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END OF THE CIRCLE MEMORY

IN VIEW OF OBTAINING A MASTER DEGREE IN MANAGEMENT SCIENCES

THEME:

THE IMPACT OF DIGITAL MARKETING AND CRYPTOCURRENCY ON THE REVENUE OF GLOBAL ENTREPRISE

CASE STUDY OF TESLA

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This thesis, is dedicated

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ABSTRACT/RESUME

ABSTRACT : This master thesis investigates the impact of digital marketing and cryptocurrencies on the revenue of global enterprises, with a specific focus on Tesla as a case study. The study explores the ways in which digital marketing strategies and the integration of cryptocurrencies can influence revenue generation in the contemporary business landscape. Through an in-depth analysis of Tesla's marketing initiatives and its engagement with cryptocurrencies, this research aims to provide insights into the potential benefits and challenges faced by enterprises in leveraging these modern marketing and financial tools.
Keywords: cryptocurrency, digital marketing, global enterprises, revenue generation

RESUME : Cette thèse de master étudie l'impact du marketing digital et des crypto-monnaies sur les revenus des entreprises mondiales, avec un accent particulier sur Tesla en tant qu'étude de cas. L'étude explore les façons dont les stratégies de marketing numérique et l'intégration des crypto-monnaies peuvent influencer la génération de revenus dans le paysage commercial contemporain. Grâce à une analyse approfondie des initiatives marketing de Tesla et de son engagement avec les crypto-monnaies, cette recherche vise à fournir des informations sur les avantages potentiels et les défis auxquels sont confrontées les entreprises pour tirer parti de ces outils marketing et financiers modernes.
Mots-clés: crypto-monnaies, marketing digital, entreprises mondiales, génération de revenus

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Terminologies

Terms	Definition
Digital Marketing	The use of online channels and strategies to promote products or services and engage with target audiences.
Cryptocurrencies	Digital or virtual currencies that use cryptography for secure transactions and operate on decentralised networks.
Global Enterprises	Large-scale companies that operate in multiple countries or have a global presence.
Case Study	A detailed examination of a specific subject to gain insights and draw conclusions.
E-commerce	The buying and selling of goods and services over the internet.
Brand Awareness	The level of recognition and familiarity that a brand has among its target audience.
Conversion	The desired action taken by a user in response to a marketing effort, such as making a purchase or filling out a form.
Social Media Marketing	The use of social media platforms to promote products, engage with customers, and build brand awareness.
Search Engine Optimization	The process of optimising a website to improve its visibility and ranking in search engine results.

Content Marketing	The creation and distribution of valuable and relevant content to attract and engage a target audience.
Website Optimization	The process of improving a website's performance, user experience and conversion rates.
Customer Relationship Management	The practices and strategies used to manage and nurture customer relationships.
Customer Engagement	The level of interaction and involvement that customers have with a brand or its offerings.
Customer Segmentation	Dividing a customer base into distinct groups based on shared characteristics or behaviours.
Personalization	Tailoring marketing efforts and messages to meet the specific needs and preferences of individual customers.
Cryptography	refers to the cryptographic principles and techniques used to secure transactions and and protect user data..
Key Performance Indicators	Quantifiable metrics used to evaluate the success and performance of marketing efforts.
Return on Investment	The measure of profitability or effectiveness of an investment, typically expressed as a percentage.
Customer Lifetime Value	The predicted revenue a customer will generate over the course of their relationship with a company.
Digital Advertising	Advertising delivered through digital channels, such as search engines, websites, or mobile apps.

Influencer Marketing	Collaborating with influential individuals on social media to promote products or services.
Social Media Influencers	Individuals with a significant following on social media platforms who can influence the opinions and behaviours of their audience.
Email Marketing	Sending targeted emails to a group of individuals to promote products, nurture leads, or build customer loyalty.
Augmented Reality	Technology that superimposes digital elements onto the real world, enhancing the user's perception and experience.
Virtual Reality	Technology that creates a simulated environment, immersing the user in a digital experience.
Chatbots	AI-powered computer programs designed to simulate conversation with users, often used for customer support or engagement.
Blockchain	A decentralised and distributed digital ledger that records transactions across multiple computers, ensuring security and transparency.
Bitcoin	The first and most well-known cryptocurrency, based on blockchain technology.
Ethereum	A decentralised platform that enables the creation and execution of smart contracts and decentralised applications.
Initial Coin Offering	A fundraising method in which a new cryptocurrency or token is offered to investors in exchange for funding a project.

Cryptocurrency Exchange	An online platform where cryptocurrencies can be bought, sold, and traded with other digital assets or fiat currencies.
Wallet	A digital or physical device used to securely store private keys and enable transactions for cryptocurrencies.
Decentralisation	The distribution of control or decision-making authority across a network of participants, rather than being centralised in one entity.
Cybersecurity	The practice of protecting computer systems and networks from digital threats, such as hacking, data breaches, or malware attacks.

List of Abbreviation

ABBREVIATION	MEANING
DIGITAL MARKETING	Digital Marketing
SEO	Search Engine Optimization
SM	Social Media
SERP	Search Engine Results Page
DEFI	Decentralise Finance
CRM	Customer Relationship Management

DOOH	Digital Out-Of-Home
DAPP	Decentralise Application
CAC	Customer Acquisition Cost
CPL	Cost Per Lead
PPC	Pay-Per-Click
E-Commerce	Electronic Commerce
POW	Proof Of Work
POS	Proof Of Stake
B2B	Buyer To Buyer
ROI	Return On Investment
GA	Google Analytics
CPA	Cost Per Acquisition
BTC	Bitcoin
ETH	Etherium
P2P	Peer To Peer
DAO	Decentralise Autosome Organisation
CEX	Centralise Exchange
AIDA	Attention, Interest, Desire, Action
Ad	Advertisement
CAC	Customer Acquisition Cost
KPI	Key Performance Indicator
SMM	Social Media Marketing
SEM	Search Engine Marketing
AML	Anti-Money Laundering
CRO	Conversion Rate Optimization
CPA	Cost Per Acquisition

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General Introduction

The topic of the impact of digital marketing and crypto currencies on the revenue of global enterprises is an important and timely one. The increasing adoption of digital marketing strategies and the emergence of cryptocurrencies have transformed the way businesses operate and generate revenue.

According to recent statistics, global digital ad spending reached a staggering $389 billion in 2022, representing a significant growth of 17% compared to the previous year. This upward trend is expected to continue, with digital ad spending projected to surpass $517 billion by 2023 (Statista, 2022). The shift towards digital advertising platforms, such as social media, search engines, and programmatic advertising, has allowed companies to target their audience more effectively and measure the return on investment (ROI) more accurately.

Furthermore, the rise of cryptocurrencies, notably Bitcoin and Ethereum, has introduced new opportunities for businesses to enhance their revenue streams. The market capitalization of cryptocurrencies reached over $2.5 trillion in 2021, reflecting the growing interest and adoption of these digital assets (CoinMarketCap, 2022). Many global enterprises have started accepting cryptocurrencies as a form of payment, expanding their customer base and tapping into a new market segment. Additionally, the utilisation of blockchain technology behind cryptocurrencies has enabled secure and transparent transactions, reducing costs and increasing efficiency for businesses.

Digital marketing refers to the use of various digital channels, such as social media, email, search engines, and mobile applications, to promote products and services. It allows businesses to target specific audiences, track campaign performance, and engage with customers in a more personalised manner (Statista, 2022).

Cryptocurrencies, on the other hand, are digital or virtual currencies that use cryptography to secure and verify transactions and control the creation of new units. The first cryptocurrency, Bitcoin, was introduced in 2009 by an individual or group of individuals operating under the pseudonym Satoshi Nakamoto. Nakamoto's original whitepaper titled "Bitcoin: A Peer-to-Peer Electronic Cash System" outlined the concept and technical details of Bitcoin (Nakamoto, 2008).

The significance of the impact of digital marketing and cryptocurrencies on the revenue of global enterprises has been highlighted by several authors and industry experts. For example, Ryan Deiss, in his book "Digital Marketing for Dummies," emphasises the importance of digital marketing in reaching and engaging with modern consumers. Similarly, Don Tapscott and Alex Tapscott discuss the transformative potential of cryptocurrencies and

blockchain technology in their book "Blockchain Revolution: How the Technology Behind Bitcoin is Changing Money, Business, and the World."

Numerous examples worldwide demonstrate the impact of digital marketing on revenue generation for businesses. Companies like Amazon, Alibaba, and Facebook have leveraged digital marketing strategies to expand their customer base and drive significant revenue growth. These organisations utilise targeted ads, personalised email campaigns, and social media marketing to reach and engage with their audiences effectively.

Regarding cryptocurrencies, their rise presents various opportunities and challenges for businesses. For example, some companies have started accepting Bitcoin or other cryptocurrencies as a form of payment, allowing them to tap into a global customer base that prefers digital currencies. Additionally, the investment potential of cryptocurrencies has attracted businesses and individuals seeking to diversify their portfolios. However, the volatile nature of cryptocurrency markets and the need for robust security measures pose challenges for businesses looking to incorporate cryptocurrencies into their operations.

By investigating the impact of digital marketing and crypto currencies on the revenue of global enterprises, this research can provide valuable insights for businesses looking to improve their marketing strategies and adapt to changing technological trends. It can also help researchers and policymakers better understand the ways in which digital technologies are shaping the global economy.Several theories and frameworks have been developed to investigate and understand the implications of these trends. Here are some prominent theories and concepts that can provide valuable insights:

1. Technology Acceptance Model (TAM): The TAM, proposed by Davis in 1989, examines how users perceive and adopt new technologies. It can be applied to understand the adoption and acceptance of digital marketing strategies by businesses and the factors influencing their decision-making processes (Davis, 1989).
2. Customer Relationship Management (CRM): CRM theory focuses on managing and nurturing customer relationships to drive loyalty and maximise customer lifetime value. Digital marketing plays a crucial role in implementing CRM strategies through personalised communication and targeted marketing campaigns (Peppers & Rogers, 1993).
3. Network Effects: The concept of network effects, popularised by Metcalfe's Law, suggests that the value of a network increases as the number of participants or users grows. In the context of cryptocurrencies, network effects play a significant role in adoption and value creation (Metcalfe, 1998).

4. Information asymmetry: refer to situation where one party in transaction where one party as more information than the others in the context of cryptocurrencies, the transparency and immutability of blockchain technology can help mitigate information asymmetry, enhancing trust and efficiency in financial transactions (Stiglitz, 2000).

The purpose of this study is to examine the impact of digital marketing and crypto currencies on the revenue of global enterprises. The study aims to explore the potential benefits and drawbacks of these two areas and their impact on the financial performance of businesses in a global context.

The specific objectives of the study include:

➢ To analyse the current state of digital marketing and crypto currencies and their relevance to global enterprises.

➢ To investigate the impact of digital marketing on the revenue of global enterprises relying on their financial performance, including the effectiveness of various digital marketing channels and tactics.

➢ To explore the impact of crypto currencies on the revenue of global enterprises, including the opportunities.

➢ To provide recommendations for global enterprises on how to leverage digital marketing and crypto currencies.

Overall, the study aims to contribute to the understanding of the role of digital marketing and crypto currencies in the global economy and provide practical insights for businesses seeking to adapt to these changing trends. Indeed, the research questions for this study is as follow:

How do crypto currencies impact the revenue of global enterprises regarding their digital marketing strategies?

Crypto currencies can impact the revenue of global enterprises in various ways when it comes to their digital marketing strategies. Here are some key impacts:

Expanding Customer Base: Accepting crypto currencies as a form of payment can attract a new segment of customers who prefer using digital assets. By incorporating crypto payment options into their digital marketing strategies, businesses can tap into a growing community of crypto enthusiasts and increase their customer base.

Enhanced Global Reach: Crypto currencies operate on a decentralised and borderless infrastructure, allowing businesses to transact with customers across the globe without the

limitations imposed by traditional payment systems. This can open up new market opportunities for global enterprises, especially in regions where access to traditional financial services may be limited.

Improved Customer Trust and Transparency: Blockchain technology, the underlying technology behind crypto currencies, provides a transparent and secure record of transactions. This transparency can enhance customer trust and confidence in the authenticity and integrity of digital marketing campaigns, especially in areas such as influencer marketing and sponsored content.

Innovative Marketing Campaigns: Crypto currencies offer unique marketing opportunities. For example, some businesses have launched Initial Coin Offerings (ICOs) or token sales to raise funds for their projects. These fundraising campaigns often involve marketing efforts to promote the ICO and attract potential investors.

Leveraging Crypto Influencers: The crypto community has its own set of influencers and thought leaders who hold significant sway over their followers. Partnering with influential figures in the crypto space can help businesses amplify their digital marketing messages and reach a highly engaged and relevant audience.

reducing intermediaries and increasing ad targeting accuracy.

In summary, by embracing crypto currencies in their digital marketing strategies, global enterprises have the potential to reach new markets, build customer trust, and leverage innovative marketing approaches in the evolving landscape of digital assets.

The hypothesis for this study could be:

Hypothesis 1: Digital marketing positively impacts the revenue of global enterprises, as it allows companies to reach a larger audience, build brand awareness, and engage with customers in real-time.

Hypothesis 2: Crypto currencies have the potential to positively impact the revenue of global enterprises, as they provide a fast, secure, and decentralised payment method that can reduce transaction costs and improve customer trust.

Hypothesis 3: Global enterprises that effectively leverage digital marketing and crypto currencies will experience higher revenue growth compared to those that do not.

This thesis includes three main chapters. In the first chapter, we present general knowledge about digital marketing. In the second chapter, we discuss some theories and processes about crypto currency. In the last chapter, we attempt to answer the research question and the hypotheses about the link on how to integrate digital marketing to crypto

currency for revenue generation of global enterprises. For that, a case study of TESLA is illustrated answering the research question. The framework of this example, based on hypothetical-deductible methodology, directly leads to answers to the questions raised above.

Literature review

A. Digital Marketing

Digital marketing has become increasingly important as businesses rely on digital platforms[1] to reach their target audience. Researchers have conducted numerous studies to determine the effectiveness of digital marketing strategies and their impact on consumer behaviour. Some key findings from the literature include:

- ***Social media marketing*** has been found to be an effective tool for engaging with consumers and building brand awareness (Mangold and Faulds, 2009; Ryan and Jones, 2012). For instance, Mangold and Faulds (2009) found that social media can help companies build brand loyalty and increase sales through personalised engagement with customers.
- ***Search engine optimization*** (SEO) is critical for businesses to increase their online visibility and attract more traffic to their website (Liu et al., 2015). Liu et al. (2015) suggested that companies must develop an effective SEO strategy to rank higher on search engine result pages and attract more visitors to their website.
- ***Email marketing*** is an effective way to communicate with customers and build relationships, but it needs to be done correctly to avoid spamming and disengagement (Chaffey et al., 2016). According to Chaffey et al. (2016), companies must segment their email lists, personalise their content, and provide valuable information to keep customers engaged.

Overall, digital marketing has been found to be an essential component of modern business strategy, and companies must continually evaluate and improve their digital marketing efforts to remain competitive.

Digital marketing has been a game-changer for businesses of all sizes, helping them reach wider audiences, generate leads, and increase revenue. In this literature review, we will explore the impact of digital marketing on the revenue of enterprises.

However, it is widely recognized in the marketing industry that digital marketing techniques can significantly impact revenue generation. Various studies and industry reports have highlighted the effectiveness of digital marketing in reaching target audiences and driving business growth. For instance, the Digital Marketing Institute reported that companies with strong digital marketing strategies have a 2.8 times higher revenue growth expectancy (Digital Marketing Institute, 2023).

[1] A digital platform refers to an online system or infrastructure that facilitates the exchange of goods, services, or information between different participants. It serves as a virtual space where users can interact, engage, and conduct various activities.

Digital marketing offers several advantages over traditional marketing channels, including the ability to target specific demographics, measure campaign performance in real-time, and optimise marketing efforts based on data-driven insights. These factors contribute to improved efficiency and effectiveness, leading to higher revenue generation for businesses.

By using social media, email marketing, search engine optimization (SEO), and other digital marketing tactics, businesses can connect with potential customers and build brand awareness.

A study by Google and IPSOS found that 82% of smartphone users consult their phones before making a purchase decision, demonstrating the importance of having a strong online presence. Businesses that invest in digital marketing strategies, such as mobile optimization and social media advertising, are more likely to attract and convert potential customers.

In addition to increasing revenue, digital marketing also helps businesses save money. According to a report by Hubspot, inbound marketing (which includes digital marketing tactics such as content marketing, SEO, and social media) costs 62% less than traditional outbound marketing methods, such as print advertising and direct mail.

In conclusion, digital marketing has a significant impact on the revenue of enterprises, as it helps businesses connect with potential customers, build brand awareness, and save money. By investing in digital marketing strategies, businesses can increase their revenue and stay competitive in today's digital marketplace.

B. Impact of Cryptocurrencies on the Revenue of Enterprises

Cryptocurrencies, such as Bitcoin and Ethereum, have gained significant attention in recent years, with many businesses considering accepting them as payment. In this literature review, we will explore the impact of cryptocurrencies on the revenue of enterprises.

One of the main benefits of accepting cryptocurrencies as payment is the potential for increased revenue. By accepting cryptocurrencies, businesses can expand their customer base to include those who prefer to use digital currencies. Cryptocurrency transactions are also generally faster and cheaper than traditional payment methods, such as credit cards, which can improve cash flow and reduce transaction fees.

Additionally, accepting cryptocurrencies can also help businesses attract customers who are interested in supporting innovative and forward-thinking companies. According to a

survey by PwC, 41% of respondents said they would use cryptocurrency if more merchants accepted it.

However, there are also some challenges associated with accepting cryptocurrencies. The volatility of the cryptocurrency market can make it difficult for businesses to accurately price their products and services, and there is also the risk of losing value if the cryptocurrency market experiences a downturn.

Another challenge is the lack of regulatory oversight in the cryptocurrency market, which can make it difficult for businesses to comply with anti-money laundering (AML) and know your customer (KYC) regulations.

In conclusion, while accepting cryptocurrencies can potentially increase revenue for businesses, there are also challenges to consider, such as market volatility and regulatory compliance. As the cryptocurrency market continues to evolve, businesses will need to carefully weigh the potential benefits and risks of accepting cryptocurrencies as payment.

CHAPTER I

THEORETICAL FRAMEWORK OF DIGITAL MARKETING

Introduction

Digital marketing has rapidly evolved in recent years and has become an essential component of the marketing strategies of global enterprises. It is a process of promoting and selling products or services through digital channels, such as search engines, social media, email, and websites. In this chapter, we explore the theoretical framework of digital marketing, including its definition, evolution, and the channels and tools used in it. We also discuss the 7P in marketing and compare traditional marketing with digital marketing.

