects of our lives including our buying behavior and decision making. It gives them tremendous power and soaring profits in almost everything they get into.

It is imperative that we use data not only for making money, increasing business, increasing jobs and better our standard of living but also use data for the betterment of humanity. We have seen governments using the demographic data for implementing mass level policies in developing nations. It should be taken ahead and used on a large scale to provide the boost Medical science and health care workforce requires in order to fight the impending Pandemics. We should take it on ourselves to use data and reduce Poverty and Hunger across this living planet. Countries like Israel have proved that Agriculture when done smartly and with the help of proper data analysis can produce more with limited resources.



Data could be an answer to our age old problems and more. There is still a lot of potential to be explored in this auto-renewable resource.

We could very well conclude this with the thought and possibilities that Data could bring in our lives. It also has its aspect of negativity, but it could open up a lot more ways to better lives on this planet. In the words of the great statistician and the father of modern quality management, William Deming, “In God we trust; all others must bring data.”

Sanchita Chavan

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Paradigm Shift in Businesses using Data

In this new era of technology, data has become a priceless commodity. The one who owns the largest amount of data is the king. Business models of companies now focus on gathering user's data. For this, increasing user engagement is the key; because the more time a user spends on their website the more lucrative data about their personal preferences is going to generate. Data can be called the new oil. These two valuable commodities, one pumped out of the ground and other pumped out of the users have been the bases of economic revolutions and each one became the foundation of enormously profitable monopolies.

There are five main reasons why business models are now data driven.

1. Better Targeting

Using data, which form of advertising reaches customers better can be determined which in turn makes a positive impact on them buying the product. It also enables companies to understand which methods of advertising the product have a greater impact on the target audience and at what scale should such advertising be adopted. A lot of money can be saved by appropriately investing it into different areas using data. For instance, if the target audience is interested in product x and not much in y then less money would be invested in product y. Having information about the customer can save a lot of time and money.

2. Knowing Target Customers

Target customers are basically potential buyers which is a subset of the entire market for the product. Knowing target customers is one of the most important things for business. Data analytics can help determine the performance of different products or businesses in the market. It can give information on which customer prefers which product so that the marketing can be done accordingly. The trends in the market can also be made available based on consumer spending and tastes. When enough information on these vital things are available, businesses can direct their focus to produce or distribute certain goods or services to fulfil their potential customer's desires. The statistical data is also crucial in setting prices of various products and businesses.



3. Updation in Old Strategies and Technology

Analysing data gives a rough outline of the future trends based on the present customer behavior. This enables the companies to adapt to future changes in advance and appropriately change their strategies. There is a scope for futuristic innovation of top class products and services with which companies will have a sharp edge advantage over other competitors and reap maximum profits.

4. Cost Cutting

Finances can be efficiently managed by analysing the finances of different sectors of businesses. A lot of cost cutting can be done by determining the sectors that do not require finances and are unnecessarily using it. By analysing the data companies can figure out which form of advertisement strategy to use, products/services to produce or discontinue and the target customers. This offers a saving in the cost which otherwise would be wasted unnecessarily without adding any value to the business.\



5. Helps Solve Problems

Major business problems can be dealt with by making informed decisions using data analytics to avoid any occurrence of loss. Any breakdown in the business system and technical system can be detected which may cause problems in the quality of work. Various risks can be calculated which help companies expand and grow.



In conclusion, data analytics helps in filtering out the useful information. It plays a strong role in the growth of any company. The one who understands their customers well is the one who leads in business.

Pooja Bhatia

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The New Oil that Caught Fire

From operations and marketing to logistics and product and finance, making a decision is now controlled by data at every level of most large private organisations. Along with data, having the internet of things (IoT) increasingly allows frontline crisis managers to make better decisions across the strength, response, and rehabilitation cycle. The best is still to come with drones flying around or, simulated visualizations and artificial-intelligence-induced catastrophes, today what we're witnessing on the frontlines is just the beginning of what might make a revolution in the 21st century.

It has been calculated that over 100 billion Internet of Things (IoT) linked devices will be connected worldwide by 2025, tossing out huge amounts of data. And each time we're using our mobile phones, accessing our social media accounts, or completing an online form, we're producing data too.

Along with this comes the data fear, where obscure and not so obscure organisations gain access to and take advantage of our information for their advantage. And maybe this is partly why data is attributed so much power, influence, and impact.

