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INFO621-24S1-Artificial Intelligence (AI) in Business

AI Fashion: Transforming Style with Artificial Intelligence

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Introduction

The fashion retail industry is a fast-changing and competitive sector that constantly tries to satisfy customer needs and market trends. The industry is driven by fast-paced trends, with consumer preferences constantly changing day by day. Moreover, the fashion market is now being globalized, with brands competing on an international scale. So, there is a need to incorporate AI into the business to manage the evolving data to stay relevant and ahead in the market along with improving the internal processes. Customers now expect a seamless shopping experience across both online as well as physical stores. Global fashion retailers like Zara, H&M, Forever 21, Uniqlo, and many more have recognized the importance of using artificial intelligence (AI) to upscale their business. AI technology has various applications in the fashion industry, such as for inventory management, predicting market trends, and providing personalized shopping experiences, thus enhancing customer satisfaction. ["Clothing Industry." *Wikipedia*, 4 Apr. 2024, en.wikipedia.org/wiki/Clothing_industry#Retail.]

H&M is one of the top global fashion retailers known for its trendy and affordable clothing, has successfully integrated AI into its operations for business growth such as for automated inventory management, keeping popular items stocked, predicting market demands, and personalized customer experiences. By analyzing data and predicting market trends, H&M ensures that its stores are stocked with the right products to efficiently meet customer demand. AI also plays an important role in personalizing the customer experience by offering customized product recommendations and improving overall satisfaction.

The focus of the report is on the incorporation of H&M's 'Body Scan Jeans' AI technology into Hallenstein Glassons, a well-known fashion retail brand in New Zealand. This AI technology enables customers to customize their jeans and provide them with the perfect fit for individual body types. This strategic move aligns with 'Hallenstein Glassons' objective of enhancing the overall customer experience as well as aligning with sustainability by reducing wastage in the fast-paced fashion industry. By offering customers a unique and interactive way to explore different clothing options, fashion brands can attract more customers while enhancing customer satisfaction levels.

The successful implementation of AI by H&M serves as a valuable case study for other fashion retail clothing brands in New Zealand. By adopting similar AI applications, these brands can enhance their own operations and customer interactions. By understanding the benefits and challenges associated with AI implementation, industry retailers can

make informed decisions about incorporating AI into their businesses, ultimately achieving growth and improving customer satisfaction.

This report aims to understand the integration of AI technology in the fashion retail sector and show how it has the potential to revolutionize customer-brand interactions, leading to increased customer satisfaction and loyalty. Moreover, the adoption of AI can ease operational processes, cut down on costs, and support innovation within retail brands. The report emphasis the transformative power of AI in the New Zealand fashion retail industry and recommends that brands like 'Hallenstein Glassons' explore similar technological advancements to stay competitive and meet the changing demands of their customer base. By embracing AI-driven solutions, these brands can position themselves for long-term success and sustainability in the dynamic fashion industry.

Part 1: Industry Use Case

1. Industry Background and Strategic Goals

1.1. Overview of Fashion Industry

The fashion retail sector is a vibrant and competitive environment that is marked by several key factors. The fashion retail industry is constantly evolving due to changes in consumer preferences, seasonal trends, and intense competition. Today's shoppers seek personalized shopping experiences, fast delivery, and environmentally friendly practices, shaping the future of the industry. The growth of e-commerce has led brands to implement omnichannel strategies to enhance customer satisfaction by showing the brand's presence both online as well as offline. The industry is experiencing noticeable shifts, including the rise of fast fashion, a growing focus on sustainability, and the increasing influence of social media on consumer choices. Key players in this sector include popular fast fashion brands like Zara, H&M, and Forever 21, as well as online retailers like ASOS and Amazon. These companies are leading the way in innovation and setting new standards for customer service and fast product delivery.

The fashion retail industry can include technology to enhance customer satisfaction, optimize processes, and drive growth. This sector greatly benefits from AI by analyzing big data to understand consumer preferences, and improve inventory management, and personalized marketing strategies, which enhances the overall shopping experience for customers. By incorporating AI technology, businesses can stay competitive, drive

innovation, and meet the evolving demands of consumers in today's digital age.

