

Digital Transformation as A Strategic Lever in Sustainable Finance: A Comparative Study of Goldman Sachs and Morgan Stanley

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Abstract. The aim of this study was comparatively exploring digital transformation as a strategic lever in sustainable finance using Goldman Sachs and Morgan Stanley as case studies. The study leveraged thematic analysis of secondary information and comparative case study to explore digital transformation as a strategic lever in sustainable finance using Goldman Sachs and Morgan Stanley as case studies. Findings show that Goldman Sachs and Morgan Stanley applies digital innovations such as AI and blockchain to address ESG commitments. However, the two companies differ in their approaches and scope. This shapes strategic competitive positioning and industry-wide innovation. In particular, Goldman Sachs applies AI chatbots to personalise financial savings solutions to customers while Morgan Stanley has adopted real-time algorithmic digital solutions to help recommend sustainable investment portfolios. This shows that digital innovations are significant in allowing financial organisations to strategically position and differentiate in the financial sector. The major contribution of this study is availing a comparative insight into how financial organisations leverage digital innovations to provide sustainable finance solutions and satisfy consumers' demands.

Keywords: Digital transformation, Goldman Sachs, Morgan Stanley, AI.

1. Introduction

Recent digital advancements and applications in sustainable finance showcases significant transformation in how global businesses conduct their operations. Currently, organisations face increasing pressure to adopt sustainable practices by leveraging digital advancements [1]. This pressure for green innovation has encouraged many financial organisations to embrace digital tools for promoting green practices and entrenching sustainability within their operational activities [2]. Goldman Sachs and Morgan Stanley are two financial organisations that have integrated digital technologies to improve their competitiveness in the dynamic sustainable economy [3-4]. Despite both companies sharing this vision, Goldman Sachs and Morgan Stanley shows unique implementation strategies in their digital strategies which is worth analysing.

On this background, the main aim of this study is investigating how Goldman Sachs and Morgan Stanley leverage on digital transformations for providing sustainable finance, as integrating sustainability and digital technologies are critical in enhancing competitive performance [5]. This is because digital technologies optimise resource-use efficiency, minimise waste, and reduce costs of operations. This allows organisations to differentiate in the market by producing green products that addresses the needs of growing conscious consumers [6]. Most existing studies highlight the role of digital technologies in achieving green strategies; however, minimal effort has been directed towards exploring how financial organisations integrate these two elements within their operational practices to realise competitive advantages. This study addresses this gap using two main objectives. The first objective is to explore how Goldman Sachs and Morgan Stanley deploy digital transformation strategies to enhance their sustainable finance initiatives. The second objective is to compare the similarities and differences in the strategic use of digital tools by the two firms in achieving competitive positioning within the context of sustainable finance.

Having introduced this study, the next section reviews existing literature on the topic followed by an outline of methodology. This study then presents findings and analysis, discusses the findings, before concluding with brief summary.

2. Literature Review

2.1. Digital Transformation in Financial Services

Digital transformation encompasses the act of introducing digital tools within an organisation to transform business processes, improve customer satisfaction, and enhance operational efficiency. In the financial industry context, digital transformation involves introducing advanced financial technologies, artificial intelligence (AI), automated processes, and machine learning [7]. While digital integration plays a significant role, it further establishes the relationship between digital innovation and new business practices focused on meeting emerging consumer demands, particularly eco-conscious requirements [7-8]. This promotes an understanding that integration of digital technologies is without obstacles which is not the case.

Financial technology has tremendously altered traditional financial services by introducing mobile banking applications, peer-to-peer lending services, and digital wallets [9]. Also, financial organisations leverage on AI and machine learning for big data analysis. This enhances investment accuracy, management of financial risks, and better customer experiences [10]. Notably, AI applications in automation and robotics allow efficient management of routine tasks such as management of customer queries and calls [8]. Globally, application of these digital technologies improves internal operational efficiency and competitiveness. For instance, Goldman Sachs leverages on AI-based chatbots on the Marcus digital platform that has integrated natural language processing (NLP) to provide personalised savings solutions and financial decision-making to clients [3].

Although digital transformation provides important advantages to financial services, there are challenges that need careful navigation. One is data security issues where financial organisations are needed to introduce strict and effective data protection policies [7]. Secondly, ethical AI application is another challenge due to the risks of biased recommendations which could undermine justifiable and balanced treatment of customers [7]. Overcoming these challenges require effective governance and collaboration between the financial organisations and legal enforcement entities.