If data as used by Google, Facebook or other such companies actually helped producers and retailers, retail sales in the nations where these companies are particularly powerful should have recorded precipitous escalations. Nothing of the kind occurred. As Google and Facebook grew, retail sales growth remained constant and even, lower than record levels.

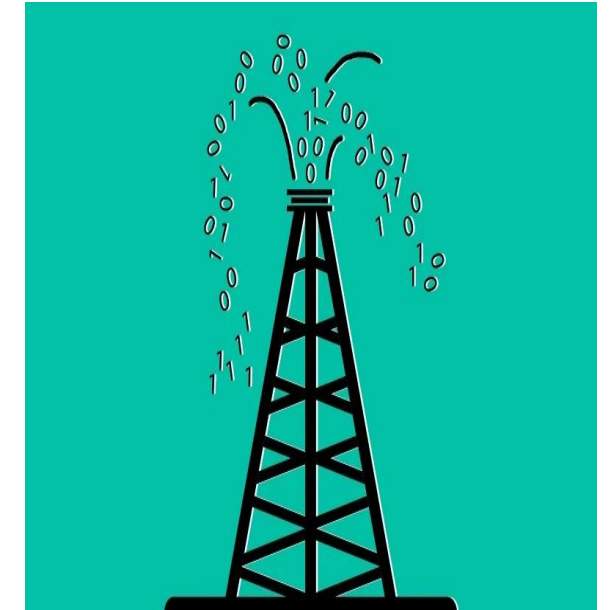


Now, of course, this is not a wholly scientific claim against the data hysteria. There have been other factors which made an impact, involving increased competition and economic circumstances. These factors may have reimbursed for data-propelled boosts in retail profitability. It'll be wise to say that in the absence of the latest research on data's impact on corporate performance, one shouldn't be doubtful about it. There is also no proof that the effect is present on a macro level and neither has it considerably aided specific companies, but the ones that exclusively sell their data expertise, such as Google and Facebook.

Data, as we understand it today, is the information on the population's online behaviours, scraps-bits- pieces of purchase records that could be going back a couple years, social networking sites' posts and exchanges presents any significant advantage on firms that try to use it.

There are major "trash in, trash out" issues with this information. In addition to that, anyone who has ever bought, say, a purse only to be constantly chased by purse ads for weeks following that understands that record-based targeting doesn't really make sense. Google and Facebook's targeting does not function any better than traditional media's conventional techniques of freely suitable advertising offers to the audiences which consume certain types of content.

Information, no doubt, remains a power. Companies, when truly try, might be able to gather sufficient useful information about us, the users, to make use of for visible sales increases. Companies which figure out how to do that will gain a merited competitive edge.



Notwithstanding data's enormous value, businesses should also be certain to recognize weak points in data strategies. An important question to ask would be: What are companies trying to do with all the IoT data? If this cannot be answered, they'll often become misaligned.

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Data in Digital Economy

Industry specialists have instituted the adage "Data Economy" to depict the impact and noticeable quality of huge information in the present society. The idea driving "Data is the new oil" is that very much like oil, crude information isn't significant all by itself, in any case, rather, the worth is made when it is accumulated totally and precisely, associated with other important information, and done as such in an ideal way.

At the point when appropriately refined, usable information rapidly turns into a dynamic device – data – permitting organizations to respond to market influences and be proactive and purposeful in their dynamic. The monetary truth of a world with COVID-19 is to such an extent that the worth of oil has definitely diminished. Oil, as an asset, is basically not sought after. For information, it's a totally different story. I would dare to contend that in the present climate, particularly with respect to far reaching worries of the wellbeing related and monetary ramifications of COVID-19, that information is in more interest than any time in recent memory.

Coronavirus related information is being produced rapidly. Working together with the remarkable speed at which the infection has spread, numerous associations should now settle on troublesome choices on the most proficient method to flourish and endure. The outcome?



The interest for precise and exceptional information, and further strategies for getting sorted out and using said information to settle on educated choices, is through the rooftop. It's obvious that there is extraordinary worth (for example financial, wellbeing, security and something else) in gaining admittance to new data quicker. In any case, what we have seen with a significant part of the COVID-19 information is that more information doesn't generally result in better data. Government associations and news sources have often given an account of the quantities of COVID-19 related passing's, positive test results, hospitalizations, and tests regulated. From this, there have been proportions covering the passing rate, recuperation rate, contamination rate, hospitalization rate, and so on in any case, essentially because of restricted testing, not all certain cases are known.

