

“ Raw data is like a barrel of crude oil, to reap the benefits, you must refine it. ”



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POWERFUL ANALYTICAL TOOLS THAT WE WORK WITH



Google Analytics

alteryx



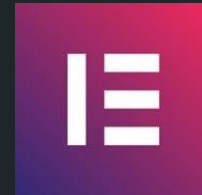
tableau®



Qlik



MOZ



Client Case Studies

How we helped Ford Motor Company enter the domain of predictive analytics



Problem

Inefficient maintenance system of car manufacturing machines, leading to long break down times.



Solution

Performed data wrangling on a dataset containing 300 million rows.

Extracted insights and then developed a pilot predictive model that leveraged artificial neural network technique to predict machine failure in advance.



Impact

The model empowered the company to proactively plan their machine maintenance strategy, including resource allocation.

This allowed Ford to control costs and maximise revenue.

Retail Industry

How we empowered a SME with data science solutions, allowing them to elevate their business practices to a multinational level



Problem

Shortage of shelf-space due to having numerous unique items.

At present, no system of sales targets or forecasts.

Availability of raw data without the capability to carry out investigative analysis.

Stagnant business performance due to aggressive competition in the market.



Solution

Developed a predictive model to forecast sales for the upcoming year.

Used sales transaction data as input to a machine learning algorithm that identified customer shopping behaviour.

Prepared a dashboard illustrating various relationships within the dataset. Through this, shelf-space utilisation was investigated (a major pain point for the client).



Impact

Optimised use of shelf-space, leading to improved profits.

A plan allowing;

- Physical store's layout to be more effective
- Create promotional strategies
- Cost savings & increased brand awareness.
- All resulting in higher sales

Prepare accurate budgets, effective inventory management, and set sales targets.

How we lowered the investment risk of a company by providing meaningful & actionable insights



Problem

Client required;

- In-depth information about the UAE furniture industry
- Analysis of factors impacting the furniture market
- Social listening and keyword analysis to determine perception towards Italian furniture



Solution

Created a market intelligence report that gave a comprehensive understanding of, the furniture market in the UAE, as well as it's consumers.

Through statistical investigations and predictive modelling, insights were highlighted and forecasts were presented.



Impact

Access to valuable information which was sourced from specialist paid databases.

Our extensive analytical report allowed the client to make greatly informed decisions, lowering their risk of a negative impact in the future.

Healthcare Industry

How we integrated automation to transform business processes for a Forbes featured skincare consultancy



Problem

Client had no system in place for tracking customers who have their follow up appointments coming up. This resulted in loss of sales.



Solution

Developed an automated tracking process that identifies patients, on a daily basis, who have an upcoming follow up appointment.

The system then automatically sends an email reminder to the identified list of patients.



Impact

Our automated system aided the consultancy to keep a track of their follow-ups, which in turn will significantly improve their sales.

Automation allowed more accuracy, consistency, and freed up clients time from doing repetitive administrative tasks.

Other Business Case Studies

Source: <https://bernardmarr.com/default.asp?contentID=1716>

How the retail industry is using data science solutions



Tesco uses analytics and clustering and suchlike, to understand the customer buying behaviour. Using this knowledge, Tesco orders products in the right way, making sure they will always be in stock, while reducing waste.

Sensor data is also increasingly being used, for example, in monitoring the temperature of fridges and freezers across the network of stores. Every machine is monitored centrally, and predictive algorithms are used to determine when a particular unit will need servicing.



Walmart uses transactional data, to be rapidly modelled, manipulated and visualized. One example was when the grocery team could not understand why sales had suddenly declined in a particular product category. By drilling into the data, they were quickly able to see that pricing miscalculations had led to the products being listed at a higher price than they should have been. The system also provides automated alerts, so, when metrics fall below a set threshold in any department, the relevant team is alerted so that they can find a fast solution. In one example of this, during Halloween, sales analysts were able to see in real time that, although a particular novelty cookie was very popular in most stores, it wasn't selling at all in two stores. The alert prompted a quick investigation, which showed that, due to a simple stocking oversight, the cookies hadn't been put on the shelves. The store was then able to rectify the situation immediately.