1.2. H&M's Market Position and Competitors

H&M has become a prominent player in the fast fashion industry for several reasons. One of the main factors contributing to its success is its global presence, which helps to establish its position in the market. With a wide range of stores worldwide, H&M can offer a consistent brand experience across different markets, providing services to a broader range of consumers. This not only enhances brand visibility but also makes it convenient for customers to access their products, giving H&M a competitive edge. However, despite its global presence, H&M faces tough competition from other fast-fashion giants such as Zara, Forever 21, and Uniqlo. Each of these competitors has its own unique position and target audience in the fashion market. To maintain its prominent position in the industry, H&M must continually innovate and implement strategies.

1.3. H&M's Strategic Goals

In pursuit of sustained growth and market leadership, H&M has outlined strategic goals aimed at fortifying its competitive position and enhancing customer engagement. One of the primary objectives for H&M is to maintain its market share and uphold its status as a dominant force in the fast-fashion sector. Moreover, H&M is committed to enhancing the overall customer experience. By prioritizing customer satisfaction and engagement, H&M seeks to foster brand loyalty and differentiate itself in a crowded marketplace. Additionally, the company places a strong emphasis on inventory management to minimize deadstock and ensure optimal product availability to meet consumer demand effectively. By aligning its inventory with market trends and customer preferences, H&M can enhance operational efficiency and drive sales growth. Furthermore, H&M is dedicated to staying ahead of evolving fashion trends and consumer preferences by swiftly adapting to changing market dynamics and consumer behaviors.

2. AI approach/technique and requirements

H&M's ‘Body Scan Jeans’ AI

H&M implemented a pilot AI application called ‘Body Scan Jeans’. In this application of AI, customers can have their bodies 3D scanned in-store, resulting

in the creation of a digital avatar. This digital avatar allows customers to virtually try on various denim colors and styles. Using machine learning, the body scan is then transformed into a paper pattern and measurement list. The jeans are subsequently manufactured and can be collected in-store or delivered a few weeks later. This innovative approach to manufacturing is personalized and on-demand, addressing the issues of size and fit for customers while also reducing returns thus contributing to environmental benefits. [“Responsible AI, Is Better AI.” *H&M Group*, 15 June 2021, hmgroup.com/our-stories/responsible-ai-is-better-ai/.]

H&M has a process in place that is followed for most AI applications. H&M conducts a 3-step process for its AI applications which are as follows:

- Proof of Concept (POC):
  H&M probably starts with a proof of concept (POC) to verify the practicality of using body scanning technology to personalize jeans. This could have involved testing the technology in certain stores or markets to gather initial feedback and study its implementation. The POC included installing the body scanning equipment, collecting data, and analyzing the results to determine the practicality of the concept. This POC phase helps H&M assess the feasibility and effectiveness of using AI.
- Pilot: Following the successful POC, H&M implements a pilot program to conduct further testing of the technology on a larger scale. The pilot can be expanded to include more stores or regions to collect additional data and feedback from a wide range of customers. This phase allows H&M to improve the technology, processes, and customer experience based on the insights gained from the POC. The pilot allows H&M to improve the algorithms and test their effectiveness in real-world scenarios.
- Industrialization and Roll-out: Following the pilot phase, H&M finally proceeds with the industrialization and roll-out procedures, which would be extending the use of the technology to all or a significant number of stores. Throughout the industrialization phase, the main objective is to ensure that the technology is reliable, and seamlessly integrated into H&M's operations. The roll-out phase also includes employee training, the implementation of the technology in stores, and the promotion of the new product/service to customers.

Throughout these phases, H&M carefully monitors key factors such as customer satisfaction, product return rates, and CO_2 emissions to understand the success of the initiative. Moreover, they address any challenges or limitations that arise during the implementation, such as technical issues, customer feedback, or compliance with regulations, to ensure a smooth

integration of the technology. [Kotorchevikj, Ivana. “AI-Driven Retail: How H&M Group Does It.” *Medium*, 14 July 2020, towardsdatascience.com/ai-driven-retail-how-h-m-group-does-it-c9606597f7bc.]

2.1. Strategic Business Goal and Objectives

The strategic business goal of this ‘Body Scan Jeans’ AI is to improve customer satisfaction and minimize environmental impact by offering personalized, on-demand manufacturing. This objective aligns well with H&M's overall goal of utilizing technology to enhance customer experience and promote sustainability.

2.2. Success Metrics

The success metrics that H&M must have conducted for this would include surveys to assess customer satisfaction regarding the use of body scan technology and the fit and comfort of the jeans. Return rates as well as CO_2 emissions due to reduced transportation would have been compared before and after the implementation of the technology.