What's more, not all associations (for example nations) are characterizing or giving an account of the information in a similar way (or maybe viler, concealing data).

Hence, while there might be a plenitude of information, and that information might be sought after, without guaranteeing that it is finished, exact, opportune and associated with other applicable information, the data may not be significant in driving key choices. More awful, it might really prompt some unacceptable choices. We've seen this work out in various organizations throughout the long term.

Anyway, what would businesses be able to acquire to gain from this model? As far as whether or not information supported dynamic really emphatically affects associations, a new overview of C-suite leaders from around the globe found that, "organizations that dominate at coordinating information into their system, activities and culture are to a great extent outperforming their friends in income development and benefit."



This proposes that, for the most part, organizations that have put resources into and keep on putting resources into developing their administration of existing information, development of usable information, and utilization of information examination will keep on flourishing even in the midst of financial vulnerability.

Ankita Paleja

PGDM - Finance

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Data is the New Oil : Absolutely Toxic if Mishandled

Oil, the world's natural resource in the 18th century, was the most valuable commodity. It was the backbone of everything from the government to small businesses. Without it, development would come to a halt, and economies would contract. Let's fast forward-The 21st century, a modern marvel that astounds the planet is the arrival of robots. Sophia is the first humanoid robot to be given citizenship in Saudi Arabia. It's incredible! Isn't that so? Human lives are rapidly transforming as a result of robots. This is the power of DATA, the most valuable resource of the 21st century.

Machines and robotics are products by the data, confirming the rapidly increasing fundamental reality that all paths lead to data. As a result, data is to the digital economy, what oil is to the manufacturing economy. Data is a vital engine that drives the knowledge revolution, just as oil did for the industrial economy. Data can be mined for information in the same way as oil can be mined for resources. Traditional oil powered the transportation age, similarly data is the latest oil in powering emerging transportation solutions such as driverless cars and hyperloop (1200km/hr) that are built on advanced data processing, algorithms, and cognitive intelligence without the use of fossil fuel. Although traditional oil has a finite supply, data seems to have an unlimited supply.

Data flows like oil, but to derive meaning from it, one must "drill down" into it. Just as oil led to valuable plastics, petrochemicals, lubricants, diesel, and home heating, data promises a plethora of new applications: disease detection, traffic pattern direction, and so on.



1) Data is only useful after refinery

Countries with oil are not the wealthiest, but those with the most intelligent refinement capability. It is in a refined form, that data is also useful. How ANALYTICS data is intelligently developed into sequences of instructions to fulfil a function as ALGORITHMS, and how these sequences of instructions can be built into a coherent programme that runs on various platforms as APPLICATIONS. As a result, data scientists, engineers, and data analysts who know how to make use of data are in high demand, otherwise we will see more information overload and less informative application of knowledge.

2) Data, like oil has two evils: spillage and militancy

When comparing oil and data, it's common to overlook oil's disadvantages. Data leaks happen as often as oil spills. Facebook got hit with a \$5B fine, and the party's just getting started. The solution isn't just to stop data leaks.

It's to keep them at bay with modern "clean data" technology and privacy-protected business models. These future developments will lay the groundwork not only for improved data storage and privacy rights, but also for the advent of a "clean data" market that would boost competitiveness.



3) Time to make data a profit centre

Many organisations' data infrastructure is still a cost centre today, but it can be turned into a profit centre by leveraging data to change it on a daily basis. Companies must start handling data as a corporate asset that can be managed locally within company divisions while still being seen as an enterprise-wide corporate asset. This allows details about goods and consumers to be shared, which opens up doors for upselling, cross-selling, and improving customer support and retention. Any organisation in the world has a massive opportunity to develop new goods and services in all lines of business by combining internal and external data.

It's a fact now that data really is the new oil and that the main effect on humanity isn't how tech giants are monetizing our attention units, but about how data can better our lives. Quietly, oil causes pollution, yet it was also responsible for lifting a large majority of the population of the world out of dire poverty. We must manage the dark side of data, but the advances in data fuels are worth the effort.