We delve into the importance of digital marketing for global enterprises, the benefits it provides, and the theoretical models that can be used to enhance its effectiveness. Additionally, we explore the key metrics used to measure the success of digital marketing campaigns and how they can be used to optimise digital marketing strategies. Finally, we provide case studies of effective digital marketing campaigns and their impact on revenue generation. By the end of this chapter, readers will gain a comprehensive understanding of the theoretical framework of digital marketing and its role in driving business success in today's digital age.

1.1 Definition and Evolution of Digital Marketing

The two forms of marketing have been defined by some great author which will be stated below':

- According to Neil Patel, a well-known digital marketing expert, "Digital marketing is any form of marketing products or services that involves electronic devices."
- The American Marketing Association (AMA) defines digital marketing as "the practice of promoting products or services using digital technologies, mainly on the Internet, but also including mobile phones, display advertising, and any other digital medium."
- Dave Chaffey, author of "Digital Marketing: Strategy, Implementation and Practice," defines digital marketing as "achieving marketing objectives through applying digital technologies and media."

➢ The Chartered Institute of Marketing (CIM) defines digital marketing as "the use of digital channels to promote or market products and services to consumers and businesses."

➢ According to Ryan Deiss, founder of Digital Marketer, "Digital marketing is the act of promoting and selling products and services by leveraging online marketing tactics such as social media marketing, search marketing, and email marketing."

Overall, digital marketing can be defined as the use of digital technologies and channels to promote, advertise, and sell products or services to targeted audiences.

Now I can define digital marketing Digital marketing is the promotion, advertising, and selling of products or services using electronic devices and digital technologies through various digital channels to targeted marketing to achieve marketing objectives.

1.1.1 Evolution of digital marketing

The history of digital marketing can be traced back to the 1980s when the first commercial computer was introduced. With the emergence of personal computers, companies started to see the potential for digital marketing. However, it wasn't until the 1990s that the internet became more widely available, and the first clickable banner ad was launched by AT&T.

In the early 2000s, search engines such as Google became popular, and search engine optimisation (SEO) emerged as a key digital marketing tactic. Companies began to optimise their websites and content to appear higher in search engine results pages (SERPs) to increase visibility and drive traffic to their sites.

Social media platforms such as LinkedIn, Facebook, and Twitter began to gain traction in the mid-2000s, and businesses began to use them to promote their products and services. The rise of smartphones and mobile devices also played a significant role in the evolution of digital marketing. Companies began to develop mobile-friendly websites and started using mobile apps to connect with customers.

The last decade has seen a rapid evolution of digital marketing with the introduction of new technologies and platforms such as artificial intelligence (AI), virtual reality (VR), and voice search. AI and machine learning algorithms have made it easier for marketers to analyse and interpret customer data, while VR and augmented reality (AR) have allowed businesses to create immersive experiences for their customers.

The evolution of digital marketing has been driven by advances in technology, changes in consumer behaviour, and the need for businesses to adapt to an increasingly digital world. Today, digital marketing is an essential part of any marketing strategy, and businesses that fail to embrace it risk falling behind their competitors.

The advent of search engines, businesses began to optimise their websites for search engines, known as search engine optimization (SEO), to improve their visibility on search engine result pages. This gave rise to the importance of keywords, backlinks, and other factors that would influence a website's search engine ranking. In addition to SEO, paid advertising on search engines became a popular digital marketing tactic, known as search engine marketing (SEM).

The rise of social media platforms in the mid-2000s further revolutionised digital marketing. Brands began to create social media profiles to engage with their customers and share their content, leading to the emergence of social media marketing. Social media platforms also provided an opportunity for influencer marketing, where businesses collaborate with popular social media users to promote their products.

The advent of smartphones and mobile devices brought about another shift in digital marketing. With more people accessing the internet through their mobile devices, businesses began to optimise their websites for mobile devices, known as mobile optimisation. The rise of mobile devices also gave rise to mobile advertising, which includes mobile banner ads, in-app advertising, and mobile video ads.

In recent years, the development of artificial intelligence (AI) and machine learning has led to the emergence of personalised marketing. AI algorithms analyse user data to provide personalised recommendations and advertisements to users, which has become a popular tactic for businesses.

Overall, digital marketing has come a long way since the first email was sent in the 1970s. From email marketing to social media marketing and personalised marketing, digital marketing has evolved to keep up with the changing landscape of the internet and technology.

1.1.2 Channels and tools used in 1.1 digital marketing

Digital marketing offers various channels and tools that can be used to reach potential customers. Some of the most commonly used channels and tools in digital marketing include: SEO, Pay-Per-Click Advertising, Social Media Marketing, Content Marketing, Email marketing, Influencer marketing, mobile marketing, Digital out-of-home marketing,

Search Engine Optimization (SEO)

Search engine optimization (SEO) is a crucial process that involves optimising a website or web page to rank higher in search engine results pages (SERPs). According to research, the global SEO industry is forecast to reach a staggering 122.11 billion $ by 2028 (Market Research Future, 2021). This significant growth can be attributed to the fact that SEO drives real business results for brands, businesses, and organisations of all sizes.

The importance of SEO is evident in the fact that whenever people want to go somewhere, find information, research, or buy a product/service, their journey typically begins with a search. However, search is incredibly fragmented today, with users searching on traditional web search engines, social platforms, or retailer websites. For instance, research shows that 61% of U.S. online shoppers start their product search on Amazon, compared to 49% who start on a search engine like Google. Additionally, 32% start on Walmart.com, 20% start on YouTube, 19% start on Facebook, 15% start on Instagram, and 11% start on TikTok (Search Engine Land, n.d.).

With trillions of searches conducted every year, search is often the primary source of traffic for websites, making it essential to be "search engine friendly" on any platform where people can search for your brand or business. On-page optimization and off-page optimization are the two main techniques used in SEO. On-page optimization involves optimizing a web page's content and HTML source code to make it more search engine friendly. This includes optimising content with relevant keywords, ensuring the website is mobile-friendly, improving website speed and usability, and ensuring the website has proper metadata and header tags. On the other hand, off-page optimization involves building backlinks or incoming links to a website from other websites. These links help to establish the authority and relevance of a website, which can improve its rankings in search engine results pages. Quality backlinks can be built through various techniques such as guest posting, broken link building, and social media marketing.

In conclusion, SEO is an essential process that businesses and organisations of all sizes need to adopt to stay ahead in the online market. The significant growth in the global SEO industry is a testament to its importance in driving real business results. As such, businesses need to optimise their websites for search engines to ensure they are easily discoverable by potential customers.

Pay-Per-Click (PPC) Advertising

PPC advertising is a popular form of online advertising where advertisers pay each time a user clicks on their ad. Advertisers bid on specific keywords or phrases that are relevant to their business, and their ads appear in the top positions of search engine results pages (SERPs).

Google Ads, formerly known as Google AdWords, is the most popular platform for PPC advertising. Advertisers can create ads in a variety of formats, including text, display, video, and shopping ads, and target their ads to specific geographic locations, languages, and devices.

To create a successful PPC campaign, advertisers need to identify relevant keywords that their target audience is searching for and bid on those keywords. The cost of each click varies based on the competition for that keyword, and advertisers can set a maximum bid for each keyword to control their costs.

In addition to keyword targeting, PPC advertising also offers advanced targeting options, such as audience targeting and retargeting. With audience targeting, advertisers can target their ads to specific groups of people based on factors such as demographics, interests, and behaviours. Retargeting, also known as remarketing, allows advertisers to target users who have previously interacted with their website or ads.

PPC advertising offers several benefits, including:

- Immediate results - PPC ads can start driving traffic and leads to a website immediately after the campaign is launched.
- Control over ad spend - Advertisers can set a budget for their campaign and control how much they spend on each click.
- Targeted audience - Advertisers can target their ads to specific groups of people based on their interests, behaviours, and demographics.

➢ Measurable results - Advertisers can track their ad performance using various metrics, such as click-through rates, conversion rates, and return on ad spend. (Google Ads Help, 2023)

Social Media Marketing (SMM)

SMM involves creating and sharing content on social media networks to build brand awareness, drive engagement, and ultimately drive website traffic and sales. The most popular social media channels for SMM include Facebook, Twitter, Instagram, LinkedIn, and YouTube.

The key to a successful SMM campaign is creating high-quality content that resonates with the target audience. This can include blog posts, images, videos, infographics, and other types of content. SMM also involves engaging with the audience by responding to comments, sharing user-generated content, and running social media contests or giveaways.

In addition to organic content, SMM also includes paid social media advertising. Social media advertising allows businesses to target specific audiences based on factors such as demographics, interests, and behaviours. Ad formats can include sponsored posts, display ads, and video ads.

Some benefits of SMM include:

➢ Increased brand awareness - SMM can help businesses reach a wider audience and build brand recognition.

➢ Improved customer engagement - SMM allows businesses to interact with their customers and build relationships.

➢ Increased website traffic - SMM can drive more traffic to a business's website, which can lead to increased sales and conversions.

➢ Targeted advertising - Social media advertising allows businesses to target specific audiences based on demographics.

Content Marketing

Content marketing involves creating and distributing valuable, relevant, and consistent content to attract and retain a clearly defined audience. Content marketing is a strategic approach to marketing that focuses on creating and distributing valuable, relevant,

and consistent content to attract and engage a specific target audience. The goal of content marketing is to build brand awareness, establish thought leadership, drive customer engagement, and ultimately, influence consumer behaviour.

Content marketing encompasses various formats and channels, including:

Blog Posts and Articles: Written content in the form of blog posts and articles allows businesses to provide in-depth information, insights, and solutions to their target audience. These can be published on a company's website, guest blog platforms, or industry publications.

Videos: Video content has gained significant popularity in recent years due to its engaging and shareable nature. Businesses create videos to educate, entertain, or demonstrate their products or services. These can be published on platforms like YouTube, social media, or embedded on websites.

Social Media Content: Social media platforms provide an avenue for businesses to share different types of content, including text, images, videos, and live streams. Social media content can be used to entertain, inform, engage, and interact with the audience directly.

Podcasts: Podcasts are audio-based content that allows businesses to share information, insights, interviews, and stories with their audience. Podcasts are particularly popular for delivering long-form, conversational content that can be consumed on-the-go.

It also includes e-books, and infographics. Content marketing involves creating and sharing valuable content to a specific audience unlike traditional advertising, which interrupts and tries to sell, content marketing provides value throughout the customer journey. Some other current digital Channels and tools in this 2023 by stack adapt for any enterprise to adopt for more efficiency are as follows Connected TV (CTV), Programmatic Audio, In-Game-Advertising and so on.

Email marketing

Email marketing is a highly effective way to reach customers and potential customers directly in their inboxes. It can be used to promote products or services, build brand

awareness, and drive traffic to a website. The key to success with email marketing is to create engaging, relevant, and personalised messages that resonate with your audience.

A study found that email marketing has a median ROI of 122%, which is four times higher than other marketing formats like social media or direct mail (DIGITAL MARKETINGA National Client Email Report 2015). Another study found that 72% of people prefer to receive promotional content through email, compared to 17% who prefer social media (Source: Marketing Sherpa Email Marketing Benchmark Report 2013).

To get started with email marketing, you'll need to build a list of subscribers who have given you permission to email them. You can do this by offering an incentive such as a free guide or discount in exchange for their email address. Then, you'll need to choose an email marketing service provider, create a template for your emails, and start sending messages to your subscribers.

Influencer marketing

Influencer marketing is a relatively new form of marketing that involves partnering with influencers who have a large following on social media to promote products or services. Influencers can include celebrities, industry experts, and micro-influencers who have a loyal following in a particular niche.

A study found that influencer marketing can deliver 11 times higher ROI than traditional forms of digital marketing (Source: Tap Influence and Nielsen Catalina Solutions ROI Influencer Marketing Study). Another study found that 49% of consumers rely on influencer recommendations when making purchase decisions (Source: Influencer Marketing Hub).

To get started with influencer marketing, you'll need to identify influencers who align with your brand values and have a following that overlaps with your target audience. You can then reach out to them to discuss potential partnerships, which may involve paying them to promote your product or service, or providing them with free products in exchange for their endorsement.

Mobile Marketing

Mobile marketing refers to any marketing activity that is designed to reach customers on their mobile devices, including SMS marketing, mobile app marketing, push notifications, and mobile-friendly website design.

A study found that 90% of mobile users have their devices within arm's reach at all times, making mobile marketing a highly effective way to reach customers in real-time (Source: Morgan Stanley). Another study found that 79% of smartphone users have made a purchase using their mobile device in the last six months (Source: OuterBox).

To get started with mobile marketing, you'll need to ensure that your website is optimized for mobile devices and that you're using mobile-friendly content formats like video and images. You can also consider creating a mobile app to engage with customers on-the-go and using SMS or push notifications to send targeted messages to customers based on their behaviour or location.

Digital Out-of-Home (DOOH)

Digital out-of-home (DOOH) is any digital ad that is found outside our buildings or offices, and in a public environment. You can run DOOH campaigns on a variety of formats and sizes, and in various public environments. There are many benefits to this channel. Programmatic automates the buying and delivery of DOOH ads, so you can buy and manage your DOOH campaigns through your programmatic platform. DOOH is not subject to privacy regulations because it doesn’t use or collect cookies, and it’s an exciting format that can engage audiences.

A well-planned content marketing strategy has many benefits and is effective at all stages of the customer journey. By creating relevant content, you can engage in deeper communications, showcase your brand personality, and start building relationships with your audience. Content can also help to spark emotions, build curiosity, and create brand loyalty.

In addition, high-quality content can complement other digital marketing channels, such as SEO, email marketing, social media, and influencer marketing. This results in a more comprehensive marketing approach that provides a higher ROI for each piece of content.

Prioritising content marketing can lead to significant business growth, making it one of the most impactful online marketing channels available.

Affiliate Marketing

Affiliate marketing is a performance-based marketing model where an affiliate promotes a brand or product and receives a commission for each sale or lead generated through their efforts. This can be done through social media, blogs, or other digital channels.

One study found that affiliate marketing can deliver a ROI of up to 16 times the investment (Source: Rakuten Marketing). Another study found that 81% of brands use affiliate marketing as part of their overall marketing strategy (Source: Mediakix).

To get started with affiliate marketing, brands can identify affiliates who have a relevant audience and align with their brand values. Brands can then provide these affiliates with a unique link or promo code to share with their audience. When a customer makes a purchase using the link or code, the affiliate earns a commission.

These channels and tools can be sourced from a variety of platforms and services, including Google Ads, Facebook Ads, Twitter Ads, LinkedIn Ads, email marketing platforms like Mailchimp and Constant Contact, and influencer marketing platforms like AspireIQ and Tribe. Additionally, businesses can also use tools like Google Analytics to measure the effectiveness of their digital marketing campaigns and make data-driven decisions to optimise their marketing strategies.

1.1.3 The 7Ps in marketing

The 7Ps are described as follows:

- **Product**: Understanding the product is crucial for effective digital marketing. Businesses need to identify their unique selling points, features and benefits, and how the product compares to competitors. This information helps to create targeted messaging that resonates with the target audience. Additionally, businesses need to consider the product life cycle, any potential updates or improvements, and the level of demand for the product.
- **Price**: Pricing strategy is critical in digital marketing. Businesses need to understand the pricing models and the pricing strategies that will best suit their target audience. The pricing strategy chosen should consider the product's perceived value and the target audience's willingness to pay. Additionally, businesses should consider promotions, discounts, and bundling options to increase sales.
- **Place**: The distribution channels chosen will depend on the target audience. Businesses need to understand the target audience's preferred channels and optimise

their user experience on those channels. Additionally, businesses should consider how they can make the buying process as smooth and easy as possible, including options like free shipping, easy returns, and convenient payment methods.

- **Promotion**: Digital marketing tactics such as advertising, content marketing, email marketing, social media marketing, and SEO are all important in promoting a product or service. Businesses need to create a compelling message that resonates with the target audience and is tailored to each platform. Additionally, businesses need to consider the frequency and timing of promotions, and measure the success of each tactic to optimise their marketing strategy.
- **People**: Understanding the people involved in the buying process is essential for effective digital marketing. Businesses need to create buyer personas and understand their needs to personalise messaging and provide excellent customer service. Additionally, businesses need to consider the role of influencers in their target audience and how they can leverage their influence to promote their product or service.
- **Process**: The process of how the product or service is sold is critical in digital marketing. Businesses need to optimise the buying process, the customer journey, and the lead nurturing process to improve the user experience and drive more sales. Additionally, businesses need to track and measure each step of the process to identify areas for improvement.
- **Physical Evidence**: Tangible elements that support the product or service are important in digital marketing. Businesses need to consider the design of their website, customer testimonials, and customer reviews to build trust with potential customers and drive sales. Additionally, businesses need to encourage satisfied customers to leave positive reviews and share their experiences on social media.

Overall, the 7Ps of digital marketing provide a comprehensive framework for businesses to plan and implement their online marketing strategies effectively. By understanding each P and tailoring the strategy to the target audience, businesses can increase brand awareness, drive traffic, and generate revenue

1.1.4 Traditional marketing vs Digital marketing

Traditional marketing and digital marketing are two different approaches to promoting products or services. Traditional marketing refers to the use of non-digital channels such as print, television, radio, and billboards to reach an audience, while digital marketing refers to using online channels such as social media, email, search engines, and websites to reach an audience.

Here are some key differences we notice between traditional marketing and digital marketing in a tabular for.

Table 1. Traditional marketing and digital marketing

	Traditional marketing	Digital marketing
Reach	. Traditional marketing (TA) can be limited to a specific geographic area	Whereas digital marketing has the potential to reach a global audience
Cost	TA can be expensive, especially when compared to digital marketing. For example, creating and airing a television commercial can cost thousands or even millions of dollars,	while creating and promoting a social media ad can cost significantly less.
targeting	may not offer the same level of targeting because its limited	Digital marketing allows for more precise targeting of specific audiences based on factors such as age, location, interests, and online behaviour,
engagement	These form of marketing is often limited to static content such as print ads or billboards.	allows for more interactive and engaging content, such as videos, quizzes, and surveys.
measurability	these may not offer the same level of measurability.	It allows for more precise measurement of the effectiveness of campaigns, such as click-through rates, conversions, and engagement metrics,

Timing	Traditional marketing often involves pre-planned campaigns that are rolled out on a set schedule,	it can allow for real-time adjustments and rapid responses to changes in the market or customer behaviour.
Personalization:	Its does not allow customers to interact and less personalisation	Digital marketing can offer a higher degree of personalization and also customers. Interaction: Digital marketing allows for more direct interaction with customers, through channels such as social media, email, and chatbots. This can facilitate engagement, customer service, and customer feedback, which can be used to improve products or services.
Environmental impact	Traditional marketing can have a significant environmental impact, through the use of materials such as paper, ink, and plastics.	can have a lower environmental impact, as it is often paperless and can be powered by renewable energy sources.
Flexibility:	With traditional marketing, once the materials have been printed or the ad has aired, it is difficult to make changes	Digital marketing offers more flexibility than traditional marketing. For example, a digital marketing campaign can be easily tweaked or modified based on the performance of the campaign.
Viral Potential:	Traditional marketing doesn't offer the same level of viral potential.	➢ Digital marketing offers the potential for content to go viral, meaning it can be shared and spread quickly across a wide audience. This can result in increased brand awareness and potentially even lead to sales.