2.2. Digital Innovation and Sustainable Finance

Digital tools are becoming more relevant in encouraging sustainable finance. This is because digital innovations allow financial organisations such as Goldman Sachs to link their business models with ESG (environmental, social, and governance) goals. Specifically, organizations adopting green business practices are implementing carbon-tracking technologies to enhance sustainability [11]. Although these approaches enable realisation of sustainable finance, it's important to note that some digital technologies cannot be scaled or standardised, hence complicating universal application [12]. Although financial organisations can realise improved transparency through application of block-chain technology to track carbon, few organisations have integrated these digital solutions due to challenges such as regulatory complications and resource constraints.

Moreover, digital tools such as AI have been applied to help track carbon and transformative results have been realised such as effectively managing emissions [13]. In the process, financial organisations are guided towards considering low-emission assets as part of investment options. This is critical in realising green goals and addressing the growing stakeholders' interest towards sustainable investments. Importantly, new green investment platforms allow financial organisations to create portfolios that address ESG objectives. These new platforms embrace digital technologies to find and manage financial investments that encourage green development [14]. As a result, financial organisations position uniquely in the increasingly volatile, complex, and uncertain financial sector.

The financial industry is becoming more dynamic and competitive. As a result, many financial organisations such as Goldman Sachs and Morgan Stanley are employing digital innovation to address sustainability demands to gain more market relevance. The use of digital innovations to provide sustainable finance allow financial organisations to become more effective and efficient in their operational practices and quest for sustainability [15]. In particular, financial organisations are appealing to sustainability conscious investors by introducing green investment initiatives [1, 5]. This is realised through digital innovations that track ESG performance, thus, promoting transparency.

Porter's generic strategies is useful in understanding how financial organisations such as Goldman Sachs and Morgan Stanley can enhance their competitive positioning through digitally empowered sustainable financial services and products. Porter's generic strategies outline three ways of realising competitive advantages; differentiation, cost-leadership, and focus [16]. The integration of digital innovations to provide sustainable financial solutions can introduce new approaches to competitive differentiation within Goldman Sachs and Morgan Stanley.

2.3. Research gaps

Firstly, many studies highlight the role of digital technologies in achieving green strategies, but minimal effort exists towards addressing their synergistic and comparative implementation in the financial sector. Secondly, limited research exists on the similarities and differences on how financial institutions utilise digital innovations for competitive positioning towards sustainable finance. Most existing studies focus on the advantages and to some extent, drawbacks of integrating digital technologies. However, it is critical to look into the varying comparative approaches utilised by financial organisations to become competitive.

3. Data

The key sources of data for this study include industry ESG reports, annual reports published by Morgan Stanley and Goldman Sachs, and environmental disclosures by the two companies. Goldman Sachs and Morgan Stanley have been selected in this study because they are pioneers in combining sustainability with digital growth. The case companies also have publicly available sustainability disclosures and reports that allows an understanding into their digital strategies and achievements in sustainable finance.

4. Findings and Analysis

4.1. Digital Infrastructure and Investment Focus

Goldman Sachs and Morgan Stanley applies digital innovations to enhances the greenness of their financial services. For example, Marcus's platform developed by Goldman Sachs from scratch supports customers in managing investments and loans [17]. Customers are empowered in making better decisions related to green investments because Marcus historically analyses their interests and behaviours [17].

Differently, E*TRADE is a digital platform acquired by Morgan Stanley to promote access to personalised and individualised recommendations on ESG financial investments. E*TRADE is algorithmically calibrated and also leverages digital analytics to enhance accuracy of green investment recommendations to clients [18].

Although both Marcus by Morgan Stanley and E*TRADE by Goldman Sachs serve similar functions in providing access to financial solutions, Goldman Sachs' digital platform focuses more on savings and retail financial services through Marcus, while Morgan Stanley's E*TRADE is geared towards management of investments [17-18]. Also, Marcus has been developed from scratch while E*TRADE is strategically acquired [17-18].

4.2. Use of AI, Data Analytics, and Automation

Both financial organisations leverage on AI, data analytics, and automation to accelerate achievement of sustainable finance goals. Unlike past studies, this research contextualises findings within the ESG risks and opportunities. Goldman Sachs and Morgan Stanley apply these digital tools to improve sustainability and competitive differentiation in the financial industry. In particular, Goldman Sachs uses AI and machine learning for management of portfolios and financial trading [3]. AI is applied in personalising financial solutions to clients based on their risk acceptance and sustainable investments preferences. Goldman Sachs has also integrated machine learning to help manage financial risks and enhance outcomes for low-carbon assets [3, 19]. This approach reflects Porter's differentiation strategy since the digitally enabled financial offerings sets Goldman Sachs from the rest of the competition [16].