Abrar Khan

PGDM Finance
N. L. Dalmia Institute of Management Studies
and Research
2020-2022



We are in a digital economy where centrality of the data helps to introduce new customers to your business, improve products and services, increase customer satisfaction, maximize profitability, and operate more effectively.

So, what exactly data is, Data is everything about an individual, what time he wakes up, what he eats for breakfast, what he wears, which car he is using to get to his office, what he is doing for fun, what are his preferences. Everything!

With the increasing importance of data in the business line, we term it as the new fuel of the modern economy. To an individual, this data may not be important but for business it is a fuel that runs the business.

Let's say, you search something on Google, with the help of Machine Learning and Artificial Intelligence, it records your search data, processes the data and finds out the pattern between the searches and sells this data to the marketing firms. You will soon begin to receive ads for the same product you searched on Google. The more you use Google, the more it refines its search. Just like this, Amazon, Facebook, Instagram, Twitter, and others are also collecting data. So, as you can see, Data is all over the world. These big business entities try to monetise all that you do.

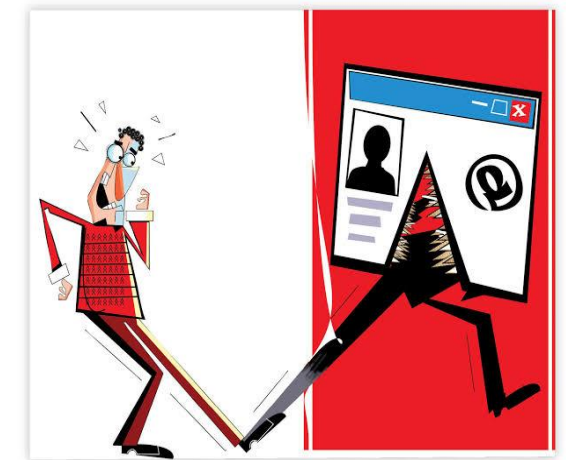
For e.g., if you search for a mobile phone on Google, very soon, you will start receiving ads of the latest mobile phones which may be best suited for you depending on your inclination towards particular brand, price & features.

With the help of data processing through AIML, we are moving towards descriptive to prescriptive analytics. In descriptive analytics, we look at historical data to find out what is going on in an organization, what has happened, and what can be learned from that data. Prescriptive analytics is related to both descriptive and predictive analytics. Prescriptive analytics is the area of business analytics dedicated to finding the best course of action for a given situation.

Data collection process may breach the privacy of the customers as their information such as their day-to-day activities, purchases, online transactions, subscriptions are monitored and are available to companies. These companies may exchange the useful customer databases for their mutual benefits. Also, this data in the wrong hands may lead to cyber issues.

Conclusion

With the help of reliable access to data, we can make better informed decisions, create impactful predictive models, ensure public safety by not only forecasting the problems but preventing them. Hence data is the future of modern economies.



Subham Kumar

PGDM Finance
N. L. Dalmia Institute of Management Studies
and Research
2021-2023



The Best Money-Making Tool the Corporates Have - “DATA”

Today data is everywhere, pen friends are gone, it's the age of Facebook friends. People are making friends based on their profiles on social media platforms. In the 21st century, data is everything, from when you turn on your GPS to find a food joint to what you buy in Amazon's great Indian sale. Corporate companies are hiring and paying people to analyse the behavioural patterns you as a consumer portray online, and they call it data. As humans, most of us think alike and the entire “people who bought this product also bought this” or “you might also like” pop-ups on e-commerce sites are just a few examples why data is being compared to oil. Once upon a time, oil was the next best thing man found after coal. The Industrial revolution was on a full swing and people wanted automation. The country with the largest oil reserve had the largest money supply.

Today, a company that can analyse the data laying at their fingertips the best, has the biggest sales. There is no denying that the rise of the internet has inadvertently paved the way to the age of data. From booking flight tickets to opening a bank account, data is everywhere. Data is an amalgamation of facts and statistical figures collected over a period of time. As oil needs to be extracted from fields, the collected data needs to be sorted out and then analysed into patterns which would then help boost the sales of a business.

Whichever industry you work in, or whatever your interests are, you will almost certainly have come across a story about how “data” is changing the face of our world. And it is not just business, data is helping cure disease, boost revenue, make a building more efficient and is definitely the reason why you are seeing the dog food advertisement everywhere when you have just started thinking about fostering a dog



A survey conducted by Deloitte revealed that even small start-ups generate data. Any business with an internet site, a social media presence, and accepts electronic payments of any kind is generating and collecting data about customers user habits, web traffic, demographics etc.