Both traditional marketing and digital marketing have their strengths and weaknesses, and a combination of both can be an effective way to reach and engage with a target audience and for any enterprise that wants to generate more revenue most engage both for marketing.

1.2 Importance of Digital Marketing for Global Enterprises

In this section, we are going to answer relying on theories to two questions.

1.2.1 Why digital marketing is essential for global enterprises ?

Digital marketing is essential for global enterprises for several reasons. In this section, I will explain why digital marketing is important for global enterprises

➢ Global Reach - Digital marketing allows global enterprises to reach a wider audience than traditional marketing methods. With digital marketing, businesses can reach customers in different parts of the world through social media, search engines, email marketing, and other digital channels. This can be particularly important for businesses that operate in multiple countries or regions.

➢ Cost-Effective - Digital marketing is generally more cost-effective than traditional marketing methods. Digital campaigns can be created and launched quickly, and businesses can track their results in real-time. This allows businesses to adjust their campaigns based on their effectiveness, which can save them money in the long run.

➢ Measurable Results - Digital marketing allows businesses to track and measure the results of their campaigns. This makes it easier for businesses to determine the ROI of their campaigns and adjust their strategies accordingly. Measuring the results of campaigns can also help businesses to identify areas for improvement and optimise their campaigns over time.

➢ Targeted Marketing - Digital marketing allows businesses to target specific groups of customers with personalised messages. This can be done through email marketing, social media ads, and other digital channels. Targeted marketing can be particularly important for global enterprises that have customers in different countries or regions, as it allows businesses to tailor their messages to each audience.

➢ Brand Building - Digital marketing allows global enterprises to build and maintain their brand online. Through social media, content marketing, and other digital channels, businesses can create and share content that reflects their brand values and personality. This can help businesses to build trust and loyalty with their customers, which can be particularly important in global markets.

➢ Customer Engagement - Digital marketing provides businesses with a way to engage with their customers and build relationships with them. This can be done through social

media, email marketing, and other digital channels. By engaging with customers, businesses can build trust and loyalty, which can lead to increased sales and customer retention.

➢ Competitive Advantage - Digital marketing can provide global enterprises with a competitive advantage over their competitors. By using digital channels to reach customers, businesses can differentiate themselves from their competitors and build a stronger brand. This can be particularly important in crowded markets, where businesses need to find ways to stand out.

➢ Real-Time Feedback - Digital marketing allows businesses to receive real-time feedback from their customers. This can be done through social media, online reviews, and other digital channels. By monitoring feedback, businesses can identify areas for improvement and make changes to their products or services. This can help businesses to stay competitive and meet the changing needs of their customers.

1.2.2 What are the benefits of digital marketing ?

Benefits of digital marketing, such as increased brand visibility, improved customer engagement, and higher ROI

Digital marketing has become an essential aspect of business strategy in today's digital age. With the rise of the internet and social media platforms, businesses have been given new tools to reach their target audience and engage with them in meaningful ways. Here are some of the key benefits of digital marketing:

• Increased brand visibility: Digital marketing helps businesses increase their brand visibility and reach a wider audience. With social media platforms and search engines, businesses can easily get in front of their target audience by creating engaging content and advertising to specific demographics.

• Improved customer engagement: Digital marketing allows businesses to engage with their customers in real-time. With SM platforms and email marketing, businesses can create targeted messages and campaigns that are personalised to their customers' needs and interests. This helps businesses build stronger relationships with their customers and improve customer loyalty.

• Higher ROI: Digital marketing is often more cost-effective than TM methods. With tools like Google AdWords and SM advertising, businesses can target their audience more effectively and get more bang for their buck. Plus, digital marketing allows businesses to track their results in real-time, so they can adjust their campaigns to improve their ROI.

- Data-driven insights: Digital marketing provides businesses with valuable data and insights into their customers' behaviour and preferences. With tools like Google Analytics, businesses can track website traffic, bounce rates, and conversion rates to see how their marketing campaigns are performing. This helps businesses make informed decisions about their marketing strategies and optimise their campaigns for better results.
- Increased customer retention: Digital marketing can also help businesses increase customer retention rates by providing customers with valuable content and engaging with them on a regular basis. This helps businesses stay top-of-mind with their customers and build stronger relationships over time.
- Targeted Advertising: Digital marketing allows businesses to target their advertising to specific demographics, interests, and behaviours. This means that businesses can create more effective and relevant ads that are more likely to resonate with their target audience.
- Increased Accessibility: With digital marketing, businesses can reach their audience at any time and from anywhere in the world. This is particularly important for global businesses that need to connect with customers in different time zones and locations.
- Flexibility and Scalability: Digital marketing is highly flexible and scalable, allowing businesses to adjust their campaigns and strategies as needed. This makes it easier for businesses to respond to changing market conditions and trends.
- Competitive Advantage: Digital marketing can give businesses a competitive advantage in their industry. By using digital channels to engage with customers and build brand awareness, businesses can differentiate themselves from their competitors and establish themselves as thought leaders in their industry.
- Measurable Results: Digital marketing provides businesses with measurable results that can be tracked and analysed in real-time. This allows businesses to see which marketing strategies are working and which are not and make adjustments as needed.
- In summary, digital marketing provides businesses with a range of benefits, including increased brand visibility, improved customer engagement, higher ROI, data-driven insights, targeted advertising, increased accessibility, flexibility and scalability, competitive advantage, and measurable results. By leveraging these benefits, businesses can improve their marketing strategies and connect with their target audience in more meaningful ways.

1.3 Theoretical models for digital marketing

Various theoretical models for digital marketing:

➢ The AIDA Model: The AIDA (Attention, Interest, Desire, Action) model is a classic model used in marketing that outlines the four stages that a customer goes through in the purchasing process. The model suggests that marketers need to create awareness (Attention), generate interest (Interest), create desire (Desire), and prompt action (Action) to convert a potential customer into a paying customer. (Source: Kotler, P., & Armstrong, G. (2021).

➢ The Digital Marketing Mix Model: The DIGITAL MARKETING mix model is based on the traditional marketing mix, which includes product, price, promotion, and place. In the digital marketing mix model, the four Ps are adapted to include People, Process, Physical Evidence, and Performance. The model helps marketers to understand the different elements that need to be optimised to achieve the desired outcomes. (Source: Chaffey, D. (2021).

➢ The SOSTAC Model: The SOSTAC (Situation analysis, Objectives, Strategy, Tactics, Action, and Control) model is a planning framework that helps marketers to develop a digital marketing plan. The model provides a clear structure for planning and executing digital marketing campaigns, starting with an analysis of the current situation and ending with a review of the campaign's performance. (Source: Smith, P. R. (2021).

➢ The Customer Journey Model: The customer journey model is a framework that helps marketers to understand the different touchpoints that customers have with a brand before making a purchase decision. The model is often visualised as a funnel, with customers moving from awareness to consideration to purchase. The model helps marketers to identify the different types of content and messaging that will be most effective at each stage of the journey. (Source: Chaffey, D. (2021). Digital marketing: strategy, implementation and practice. Pearson.)

➢ The SERVQUAL Model: The SERVQUAL model is a framework used to measure the quality of service provided by a business. The model identifies five dimensions of service quality: reliability, responsiveness, assurance, empathy, and tangibles. The model helps marketers to identify areas where their service offering can be improved and to develop strategies to meet the needs of their customers. (Source: Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985).

➢ The Social Media Engagement Model: The SM engagement model is a framework used to measure the level of engagement that a brand has with its social media followers. The model identifies four levels of engagement: Reach, Engagement, Conversion, and Advocacy. The model helps marketers to track the effectiveness of their social media campaigns and to identify opportunities for improvement. (Source: Boyd, D. M., & Ellison, N. B. (2007).

How these models can be used to improve the effectiveness of digital marketing strategies?

➢ The AIDA Model: By using the AIDA model, marketers can create content and campaigns that are tailored to each stage of the customer journey, from creating awareness to prompting action. This can help to increase the effectiveness of digital marketing efforts by ensuring that the right message is delivered to the right audience at the right time.

➢ The Digital Marketing Mix Model: The digital marketing mix model can help marketers to identify the key elements that need to be optimized to achieve the desired outcomes. By understanding how each element of the marketing mix impacts the customer experience, marketers can develop strategies that align with the needs and preferences of their target audience.

➢ The SOSTAC Model: The SOSTAC model can help marketers to develop a structured and comprehensive digital marketing plan. By following the framework, marketers can ensure that all aspects of their digital marketing strategy are aligned and working towards the same goals.

➢ The Customer Journey Model: The customer journey model can help marketers to identify the different touchpoints that customers have with their brand and develop content and messaging that is tailored to each stage of the journey. This can help to increase engagement and ultimately drive conversions.

➢ The SERVQUAL Model: The SERVQUAL model can help marketers to identify areas where their service offering can be improved and develop strategies to meet the needs of their customers. By delivering high-quality service, marketers can build trust and loyalty with their target audience, which can lead to increased sales and customer retention.

➢ The Social Media Engagement Model: The social media engagement model can help marketers to track the effectiveness of their social media campaigns and identify opportunities for improvement. By measuring engagement levels and analyzing customer feedback, marketers can refine their social media strategies and create content that resonates with their target audience.

➢ The Content Marketing Funnel Model: The content marketing funnel model can help marketers to create and distribute content that aligns with each stage of the customer journey. By creating targeted content for each stage, marketers can increase engagement and ultimately drive conversions.

➢ The Five-Stage Decision-Making Model: The five-stage decision-making model can help marketers to create messaging and campaigns that resonate with customers at each stage of the decision-making process. By understanding the factors that influence purchasing decisions, marketers can develop strategies that address customer needs and preferences.

➢ The Hierarchy of Effects Model: The Hierarchy of Effects model can help marketers to create messaging and campaigns that move customers through the hierarchy and ultimately drive conversions. By tailoring messaging to each stage of the hierarchy, marketers can create content that resonates with their target audience and encourages them to take action.

In summary, these theoretical models provide a framework for understanding the different elements that impact the effectiveness of digital marketing strategies. By using these models, marketers can develop strategies that are tailored to the needs and preferences of their target audience and ultimately drive conversions.

1.4 Key Metrics for Measuring Digital Marketing Success

Here are some key metrics for measuring digital marketing success:

Website Traffic: This metric measures the number of visitors to your website over a given period of time. It can be further broken down by source (e.g. organic search, social media, paid advertising) to help you understand which channels are driving the most traffic. (Sources: "Website Traffic Metrics: 10 Key Metrics to Measure Your Website Traffic" by Alexa Internet, Inc).

Conversion Rate: This metric measures the percentage of visitors to your website who take a desired action, such as making a purchase or filling out a lead form. It can help you understand how well your website is converting visitors into customers or leads. Sources: "What is Conversion Rate Optimization (CRO)?" by Optimizely).

Cost per Acquisition (CPA): This metric measures the cost of acquiring a new customer or lead. It can help you understand the cost-effectiveness of your marketing campaigns and identify areas for optimization. Sources: "What is Cost Per Acquisition (CPA)?" by WordStream).

Customer Lifetime Value (CLV): This metric measures the total value that a customer will bring to your business over their lifetime. It can help you understand the long-term profitability of your marketing campaigns and inform decisions around customer acquisition and retention. Sources: "Customer Lifetime Value: A Complete Guide" by Shopify).

Engagement Rate: This metric measures the level of interaction that your audience has with your content, such as likes, comments, and shares on social media. It can help you understand

how well your content is resonating with your audience and identify opportunities for improvement. Sources: "What is Engagement Rate and How to Calculate It" by Hootsuite).
Return on Investment (ROI): This metric measures the financial return on your marketing investment, taking into account both the costs and the revenue generated. It can help you understand the profitability of your marketing campaigns and make informed decisions around budget allocation. Sources: "Calculating Return on Investment for Your Marketing Campaigns" by The Balance Small Business.
Overall, these metrics can provide valuable insights into the effectiveness of your digital marketing campaigns and help you make informed decisions around optimization and budget allocation.

How these metrics can be used to optimise digital marketing strategies?

Digital marketing metrics can provide valuable insights into the effectiveness of your digital marketing strategies and can help you optimise your campaigns to achieve better results. Here are some ways in which these metrics can be used to optimise digital marketing strategies:

- Identify areas for improvement: Digital marketing metrics can help you identify areas of your campaign that may be underperforming or not delivering the desired results. For example, if your website's bounce rate is high, you may need to improve the user experience or adjust your messaging to better align with your target audience.
- Track progress towards goals: Digital marketing metrics can help you track your progress towards your marketing goals, whether they are related to website traffic, lead generation, or sales. By tracking these metrics over time, you can see how your campaigns are performing and make adjustments as needed.
- Optimise your budget: Digital marketing metrics can help you determine which channels and tactics are delivering the best results for your budget. By analyzing metrics such as cost per click or cost per acquisition, you can allocate your budget towards the most effective channels and optimise your return on investment.
- Refine your targeting: Digital marketing metrics can help you refine your target audience and tailor your messaging to better resonate with them. By analysing metrics such as demographics, engagement rate, or customer lifetime value, you can gain insights into the preferences and behaviour of your audience and adjust your campaigns accordingly.

• Test and iterate: Digital marketing metrics can help you test and iterate different strategies and tactics to see what works best. By running A/B tests or experimenting with different messaging or visuals, you can use metrics such as click-through rate or conversion rate to measure the effectiveness of each approach and refine your campaigns over time.

Overall, digital marketing metrics provide a wealth of insights into the performance of your campaigns and can help you optimise your strategies to achieve better results. By using these metrics to identify areas for improvement, track progress towards goals, optimise your budget, refine your targeting, and test and iterate different approaches, you can continually improve the effectiveness of your digital marketing campaigns.

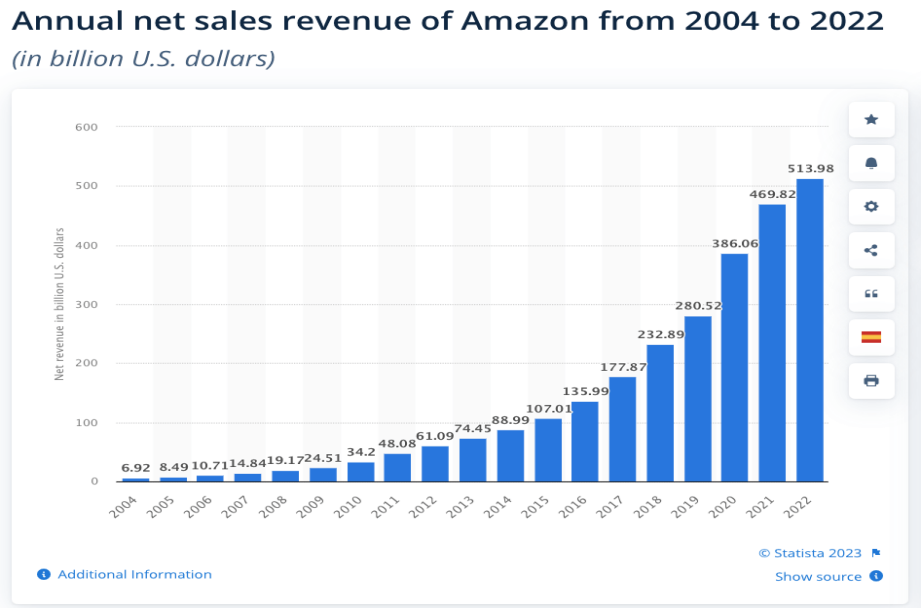
1.5 Examples of Effective Digital Marketing Campaigns and Their Impact on Revenue Generation

Case Study Of Amazon

Amazon's revenue model and culture of customer metrics are a major contributor to its success in e-commerce. In the last quarter of 2022, the company reported record-breaking net sales of over $149.2 billion, which is a testament to its consistent growth. Despite seasonal fluctuations, Amazon has maintained its position as a leader in e-commerce, largely due to its evolving marketing strategy since its inception in 1994.The Amazon marketing strategy has continued to evolve over time, as the company has grown and expanded into new markets and industries. One of the key factors in Amazon's success has been its focus on customer metrics, which has helped the company to understand and meet the needs of its customers more effectively.

In addition to its focus on customer metrics, Amazon has also developed a strong brand identity and a culture of innovation that has allowed it to stay ahead of its competitors. The company's marketing objectives are focused on driving revenue growth and increasing market share, while also maintaining a high level of customer satisfaction and loyalty.

The success of Amazon's marketing strategy can be attributed to a combination of factors, including its focus on customer metrics, its strong brand identity and culture of innovation, and it's clear marketing objectives focused on revenue growth and customer satisfaction. As the company continues to expand into new markets and industries, it will be interesting to see how its marketing strategy continues to evolve and adapt to meet the changing needs of its customers.

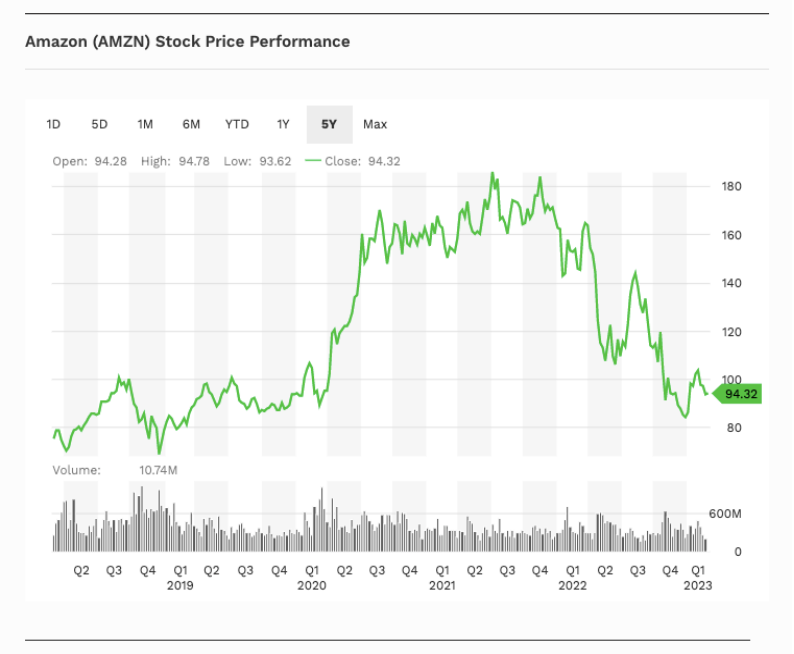


For nearly two decades, the Amazon marketing strategy case study has been a subject of interest for various businesses. The company's focus on the customer has been a driving force behind its success in e-commerce. Their response to the pandemic was impressive, but not entirely surprising given their customer-centric approach.

From small startups to large corporations, there are valuable lessons to be learned from Amazon's focus on testing and analysis to improve results, and their willingness to test market opportunities made available by digital technology.