On the other hand, Morgan Stanley applies AI basically for segmenting its customers and offering personalised ESG-aligned investments portfolios. The AI tools deployed by the company analyses clients' behavioural practices and market dynamics to offer low-emission investment options and knowledge about sustainable assets [4]. Importantly, automated digital infrastructure allows real-time analysis of investment information, thus, enhancing the effectiveness of monitoring sustainable portfolios [4].

On this background, a key difference is that Goldman Sachs focuses more on managing risks and personalising sustainability solutions, while Morgan Stanley is oriented towards real-time data analytics, customer segmentation, and assisting customers to match their portfolios with sustainability objectives.

4.3. ESG Integration and Impact Measurement

Goldman Sachs and Morgan Stanley are applying digital tools to meet environmental, social, and governance goals (ESG) in respect of performance monitoring and climate risk assessments. Specifically, Goldman Sachs has integrated ESG scoring within its Marcus digital platform and financial investment portfolios [19]. These digital developments enable clients to monitor the extent to which their investments are eco-friendly. This is because Marcus allows carbon-tracking capabilities that promote analysis of the environmental impacts of investment decisions [19]. As a result, Goldman Sachs is able to match its financial solutions with the sustainability impacts of its investments solutions.

Conversely, Morgan Stanley applies blockchain digital technology to enhance eco-friendly reporting in regard to the carbon credits and green bonds. The company's digital solution enables open reporting of ESG performance such as greenhouse gas emissions (GHG) and the results of sustainability investments [4]. Moreover, the company uses AI-based digital analytics to monitor climate-based risks. This allows Morgan Stanley to reduce negative environmental outcomes, address the growing investors' demand for sustainable finance solutions [4]. The application of digital solutions pillars the company's focus on enhancing its ESG impacts and offering open, eco-friendly financial investment solutions to clients.

4.4. Strategic Positioning and Differentiation

Digital solutions integrated by Goldman Sachs and Morgan Stanley allows unique competitive differentiation in the financial sector. Goldman Sachs' Marcus uses AI-powered chatbots to personalise saving solutions to customers hence appealing to sustainability conscious consumers [20]. In the process, Goldman Sachs effectively differentiates itself as a valuable provider of retail sustainable finance solutions. This is because the organisation provides personalised and customised financial solutions that addresses the growing customers' interest towards eco-friendly financial solutions [3, 19-20]. Focus on sustainable investment solutions such as lending, and savings uniquely positions Goldman Sachs as broadening access to eco-friendly finance services.

Morgan Stanley differentiates itself as a global provider of sustainable investments through the E*TRADE digital solution [18]. The platform is integrated with real-time digital analytics which

allow investors to make rational decisions on low-emission investment solutions [18]. The use of data analytics and AI within the E*TRADE enable identification and recommendation of green investment opportunities that meet ESG objectives. Thus, the company is primarily focused on impact-focused investment solutions that address customers' growing demand for sustainable assets and climate-leaning investment options [4].

Accordingly, the strategic positioning and differentiation goals of both companies demonstrates their efforts to digital growth and eco-friendly finance. However, Goldman Sachs and Morgan Stanley adopts different strategies. Goldman Sachs is centred more on retail banking services and products, while Morgan Stanley focuses on investment management and solutions on sustainable portfolio management. This reveals how the two companies have integrated digital solutions into sustainability-oriented finance, hence becoming effectively positioned and differentiated in the financial market.

5. Discussion

5.1. Important Similarities in Digital Strategies

Goldman Sachs and Morgan Stanley apply digital tools to enhance the effectiveness, transparency, and efficiency of their eco-friendly finance solutions. Research shows that the application of automation, AI, and data analytics significantly improves financial solutions, specifically, in regard to risk management and decision-making [7-8]. Both organisations have leveraged on AI-based tools, for example, Goldman Sachs' Marcus and Morgan Stanley's E*TRADE to monitor and track eco-friendly financial solutions which leads to market leadership in provision of eco-conscious financial solutions. Goldman Sachs applies AI chatbots to personalise financial savings solutions to customers and provide sustainable financial services and products. On the other hand, Morgan Stanley has adopted real-time algorithmic digital solution to help recommend sustainable investment portfolios. This shows that commonality in application of AI to meet the growing demand for sustainable financial solutions [3-4].