Data is an all-in-one solution for all your problems. After experiencing slow sales or watching a poor-performing marketing campaign, how does one pinpoint what went wrong? Tracking and reviewing data from business processes helps you uncover performance breakdowns, so you will better understand each part and know which steps went wrong. Sports teams are a great example of businesses that collect performance data to make their teams better. There isn't a knowledgeable team that doesn't employ a team of collectors and analysts to assist, support and improve their play on the sector. Updating is done constantly about who is doing what well and how it can help the team.

Data helps you know who your loyal customers are, if the consumers like your products or if your marketing efforts are effective. Without data, how does one know which skills make more money?

Companies like Google and Tesla are using data to hook up with the cloud and compare the previously stored terabytes of data to turn right / left. Good customer experiences can be provided with the feedback data generated from the users. While bad customer experiences can be analysed correctly to know what exactly went wrong. Data generated by online trading has created a whole new field of trading stocks based on algorithms and previous patterns, algorithm-based trading is taking both BSE and NSE to a new level. Data is thus improving the profits and enhancing the businesses.

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Crude Oil was first discovered in America in the year 1875 and after a few years down the line, engines and machines helped in booming the prices of oil. John D Rockefeller had set up an oil company because of which he became one of the richest persons in America during that period. Now we are in the 21st Century where oil has importance however Data is now also given an equal level of importance.

Let's try understanding why it is so? We know Mark Zuckerberg, CEO of Facebook whose net worth is approximately 120 Billion USD. How was he able to achieve this milestone? The simple answer is Facebook, it has around 2.89 billion users who help them in generating massive revenue through social media advertisements. Companies require data of users in order to provide them advertisements based on their interests.

Oil has no value until it is refined in the same manner. Data is not valuable in itself; rather the value is created when it is gathered completely, accurately, connected in a structured and timely manner. It is processed with the help of algorithms, big data, machine learning and AI in order to make proper use of them. "Oil is a finite resource however, data is an infinite resource". It helps in understanding:

1. What are the interests of the users?
2. What are they willing to pay?
3. What is the budget?

And many more similar questions. And to answer the same question data can be used.

For example, to know about the budget one can get an idea through WhatsApp payment history.

Let me list down a few pros of data:

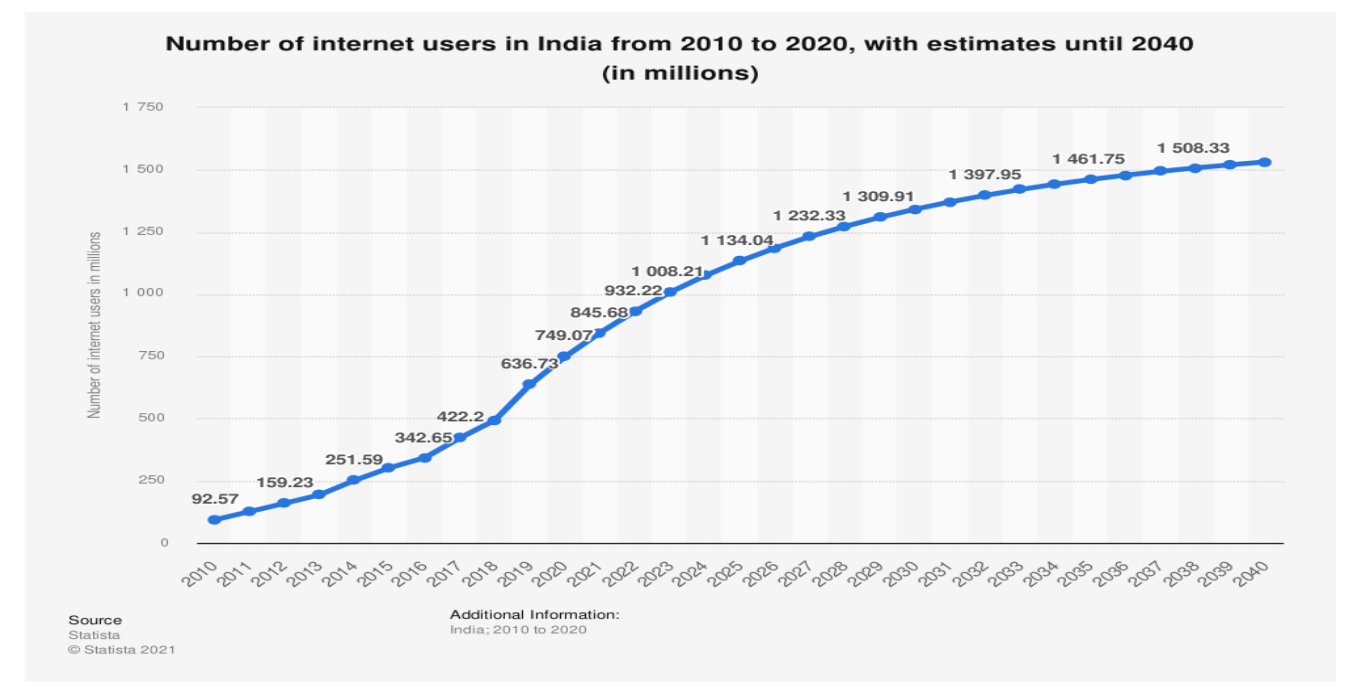
1. Helps in identifying the cost reduction drivers.
2. Helps in improving customer insights and engagements.
3. Identifying new opportunities.
4. Taking the right decision if structured and represented in the correct manner.
5. Saving Time.
6. Analysing the Trends through past historical performance.