2.3. Alignment with Goal

The program aligns with the strategic goal of enhancing customer satisfaction and reducing environmental impact by offering customized, on-demand production. H&M aims to improve customer satisfaction and loyalty by using AI technology to create custom-fit jeans, providing a unique and tailored experience.

2.4. Potential Benefits

Achieving improved customer satisfaction and enhanced experience is possible. Reduced expenses associated with returns are achievable. It is possible to decrease carbon dioxide emissions and have an environmental impact that supports sustainability can be achieved.

2.5. AI Approach

- Machine Learning: The AI methodology involves using machine learning algorithms to conduct body scans and generate patterns and measurements for clothing.
- Data Required: The necessary data includes customer body scan information, preferences for denim color and style, along with basic measurement requirements is essential for manufacturing processes.

Overall, this AI application demonstrates H&M's utilization of technology to develop innovative solutions that attract the interest of customers as well as being environment friendly, which perfectly aligns with their strategic objectives of enhancing customer satisfaction and promoting sustainability.

3. Barriers and challenges

The Body Scan Jeans AI use case faces a range of challenges across different areas, such as ethical and legal concerns surrounding privacy, difficulties in the application of technology, and limitations in skills and resources. Some of the main concerns include:

- Privacy issues with capturing and storing body measurements can lead to ethical and legal challenges, potentially resulting in negative responses by customers and legal issues related to data protection and privacy laws.
- The need for advanced scanning systems, software development, and integration with production processes involves technological challenges that require large investment and expertise.
- Challenges in skills, capacity, and resources include training staff, educating customers, and expanding the technology to multiple locations, which leads to investment in training programs, customer support, and resources.
- Implementation challenges also involve logistical issues such as space issues, store layout adjustments, and ensuring a consistent customer experience, requiring careful planning to minimize disturbances and seamlessly integrate with existing operations.

3.1. How has H&M dealt with the challenges/limitations?

H&M is actively addressing the challenges of AI by adopting various strategies. They conduct regular audits to ensure the ethical use of AI and strengthen their technological infrastructure through partnerships and investments in cloud technology. Additionally, H&M focuses on bridging the skill gap by providing training opportunities and collaborating with universities. By adopting a structured approach that includes pilot projects and cross-functional teams, H&M effectively minimizes implementation risks and responsibly uses the power of AI.

4. Realised benefits

4.1. Key Results

H&M has effectively utilized artificial intelligence to accomplish various important goals, including decreasing excess inventory and decreasing CO_2 emissions from large production, enhancing customer experience, and achieving the goal of sustainable fashion.

4.2. Alignment with Strategic Goal

The integration of AI technology at H&M supports the strategic objective of customer satisfaction through personalized and innovative solutions. H&M's commitment to sustainability is achieved through initiatives such as minimizing returns and adopting on-demand manufacturing to reduce environmental impact.
The findings are in line with H&M's objective of enhancing their fashion business and providing customized customer experiences. The AI-powered personalized suggestions enhance the overall shopping experience, leading to higher customer satisfaction and loyalty.

4.3. Benefits of AI

- Customer engagement is improved through the virtual trial of various denim options, resulting in higher satisfaction levels.
- Operational efficiency is increased with on-demand manufacturing and fewer returns, leading to cost savings and improved productivity.
- H&M's efforts to reduce overproduction and inventory waste contribute to a more sustainable fashion industry, promoting environmental sustainability.

Part 2: AI Application Proposal/ Business Case

1. Current State

'Hallenstein Glasson' Holding Limited, operating under the Glassons and Hallenstein Brothers brands, holds a prominent position since its establishment in 1873, in the fashion retail sector in New Zealand and Australia. The company has built a strong market presence through its extensive network of stores and expanding online platforms. Known for their fashionable and modern clothing options, Glassons and Hallenstein Brothers attract a wide range of customers, including both young adults and mature

shoppers. Offering a wide variety of clothing and accessories, from casual wear to formal attire and seasonal collections, the brands are popular among style-conscious consumers. Hallenstein Glassons places a high priority on engaging with customers and actively seeks feedback to enhance its products and services. The company has also embraced digital innovation, investing in technology to improve the online shopping experience and reach a broader audience. Furthermore, Hallenstein Glassons is dedicated to sustainability, utilizing eco-friendly materials and responsible manufacturing practices. Overall, the company's strong brand presence, trendy products, and commitment to customer satisfaction contribute to its success in the fashion retail industry.
[“Hallensteins Glassons.” *Wikipedia*, 4 Dec. 2022, en.wikipedia.org/wiki/Hallensteins_Glassons]

