

Technical Report: Investigating the use of Data Analytics in understanding customer motivators

Introduction to Industry 4.0 : Assignment 1

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Abstract

This report will focus on Industry 4.0 technologies for small and medium sized companies, highlighting the opportunities and challenges when investigating the use of data analytics to understand the customer motivators.

The DO Lectures are interested in applying Industry 4.0 methods to automate existing techniques, applying a marketing strategy that works with algorithms rather than against, and using personal data ethically. Currently the company uses methods that are cumbersome and requires a member of staff, by applying innovative process this will improve staff efficiency and reduce existing manual intensive processes.

Introduction

This technical report will focus on using data analysis to engage with both existing and new customers via different types of strategic data collecting methods. Moving into Industry 4.0 will improve the company's current process efficiency and will gain insights into how it is best to improve services.

Market research is valuable for the DO Lectures as it helps the company to understand the needs of their customers and community. Currently market research is collected through online surveys, focus groups, face-to-face conversations and weekly observation 'dashboard' meetings. Speaking directly about customer experience first hand helps to gain better empathy of the experience, yet this isn't enough when aiming to reach a wider audience.

The aim of this report is to gather information that will help the DO Lectures better understand their target market through data, supporting the investment of service design improvements, enhancing the user-experience and developing a market-strategy that engages quality leads to increase conversation rates.

This report will give an outline of the aims and objectives as well as the steps involved in order to implement these points successfully. Carrying out background research will demonstrate a better understanding of the services being produced and establish the appropriate information to further the DO Lectures ability, including case studies from innovative companies using technology and data analytics prosperously.

To conclude, opportunities and challenges will be highlighted and actioned for the innovation advancement of Industry 4.0, whilst maintaining the company values. The DO Lectures prides itself on the organic relationships that are developed post-product/service. By gaining a better understanding of the users data will deepen the relationship between company and customer.

Aims and Objectives

To see the benefits from this strategic thinking all members of the team must be onboard for change. By outlining the aims and objectives to reach a positive solution at the start will make for a clear process everyone can follow. The intension is to apply a set of techniques that focus on achieving an actionable efficient change. The two processes within the company where efficiency can be improved have been identified and are closely interconnected with the collection of customer data, resulting in both processes possibly sharing similar implementation methodology.

#1 Aim: Online learning platform - increasing sales

Using pre-existing data to connect, optimise and automate valuable marketing content will increase the interconnection with leads and ultimately increase sales. By increasing customer knowledge about the company's services will allow for open data innovation and more real-time decision making that will reduce any complexities. Interest and demand will be created when high quality content is delivered, as this will attract the right customers to the point of purchase.

#1 Objective:

With the use of IoT, aggregators and cloud computing the company can focus on the anticipated behaviour of a customer. With 30% of users installing ad blockers, advertising as we know it currently is changing with a cultural tectonic shift for real-time marketing (Rajamannar, 2022). Assigning a member of the team to use big-data technologies to automate existing systems and introduce new innovative ways to serve customers, will enable faster and better decision making for the company. This will also have a positive impact on new job categories.

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#2 Aim: AI Ethical Strategy

The price of a DO Lectures in-person event ticket is around £3-5000, but the talks are uploaded and shared afterwards to the world for free. Over 300 talks can be found on the DO Lectures website, YouTube and Vimeo account, or by word of mouth. By using machine learning algorithms to push this free content to new users, and implementing an AI ethical strategy will allow for overall improvement of the customers experience.

#2 Objective:

Building an AI ethic team would involve researchers and data scientists to help evaluate the impact of the internets algorithms, moving away from the pre-existing echo chamber

and diversifying the audience. Developing a system to evolve the company's content by encouraging design ethics, product accessibility and inclusive design will create impact. Time and consideration needs to be spent on the company's policy and potential parameters set around the recommendations of shared content, carrying out observational studies on behavioural patterns of a user and creating an impact study report would increase the user base.