However, as there are pros there are also cons and the biggest threat to oil is oil spills in the same manner for data it is data spills or data leakages. The best example we see often is with Facebook. Data of many users are leaked online or on the dark web.

If data is used correctly it can do wonders. For Example, Asian Paints had set up a supercomputer in the 1970s for 8 crore rupees. And now we can witness the company is the market leader in paints industries. Supercomputers helped to analyze the data for demand, inventory management, logistics, vendor requirements and so much more...

To conclude it's clear that data is the new oil. The global focus is shifting from Oil to Data which gives immense opportunities ahead. Data helps in predicting customer behavior and plays a key role in digital marketing. Data is the future and to protect this future it is equally important to have data privacy laws to keep the water safe and clean to drink.

"Oil was the fuel for the industrial economy, data is the fuel for the digital economy"



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Deep Learning is a revolutionary field, but for it to work as intended, it requires data. The area related to these big datasets is known as Big Data, which stands for the abundance of digital data. Data is as important for Deep Learning algorithms as the architecture of the network itself, i.e., the software. Acquiring and cleaning the data is one of the most valuable aspects of the work. Without data, the neural networks cannot learn.

Most of the time, researchers can use the data given to them directly, but there are many instances where the data is not clean. That means it cannot be used directly to train the neural network because it contains data that is not representative of what the algorithm wants to classify. Perhaps, it contains bad data, like when you want to create a neural network to figure out cats among coloured images, and the dataset contains black and white images. Another problem is when the data is not appropriate.

For example, when you want to classify images of people as male or female. There might be pictures without the tag or pictures that have the information corrupted with misspelled words like 'ale' instead of 'male.' Even though these might seem like crazy scenarios, they happen all the time. Handling these problems and cleaning up the data is known as data wrangling.

Also, researchers sometimes have to fix problems of how data is represented. In some places, the data might be expressed in one way, and in other areas, the same data can be described in a completely different way. For example, you can classify a disease like diabetes with a certain number in one database and in another. This is one reason for the considerable effort in industries to create standards to share data more easily. For example, Fast Healthcare Interoperability Resources (FHIR) was created by the international health organization, Health Level Seven International, to create standards for exchanging electronic health records.

Standardizing data is essential, but selecting the correct input is also important because the algorithm is created based on the data. And, choosing that data is not easy. One of the problems that can occur when selecting data is that it can be biased in some way, creating a problem known as selection bias. That means that the data used to train the algorithm does not necessarily represent the entire space of possibilities.

The saying in the industry is, "Garbage in, garbage out." That means that if the data entered into the system is not correct, then the model will not be accurate. This is best illustrated by the parable in "Artificial Intelligence as a Negative and Positive Factor in Global Risk," as said by Eliezer Yudkowsky.



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Data in the 21st century is what oil was in the 18th century for us; a vast, untapped valuable asset. Just like oil, data has huge value. We just have to learn how to extract information from it and use it for our benefit, gaining huge rewards. Today, data is more valuable than ever and it is stored at every step by governments to companies and various organizations for smoothness.