Moreover, the results show that both Morgan Stanley and Goldman Sachs values ESG goals in their operational activities. Notably, green finance is becoming more linked to the application of digital tools that allow emission tracking and open reporting of sustainability practices [11, 14]. For instance, Goldman Sachs applies carbon monitoring digital tools to enable ESG scoring within the Marcus digital platform. In the process, the company accurately traces and monitors its ecological outcomes and investment impacts [3]. Comparatively, Morgan Stanley uses blockchain to monitor green bonds and carbon credits. This empowers clients to have open access to the outcomes of their green investment decisions [4]. These findings are further supported by previous literature that AI improves customer satisfaction and provision of eco-friendly financial solutions [10].

5.2. Important Differences in Strategic Orientation

Although there are commonalities in how Goldman Sachs and Morgan Stanley applies digital tools, there are also specific differences in the priority of their strategic orientation and the operational importance of their digital tools. Goldman Sachs' Marcus is integrated with digital tools that support retail banking services [17]. The digital platforms reflect Porter's differentiation strategy because they support user-behaviour analytics and recommendation on sustainable financial solutions to customers hence improving client experiences and satisfaction [3, 16-17]. This effectively positions and differentiates Goldman Sachs as a provider of sustainable financial investment solutions to eco-conscious customers. Furthermore, this positioning and differentiation enables the company to meet the needs of the retail customers while addressing sustainability in its financial solutions [9].

Comparatively, Morgan Stanley prioritises high-net worth customers and institutional investors which is its differentiation focus as outlined by Porter [16]. The company's E*TRADE digital platform ensures real-time insights through AI, thus, allowing personalised recommendations on low-emission investment assets [18]. Varying strategic focus between Morgan Stanley and Goldman

Sachs underscores Porter's theory which holds that competitive advantage can be addressed through unique products and services [16]. While Morgan Stanley prioritises eco-conscious investments, Goldman Sachs centres more on retail solutions that addresses the growing need for climate-conscious clients [3, 18].

5.3. Digital Tools as Enablers or Differentiators in Sustainable Finance

Both companies have strategically leveraged on digital tools to achieve unique positioning and differentiation in the financial sector as described by Porter [16]. For instance, Goldman Sachs' Marcus uses AI to provide personalised financial recommendations to green-conscious investors [17]. This aligns with Păun and Pinzaru's findings that digital developments improve resource-use effectiveness directed towards targeting and addressing the needs of green conscious customers [1]. Contrastingly, Goldman Sachs' application of blockchain digital solution allows open disclosures on carbon credits and green bonds to address the interests of institutional investors and those that value environmental sustainability [19]. Notably, this strategic approach demonstrates how digital tools effectively support ESG openness hence appealing to stakeholders interested in green finance investment solutions [11].

5.4. Implications for Theory and Practice

Application of digital innovations to promote sustainable finance as seen through Goldman Sachs and Morgan Stanley reveals the significance of digital technologies in improving efficiency in operations and solving the growing requirement for sustainable finance services. While research confirms that the emergence of fintech accelerates provision of sustainable finance services, there remains a need for more research into how digital solutions can be scaled to maximise ecological impacts [12-13]. This study has addressed this gap by providing practical insights into how financial organisations can leverage on digital innovations such as AI and blockchain to effectively position as providers of sustainable finance solutions.

However, this study collected qualitative secondary data from two US financial organisations which reduces generalisability of findings. Insights and data generated from the two companies may not fully reveal the digital strategies and developments adopted by other local and cross-border financial organisations pursuing sustainable finance through digital technologies.

6. Conclusion

Findings in this study show that Goldman Sachs and Morgan Stanley applies digital innovations such as AI and blockchain to address ESG commitments. However, the two companies are applying varying strategic approaches, and their operational scope also differ. For instance, Goldman Sachs applies AI chatbots to personalise financial savings solutions to customers while Morgan Stanley has adopted real-time algorithmic digital solution to help recommend sustainable investment portfolios. This shows that digital innovations are significant in allowing financial organisations to strategically position and differentiate in the financial sector. However, this study has mainly used secondary data whose authenticity and accuracy has not been ascertained and large US investment banks. Future studies may consider using smaller case companies while collecting primary data using survey questionnaires or in-depth interviews to validate the secondary data findings.

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