Implementation Methodology

To successfully implement the intended aims and objectives the DO Lectures must look at the company from both granular and abstract viewpoints. By 2025 it is estimated that 84% of people will have a digital presence on the internet (Schwab, 2016).

To achieve both aims, the collection of data for leads should be a top-down approach, when the data is collected the overall goal is to give the company insight into what smart decisions should be made. A specific team within the company with specialised skills should be in control of making any data-driven decisions. It is important to understand the buyer/users desire at each stage of the funnel so that the appropriate information can be implemented at the right time.

Background Research

Data management and analysis is the foundation of innovation. Questioning parts of a process demonstrates a forward thinking attitude. Identifying the opportunities and challenges will help the company to work with machine learning systems to reach the aims highlighted in this report.

Opportunities:

- Diversification and transparency

Smarter company decisions can be made when a digital experience is connected through a combination of digital and automated marketing, action must be taken when a new pattern is detected. Targeted marketing has content rich outcomes and can help build trust in the user through conscious social impact. Touch points are an example of automation that can help with strategy, workflows and evolution of the company (I-SCOOP, n.d.).

- Faster information exchange

This fourth revolution is offering the opportunity of integrating two billion people into the global economy by propelling the DO Lectures existing services to the connected users

and communities across the world. The ability and management of data is improving daily, automated decisions reduce intricacy and contributes towards real-time service support for both user and company (Schwab, 2016).

- New job opportunities/gains and innovation

In this new era of prosperity these technologies will not replace humans or allow for jobs to become obsolete, instead they will support existing functions to open up opportunity for jobs within the company that may not currently exist. The perpetual needs and desires of a human validates jobs will be infinite, the agricultural industry has demonstrated this success with minimal social disruption (Schwab, 2016).

Challenges:

- Ethic implications

By creating an automated system for efficient marketing the company must be aware of the ethical implications and only use identifiable information. By making sure there is no lack of oversight and correct regulations are in place, including avoiding the misuse of personal information, a viable future can be created. The World Federation of Advertisers summarised data ethics as a gap between what we could do with data and what we should do with data, making a mind shift from data first to people first (Rajamannar, 2021).

- Algorithm battle

To limit awry algorithms that may result in unfair, biased or discriminatory decisions, the company can conduct an impact assessment for algorithmic decision making seeing if the system treats consumers differently according to gender, race, disability, religion, etc. Using autonomous cyber defence can detect and respond to subtle attacks (Rizzo, 2021).

- Trusting the data

There is a radical systemic change happening and by having a digital engagement strategy in place for customers, users and the team will primarily improve the company's efficiency. With the use of big data analytics discovering relevant patterns will help for better decision making and address any changes in a customer or users behaviour (RGBSI, n.d.).

Recommendations

- Stitch fix

An online personal styling service reinventing the retail industry with innovative technology and employing 150+ data scientists and engineers. This company want to change the way people find clothes with the use of deep-cutting edge algorithms and data science, each item of clothing is hand selected and based on size, budget, and style (Stitch Fix, n.d.).

- Spotify

The audio streaming provider are helping their “underserved” podcast creators with a smaller marketing budget build larger audiences. Internal research shows that podcasts less than 14 days old generally perform better. Spotify are using machine learning systems to push the podcasts to a strategic audience match by looking at user characteristics, in particular Knowledge Graphs to relate different entities (Aziz, 2022).

- Twitter

The social media platform are looking at increasing the users choice with how algorithms work, choosing transparency over computation systems. Although an algorithmic choice presents challenges this concept has huge influence to make a positive impact with the existing relationship between platform and user, allowing the user to customise what they see (Chowdhury and Williams, 2021).

Conclusion

The intended proposition of this report is to demonstrate the opportunities for the company in advancing to Industry 4.0, and as a result provides how productivity and efficiency within the workplace will gain overall growth for the company.

Researching into the technologies available and those best suited is critical, the company must be concise and clear using the included case studies as leverage because the methods of data collection is similar. Viewing the user/customers service as ongoing means that modifications should be changed when needed for the best results.

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