Data is only valuable when it is in usable form. Raw, unorganized data is of no use just like crude oil. Even crude oil is transformed into useful products such as petroleum, raw

data needs to be processed before it can be analysed. Companies have started treating data as a corporate asset while managing the data locally within the business. This enables them to share data about products and customers, bringing up new business opportunities and grabbing market share gaining an edge over their competitors.

Quality Data is Fuel

When your business is growing, people form an opinion about which certain steps need to be taken. If the data collected is accurate then almost everything can be measured and improved. You can come up with new ideas and opportunities to test them and check their validity and impact. A test is never worthless, you get new insights about if it's working or not. It's easy to give Artificial Intelligence and tools like Python, Tableau credit for business outcomes but none of it is possible without quality data.

You can create a machine-learning algorithm to understand data using mathematical techniques. But at the end of the day, the car is useless without fuel. Just like that, a machine learning algorithm is useless without data.

Data vs Oil

Oil has finite resources while data is virtually infinite. While there are many undiscovered oil reserves, we know that there is a finite amount of oil left on our planet. At some point or other, we will run out of oil and will be forced to switch to other alternative forms of energy.

With digitalization and the number of internet users growing exponentially, we can say that data is practically infinite, we will be creating more data and will never run out of data.

Oil is consumed, data is created

Oil is consumed and is permanently destroyed after we use it. On the other hand, data is created and doesn't have to be destroyed. For e.g. You search for something on Amazon, you're creating data for Amazon's machine learning algorithm.

Companies can keep collecting data from companies to provide a better experience to customers. By adding data and improving algorithms, companies can turn data into an asset.

Privacy and Ethics

With great power comes great responsibility. A significant amount of data may be protected by privacy guidelines and laws. There are also ethical concerns while dealing with customers' data. These issues are real and can have serious repercussions for companies if they fail to consider them.



Way Forward

1. If you're a company that uses the data and takes advantage of that data, then you need to have data infrastructure to manage data effectively. You also need to make sure it is available, fault-free and cost-effective.
2. The output of the analysis depends on the quality of the data fed in analytics. If the raw data contains missing information, you may have to refine it, just like oil, to reach a level of quality needed for analysis.
3. Data analytics is power. It must be used ethically and responsibly as with great power comes great responsibility and by considering the legal implications if you use it unethically.



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If data is the new oil, then who will control the data refinery?

The term “Data is the New Oil” was coined by a Mathematician in 2006 but it became a buzzword in 2017 after a report named the “world's most valuable resource is no longer oil but data” was published.

First question that arises is why oil is compared to data if looked closely there are two stark similarities. One is as energy can be extracted from refineries in the same manner intelligent information can be extracted from data using modern day processing framework. And second is that the emergence of oil empowered transportation of goods in the exact way data is empowering communication between things and humans (Driverless cars) based on synthesis of data. One difference which is worth mentioning is oil is in finite quantity. According to study there is 1.688 trillion barrels of oil left which is good to go for the next 53 years, but data availability seems to be infinite. There are 2.5 quintillion bytes of data created each day and the growth is still exponential. In other words, it means that what oil has done to global economy in part 200 years that data will do in next 20 years and one of the best examples of what data can do to Indian economy is GST, which generates huge data related to business finances which can be used to determine credit worthiness of individuals so that small businesses can show their credibility to the lending institutions such as banks.

Therefore, it is the most exciting time in human history as we are at the cusp of the fourth industrial revolution and witnessing the convergence of physical, digital, and biological Sciences.

As it is said that “Nothing vast enters the life of mortals without a curse” therefore this data and its ongoing revolution will also increase the challenges of present-day governments and businesses. The way wars have been fought for who controls oil, we would observe the same thing for controlling data, but we are not yet certain about the battlefield for upcoming data wars.