When people visit a "new" Starbucks location, that store's point-of-sale system is able to identify the customer through their smartphone and give the barista their preferred order. In addition, based on ordering preferences, the app will suggest new products (and treats) customers might be interested in trying. Through AI they recommend food and drink items to customers who didn't even know, yet they wanted to try something new. The Starbucks market planning team doesn't rely on their gut feelings to determine where stores should be located but taps into the power of data intelligence. They evaluate massive amounts of data, such as proximity to other Starbucks locations, demographics, traffic patterns and more, before recommending a new store location. This system even predicts impact to other Starbucks locations in the area if a new store were to open.

How the SMEs are using data science solutions

Pendleton & Son Butchers

The first step was to install simple sensors inside the store window to track overall footfall and measure how effective displays and promotions were with passing customers. These sensors allowed the Pendletons to track how many people walked passed the shop, how many stopped to look at displays/signs and how many people came into the store.

In this case, the data showed that meal suggestions on the sandwich board outside the shop proved more popular with customers than messages about special offers (which were available every day in the nearby supermarket). For example, on a cold, wintery day, the sign outside might read “How about venison sausage & bean stew?” and inviting customers to come inside.

The sensor data also pointed to an unexpected additional income stream. As two popular pubs were located on the same street, the hours of 9 p.m. to midnight provided a lot of pavement traffic— almost as much as the busy lunchtime period. So, the Pendletons started opening on Friday and Saturday nights, serving premium hot dogs and burgers to hungry folks making their way home after a few pints. Not only did this provide much-needed additional revenue, but it also introduced the company and their products to new customers.

How the financial services industry is using data science solutions



Royal bank of Scotland uses big data to improve their customer service, they do this by having a personalised approach by congratulating customers when they contact a branch on their birthday.

Furthermore, transactional data is analysed to identify where customers are paying twice for financial products, such as paying for insurance that is already provided as part of a bank account package. RBS analyse their customers' account transactional history and personal information to determine what products or services would be most useful to specific clients.



Citi's operations use Big Data analytics for customer retention and acquisition. This involves analysing data and targeting promotional spending using machine learning algorithms.

Another is to scan transactional records to spot anomalies, which in the case of Citi's customers, can mean incorrect, unusual or fraudulent charges. The costs resulting from these anomalies are far easier to manage if the problem is spotted quickly – or even before it happens, through predictive modelling.



Machine learning is at the heart of American Express's decision making in detecting fraud. They employ a machine learning model that uses a variety of data sources, including card membership information, spending details, and merchant information to detect suspicious events, and make a decision in milliseconds by comparing that event to a large dataset.

This has enabled American Express to detect more fraudulent transactions and save millions.

How the fashion industry is using data science solutions

The Burberry logo, consisting of the word "BURBERRY" in a bold, black, sans-serif font, centered within a white rectangular box.The H&M logo, featuring the letters "H" and "M" in a stylized, red, handwritten font, with an ampersand "&" between them.

Burberry's strategy for boosting sales hinges upon nurturing deeper, more personal connections with its customers.

It achieves this end by encouraging loyal customers to share their data through various reward and loyalty programmes. This valuable customer data is then used to offer tailored recommendations – and not just for online shoppers. In store, sales associates use tablets to give shoppers personalised suggestions based on their purchase history and social media habits.

For example, if Burberry knows that you bought a particular handbag recently, then in-store assistants could show you a coat that has proven popular with other buyers of the same handbag. Burberry is also making use of Big Data technology to identify knock-off products. The company uses AI-powered image recognition technology to identify whether a product is genuine or not just by looking at a photograph. By assessing tiny details in the weaving and texture, the system can reportedly identify a bootleg item with 98 percent accuracy. This allows Burberry to move quickly to shut down businesses offering counterfeit products.

In order to succeed, fast-fashion retailers such as H&M need to predict what the market wants to avoid a bad product cycle and the reality of discounting inventory, even more, to move it out. Since the price points are already incredibly low for fast-fashion retailers, it's tough to recover from bad purchase decisions and to move unwanted inventory.