Amazon's customer experience has made it a thought leader in e-commerce, but customer satisfaction ratings have fluctuated. The global pandemic has created challenges for the company, with customers expecting more while experiencing diminished customer service.

Despite these challenges, Amazon's stock continues to be a popular choice, with a consensus recommendation to buy and a return on assets of 1.73% (TTM). While the stock performance isn't as high as it was in previous years, there has been some growth in late 2022 and early 2023.



In 2018, Amazon launched the "Buy It Again" campaign as part of its digital marketing strategy to drive sales and revenue growth. The campaign targeted customers who had previously purchased items from Amazon, with personalised recommendations based on their purchase history.

The campaign used Amazon's recommendation engine to suggest items that the customer had bought before but may have run out of or needed to replace. For example, if a customer had previously purchased pet food or diapers, the "Buy It Again" campaign would send a notification reminding them to restock. Amazon also used email marketing to send personalised messages to customers, encouraging them to repurchase items they had previously bought. The messages included a direct link to the item on Amazon's website, making it easy for customers to make a quick purchase.

The results of the "Buy It Again" campaign were impressive. Amazon reported a 30% increase in repurchases from customers who received personalised recommendations through the campaign. The campaign also generated a significant increase in revenue for Amazon.

The success of the "Buy It Again" campaign is a testament to the power of personalised recommendations and targeted digital marketing campaigns. By analysing customer data and purchase history, Amazon was able to deliver highly relevant and effective marketing messages that drove sales and revenue growth.

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Another case study on effective digital marketing campaign is the "Share a Coke" campaign by Coca-Cola. The campaign, which was launched in 2011, encouraged customers to purchase Coke products with their friends' names on the bottles. The campaign used personalised bottles with popular names and encouraged customers to share pictures of the bottles on social media with the hashtag #ShareACoke. The campaign was a huge success, with Coke experiencing a 2% increase in sales in the U.S. and a 4% increase globally. The campaign also generated over 500,000 photos shared on social media.

These case studies demonstrate the importance of personalised marketing campaigns and how they can impact revenue generation. By leveraging customer data and creating personalised experiences, companies like Amazon and Coca-Cola are able to increase customer engagement and drive sales.

Conclusion

Based on the theoretical framework presented in Chapter 1, it is clear that DIGITAL MARKETING has evolved over time, becoming an essential component of global enterprise marketing strategies. DIGITAL MARKETING channels and tools offer a wide range of

opportunities to reach target audiences, with the 7 Ps of marketing providing a comprehensive framework for developing effective campaigns.

The importance of DIGITAL MARKETING for global enterprises is further underscored by the benefits it offers, including increased brand awareness, better customer engagement, improved targeting, and higher ROI. These benefits are supported by theoretical models for digital marketing, which offer insights into consumer behaviour, decision-making processes, and effective communication strategies.

To measure the success of digital marketing campaigns, it is essential to use key metrics such as website traffic, conversion rates, social media engagement, and customer retention rates. These metrics can be used to optimise digital marketing strategies and improve campaign performance over time.

Finally, case studies on effective digital marketing campaigns highlight the impact that these strategies can have on revenue generation. By leveraging the right channels and tools, understanding consumer behaviour, and optimising campaigns based on key metrics, global enterprises can create highly effective digital marketing campaigns that deliver real results.

In conclusion, digital marketing has become an essential component of global enterprise marketing strategies, offering a wide range of benefits, theoretical models, and key metrics to optimise campaign performance. By understanding the evolving nature of digital marketing, global enterprises can stay ahead of the curve and create highly effective campaigns that drive revenue and deliver results.

As digital marketing continues to evolve, it is important for global enterprises to stay up to date with the latest trends, tools, and techniques. This requires a deep understanding of the digital landscape, as well as a willingness to experiment and innovate.

By leveraging the insights provided by theoretical models and case studies, global enterprises can develop highly effective digital marketing strategies that are tailored to their specific needs and goals. This can lead to increased brand awareness, customer engagement, and revenue generation, ultimately contributing to the long-term success of the enterprise.

In summary, digital marketing is a rapidly evolving field that offers a wide range of opportunities and benefits for global enterprises. By embracing digital marketing and using the right channels, tools, and strategies, enterprises can create highly effective campaigns that drive revenue and deliver real results. By staying up to date with the latest trends and leveraging key metrics, theoretical models, and case studies, enterprises can stay ahead of the curve and achieve long-term success in the digital age. There is a phrase that says it's not the

best product that wins, it's the best marketer and also based on all the studies in this chapter implementing digital and traditional marketing strategy will make you the best marketing and which in turn generate more revenue for enterprise .

CHAPTER 2

THEORETICAL FRAMEWORK OF CRYPTO CURRENCY

Introduction

Cryptocurrencies are digital or virtual currencies that are secured using cryptography, which makes them difficult to counterfeit or double-spend. They are decentralised, meaning that they operate independently of a central authority, such as a government or financial institution. BTC, the first and most well-known cryptocurrency, was introduced in 2009 and since then, the market has grown rapidly, with thousands of different cryptocurrencies now available.

The emergence of cryptocurrencies has had a profound impact on various industries, including finance, technology, and retail. The decentralisation and security features of cryptocurrencies have disrupted traditional banking systems, enabling individuals and businesses to conduct transactions without intermediaries. This has resulted in faster transaction speeds, reduced transaction fees, and greater financial inclusivity, especially for people in developing countries who lack access to traditional banking services.

Moreover, the use of cryptocurrencies has led to the development of new business models and industries, such as cryptocurrency exchanges, wallets, and mining operations. The global cryptocurrency market was valued at USD 1.03 billion in 2019 and is expected to reach USD 1.40 billion by 2024, growing at a CAGR of 6.18% during the forecast period (1). The potential for growth and innovation in this market is significant, as cryptocurrencies offer several advantages over traditional financial systems.

However, the rapid rise in popularity of cryptocurrencies has also raised concerns around their regulatory status, security, and volatility. The lack of regulatory clarity and uniformity across different countries and jurisdictions can create uncertainty and hinder the growth of the cryptocurrency market. Moreover, the use of cryptocurrencies has also raised concerns around security, as there have been several high-profile hacks and thefts of cryptocurrencies in recent years. The volatile nature of the cryptocurrency market has also been a cause for concern, with large price fluctuations causing significant financial losses for investors.

also this chapter will delve deeper into how the integration of digital marketing and cryptocurrencies can create new revenue opportunities for global enterprises. we will explore the integration of digital marketing and cryptocurrencies for revenue generation. The

emergence of digital marketing has revolutionized the way businesses promote their products and services, and the adoption of cryptocurrencies has opened up new possibilities for revenue generation. By combining the two, enterprises can create new revenue opportunities and gain a competitive advantage in the market.

Now we will first discuss the theoretical relationship between digital marketing and cryptocurrencies in revenue generation, and explain how they can be integrated to create new revenue streams.

2.1 Definition and Characteristics of Cryptocurrencies

Cryptocurrencies are digital assets that use cryptography to secure transactions and control the creation of new units. They are decentralised and operate without the need for intermediaries such as banks or financial institutions. Bitcoin, the first and most well-known cryptocurrency, has paved the way for the development of other cryptocurrencies, each with its own unique characteristics and goals. The rise of cryptocurrencies and blockchain technology has opened up new opportunities and challenges for the global financial system.

The impact of cryptocurrencies on the economy and society is a complex and ongoing topic of research and debate. Several studies have analysed the potential implications of cryptocurrencies, including their impact on trade, investment, financial systems, and monetary policy. A study by Böhme et al. (2015) examined the potential economic impact of Bitcoin and found that it could potentially disrupt traditional payment systems and have implications for monetary policy. Another study by Vigna and Casey (2015) analysed the potential for cryptocurrencies to challenge traditional banking systems and promote financial inclusion. Additionally, a study by Yermack (2013) analysed the potential for Bitcoin to be used as a store of value and found that it had potential as an alternative investment asset.

2.1.1 Definition of cryptocurrencies

Cryptocurrency refers to a digital unit of currency encrypted and stored on a decentralised network known as the blockchain. The blockchain serves as a secure ledger for recording transactions, including buying, selling, and transferring of cryptocurrencies, without the need for government or financial institutions' control. The creation and security of cryptocurrencies rely on complex cryptographic algorithms that are validated through a

process called mining. Miners, using a network of computers or specialised hardware, confirm and process transactions, with incentives such as cryptocurrency as a reward.

Investopedia defines cryptocurrency as a digital payment system operating on a decentralised platform, enabling peer-to-peer transactions without the need for banks. Unlike physical currencies, cryptocurrencies only exist as digital entries in a public ledger that every user can access. Transactions are secured through encryption, using advanced coding techniques to protect data exchanged between digital wallets and public ledgers.

Bitcoin is the first and most popular cryptocurrency introduced in 2009, intended as an independent means of exchange. However, cryptocurrency has attracted investors seeking profits from buying and selling, leading to significant price volatility driven by market speculation.

2.1.2 Characteristics of cryptocurrencies

The characteristics of cryptocurrencies are given below.

- ✔ **Decentralisation (No Central Authority)**

Meaning they are not controlled by any central authority or institution. This allows for trust and transparency in transactions without the need for intermediaries. Transactions are verified and recorded on a distributed public ledger called a blockchain, which is made possible through the use of blockchain technology. Each transaction on a blockchain is verified and recorded by a network of computers that are spread out across the world, making it nearly impossible for anyone to manipulate the blockchain without the consensus of the entire network.

The transparency and security provided by blockchain technology ensures that the integrity of transactions is maintained, even without the need for a central authority. This makes it much harder for bad actors to commit fraud, and it also allows for greater accountability and trust in financial transactions.

The decentralised nature of cryptocurrencies and the use of blockchain technology provide a new and innovative way to conduct financial transactions without the need for intermediaries or central authorities. Most of the blockchain protocol, decentralised Application (dApp), Decentralised Autonomous Organization (DAO), or other blockchain-related solution adopts varying levels of decentralisation. The adoption level is typically based on the maturity of the solution, the time-proven reliability of its incentive models and consensus mechanisms, and the ability of the founding team to strike the right

balance. For example, many DAOs have various components at different stages of decentralisation: oracles (i.e., third-party services that provide smart contracts with external information) may be partly decentralised, smart contracts might be fully centralised, while the governance process for adjusting parameters is community-driven and decentralised.

On a wide scale, decentralised blockchain solutions are being discovered and adopted by organisations of every type, size, and industry. Some notable examples include applications that provide immediate foreign or emergency aid to those who need it most, without the mediation of a bank, government or third-party entity. Or applications that give people the ability to manage their own digital identities and data. Today, social media platforms, companies, and other organisations sell this information without the individual seeing any advantages. A decentralised approach would help make it equitable for all. According to Amazon Web Services 10th of March 2023.

- ✔ **Irreversible and Immutable (Cannot be Undone)**

Immutability in regards to blockchain and cryptocurrency should follow 3 principles: It should be highly improbable or difficult to rewrite history. It should be impossible for anyone but the owner of a private key to move funds. All transactions are recorded on the blockchain (to guarantee the above 2 principles). The irreversible and immutable features of cryptocurrency mean that it is impossible for anyone but the owner of the respective private key to move their digital assets and that transactions cannot be changed once it is recorded on the blockchain. As we have already seen that the elements of centralization and trust are removed from cryptocurrency, there is no longer a third party for us to trust to do these things. Therefore, transaction records are made public and unchangeable (immutable). Although it isn't impossible to change the transaction ledger, cryptographic security makes it extremely difficult. It requires you to compromise the entire network of cryptocurrency users.

- ✔ **Anonymous**

As we all know that in crypto there is no need for a central Authority for users do not need to identify themselves when transacting with cryptocurrency. When a transaction request is submitted, the decentralised network will check the transaction and verify it and record it on the blockchain called ledger accordingly. Cryptocurrencies, like Bitcoin, use a private key and public key system to authenticate these transactions. This means users can create

anonymous digital identities and digital wallets to transact on the decentralised system and still be able to securely authenticate their transactions.

✔ **Limited Supply and Scarcity**

As we all know that physical currencies (fiat) in the world have an unlimited supply, as the central banks can issue and/or print as much fiat currencies as they want. Central banks often manipulate the value of the countries' currencies as part of their economic policies. The inflationary nature of fiat currencies would mean a decrease in the value of the currency over time.

On the other hand, most cryptocurrencies have a limited and pre-determined supply of the cryptocurrency in circulation that is coded into its underlying algorithm when it is created.

With cryptocurrency, however, no individual or consortium is able to affect the supply of currency or exert significant influence over it without the approval of the majority. Leading cryptocurrencies feature maximum token supply caps or infinite supply with predefined production parameters.

Many top cryptocurrencies such as Bitcoin, Litecoin and Dash have a maximum supply, making them deflationary by nature. Any increase in the demand or adoption of the cryptocurrency will cause a corresponding increase in the price (Asian Market Cap, 2023)

2.1.3 Different types of cryptocurrency

Will be discussing about the different types of cryptocurrency and Tokens examples: While BTC was the first operational public cryptocurrency, it is not the only type, and there certainly are many variations of cryptocurrencies. We can identify at least four types of cryptocurrencies depending on how they are formulated or code design, application or use case, and other factors.

You might get coins, payment tokens or altcoins, security tokens, non-fungible tokens or NFTs, decentralised finance tokens, utility tokens, and other categories. I will be explaining each of them with examples before that will first explain the meaning of altcoin, coin and a token. ***What is a coin ?*** a coin is said to be any crypto currency that's as is Blockchain. Coins can be differentiated from altcoins because they are based on their blockchain. On such a blockchain, they act as the native token as well as gas or fuel payment

token, although a blockchain can have the gas paid in a different cryptocurrency. A good example is Bitcoin on the Bitcoin and Ether or ETH on the Ethereum blockchain. In terms of constructing or developing a cryptocurrency, it starts or comes along with developing a blockchain.

Altcoins: Although these can be regarded as coins, they are all understood to be alternatives to Bitcoin as the first cryptocurrency. Also known as shitcoins, Ethereum is the father of all altcoin most of the first ones were forked from Bitcoin. These include Namecoin, Peercoin, Litecoin, Dogecoin, and Auroracoin.

Tokens: Tokens are the digital representations of a particular asset or utility in a blockchain. All tokens can be termed altcoins, but they are differentiated by residing on top of another blockchain and not being native to the blockchain on which they reside.

They are coded to facilitate smart contracts on blockchain networks like Ethereum, and we can transfer some from one chain to another. The tokens are embedded in self-executing computer programs or codes and can operate without a third-party platform. They are also fungible and tradable. They can be used to represent loyalty points and commodities or even other cryptos.

1) Utility Tokens

Utility tokens are thought of as coupons or vouchers but essentially are digital units representing a value on the blockchain. In other words, the token provides certain access to a product or service run or operated by the token issuer. A person can gain access by buying the token and can redeem it for a defined access value to the product or service.

- The holder gains the right to product or service to an equivalent value of token but not ownership. **For instance,** they can access the product or service at discounted fees or for free as long as they hold the tokens.
- In some jurisdictions, defining a cryptocurrency as a utility token means it is not under any financial regulation.
- The main understanding is that they are not investment products and can lose value completely at the expense of the holder.
- Utility tokens are better understood from a regulatory perspective in that they are not assumed to be regulated. The holder of the token is not holding an equivalent of stock or bond, or other asset regulated under financial acts.

- Applications include access to decentralized storage in a decentralized storage network, rewards tokens, and as currency for a blockchain.

Examples of utility tokens: Funfair, Basic Attention Token, Brickblock, Timicoin, Sirin Labs Token, and Golem.

2) Security Tokens

These are securitized cryptocurrencies that derive value from an external asset that can be traded under a financial regulation as security. They, therefore, are used for securitized tokenization of properties, bonds, stocks, real-estates, property, and other real-world currencies.

- Therefore, because of the nature of transactions, their exchange, issuance, dealings, value, tokenization, backing, and trading must be controlled and governed by financial regulators to protect user investments.
- The regulation, in such a case, exists to guarantee user funds and investments and to hold founders responsible.

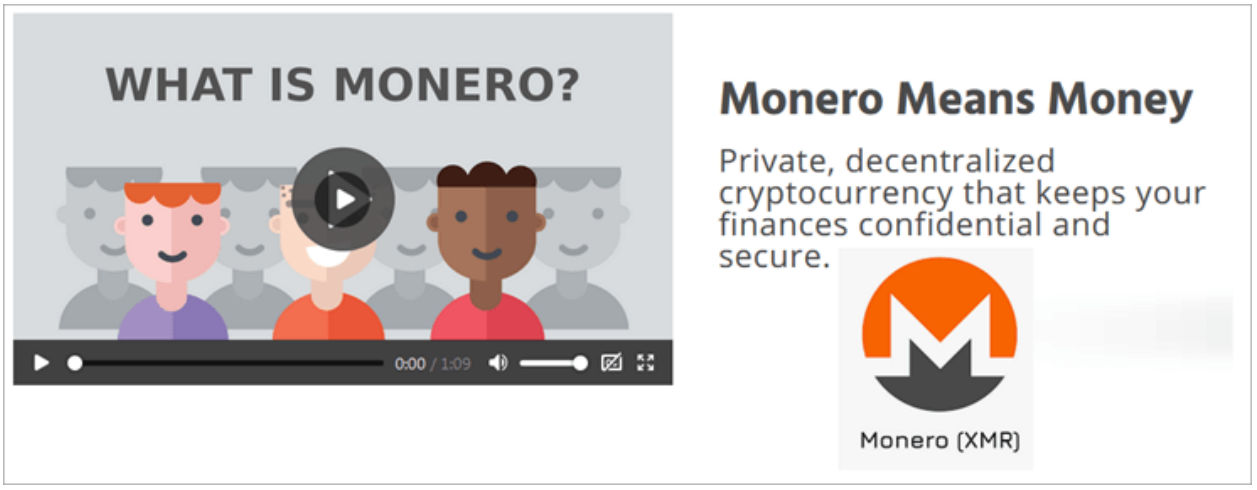
Security tokens represent a stake, share in stock or equity, voting rights, and right to the dividend in the asset represented. Owners or holders receive part of the profit from the issuers' or managerial actions and decisions.

- They are issued through Security Token Offering (STOs)
- Their applications include where investors need instant settlement, transparency in management, divisibility of assets, etc.

Security tokens are further divided into:

- **Equity tokens:** These are similar to traditional stocks in form and operation except that ownership and transference happen digitally. Investors are entitled to dividends from managerial and issuer actions and decisions. Debt tokens represent short-term loans that carry pre-defined interest rates.
- **Asset-backed tokens:** These are backed by real-world real estate, art, carbon credits, or commodities as underlying value.

3) Payment Tokens



getmonero.org

As the name suggests, payment tokens are those used for buying and selling goods and services on digital platforgetmonerms without an intermediary, as happens in traditional finance and banking arenas. Of course, the majority of cryptocurrencies and tokens fall into this category, whether they are security or utility. However, not all utility tokens can be payment tokens.