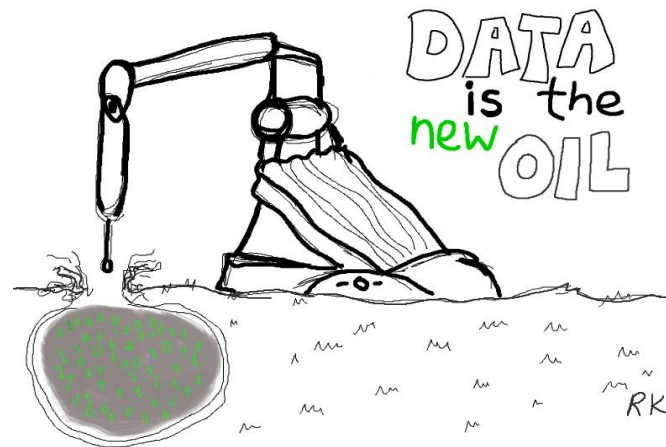


All said and done, the most interesting question now is who will become the next Saudi Arabia of data reserves? And its answer depends on two things. First is what is the data protection policy of that country and how businesses in the country are riding and thriving on the wave of this data revolution. Presently the EU with its data privacy law - General Data Protection Regulation and the big tech companies like Google, Amazon, Facebook etc. who control 99% of the personalized data are the early miners of this goldmine. But here lies the big opportunity for developing countries as well, as most of the data that is generated is in countries like India, with robust data localization policy the developing countries will have upper hand in bargaining with the developed world.

John D Rockefeller became the first billionaire in America in the 19th century who founded Standard Oil and is considered as all-time richest man. He created this wealth by trailing on the mounting importance of Kerosene and Gasoline. Similarly, Mukesh Ambani created digital unit Jio if we look closely Jio is an inverted image of oil which tells a lot about significance of data in general and ambitions of Reliance Industries in particular. Who will be the next Standard Oil and John D Rockefeller only time will tell.

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We all are surrounded by data. It has become part and parcel of our daily life. Tons of data is shared and consumed on a daily basis, without us realizing it. As we are rapidly moving towards a digital economy, the significance and value of data has become greater than ever. Before diving into the topic, let us first understand the importance of data in today's context. It improves people's lives, it helps in making informed decisions and prevents an organization or an individual from coming to an incorrect conclusion. It helps in formulating accurate strategies to meet certain goals or objectives. Meaningful data helps in deploying resources where they are needed and helps the organizations to identify which areas they need to prioritize. Data has a significant importance in the healthcare sector too. It is used to forecast weather and is very beneficial to warn the public about the impending natural disaster. It is used in sports to analyse the opponent's strengths and weaknesses. Basically, it is used everywhere.

As per the data shown by Telecom Regulatory Authority of India (TRAI), the number of internet users in India as of March 2021 stands at about 825 million people and it is projected to reach to about 1.13 billion users by 2025. This is just for India. When we talk about the entire world, around 60% of the total population have active internet users, which is quite overwhelming. And the numbers are increasing. Every person with a digital footprint is a source to all kinds of data- where they go, what they eat, how they shop, how much they spend, what they spend on, etc.

But all this is raw data. Just like oil, data too has to be refined and analysed, only then will it be of any value or use. It must be seen that this data is reliable, accurate and is easily comprehended. This data is used in analytics and meaningful stories are made out of it. It has become a great business asset and helps the companies to understand the consumer behaviour in a much better way. It becomes a handy decision-making tool which makes companies proactive in reacting to the market and consumer needs.



All these reasons make data the most powerful and the most valuable asset in the 21st century. It is as important as oil was once in the previous centuries. The data which is collected from the individuals by the companies like Google, Facebook, Amazon, etc. is owned by them and can easily be manipulated. This privately held data can be used for governance and policy purposes, but since it is owned by the private companies, policymakers and researchers do not have access to it. But if this personal data is not regulated effectively, it can be used as a tool for surveillance and monitoring purposes. We can take the recent example of the Facebook-Cambridge Analytica data scandal of 2018. Here, Cambridge Analytica collected personal information of millions of Facebook users without their consent for political advertising purposes. This example suggests how powerful an organization can get with all the access to personal information.

As technology advances and as more and more chunk of the population gets access to the internet, the amount of data shared, generated and consumed will be colossal. Oil is a scarce resource and will get exhausted one day, but data won't. It is infinite in nature. Data and Artificial Intelligence are going to play a huge role in the coming future. More and more economies will be driven by data and not oil.

Jack Welch opined that there are two sources of competitive advantage that we can benefit from as dividends of the digital economy: the ability to learn more about our customers faster than the competition and the ability to turn that learning into action faster than the competition. This will be all possible due to data. The global focus in recent times has surely moved from oil to data and data will make wonderful things happen in the near future. Indeed, data is the new oil.



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