The stakes are high for fast-fashion retailers and the insights provided by data can help build a more flexible and faster supply chain, facilitate trend detection, manage inventory and set prices. H&M is also using big data and Artificial Intelligence (AI) to analyse returns, receipts and loyalty card data to tailor the merchandise for each store.

How the sport & media industry are using data science solutions

NETFLIX



VIACOM

Big Data analytics is the fuel that fires the “recommendation engines” designed to serve this purpose. More recently, Netflix has started positioning itself as a content creator, not just a distribution method. Unsurprisingly, this strategy has been firmly driven by data. For example, data showed that Netflix subscribers had a voracious appetite for content directed by David Fincher and starring Kevin Spacey. After outbidding other networks for the rights to House of Cards, Netflix was so confident the programme fitted its predictive model for the “perfect TV show” that it bucked the convention of producing a pilot and immediately commissioned the first two seasons.

Netflix has since added many other original shows, like Orange is the New Black, to its offering. The strategy has been a great success – 90% of Netflix members have engaged with the company’s original content.

Keeping players hooked is the name of the game, and Big Data is helping EA do just that. Say for example that a number of players are losing all of their virtual lives and giving up in frustration at one particular point.

Analysis can show where adjustments could be made to create a more engaging, and longer-lasting player experience. Or, if players who engage with other players over voice chat tend to play for longer, analysis can determine which features of the game encourage users to communicate.

Viacom is combining its network data with cutting-edge real-time analytics to improve viewer experience and grow its audience. Viacom has built a real-time analytics platform that constantly monitors the quality of video feeds and reallocates resources in real-time when it thinks it will be needed.

Thanks to improvements driven by analytics, Viacom has been able to reduce the time it takes a video to start playing to around one third of what it was. In terms of growing its audience, the company deduced, through analytics, that it needs to get viewers hooked on at least two individual shows for them to become loyal Viacom viewers.

How the public sector is using data science solutions



The Fire department in Amsterdam uses predictive modelling to build up a picture of the risk profile of the area where an incident is taking place.

Data taken from fire hose sensors and personal protective equipment, can be used to build models for assessing risk.



NASA uses real-time analytics to speed up the time in which decisions can be taken by mission control.

Furthermore, NASA uses machine learning to find out a problem with the spacecraft, where precise details of its operations can immediately be analysed to find out when this situation last occurred, and what other elements were in play at the time.



Milton Keynes in the UK has installed sensors monitor the flow of traffic on roads and paths throughout the city. Smart street lighting technology gathers data on when and where people are walking at night, to ensure street lights are on where they're needed and off where they're not needed, thereby saving energy.

Data on water and energy usage is gathered to better understand demand and to help plan for supply.

How the manufacturing industry is using data science solutions



Big Data analytics helps Rolls-Royce improve the design process, decrease product development time and improve the quality and performance of their products – while reducing costs at the same time.

The company has also been able to further streamline production processes by eliminating faults during the design process.



GE has installed sensors in machinery across every sector in which it operates. The data generated is analysed to provide information on how the machinery is operating and to monitor the effect of minor changes –like operating temperatures or fuel levels – on performance. GE's power turbines, aircraft engines and hospital scanners are all constantly monitoring the conditions in which they operate.

Each of the company's 22,000 wind turbines is continually streaming operational data to the cloud, where GE analysts can tweak the direction and pitch of the blades to ensure as much energy is being captured as possible. Intelligent learning algorithms allow each individual turbine to adapt its behaviour to mimic other nearby turbines that are operating more efficiently.



Volvo's analytic strategy is improving driver and passenger convenience. This involves monitoring the use of applications and comfort features to see what customers are finding useful, and what is being underused or ignored. This includes entertainment features like built-in connectivity with streaming media services, as well as practical tools such as GPS, traffic incident reporting, parking space location and weather information.

In terms of predicting breakdown and failures Volvo carries out predictive, machine learning-driven analytics across petabyte-scale data sets. Volvo's Early Warning System analyses over one million events every week to discern their relevance to breakdown and failure rates.