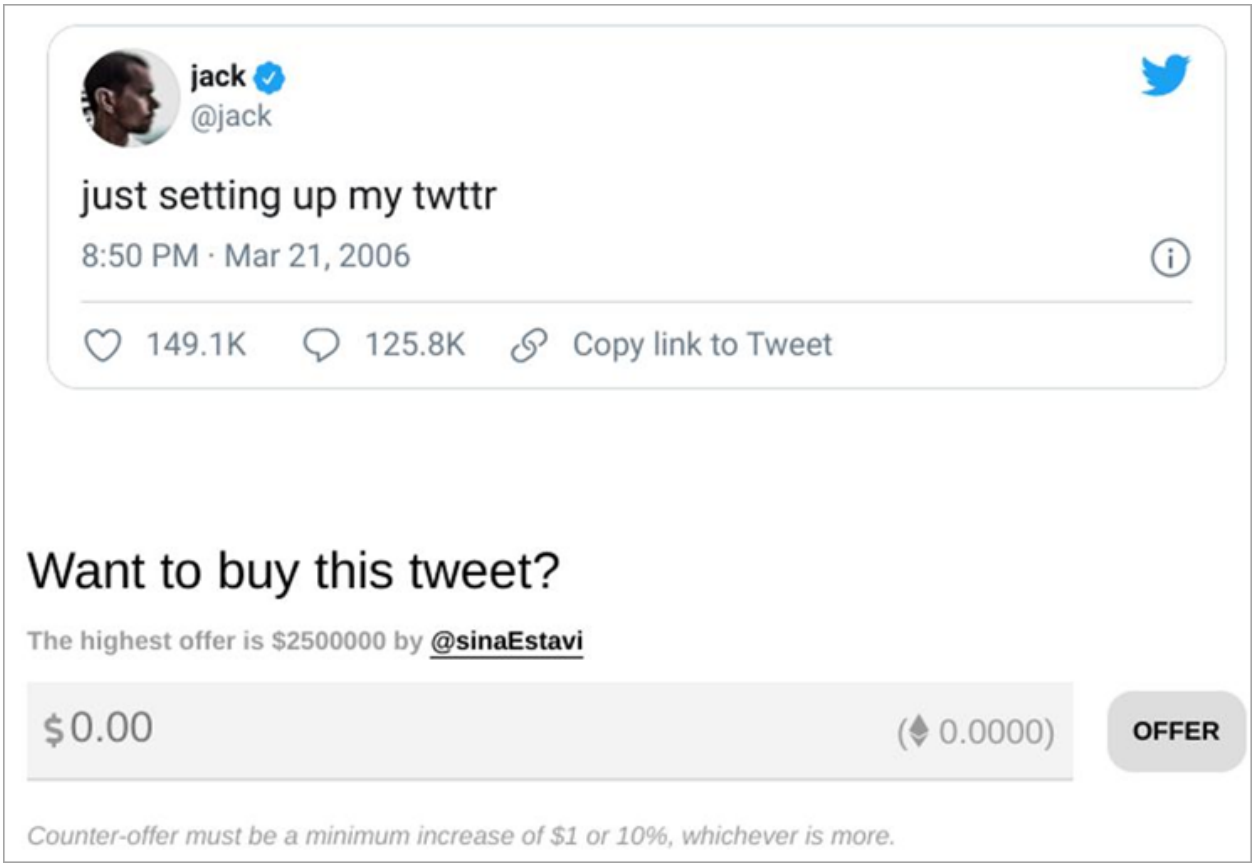
- Mostly hybrids of other tokens.
- Payment tokens do not represent and cannot be invested in as securities. Hence, they do not fall under financial regulation as asset securities.
- They may or may not guarantee holders'

4) Exchange Tokens

gemini.com

Exchange tokens are a type of cryptocurrency that are primarily used within cryptocurrency exchanges for buying, selling, and swapping other tokens. Although they can be used outside of these exchanges, their main purpose is to facilitate exchange transactions or as utility payments for gas fees. These tokens can be issued by centralised exchanges, with or without their own blockchains, and offer various benefits such as cheaper gas fees, increased liquidity, discounts, voting rights, and access to specific exchange services. Exchange tokens are also used to attract investors to participate in exchange projects. Popular examples of exchange tokens include Binance Coin (BNB), Gemini USD, FTX Coin, , KuCoin Token, Uni token, HT, Sushi, and CRO. (Source: CoinMarketCap)

5) Non-fungible Tokens



v.cent.co

A non-fungible token (NFT) is a type of digital asset that serves as a unique, irreplaceable certificate of ownership for a particular item or asset on the blockchain. Unlike other tokens, NFTs represent original, one-of-a-kind assets that cannot be traded for another token. These assets may include works of art, photos, videos, audios, collectibles, virtual real estate, and other types of digital content.

The technology used to create NFTs is similar to that used to create other types of tokens, with the first NFT created in 2015 on the Ethereum blockchain. NFTs allow the holder to own a limited-edition, original item that may be of high value due to its uniqueness or limited supply. NFTs are particularly useful for artists, creators, and collectors who want to sell their items.

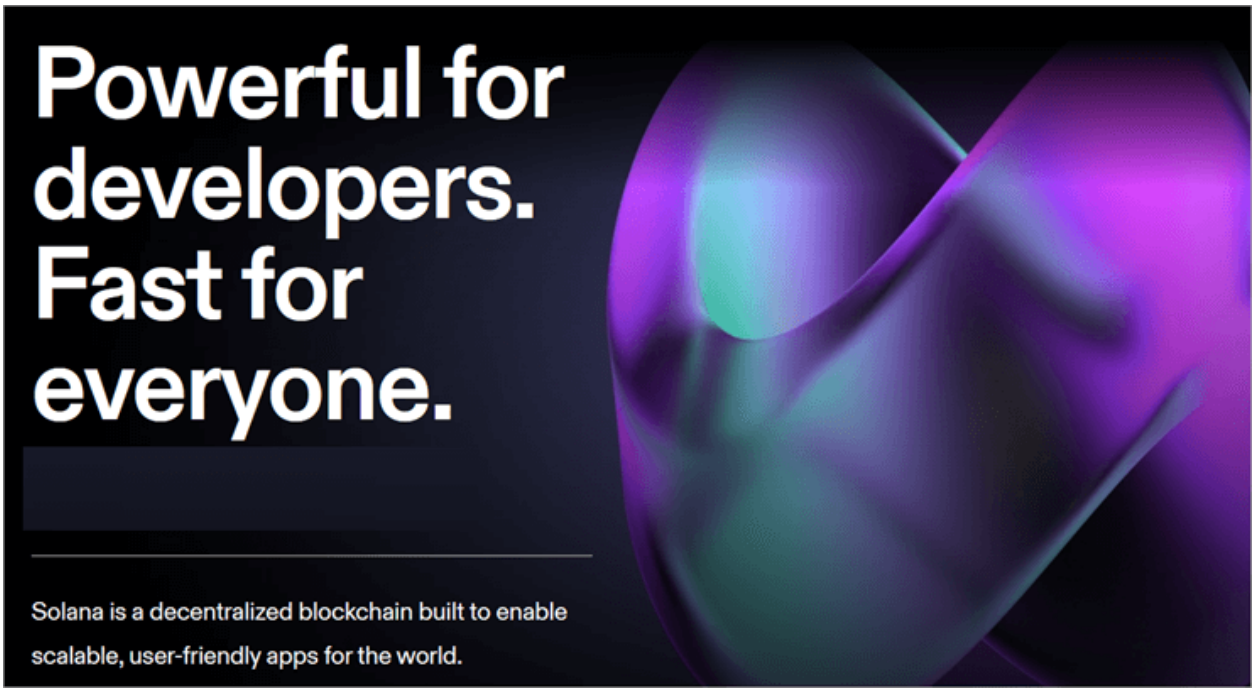
NFTs can be bought and sold on various marketplaces, including OpenSea, Rarible, Foundation, and Decentraland. They have several applications, including monetizing wares, auctioneering to raise capital, preserving histories, and creating unique moment memories.

NFTs also offer partial ownership of land and expensive assets, as well as royalty payments to artists.

It is essential to differentiate NFTs from Initial Exchange Offering tokens, which are standard Initial Coin Offering tokens promoted by crypto exchanges. Some popular examples of NFTs include Logan Paul's video clips, Twitter founder Jack Dorsey's first tweets NFT, EVERYDAYS: The First 5000 Days by Mike Winklemann, and several crypto kitties.

Source: G. Udoh, "Non-Fungible Tokens (NFTs): A Beginner's Guide," Investopedia, June 18,

6) DeFi Tokens Or Decentralised Finance Tokens



solana.com

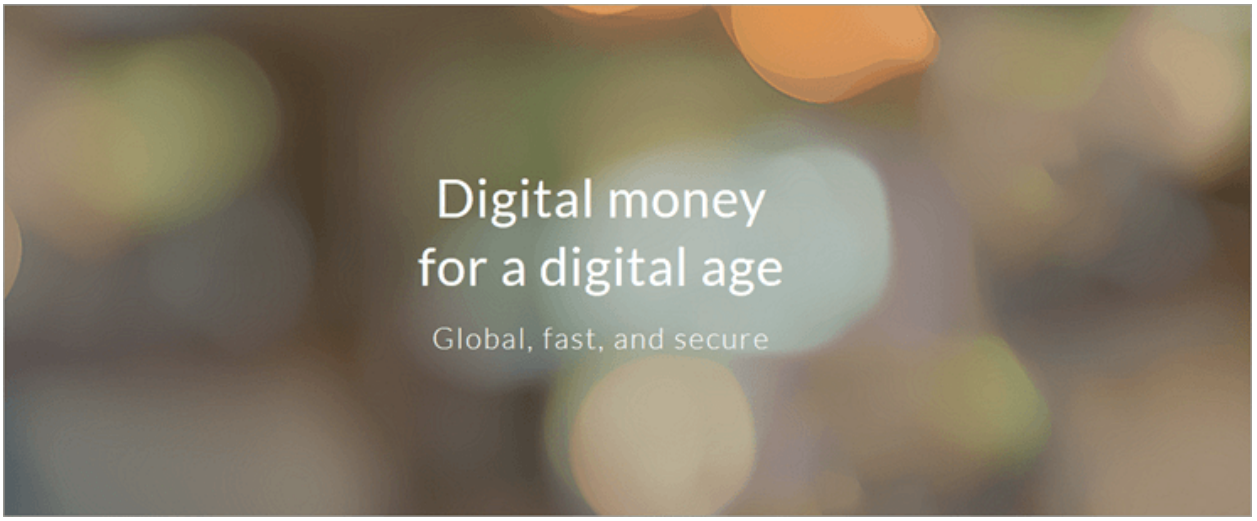
Decentralised finance refers to financial applications insurance or dApps built on the blockchain or distributed ledger, which makes them distributed and those that render financial and money control directly to the user while allowing them to transact on a global scale with peers to peer methods and access to global markets.

These DeFi apps are accessible to anyone with internet connectivity. Each DeFi app is powered by a token economy behind which there is a native token. These tokens are a form

of programmable money where developers can program logic into payments and transaction flows.

- Most of DeFi tokens are currently based on the Ethereum blockchain. Other blockchains with support for DeFi include Stellar, Polygon, IOTA, Tron, and Cardano.
- Through these tokens, people can earn, lend, borrow, long/short, earn interest, save, grow and manage the portfolio, buy, invest in securities, invest in stocks, invest in funds, send and receive monetary value, trade value on decentralised exchanges, invest and buy assets, sell assets, and more.
- Examples of well-known decentralised finance tokens include Solana, Chainlink, Uniswap, Polkadot, Aave, and many others. Some categories of DeFi applications include decentralised lending apps, decentralised exchanges, decentralised storage sharing, etc.
- The most powerful feature about DeFi tokens is smart contracts, allowing anyone to define, write, program, and execute transaction rules based on certain conditions and have transactions executed when those conditions are met.

7) Stablecoins – Fiat And Other Types



tether.to

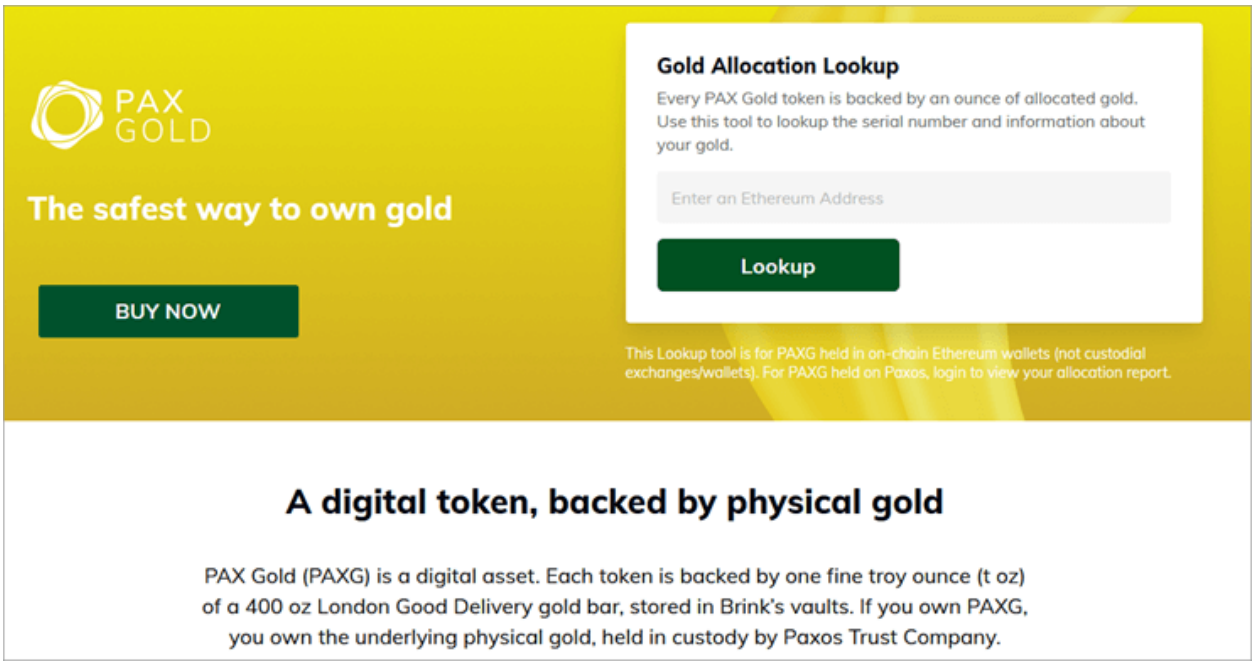
As the name suggests, these are tokens of a stable value in nature in that their value is somewhat predictable in the sense that it remains the same almost all the time. Stable tokens or stablecoins as they are mainly called, are backed by a stable or fairly value-stable asset like

fiat. So we have dollar and Euro-stabilised or backed stable coins, gold and other precious metals, oil, and commodity-backed tokens.

- Stable tokens help the world to rid of volatility in assets or even other digital currencies.
- They are backed on a defined ratio and the asset backing them must be kept in reserves as per the defined ratio. We have those backed by fiat, crypto, commodity, and algorithmic stablecoins which use software and rules to maintain the stable peg with fiat or another asset.

Examples of stablecoins: Tether, which is backed on a 1:1 ratio with USD fiat, the same as TruSD, Gemi Dollar, and USD Coin, and Paxos. Kitco Gold, Tether Gold (XAUT), DigixGlobal (DGX), and Gold Coin (GLC) also serve as stablecoins backed by gold. Algorithmic-backed stable coins include Ampleforth (AMPL), DefiDollar (USDC), Empty Set Dollar (ESD), Frax (FRAX).

8) Asset-backed Tokens



paxos.com

Asset-backed tokens are a category of cryptocurrencies whose underlying value is backed by a real-world asset that could be other money, stock, bonds, real estate, gold, and precious money. They are used to digitally represent and trade value for these underlying assets but on blockchains.

Most of these are offered as security tokens due to the nature of transactions involving the underlying assets. They are mostly issued through the Equity Tokens Offer (ETO).

- They could be backed at any ratio depending on the issuer.
- Precious metal-backed tokens include PAXG and DGX which are backed by gold. Read more on other gold-backed tokens from our other tutorial.
- Company share-backed tokens allow tokenizing of company shares and trading them on crypto exchanges. Examples include Quadrant Token which tokenizes the Quadrant Biosciences Inc equity, Neufund, The Elephant Private Equity Coin, Slice, Document, BFToken, The Dao, and RRT Token
- Tokenized commodity tokens are also known as crypto commodities that represent the value of commodities and allow tokenization and trading of oil, natural gas, renewable energy, wheat, sugar, etc.

Examples of asset-backed tokens: OilCoin which tokenizer barrels of oil held in reserve, Petroleum Coin, Ziyen Inc Oil token, etc. The Energy Web Token (EWT) tokenized energy, Green Energy Token by WPP, etc. Wheat Token Coin for wheat tokenization, etc.

9) Privacy tokens

As the name suggests, these are cryptocurrencies used for privacy applications because their code encourages better privacy than would Bitcoin and mainstream crypto.

There are many reasons one would need better privacy in crypto transactions – first as a right to privacy, security investigations, and highly sensitive transactions, although they are also used for crime and scams.

- These cryptocurrencies incorporate different methods of ensuring transaction privacy, e.g. coin mixing, anonymity techniques like CoinJoin, and offline transactions. This is in addition to techniques employed in mainstream crypto e.g. lack of tying real-world names with crypto addresses and blockchain encryption.

Examples of privacy tokens: Monero, Zcash, Dash, Polygon, Beam, and Verge.

Here, we discussed all the different types of cryptocurrency. For those asking how many types of cryptocurrency are there, we have listed 9 common types. Of all types of cryptocurrencies, the main ones are payment tokens.

Based on these categories, security tokens are the best to invest in, although basically all payment tokens are ideally fit for that purpose. Only that utility tokens are not backed by regulation and so no one is held accountable if an investment goes bad.

If it is a scam, it would be known long before it goes far. Most utility token projects survive in the market based on keeping their word to their investors because that affects demand and usability or utility directly.

2.1.4 History and evolution of cryptocurrencies

The idea of a decentralised digital currency has been around since the 1980s. In 1983, American cryptographer David Chaum created an anonymous electronic cash system called eCash. In 1991, he founded a company called DigiCash to further develop and promote the technology. However, DigiCash ultimately failed due to a lack of interest from banks and financial institutions.

In the early 2000s, several attempts were made to create a decentralised digital currency, but all failed due to technical and regulatory issues. Then, in 2008, an individual or group of individuals using the pseudonym Satoshi Nakamoto published a whitepaper describing a decentralised digital currency called Bitcoin. The whitepaper proposed a system for creating a currency that did not rely on a trusted third party, but instead relied on cryptographic protocols to verify transactions and ensure the integrity of the system.

Bitcoin launched as open-source software in January 2009, and was the first cryptocurrency to gain widespread acceptance. Other cryptocurrencies soon followed, including Litecoin, which launched in October 2011, and Ripple, which launched in 2012. Today, there are thousands of cryptocurrencies in circulation, with a total market capitalization of over $2 trillion as of September 2021.