1.1. Competitive Position

- Unique Advantages: Hallenstein Glasson Holding Limited has built a good reputation in New Zealand and Australia, establishing a strong brand presence that has gained customer trust and loyalty. By adopting a dual-brand strategy, the company effectively targets a wide range of customers in the fashion market, offering two brands such as Glassons and Hallenstein Brothers to divide its customer base.
- Opportunities: Hallenstein Glasson can work on the rising popularity of online shopping by enhancing its e-commerce platform and try improving the offline shopping experience to attract a broader customer base. It also has the chance to broaden its market reach by expanding into new international markets outside of New Zealand and Australia, utilizing its established business strategies and strong brand image.
- Threats: The fashion retail sector faces intense competition, as many brands compete for market dominance in both physical stores and online platforms. Changes in the economy or consumer spending habits have the potential to affect the company's financial performance and sales.

1.2. Specific Business Goals

Glassons and Hallenstein Brothers are focused on expanding their customer base and retaining existing customers to increase their business. The company provides personalized services and products tailored to individual customer preferences to enhance the overall shopping experience. Hallenstein Glasson is working towards improving operational efficiency by reducing costs, optimizing inventory management, and focusing on sustainability factors.

1.3. Innovative Technologies Deployment

Hallenstein Glasson Holdings has introduced chatbots Charlie and Benny to address customer queries on their websites. The company has also implemented interactive fitting rooms with unique features that enable customers to enjoy their favorite music, alongside testing handheld payment devices in their retail stores, as well as expanding click-and-collect services. These initiatives show Hallenstein Glasson's commitment to using technology to improve customer engagement and operations in a competitive retail market. [Shaw, Aimee . "Chatbots and Interactive Fitting Rooms Part of Hallenstein Glasson Holdings' Plan to Combat Ever-Changing Retail Market." *NZ Herald*, 12 Dec. 2018, www.nzherald.co.nz/business/chatbots-and-interactive-fitting-rooms-part-of-hallenstein-glasson-holdings-plan-to-combat-ever-changing-retail-market/5FL76EUKGR4NK2GJY4NE6EWDV4/.]

1.4. Problem/Opportunity Addressed by Proposed AI

- Opportunity: Personalized customer service
- Issue: Currently, Hallenstein Glasson may face challenges in providing customized shopping experiences to their customers, resulting in missed chances to enhance sales, attract more customers, and promote related products.
- Importance: The importance of tailored customer experiences cannot be ignored, as they greatly influence customer satisfaction, loyalty, and overall value. By initiating this opportunity, Hallenstein Glassons can improve its competitive advantage, increase customer loyalty, and drive revenue growth.

2. Proposed Intiative

2.1. AI Technology/Application

The integration of H&M's Body Scan Jeans AI technology into Hallenstein Glassons stores aims to enhance the shopping experience. This technology enables customers to generate a digital avatar by using 3D body scanning in the fitting rooms. With this avatar, customers can virtually test out different denim styles and colors.

2.2. Description of Specific Tasks and Processes Benefiting from AI

The main goal of this initiative is to enhance the customer shopping experience at Hallenstein Glassons stores by incorporating H&M's

Body Scan Jeans AI technology. By introducing this AI application, customers will be able to undergo a 3D body scan at the store, which will generate a digital avatar. This avatar will allow customers to virtually try on different denim colors and styles. Furthermore, machine learning algorithms will convert the body scan data into a paper pattern and measurement list, making it easier to produce personalized jeans for each body type.

2.3. Solution's Relation to Identified Problem/Opportunity

The solution presented in this initiative directly tackles the issue of providing customized service to customers by making personalized, on-demand manufacturing. Through the utilization of AI, Hallenstein Glassons can effectively minimize returns and reduce wastage, which aligns with their dedication to sustainability and customer satisfaction. AI proves to be an optimal choice as it combines digital innovation along with a customer satisfaction approach, ultimately giving an advantage to Hallenstein Glassons over its competitors and attracting new potential customers.

2.4. Technical Requirements

To effectively incorporate AI technology into the production of Body Scan Jeans, it is important to have 3D scanning technology, machine learning algorithms for creating patterns, and seamless integration with production systems to facilitate the manufacturing of customized jeans.