How various other industries are using data science solutions



amazon

Amazon uses Big Data gathered from customers while they browse to build and fine-tune its recommendation engine.

The more Amazon knows about you, the better it can predict what you want to buy. And, once the retailer knows what you might want, it can streamline the process of persuading you to buy it – for example, by recommending various products instead of making you search through the whole catalogue.



The insight gained from its data enables Airbnb to ensure the company is concentrating on signing up hosts in the most popular destinations around the world at peak times – and ensure accommodation is marketed at an appropriate price.

For example, Airbnb helps its hosts determine the right price for their property or room using certain algorithms. The appropriate price of accommodation is determined by a number of data points, such as location, transport links, type of accommodation, time of year, etc.

A hospital in Paris, France

Data from internal and external sources – including 10 years' worth of hospital admissions records– has been crunched to come up with day- and hour-level predictions of the number of patients expected through the doors.

The system allows doctors, nurses and hospital administration staff to forecast visit and admission rates for the next 15 days. This means extra staff can be drafted in when high numbers of visitors are expected, leading to reduced waiting times for patients and better quality of care.

Data Visualisation

Data visualisation is the process of graphically representing data, usually in the form of an interactive dashboard. Following are the benefits;

- Easily understand and communicate complex and large sets of data.
- Provides the ability to explore various relationships within a dataset and carry out vital investigative analysis.
- Identify trends, pattern and anomalies within the data.
- The user of visualisation requires less skills to carry out analysis, for example when compared to performing analytics on spreadsheets.
- Speeds up the entire review process.

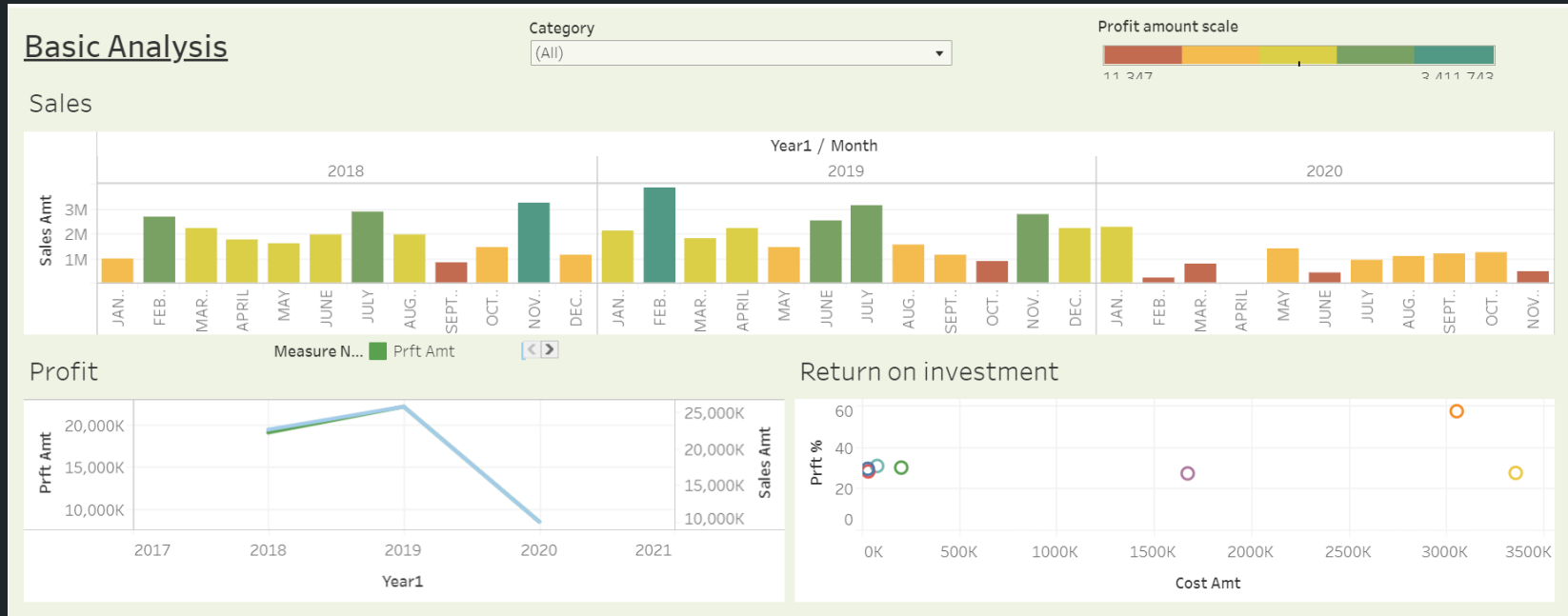
Following slides contain dashboard samples that we have created!