One of the key features of cryptocurrencies is that they are decentralised, meaning that they are not controlled by any government or financial institution. This makes them resistant to censorship and government interference, but also makes them more vulnerable to fraud and hacking.

Another important feature of cryptocurrencies is that they use blockchain technology to record transactions. A blockchain is a decentralised digital ledger that records all transactions in a transparent and immutable way. This makes it virtually impossible to alter the ledger without the consensus of the entire network.

Over the years, cryptocurrencies have evolved to include a range of features beyond simple currency transactions. For example, some cryptocurrencies are designed to be used as smart contracts or to facilitate anonymous transactions. Other cryptocurrencies have been designed to be more energy-efficient or to address specific use cases, such as supply chain management or identity verification. Cryptocurrencies have also faced a number of challenges over the years. One of the biggest challenges has been regulatory scrutiny from governments and financial regulators around the world. Many governments have been hesitant to embrace cryptocurrencies, citing concerns about money laundering, fraud, and the potential for cryptocurrencies to be used for illegal activities.

Cryptocurrencies have also faced technical challenges, such as scalability and energy consumption. As more people have started using cryptocurrencies, the transaction volume on some networks has grown to the point where the networks have become congested, leading to slow transaction times and high transaction fees. Additionally, the process of verifying transactions on many cryptocurrency networks requires a significant amount of computing power, leading to high energy consumption.

Despite these challenges, cryptocurrencies continue to gain in popularity and adoption. In recent years, more and more businesses and institutions have started accepting cryptocurrencies as payment, and there has been a significant increase in the number of cryptocurrency ATMs and exchanges.

The future of cryptocurrencies is still uncertain, but many experts believe that they will continue to play an increasingly important role in the global financial system. Some experts predict that cryptocurrencies could eventually replace traditional fiat currencies as the primary means of exchange, while others

They have gained increasing importance for global enterprises due to various reasons, including individuals who lack access to traditional banking services or possess distrust towards their leaders have the option to utilise cryptocurrencies without concern of being censored or having their assets seized. The decentralisation of cryptocurrencies is the key factor in their significance, allowing users to interact with currency without dependence on local institutions or government entities. This decentralised nature makes cryptocurrencies a valuable financial tool for a significant portion of the world's population, particularly those situated in authoritarian or underdeveloped financial environments. Additionally, cryptocurrencies such as Bitcoin are invulnerable to manipulation since they lack central authorities such as the Federal Reserve that control them. Individuals who possess

cryptocurrency in a wallet benefit from the responsibility and advantages of self-custody and censorship immunity. These characteristics have the potential to offer millions of people access to capital that is challenging to inflate or seize.

2.2 Importance of Cryptocurrencies for Global Enterprises

Following is a discussion on the importance and benefits for global enterprises to think and adjust a posture toward cryptocurrencies.

2.2.1 Why cryptocurrencies are becoming increasingly important for global enterprises?

The importance include:

➢ The decentralised nature of cryptocurrencies is one of their most significant features, as they are not subject to control by any central authority. This feature renders cryptocurrencies more resistant to censorship and less susceptible to political influence, making them appealing to businesses that operate in countries with unstable or corrupt governments, or where traditional financial systems are weak. Cryptocurrencies can offer a reliable and secure means of conducting transactions in such environments, providing businesses with greater control and autonomy over their financial affairs. Furthermore, the decentralised nature of cryptocurrencies enables them to be utilised across borders, without the need for intermediary institutions, making them an attractive option for businesses that operate on a global scale (Riksbank, 2020).

➢ Cryptocurrencies are built on blockchain technology, which is a decentralised ledger that records all transactions in a tamper-proof manner. This transparency provides complete visibility of all transactions to all participants in the network, thereby increasing trust between parties and reducing the risk of fraudulent activities. The verification process involved in transactions ensures that they are secure and accurate, and once recorded, they cannot be altered or deleted, creating a permanent and immutable record of all transactions. This transparency can also be beneficial for businesses in managing their supply chain. By using blockchain technology to track the movement of goods, companies can ensure that their products are ethically

sourced and manufactured and that they are not involved in any illegal activities such as money laundering or terrorism financing. The transparency provided by blockchain technology enhances trust between parties, reduces the risk of fraud, and improves supply chain management. Therefore, cryptocurrencies are a valuable option for businesses that require transparency and accountability in their transactions (World Economic Forum, 2020).

➢ One of the significant benefits of using cryptocurrencies is that they have lower transaction fees than traditional payment methods. This is because cryptocurrencies are decentralised, and there is no need for intermediaries like banks or credit card companies to process transactions. When making traditional transactions, banks and credit card companies charge a fee to cover their services, which can be expensive, particularly for cross-border transactions. Cryptocurrency transactions, on the other hand, involve much lower fees, as they are not subject to the same intermediaries' fees. Furthermore, the fees associated with cryptocurrency transactions are generally fixed, making it easier for businesses to predict their transaction costs accurately. In contrast, traditional payment methods' fees can be variable and depend on various factors, including the size and destination of the transaction. The lower transaction fees associated with cryptocurrencies make them particularly attractive for businesses that operate globally, as they enable companies to transact across borders more cost-effectively. Moreover, cryptocurrency transactions can be processed more quickly than traditional transactions, further reducing costs and delays associated with cross-border transactions (CoinDesk, 2021).

➢ Another key importance of cryptocurrencies is their ability to enable fast transaction times. Unlike traditional payment methods, which may take several days to complete, cryptocurrency transactions can be processed almost instantaneously, depending on the specific cryptocurrency being used. This is especially important for global businesses that need to move funds quickly across borders. Traditional methods, such as wire transfers, can take several days to complete, causing delays and potential financial losses. Cryptocurrencies, on the other hand, allow businesses to move funds almost instantly, improving cash flow and reducing the time and cost associated with traditional payment methods. The speed of cryptocurrency

transactions is due to the decentralised nature of cryptocurrencies. Transactions are verified by a network of computers, rather than a central authority, enabling them to be processed quickly and efficiently. Additionally, because there is no intermediary involved in cryptocurrency transactions, there are fewer delays and potential errors, further enhancing their speed and efficiency.

Overall, the ability to transact quickly and efficiently with cryptocurrencies can be a significant advantage for global businesses that need to move funds quickly and reliably across borders. The near-instantaneous transaction times can help to improve cash flow, reduce the time and cost associated with traditional payment methods, and enable businesses to be more agile and responsive in their operations (Riksbank, 2020).

One of the most significant advantages of cryptocurrencies is that they are borderless, meaning they are not bound by national borders or currency exchange rates. This makes them an attractive option for businesses that operate in multiple countries or conduct transactions across borders regularly.

Traditionally, businesses that operate globally may need to maintain multiple bank accounts in different currencies to facilitate transactions in different countries. This can be costly and a Digital marketing initiatively burdensome, with businesses needing to manage different accounts, currencies, and regulations. Cryptocurrencies remove the need for businesses to maintain multiple accounts, simplifying the process of transacting across borders. By using cryptocurrencies, businesses can transact in a single currency without the need for intermediaries or currency exchange fees. This reduces the costs associated with conducting transactions across borders, making it more cost-effective for businesses to operate globally. Additionally, the borderless nature of cryptocurrencies can also make it easier for businesses to enter new markets, as they do not need to navigate complex currency exchange regulations or open new bank accounts.

Overall, the borderless nature of cryptocurrencies can be a significant advantage for businesses that operate globally, as it reduces costs, simplifies transactions, and can make it easier to enter new markets. By removing the need for multiple bank accounts and currency exchange fees, cryptocurrencies can help

businesses to streamline their operations, reduce their digital marketing administrative burden, and improve their bottom line (CoinDesk, 2021).

➢ Another significant importance of cryptocurrencies for businesses is the ability to access capital through Initial Coin Offerings (ICOs). ICOs are similar to Initial Public Offerings (IPOs), but instead of using traditional currencies, they use cryptocurrencies to raise funds. ICOs have become an increasingly popular method for startups and small businesses to raise capital, as they provide a faster and more cost-effective way to raise funds compared to traditional funding channels. According to a report by PwC, ICOs raised over $13.7 billion in 2018, with the majority of funds raised in the first half of the year (PwC, 2019). ICOs allow businesses to raise funds directly from investors, bypassing traditional intermediaries such as banks and venture capitalists. This can be particularly advantageous for businesses that may have difficulty accessing traditional funding channels due to their size, location, or industry. Additionally, because ICOs use cryptocurrencies, they can potentially reach a larger pool of investors, including those who may not have access to traditional financial systems. This can help to democratize the investment process and provide more opportunities for smaller investors to participate in funding startups and small businesses. Overall, the ability to access capital through ICOs can be a significant advantage for businesses, particularly those that may have difficulty accessing traditional funding channels. By using cryptocurrencies to raise funds, businesses can bypass intermediaries, reach a broader pool of investors, and potentially raise funds more quickly and cost-effectively (CoinDesk, 2021).

Now, if we consider opportunities from what we explore, what to say?

In addition to providing access to capital through ICOs, cryptocurrencies have also become an attractive investment opportunity for businesses. As cryptocurrencies have gained wider acceptance and recognition, some companies have started to invest in them as a hedge against inflation or currency devaluation.

For example, companies like MicroStrategy and Tesla have made large investments in Bitcoin, with MicroStrategy holding over $5 billion worth of Bitcoin on its balance sheet as of December 2021 (MicroStrategy, 2021). These investments

are seen as a way to diversify their assets and protect against potential risks from traditional fiat currencies.

Furthermore, cryptocurrencies have also provided new opportunities for businesses to invest in blockchain technology, the underlying technology behind cryptocurrencies. Blockchain has the potential to revolutionize a wide range of industries, including finance, healthcare, supply chain management, and more.

Investing in blockchain technology can allow businesses to develop new products and services, streamline operations, and increase efficiency. It can also give them a competitive advantage in industries that are undergoing significant technological disruption.

2.2.2 Benefits of cryptocurrencies

Benefits of cryptocurrencies could be summarized as follows.

➢ ***Innovation***: Cryptocurrencies have given rise to new business models and innovations, such as decentralised finance (DeFi) and non-fungible tokens (NFTs), that are changing the way businesses operate and interact with customers (CoinDesk, 2021).

➢ ***Customer demand***: Cryptocurrencies are becoming increasingly popular among consumers, with many businesses accepting them as a form of payment. This has led to businesses needing to integrate cryptocurrencies into their payment systems to meet customer demand (CoinDesk, 2021).

➢ ***Regulation***: Cryptocurrencies are becoming more regulated around the world, with some countries recognizing them as legitimate forms of payment. This regulatory clarity is making cryptocurrencies more attractive to businesses that were previously hesitant to adopt them (Riksbank, 2020).

➢ ***Financial inclusion***: Cryptocurrencies have the potential to provide financial services to people who do not have access to traditional banking services. For example, in countries with low levels of financial inclusion, such as many African countries, cryptocurrencies are being used to provide access to financial services like loans and remittances (The World Bank, 2021).

➢ ***Improved supply chain management***: Cryptocurrencies are being used to improve supply chain management in various industries. For example, in the food industry, blockchain-based cryptocurrencies are being used to track the origin and quality of food products, reducing the risk of fraud and improving food safety (CoinTelegraph, 2021).

➢ ***Environmental sustainability***: Cryptocurrencies are becoming increasingly important for companies that prioritise environmental sustainability. Some cryptocurrencies use alternative consensus mechanisms that are less energy-intensive than traditional proof-of-work mechanisms, making them more environmentally friendly (CoinDesk, 2021).

➢ ***Protection against currency fluctuations***: Cryptocurrencies provide protection against currency fluctuations, which is particularly important for global enterprises that operate in multiple countries. By holding cryptocurrencies, businesses can reduce their exposure to currency risk (Riksbank, 2020).

➢ ***Cross-border payments***: Cryptocurrencies are being used to facilitate cross-border payments, which are often slow and expensive using traditional payment methods. Cryptocurrencies can facilitate instant cross-border payments, reducing transaction costs and improving liquidity (The World Bank, 2021).

In conclusion, cryptocurrencies are becoming increasingly important for global enterprises due to their decentralised nature, transparency, lower transaction costs, faster transaction times, borderless nature, access to capital, investment opportunities, innovation, customer demand, regulation, financial inclusion, improved supply chain management, environmental sustainability, protection against currency fluctuations, and cross-border payments. As such, businesses that want to remain competitive in an increasingly globalised world will need to consider ads.

2.3 Theoretical Models for Cryptocurrencies

In this part, we aim to present theorical models for cryptocurrencies and the manner to adopt it in businesses.

2.3.1 Various theoretical models for cryptocurrencies

Some thoracal models are presented as follows.

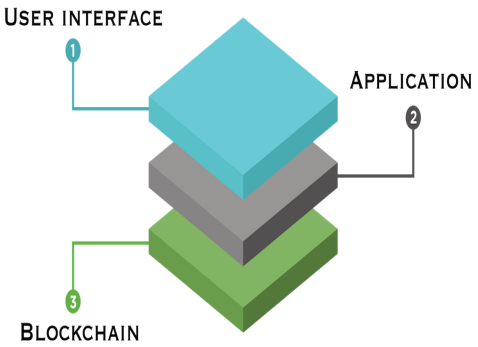
Blockchain model

This model is the backbone of many cryptocurrencies, such as Bitcoin. It operates by grouping transactions into blocks that are added to a chain of blocks, forming a chronological and linear record. Each block contains a cryptographic hash of the previous block, making it nearly impossible to tamper with earlier transactions. The blockchain is maintained by a decentralised network of nodes that validate transactions and blocks using a consensus algorithm.

Traditionally, financial intermediaries were responsible for maintaining the accuracy of customer accounts, performing bookkeeping functions, and preventing unauthorised access. However, recent technological advancements have enabled an alternative architecture of storing and managing information where no single entity has complete control over all states and transactions. This decentralised architecture, known as Distributed Ledger Technology (DLT), allows multiple parties to hold their own copies of states and collectively decide which transactions are a digital marketing visible.

DLT eliminates the need for a central point of failure as multiple copies of records exist, preventing the corruption of a single node or copy from compromising the blockchain's security. Blockchains can be permissioned or permissionless, depending on the set of entities allowed to be validators. Permissioned blockchains have a coordinating body that approves validators, while permissionless blockchains do not impose constraints on the number or identity of validators. Blockchains can also be private or public, with public blockchains accessible to everyone, and private blockchains restricting access to authorised parties.

Permissionless blockchains provide a "thrustless" trust architecture, eliminating the need for trust in any individual validator. However, anyone can become a validator in a permissionless blockchain, making it potentially vulnerable to a Sybil attack where an adversary creates a large number of pseudonymous validators to gain disproportionate influence over the consensus protocol. On the other hand, permissioned blockchains still require trust in the coordinating body that approves validators, which some crypto enthusiasts view as a fundamental flaw. Hence, we present an illustration of the three layers of blockchain.



Blockchain technology consists of various layers, each serving a specific purpose to enable its functionality.

At Layer 0, the underlying infrastructure of the Blockchain is established, allowing cross-chain interoperability communication within different layers.

Layer 1, also known as the implementation layer, maintains the network's functionality, and changes made to any new protocol on Layer 0 directly affect Layer 1. Many popular cryptocurrencies, such as Bitcoin and Ethereum, are examples of Layer 1 blockchains.

To remove limitations and challenges experienced at Layer 1, Layer 2 refers to scaling solutions by specific platforms that interact with third parties. These solutions are currently popular in solving issues arising from the proof-of-work consensus mechanism.

Finally, Layer 3, also known as the application layer, hosts decentralised applications (DApps) and other protocols supporting various apps. This layer includes two sub-layers, the application, and execution.

Blockchain business models have advanced significantly at Layer 3, thanks to the technology's improved scalability, enabling faster and more secure networks that can handle the security, scalability, and decentralisation trilemma, making blockchain businesses viable.

✔ **Traditional business model**

A business model is essentially a plan or strategy employed by a company to sell its products or services

and generate a profit, based on its target market. The traditional business model is a centralised model that involves several key players, including owners or shareholders, the company itself, its employees, and consumers.

In this model, the business creates and offers goods or services with the expectation that consumers will purchase them at a set rate that covers all of the expenses incurred to produce and deliver the product. These expenses may include things like wages, raw materials, marketing costs, and other overhead expenses.

Centralised business models may vary across industries but typically involve several players, such as manufacturers, distributors, retailers, and franchises. These players work together to create and distribute products or services, with the ultimate goal of generating revenue and earning a profit.

Despite the prevalence of centralised business models, there are also other types of business models that have emerged in recent years. For example, some businesses are now utilising decentralised models that rely on peer-to-peer networks and blockchain technology to conduct transactions and exchange value without the need for intermediaries. Other businesses may be adopting subscription-based models or freemium models that offer basic services for free and charge for premium features.

Ultimately, the success of a business model depends on a variety of factors, including the target market, the product or service being offered, and the competitive landscape. However, by carefully considering these factors and developing an effective business model, companies can increase their chances of success and achieve their goals.

- ✔ **Blockchain business model**

The blockchain business model is characterised by decentralisation, immutability, and transparency. The use of blockchain technology in business enhances the way business's function, making it more reliable and trustworthy for peer-to-peer transactions. The model eliminates central authorities and intermediaries, introducing decentralised applications (DApps) that directly execute transactions, making the users owners and workers, and reducing time and cost. The model earns profits by keeping a portion of the tokens for the companies, which are sold to investors through Initial Coin Offerings (ICO). There are several types of blockchain business models, including the P2P blockchain business model,

Blockchain as a Service (BaaS) business model, Token economics, Utility Token Business Model, blockchain-based software products, and Development Platforms. These models have different practical applications, from cybersecurity services to improving existing products and services, creating a token-based economy, and facilitating smart-contract opportunities for transactions.

Now let me explain each type.