2.5. Managerial or Leadership Requirements

Effective leadership in preparing employees is essential for the successful execution of this application and aligning business objectives with this AI technology.

2.6. Costs

Obvious costs include purchasing 3D scanning equipment, creating AI software, and conducting training sessions. On the other hand, there might be some non-obvious costs such as operational disturbances during the integration process and training employees.

2.7. Fit with the Organization's IT Strategies and Capabilities

The implementation aligns with Hallenstein Glassons IT strategies, aiming to improve customer experience through technology. The IT infrastructure should also be scalable, which can handle the increased

demands and data processing requirements that come with AI integration. This will enable the company to effectively implement AI to enhance its customer experience and stay competitive in the rapidly changing fashion industry.

2.8. Benefits to Customers and/or Suppliers

Customers can enjoy the advantages of customized, just-in-time production, leading to more perfect fittings and decreased product returns. It also allows for a more efficient use of resources, reducing waste and improving overall sustainability in the manufacturing process. Suppliers can benefit from increasing demand and the inventory can be under control.

2.9. Risks and Mitigation

- Potential risks associated with integrating AI into current systems at Hallenstein Glassons involve technical difficulties and data privacy issues. This can include compatibility issues with legacy systems, software bugs, and the need for additional hardware or infrastructure upgrades. These can lead to system downtime, decreased efficiency, and increased costs.
- Data privacy issues are another concern when integrating AI into current systems. This data can include personal information about customers, such as their body measurement details, shopping habits, and preferences. If this data is not properly protected, it can have unauthorized access, hacking, or misuse, leading to potential fraud and loss of customer trust.
- To address these risks, regular testing procedures should be put in place. This can involve conducting thorough testing at each stage of the integration process, including unit testing, integration testing, and system testing. By identifying and resolving any technical issues early on, Hallenstein Glassons can minimize the impact on its operations and ensure seamless integration.
- Regarding data protection laws, it is necessary to safeguard customer data and maintain trust. This includes obtaining proper consent from customers for collecting and using their data, implementing security measures to protect the data, and providing customers with the option to opt out or delete their data if desired.
- Open communication with customers is essential to address any concerns or questions they may have regarding the use of AI technology. Hallenstein Glassons should be transparent about how AI is being used, what data is being collected, and how it is being protected. This can be

done through clear and easily accessible privacy policies, terms of service, and customer support.

Evidence from Organizational Context:

The integration of chatbots, interactive fitting rooms, handheld payment devices, and other advanced technologies by Hallenstein Glassons showcases their forward-thinking mindset and willingness to adapt to the changing landscape of retail. By implementing this AI solution, they can provide a more personalized and efficient customer experience, setting themselves apart from competitors and strengthening their position in the fashion industry.

3. Conclusion/Recommendation

In conclusion, the incorporation of H&M's Body Scan Jeans AI technology into Hallenstein Glassons stores presents a revolutionary chance for the company. This initiative aligns with Hallenstein Glassons commitment to innovation and customer-focused practices, as well as supporting sustainable fashion, enabling a unique and personalized shopping experience. Thus, can enhance its competitive edge, enhance customer satisfaction, and achieve sustainable growth in the dynamic fashion retail industry.

3.1. First Steps

- Feasibility Study: In order to assess the practicality and efficiency of incorporating the Body Scan Jeans AI technology, Glassons should conduct a feasibility study and pilot program. This initial step is crucial in determining the viability of the AI application.
- Pilot: To evaluate the effectiveness and practicality of the AI technology, it is recommended to initiate a limited pilot program in specific stores. This program will allow for real-world testing and provide an opportunity to gather valuable feedback from both customers and store personnel. The aim is to assess the usability, functionality, and overall impact of the technology in a controlled environment.
- Stakeholder Involvement: Engaging stakeholders involves interacting with essential people such as clients, staff, and vendors to convey the advantages of the AI project and tackle any opposition to modifications.
- Training and Implementation Plan: Develop a structured training and implementation plan to ensure that employees are well-prepared to effectively utilize AI technology. Provide ongoing support and training to maximize the benefits of the project.
- Evaluation and Adjustment: The pilot program should be consistently evaluated and adjusted by considering feedback and performance. It is important to identify areas that require improvement and refine the

implementation strategy to successfully implement the program on a larger scale.

By implementing these initial measures, Hallenstein Glassons will be able to create a foundation for the smooth integration of the Body Scan Jeans AI technology, resulting in a more personalized and advanced shopping experience for its customers.

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