Aim – Deep diving in to vital business areas, such as profit, sales, costs and year-on-year analysis.

Link to the interactive dashboard (screenshot below)

<https://public.tableau.com/profile/maglytic.a.data.science.consultancy#!/vizhome/Demo-SalesCostProfitAnalysis/BasicAnalysis>

The link hosts four dashboards, scroll down to view and toggle between them.

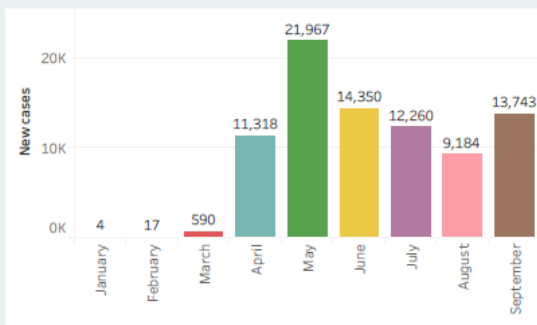


Aim – investigate the possible causes behind a potential second wave of Covid-19

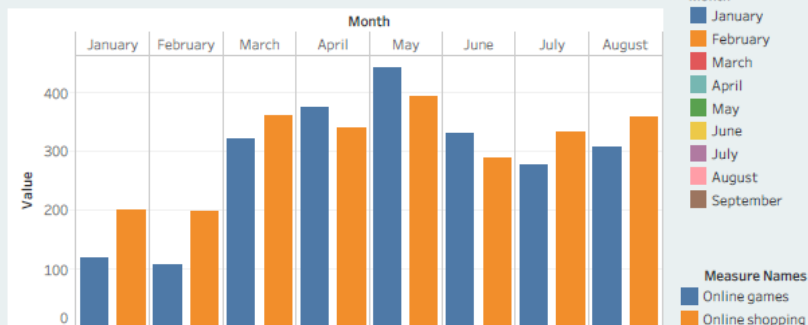
Link to the interactive dashboard (screenshot below) -

https://public.tableau.com/profile/maglytic.a.data.science.consultancy#!/vizhome/Covid-19asecondwave_16122506502700/Covid-19asecondwave

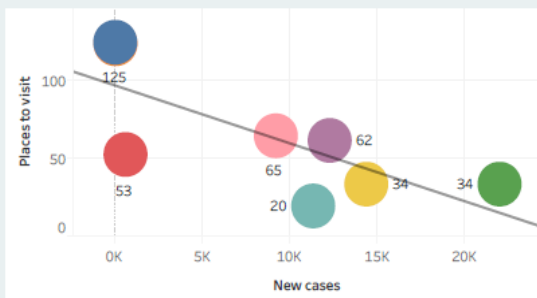
Monthly cases



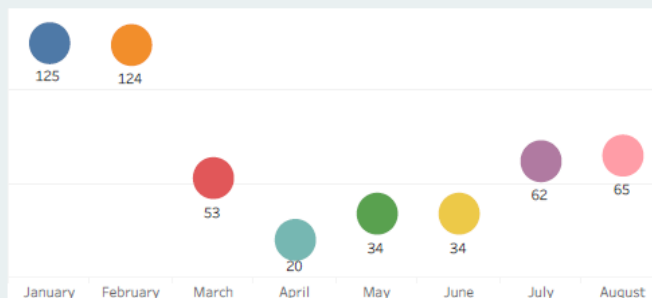
Monthwise trend of online games & online shopping



Impact of rising cases, on trend to go out



Monthwise trend of going out



**GET IN
TOUCH**



A Data Science Consultancy



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