- ***P2P blockchain business model***: This model refers to businesses powered by the peer-to-peer model that enables end users to interact with each other. The P2P model is a foundation principle for almost all blockchain-based enterprises, and they're tokenized in different ways, including through transaction fees, tokens, and Baas. The system is a hybrid between Business to Consumer (B2C) and business-to-business (B2B) models. The model enables businesses to compete with each other using blockchain protocols to negotiate between DApps owners and consumers using smart contracts.
- ***Blockchain as a Service Business Model (BaaS)***: The BaaS business model provides advanced cybersecurity services monthly. Users can build, manage and host their respective blockchain apps without creating their nodes. Blockchain users can enjoy working in a safe environment by paying a monthly subscription to access tech support and frequent updates using high-level decentralisation and encryption. The leading examples of BaaS include R3, a project that integrates banking institutions with Corda, Microsoft's partnership with ConsenSys, and PayStand, to name but a few.
- ***Token Economy – Utility Token Business Model:*** The utility token business model creates a token-based economy that enables service providers to offer better services to their clients. They achieve this using blockchain utility tokens that would allow clients to benefit from revenue sharing or bonuses derived from peer-to-peer transaction-based payments. The system facilitates monetization by introducing apps that allow smart contract opportunities in transactions that use custom software-driven programs available in decentralised browsers. The model uses a smart-contract system to share revenues between clients and providers.
- ***Blockchain-Based Software Products***: This blockchain business model seeks to create relevant blockchain use cases for different existing products and services. The model delves into and aims to improve different products and services, including

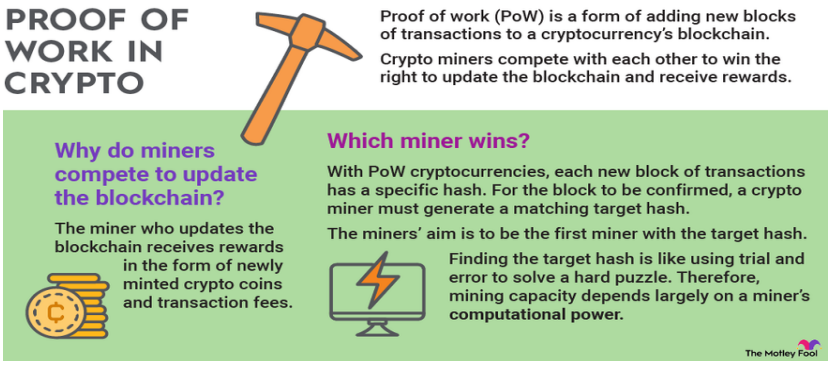
intellectual properties, physical goods, or any other that haven't yet been disrupted by technology. The businesses achieve the aforementioned goals by buying blockchain solutions and then integrating them into their systems. Blockchain startups that emerge offer solutions that they can later sell to bigger organisations.

- ***Development Platforms***: Blockchain startups that specialise in creating development platforms offer other blockchain-based startups a chance to build their applications on their decentralised networks. The idea is to offer existing infrastructure, like peer-to-peer networks, to emerging companies. The startups working on this business model seek to monetize by creating customizable APIs that enable other companies to use their systems to create new applications. The developers of the systems are almost always paid upfront and later when they provide user support after implementations.

Proof of work model (PoW)

This is the first and most widely used method for validating transactions on a cryptocurrency's blockchain. Its main goal is to ensure decentralisation by confirming transactions without the involvement of financial institutions. PoW involves generating a hash that matches the target hash for the current block, and the crypto miner who successfully does this is rewarded with the right to add the block to the blockchain and receive rewards.

In the proof-of-work model, each block of transactions has a specific hash, and a crypto miner must generate a target hash that's less than or equal to that of the block to confirm it. Miners use specialised devices to quickly generate computations and try to be the first one to find the target hash. The process is difficult enough to prevent the manipulation of transaction records, yet easy for other miners to verify once a target hash is found.



Bitcoin, the first cryptocurrency, uses proof of work to maintain the integrity of its blockchain. Its proof-of-work algorithm generates a hash for each block of transactions, and miners race to find a target hash that's below the block hash. The winner adds the block to the blockchain and receives Bitcoin rewards in the form of newly minted

coins and transaction fees. The difficulty of mining adjusts depending on how quickly miners are adding blocks to maintain a target rate of one block every 10 minutes.

Understanding proof of work is crucial for anyone interested in investing in cryptocurrencies as it helps to identify which coins use this method for consensus and how it affects their performance.

Proof-of-Stake Model

The Proof-of-Stake model is a newer model that aims to address some of the drawbacks of the proof-of-work model. In this model, validators (rather than miners) are chosen to validate transactions and create new blocks. Validators are chosen based on the amount of cryptocurrency they hold (their stake). Validators are incentivized to act honestly, as they risk losing their stake if they validate fraudulent transactions.

Proof of stake (PoS) is a consensus protocol used in blockchains to determine which users validate new blocks of transactions and earn a reward for doing so accurately. This protocol incentivizes traders to validate transactions by providing them with cryptocurrency rewards for each successful validation. To prevent fraud, PoS requires traders to stake some of their cryptocurrency as collateral, which is then locked up in a deposit. If a trader adds an invalid transaction to the blockchain, they can lose a portion of what they staked.

Validators in PoS are usually limited in the amount they can stake, but after the limit is exceeded, they can stake as much as they want. The more a trader stakes, the more likely they are to be chosen by the algorithm to validate transactions. For instance, if ten nodes volunteer to validate a new change in the blockchain and each stake one crypto coin, they each have an equal 10 percent chance of being awarded the work. However, if one validator stakes three coins, their chance of winning the work increases to 25 percent, while others' chances go down to 8.3 percent if they maintain their stake at one coin.

In practice, the PoS protocol is more complicated than this example. New transactions are grouped together in blocks, sometimes consisting of hundreds of transactions or more, which are then chained together to create a record of all the transactions in order. Additionally, traders can join staking pools, where a group of validators can pool their resources together to meet the lower limit of staking required

to become a validator. When a staking pool wins the validation work, the reward is shared among the pool's members, with a slightly larger share going to the pool's owner (Mckinsey, 2023).

Delegated Proof-of-Stake (DPOS) : is a consensus model used in some blockchains, such as BitShares and EOS, that allows token holders to have a more direct say in the validation and governance of the network. In DPoS, token holders are given the power to vote for delegates, also known as witnesses or block producers, who are responsible for validating transactions and creating new blocks.

The number of delegates that can be elected varies by blockchain, but typically ranges from 21 to 101. Token holders can vote for their preferred delegates by staking their tokens, and the delegates with the most votes are elected to perform the validation and block production tasks.

Delegates are incentivized to act in the best interest of the network by earning rewards in the form of tokens for their validation and block production efforts. However, they must also maintain their position as a delegate by acting honestly and not engaging in any malicious activity, as they can be voted out by token holders if they do not perform their duties satisfactorily.

This system of governance allows for a more democratic and decentralised approach to blockchain validation, as token holders have the power to vote for delegates and can therefore influence the direction of the network. It also promotes a more efficient and cost-effective model for block production, as only a limited number of delegates are responsible for this task, rather than every node in the network.

2.3.2 How can these models be used to understand the operation and potential of cryptocurrencies?

Blockchain technology is the underlying technology that powers cryptocurrencies. It is a decentralised ledger that records all transactions in a transparent and immutable way. This technology allows for a secure and tamper-proof way of recording and verifying transactions, which is essential for the operation of cryptocurrencies.

Cryptocurrencies use different models, such as proof-of-work, proof-of-stake, and delegated proof-of-stake, to validate transactions and maintain the integrity of the blockchain. Each of these models has its own advantages and disadvantages, and the choice of which model to use depends on the specific needs of the network.

For example, the proof-of-work model, used by Bitcoin and many other cryptocurrencies, requires miners to solve complex mathematical puzzles to validate transactions and earn rewards. This model is energy-intensive and slow, but it provides a high level of security and is resistant to attacks.

On the other hand, the proof-of-stake model, used by Ethereum and other cryptocurrencies, requires validators to stake a certain amount of cryptocurrency to participate in the validation process. This model is faster and less energy-intensive than proof-of-work, but it requires a high level of trust in the validators and can lead to centralization.

The delegated proof-of-stake model, used by cryptocurrencies like EOS and Tron, allows token holders to vote for delegates who will validate transactions and create new blocks. This model is more democratic and decentralized than the other two, but it requires a high level of participation from token holders and can also lead to centralization if a few delegates gain too much power.

By understanding the different models used by cryptocurrencies, we can better understand their potential and limitations. For example, the proof-of-work model may be more suitable for a cryptocurrency that prioritizes security over speed, while the proof-of-stake model may be better for a cryptocurrency that prioritizes speed and efficiency.

Another way blockchain models can help understand the potential of cryptocurrencies is through their ability to create decentralized applications (dApps). These are applications that run on a blockchain network and use its decentralized nature to provide a secure, transparent, and tamper-proof platform for various use cases. For example, DApps can be used for decentralized finance (DeFi), where users can lend, borrow, and trade cryptocurrencies without the need for traditional financial intermediaries.

One example of a DApp is the Ethereum-based platform Uniswap, which allows users to exchange cryptocurrencies without a central exchange. Uniswap uses an automated market maker (AMM) algorithm to determine the exchange rates based on the supply and demand of the cryptocurrencies. The platform also uses a liquidity pool, where users can provide liquidity by depositing their cryptocurrencies, and earn a share of the trading fees generated on the platform.

Another example of a DApp is Brave browser, which uses the Basic Attention Token (BAT) to reward users for viewing advertisements. Brave browser blocks advertisements by default, but users can choose to view them and receive BAT as a reward. This creates a more fair and transparent advertising ecosystem, where users have control over their data and can earn rewards for their attention.

Blockchain models provide a powerful framework for understanding the potential of cryptocurrencies and decentralized applications. They offer a secure, transparent, and decentralized platform that can enable various use cases and disrupt traditional industries. As the technology continues to evolve and more innovative use cases emerge, the potential of cryptocurrencies and blockchain models is only set to grow.

Another way blockchain models can be used to understand the operation and potential of cryptocurrencies is through the study of smart contracts. Smart contracts are self-executing contracts that are stored on the blockchain and automatically execute when certain conditions are met. They allow for the automation of processes and the creation of new decentralized applications.

For example, Ethereum, a blockchain platform, allows for the creation of decentralized applications (DApps) through the use of smart contracts. DApps can be used for a wide range of purposes, such as decentralized finance (DeFi), gaming, and supply chain management. They can also be used to create new types of cryptocurrencies, such as stablecoins, which are pegged to the value of a real-world asset.

Moreover, blockchain models can help to understand the potential impact of cryptocurrencies on industries such as banking and finance. Cryptocurrencies can provide a more efficient and cost-effective way to transfer funds globally, without the need for intermediaries such as banks. This has the potential to disrupt traditional financial systems and provide greater financial inclusion to individuals who may not have access to traditional banking services.

In addition, blockchain models can be used to understand the potential for cryptocurrencies to address issues such as transparency and security in supply chains. By using blockchain technology to track the movement of goods and verify their authenticity, it is possible to create a more transparent and secure supply chain. This can help to prevent issues such as counterfeiting and fraud, and provide greater assurance to consumers about the authenticity and quality of products.

Overall, blockchain models provide a framework for understanding the operation and potential of cryptocurrencies. By studying the underlying technology and its various

applications, it is possible to gain a deeper understanding of how cryptocurrencies can be used to create new decentralised systems and disrupt traditional industries.

***Examples of enterprise who has successfully implement crypto currencies to generate more revenue*;**

I will talk about **Overstock.com** is an American online retailer founded in 1999 by Patrick Byrne. The company originally started as an online retailer for surplus and returned merchandise, but has since expanded its offerings to include furniture, home decor, clothing, and electronics. In 2014, Overstock.com became one of the first major retailers to accept Bitcoin as a payment method, paving the way for other companies to follow suit.

Overstock's acceptance of cryptocurrencies has allowed the company to reach a new customer base and generate more revenue. According to a 2018 report, cryptocurrency transactions accounted for over $20 million in sales for the company. Overstock.com has also been vocal about its support for the use of cryptocurrencies and blockchain technology, with the company launching its own cryptocurrency trading platform called tZero in 2018.

In addition to its focus on cryptocurrencies, Overstock.com has also been a pioneer in the adoption of blockchain technology. The company was the first major retailer to accept the digital currency Bitcoin and has since expanded its acceptance of cryptocurrencies to include Ethereum, Litecoin, Dash, and Bitcoin Cash.

Overall, Overstock.com's acceptance of cryptocurrencies has allowed the company to stay ahead of the curve in the rapidly evolving world of e-commerce. By embracing new technologies and providing innovative payment options for customers, Overstock has been able to generate more revenue and expand its customer base.

It's worth noting that Overstock.com has also been active in exploring the use of blockchain technology beyond just accepting cryptocurrencies as payment. In 2015, the company launched a blockchain-based platform called Medici, which was designed to facilitate peer-to-peer trading of securities. Overstock also created a subsidiary called Medici Ventures, which has invested in a number of blockchain startups and projects, including tZero.

In addition to its focus on cryptocurrencies and blockchain, Overstock.com has also been a leader in other areas of e-commerce innovation. For example, the company was one of the first retailers to offer free shipping on all orders, and it has also been experimenting with augmented reality technology to enhance the online shopping experience.

Overall, Overstock.com early adoption of cryptocurrencies as a payment method has helped the company stay ahead of the curve and generate more revenue. By expanding its

acceptance of different cryptocurrencies and exploring the use of blockchain technology in other areas, Overstock has positioned itself as a leader in the evolving world of e-commerce.

2.4 The Relationship between Digital Marketing and Cryptocurrencies in Revenue Generation

. The research methodology used in this thesis will include a literature review, case study analysis, and theoretical model analysis to provide a comprehensive understanding of the impact of digital marketing and cryptocurrencies on revenue generation.

2.4.1 Theoretical relationship between digital marketing and cryptocurrencies in revenue generation

The relationship between digital marketing and cryptocurrencies in revenue generation is an emerging topic in the business world. The emergence of cryptocurrencies has created new opportunities for businesses to generate revenue through digital marketing.

One of the relationships between digital marketing and cryptocurrencies is the potential for increased sales and revenue through the use of cryptocurrency payments. Accepting cryptocurrencies as a form of payment can provide a convenient and secure payment option for customers, especially those who prefer to use digital currencies. Additionally, accepting cryptocurrencies can also attract a new customer base that is interested in using and investing in digital assets. Like bitcoin, USDT (Brito & Castillo, 2013). This new customer base can be reached through digital marketing channels such as social media particularly twitter, Facebook, reddit, telegram and also other crypto websites and targeted advertising.

Another theoretical relationship between digital marketing and cryptocurrencies is the use of blockchain technology in digital marketing. Blockchain technology is the underlying technology of cryptocurrencies as we have explained in chapter 2, and it allows for secure and transparent transactions without the need for intermediaries. This technology can be used in digital marketing to provide transparency and security in advertising and data management (Park & Kim, 2020). For example, blockchain technology can be used to verify ad impressions and clicks, preventing fraud and ensuring that advertisers get what they pay for still on blockchain tech. We can also say that blockchain-based smart contracts can be used to automate payment processing, eliminating the need for intermediaries and reducing costs.

These technologies can also help businesses track customer interactions across multiple channels and devices, providing valuable insights into customer behavior and preferences. This information can be used to create personalised marketing campaigns and improve the overall customer experience.

In addition, blockchain technology can be used to create new types of digital assets that can be used for marketing purposes, such as virtual currency tokens or loyalty points. By leveraging smart contracts, businesses can create these assets quickly and securely, making them more resistant to fraud and hacking.

By tracking a product's value chain from manufacture to disposal, businesses can provide consumers with transparent information about the product's environmental and social impact. This can help businesses meet their ESG commitments and appeal to consumers who are concerned about sustainability and ethical consumption (Flávia Sales, 2023).

Digital marketing can also be used to promote and market cryptocurrencies themselves. Cryptocurrency exchanges, wallets, and other related services can benefit from digital marketing strategies to reach potential customers and investors. Social media platforms and search engines can be used to advertise these services and reach target audiences (Chaffey & Smith, 2017).

Furthermore, digital marketing can be used to educate customers about cryptocurrencies and their benefits. Many people are still unfamiliar with cryptocurrencies and may not know how they work or why they are valuable. Digital marketing can be used to provide educational content, such as blog posts and videos, that explain cryptocurrencies in simple terms and highlight their benefits.

2.4.2 How digital marketing and cryptocurrencies can be integrated to create new revenue opportunities for global enterprises?

In order to create new revenue opportunities for global enterprises, digital marketing and cryptocurrencies can be integrated in various ways. One way is to accept cryptocurrencies as a form of payment on a global scale. This can be done through the use of cryptocurrency payment processors, such as BitPay and Coinbase Commerce, that allow businesses to accept a variety of cryptocurrencies from customers all over the world (Wulf, 2021). This can help businesses reach new customers and expand their global reach.

Another way to integrate digital marketing and cryptocurrencies is to use blockchain technology in advertising and data management. This can help businesses ensure that their

advertising is transparent and that their customer data is secure. For example, blockchain-based advertising platforms such as Brave and AdEx allow advertisers to reach target audiences without intermediaries, while also ensuring that ad impressions are verified and that customers' data is secure (Park & Kim, 2020).

I will love to say that the relationship between digital marketing and cryptocurrencies in revenue generation is an area of growing importance for global enterprises. By accepting cryptocurrencies as a form of payment, using blockchain technology in advertising and data management, and promoting cryptocurrencies through digital marketing, businesses can create new revenue opportunities, reach new customers, and stay ahead of the competition.

The mixture of social media and SEO plays a crucial role in the digital marketing of cryptocurrencies. Social media platforms provide an excellent opportunity for businesses to reach out to potential customers, promote their products, and build a loyal community of followers. On the other hand, search engine optimization helps businesses to rank higher in search engine results, making it easier for potential customers to find their products and services.

According to a report by **Statista**, the number of social media users worldwide is projected to reach 4.41 billion by 2025. This presents a massive opportunity for businesses to leverage social media to promote their cryptocurrencies and reach a broader audience. By creating engaging content and building a community of followers on platforms such as Twitter, Facebook, and LinkedIn, businesses can increase their brand visibility, drive traffic to their website, and generate leads.

In addition to social media, search engine optimization is also critical in the digital marketing of cryptocurrencies. With the increasing popularity of cryptocurrencies, many people are searching for information online to learn more about them. By optimizing their website for specific keywords and phrases related to cryptocurrencies, businesses can rank higher in search engine results and attract more potential customers to their website.

According to a report by Google, 76% of people who search for something nearby on their smartphone visit a related business within a day, and 28% of those searches result in a purchase. This highlights the importance of search engine optimization in driving targeted traffic to a business's website and ultimately increasing sales.

By leveraging these channels effectively, businesses can reach a wider audience, build a loyal community, increase brand visibility, drive targeted traffic to their website, and ultimately increase sales.

According to a report by Statista, many businesses have started to research the potential implementation of blockchain technology in their industry. The telecommunications, media, supply chain, and technology industries are leading in this category. From this group, 40% of businesses declared that they are in the awareness stage or have started to learn about the technology, 39% said they are testing the implementation of blockchain or building proofs of concept, and 12% have already commenced using blockchain in their businesses (Liu, 2019).

Kuno Creative (2018) discussed six possible ways to implement blockchain in marketing. On the other hand, Sam Mire (2018) identified seven possible use cases of blockchain in marketing. However, David Berkowitz (2017) believes that the implementation of blockchain is not limited to six or seven cases. Instead, it can impact marketing in twenty-seven different ways, from automated ads confirmation via smart contracts to the development of decentralised e-commerce platforms.

Ioannis Antoniadis, Stamatis Kontsas, and Konstantinos Spinthiropoulos (Antoniadis, Kontsas & Spinthiropoulos, 2019) have displayed all possible applications of blockchain in marketing in Figure 1. Additionally, Adnan Veysel Ertemel (2018) investigated the implications of blockchain technology on marketing from different aspects, including removing uncertainties by ensuring transparency and trust, personal identity ownership, true disintermediation, co-creation and monetization of value by customers, and democratisation of supply and cost reduction. The paper concluded that it is essential to understand how blockchain will shape the future of marketing.

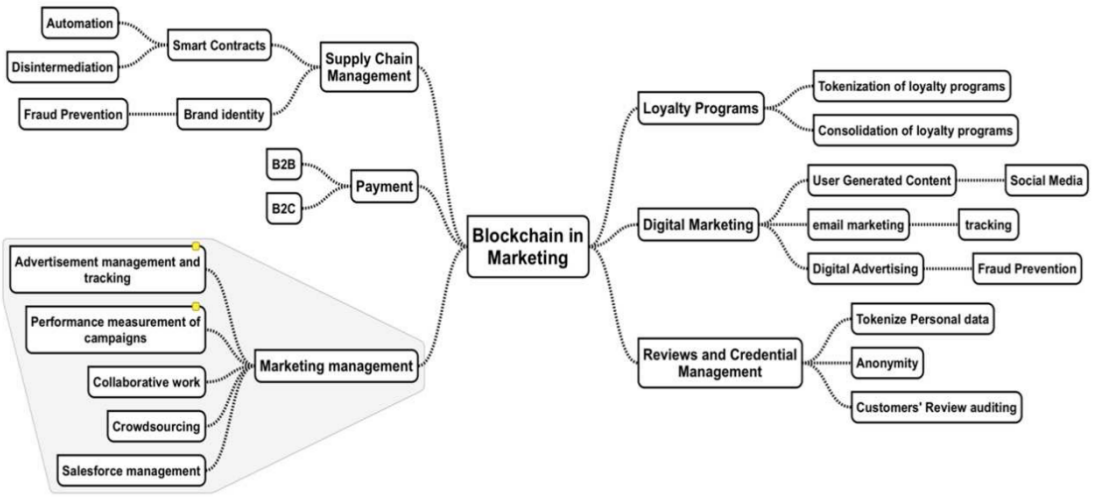


Figure 1: Potential Applications of Blockchain in Marketing
(Source: Antoniadis, 2019)

However, not everyone believes that blockchain will have a positive impact on marketing. According to Annalect (2017), blockchain takes marketing to unknown areas that may have both positive and negative effects. In their publication "*Blockchain Pulls Marketing into Uncharted Territory*," they claim that if blockchain is fully implemented in marketing, it would positively affect media exchange without middlemen, as middlemen usually charge a 25% fee for transactions, which is significantly higher than using blockchain. Additionally, blockchain can aid in fraud exposure and prevention.

However, not everyone is convinced that blockchain will have a positive impact on marketing. Annalect (2017) argues that blockchain takes marketing to unknown areas that will have both positive and negative effects. They claim that implementing blockchain in marketing will positively impact media exchange without middlemen, as no middlemen will be needed, and this will decrease the cost of the transaction. Furthermore, middlemen usually charge a 25% fee for the amount, which is significantly higher than using blockchain. Implementing blockchain can also expose and prevent fraud in advertising, reducing the $7.2 billion fraud cost in ads in 2016, according to "The CMO Primer for The Blockchain World" book (Skule & Dave, 2017).

Another advantage of implementing blockchain in marketing is better data tracking and monitoring. Public and open blockchain will enhance transparency and make better tracking and monitoring possible for marketers. Blockchain will improve user ID tracking on websites, and brands that use blockchain technology will be able to increase their brand safety image among their customers (Annalect, 2017).

Emerging Insider Communications conducted research among 600 marketers, where 88% of participants believe that blockchain technology will positively disrupt the existing marketing ecosystem. They are enthusiastic to see the outcome of implementing blockchain in loyalty programs (24%), ad verification (23%), making consumer data more transparent (21%), and CRM (15%). However, only 15% of participants feel knowledgeable enough about blockchain to disclose it to their clients, despite 40% reading a blockchain-related study in recent months, highlighting that technical language is likely to be an ongoing issue (Hebblethwaite, 2017).

3.1.3 Challenges faced in integrating digital marketing and cryptocurrencies in generating revenue

Some of challenges are analysed in following statements.

A. Regulatory Challenges

Cryptocurrencies are a relatively new concept and there is a lack of global regulatory frameworks that govern their use in digital marketing. This creates uncertainty for global enterprises and may limit their ability to fully integrate cryptocurrencies into their digital marketing strategies (Pawlowski et al., 2021).

The lack of global regulatory frameworks for cryptocurrencies creates several challenges for global enterprises in integrating them into their digital marketing strategies. For example, in some countries, cryptocurrencies are banned, while in others, there may be restrictions on their use. This makes it difficult for global enterprises to develop consistent policies and procedures for using cryptocurrencies in their digital marketing efforts.

Another challenge related to regulatory issues is the uncertainty around taxation and accounting practices for cryptocurrencies. Since they are not yet widely recognized as a legitimate form of currency, there is often confusion around how to account for them in financial statements and tax filings. This can make it difficult for global enterprises to accurately track revenue generated through cryptocurrency transactions, which can impact their financial reporting and overall performance.

Furthermore, regulatory challenges can also impact the use of cryptocurrencies in advertising. For instance, social media platforms such as Facebook and Twitter have banned cryptocurrency-related advertising due to concerns around fraudulent activity and the lack of regulatory oversight. This limits the ability of global enterprises to use these platforms to reach potential customers through cryptocurrency-related promotions.

B. Volatility

Cryptocurrencies are notoriously volatile, which means that their value can fluctuate rapidly and unpredictably. This makes it difficult for businesses to rely on cryptocurrencies for revenue generation or to use them as a consistent means of payment for their products or services (Tshilongamulenzhe & Mujinga, 2020).

Volatility is a major challenge faced by global enterprises that seek to integrate cryptocurrencies into their digital marketing strategies. Cryptocurrencies such as Bitcoin, Ethereum, and others are known for their wild price swings, which can occur in a matter of hours or days. This unpredictability can make it challenging for businesses to rely on

cryptocurrencies for revenue generation or to use them as a consistent means of payment for their products or services.

For instance, in December 2017, the price of Bitcoin reached an all-time high of nearly $20,000, only to drop to around $3,000 a year later. This extreme volatility can cause significant problems for businesses that use cryptocurrencies, as they may not be able to accurately forecast how much revenue they will generate from their digital marketing efforts.

Furthermore, the rapid fluctuations in cryptocurrency prices can also make it difficult for businesses to use them as a consistent means of payment. For example, if a business accepts Bitcoin as payment for its products or services, the value of Bitcoin could change significantly between the time of the transaction and the time the payment is processed, potentially resulting in a loss for the business.

C. The lack of knowledge and expertise on both cryptocurrencies and digital marketing

Cryptocurrencies involve complex technology and concepts, such as blockchain, mining, and digital wallets, which may be difficult for businesses to understand and use effectively.

Moreover, digital marketing requires a deep understanding of consumer behaviour, search engine optimization, content marketing, and social media marketing. Without expertise in these areas, it can be challenging for businesses to effectively leverage cryptocurrencies in their digital marketing strategies.

According to a study by Wagner and Stokic (2019), many businesses lack knowledge and understanding of cryptocurrencies and their potential applications in digital marketing. This can lead to missed opportunities to generate revenue or attract new customers. Therefore, global enterprises need to invest in training their employees and seeking expert advice to overcome this challenge.

Furthermore, it is important for businesses to stay up-to-date with the latest developments in both cryptocurrencies and digital marketing, as these fields are constantly evolving. By investing in knowledge and expertise, businesses can gain a competitive advantage in the global market and generate revenue through innovative and effective digital marketing strategies.

D. Security risks

Cryptocurrencies are often stored in digital wallets, which can be susceptible to cyber-attacks and hacks. The risk of theft and fraud is high in the cryptocurrency space, and global enterprises must take measures to ensure the security of their digital assets (Lee, 2021).

Cryptocurrency transactions are secured using cryptography, which makes them difficult to hack or steal. However, the digital wallets where these assets are stored can still be vulnerable to cyber-attacks and fraud. There are several types of security risks associated with cryptocurrencies, including hacking, phishing, and malware attacks.

One of the most significant security risks associated with cryptocurrencies is the potential for hacking attacks. Hackers can attempt to steal cryptocurrencies by gaining unauthorized access to digital wallets or cryptocurrency exchanges. In 2019, the Japanese cryptocurrency exchange Coincheck suffered a hack that resulted in the loss of over $500 million worth of cryptocurrency (BBC News, 2019).

Another security risk is phishing, which involves attackers sending fraudulent emails or messages to users, attempting to trick them into revealing their login credentials or private keys. Once the attacker has access to the user's account, they can steal their cryptocurrency. In 2020, a Twitter hack targeted high-profile accounts and used phishing tactics to steal over $118,000 worth of cryptocurrency (The Verge, 2020).

Malware attacks are also a common security risk in the cryptocurrency space. Attackers can use malware to gain access to a user's computer or digital wallet, allowing them to steal cryptocurrency or spy on the user's transactions. In 2020, a malware attack on the cryptocurrency wallet Electrum resulted in the theft of over 240 BTC (ZDNet, 2020).

To mitigate security risks, global enterprises must implement robust security measures, including strong passwords, two-factor authentication, and cold storage solutions. Cold storage involves storing cryptocurrency offline in a secure location, such as a hardware wallet, which can reduce the risk of theft from online attacks.

E. Lack of infrastructure and integration with existing systems

The cryptocurrency infrastructure is still developing, and there are limitations on the number of transactions that can be processed at any given time. This can create challenges for

global enterprises that need to process high volumes of transactions quickly (Schueffel, 2018).

While cryptocurrencies offer an alternative to traditional payment methods, their acceptance as a form of payment is still limited. This can create challenges for global enterprises that need to offer a wide range of payment options to their customers (Bai et al., 2021).

Integrating cryptocurrencies into existing digital marketing systems and processes can be challenging, particularly for global enterprises with complex IT infrastructure. This can require significant investment in new technology and personnel (Nanda & Sikder, 2020).

Conclusion

After studying the theoretical framework of cryptocurrencies, it provides a deep understanding of the concept of cryptocurrencies and their potential for global enterprises. Cryptocurrencies are digital assets that use cryptography to secure transactions and control the creation of new units. They are decentralized, meaning they are not controlled by any central authority, making them more secure and less prone to fraud.

Cryptocurrencies have gained importance over the years, with more and more global enterprises accepting them as a means of payment. They provide several benefits, such as faster transactions, increased security, reduced transaction costs, and access to a new customer base.

Theoretical models such as the Blockchain model, Proof-of-Work model, and Proof-of-Stake model provide insight into the operation and potential of cryptocurrencies. These models can be used to evaluate the potential of cryptocurrencies for global enterprises, helping them make informed decisions on whether to adopt cryptocurrencies or not.

Several enterprises such as Tesla and Overstock.com have successfully implemented cryptocurrencies to generate more revenue. Tesla's investment in Bitcoin and Overstock's acceptance of multiple cryptocurrencies have allowed them to reach new customer bases and generate more revenue.

Overall, the theoretical framework of cryptocurrencies provides a foundation for understanding the concept and potential of cryptocurrencies. It is important for global enterprises to consider adopting cryptocurrencies as a means of payment to remain competitive and to take advantage of the benefits they offer.

Additionally, global enterprises need to consider the potential risks associated with cryptocurrencies, such as price volatility, security issues, and regulatory challenges. It is essential to develop effective strategies for managing these risks and mitigating potential losses.

Measuring the success of cryptocurrency adoption in global enterprises can be challenging, but key metrics such as transaction volume, customer adoption, and revenue generated can be used to evaluate the effectiveness of cryptocurrency strategies. Global enterprises can use these metrics to optimize their cryptocurrency strategies and maximize their revenue potential.

In conclusion, the theoretical framework of cryptocurrencies provides a foundation for understanding the potential of cryptocurrencies for global enterprises. As cryptocurrencies continue to gain popularity and acceptance, it is important for global enterprises to evaluate their potential benefits and risks and develop effective strategies for their adoption. By doing so, they can remain competitive and take advantage of the benefits that cryptocurrencies offer in terms of security, efficiency, and revenue generation.

CHAPTER 3

DIGITAL MARKETING AND CRYPTOCURRENCIES ON REVENUE OF GLOBAL ENTERPRISES: LESSONS AND EVIDENCES FROM TESLA

Introduction

Tesla, Inc., founded by Elon Musk in 2003, is a renowned American electric vehicle (EV) and clean energy company that has redefined the automotive industry through its commitment to innovation, sustainability, and technological advancements. This introduction provides an overview of Tesla, highlighting its background, significant milestones, product lineup, and contributions to the EV market.

Background and Founding

Tesla, Inc. traces its origins back to a group of engineers, including Martin Eberhard and Marc Tarpenning, who shared a vision of developing high-performance electric vehicles. In 2004, Elon Musk, a visionary entrepreneur, joined the company as chairman of the board and later became the driving force behind Tesla's growth and success. Musk's ambitious goal was to accelerate the transition to sustainable transportation and reduce dependence on fossil fuels (Tesla, 2021a).

Significant Milestones

Tesla's journey has been marked by significant milestones that have propelled the company's success. In 2008, Tesla unveiled the Tesla Roadster, an all-electric sports car that demonstrated the potential of electric vehicles by offering impressive performance and an extended range (Davis, 2021). This was followed by the introduction of the Tesla Model S in 2012, a luxury electric sedan that achieved critical acclaim for its groundbreaking range and innovative design (Tesla, 2021a).

Product Lineup

Tesla's product lineup has expanded over the years, offering a range of electric vehicles designed to cater to different market segments. The Tesla Model 3, introduced in 2017, aimed to make electric mobility more accessible to a broader consumer base, achieving significant success and becoming one of the best-selling electric vehicles globally (Tesla, 2021a; Bujdosó & Csapó-György, 2021). Tesla's Model X, an electric SUV with unique falcon-wing doors, and the more recent Model Y, a compact SUV, further solidified the company's presence in the EV market (Tesla, 2021a).

Contributions to the EV Market

Tesla's impact on the EV market cannot be overstated. The company's relentless pursuit of innovation and continuous improvements in battery technology have led to advancements in electric vehicle range, performance, and charging infrastructure (Kallo & Wozny, 2020). Furthermore, Tesla's success has played a crucial role in shifting public perception, spurring competition, and driving investment in the electric vehicle sector (Gruszczynski, Klobuczek, & Bialek, 2021). The company's influence extends beyond its own product offerings, shaping the broader automotive industry's response to the transition to sustainable transportation (Armstrong, 2019).

3.1 Case studies on the integration of digital marketing and cryptocurrencies for revenue generation

Tesla, Inc., a leading electric vehicle and clean energy company, has successfully integrated digital marketing and cryptocurrencies to generate revenue. The company has leveraged various digital marketing strategies to promote its products and services, and has

also embraced cryptocurrencies, especially Bitcoin, as a means of diversifying its cash holdings and maximizing returns.

Research Design:

This study utilizes a case study research design to investigate the impact of digital marketing and cryptocurrencies on the revenue of Tesla. The case study approach was chosen because it allows for an in-depth investigation of a specific phenomenon within its real-life context.

Data Collection:

Qualitative Data: The data for the qualitative analysis was collected from various sources such as books, website articles, and journals. The selection of sources was based on their relevance to the research topic and research questions. The data was organized using the thematic analysis approach, where data was categorized into themes based on the research questions. The themes that emerged from the analysis were used to draw conclusions and insights from the data.

Quantitative Data: The quantitative data for this study was collected from Tesla statistics on demandsage.com, Twitter account, and crypto prices from coingelko.com and also . The data was collected for a period of 8 years, from 2016 to 2023. The collected data was analyzed using descriptive statistics such as mean and to explore the relationship between digital marketing and cryptocurrencies on Tesla's revenue.

Sample and Participants:

The sample of this study consisted of secondary data sources. The books, articles, and journals were selected based on their relevance to the research topic and research questions. The quantitative data was collected from Tesla statistics, Twitter account, and crypto prices from coingelko.com.

Data Analysis:

Qualitative Data: The qualitative data analysis was conducted using thematic analysis. The analysis involved identifying themes that emerged from the data and categorizing the data into those themes. The themes were then used to draw conclusions and insights from the data.

Quantitative Data: The quantitative data analysis was conducted using descriptive statistics such as mean and standard deviation. The analysis was done to explore the relationship between digital marketing and cryptocurrencies on Tesla's revenue.

Limitations and Assumptions:

The limitations of this study include the availability of data and the generalizability of the findings. Additionally, the study relied on secondary data sources, which may limit the reliability of the findings.

Validity and Reliability:

To ensure the validity of the data, triangulation was used by combining data from different sources. The reliability of the data was ensured by cross-checking the data from different sources and using standard methods of data analysis.

3.1.1 Tesla's Integration of Digital Marketing and Cryptocurrencies for Revenue Generation: A Case Study

One of the key digital marketing strategies employed by Tesla is social media marketing. The company has a strong presence on social media platforms such as Twitter, Instagram, and YouTube, where it regularly shares updates on its products, services, and innovations. Tesla's CEO, Elon Musk, is also a prolific social media user, with a large following on Twitter, where he often shares news, insights, and opinions related to Tesla and other topics.

In addition to social media marketing, Tesla has also used email marketing to engage with its customers and promote its products. The company sends regular newsletters to its subscribers, which contain information on new product launches, events, and other updates.

Tesla has also integrated cryptocurrencies into its business model. In February 2021, the company announced that it had invested $1.5 billion in Bitcoin, and that it planned to accept the cryptocurrency as a form of payment for its products in the future (Tesla, 2021). This move not only helped Tesla to diversify its cash holdings, but also signalled the company's support for the cryptocurrency industry.

Moreover, Tesla's Bitcoin investment has proven to be a smart financial decision. Since the investment, the value of Bitcoin has increased significantly, resulting in substantial returns for Tesla. According to the company's Q1 2021 earnings report, Tesla sold a portion of its Bitcoin holdings, resulting in a net profit of $101 million (Tesla, 2021).

Now we are going to give some analysis base on the impact of digital marketing and crypto currencies with the table below. The data use on the revenue was taken from https://www.demandsage.com/tesla-statistics/ 5/5/2023

Table 2: The revenue of Tesla 2016 to 2022

Years	Revenue of Tesla	Percentage Change %

2016	7000000	
2017	11759000	67.98571429
2018	21461000	82.5070159
2019	24578000	14.52402032
2020	31536000	28.30987062
2021	53823000	70.67161339
2022	81467000	51.36094235
Total	231624000	315.3591769
average	33089142.86	

The revenue table for Tesla from 2016 to 2022 showcases the financial performance of the company over the years.

1. Total Revenue: The total revenue generated by Tesla during this period amounts to $231,624,000.
2. Average Revenue: The average annual revenue for Tesla over the seven-year period is $33,089,142.86. This figure represents the typical annual revenue earned by the company during this timeframe.
3. Percentage Change: The percentage change in revenue from year to year demonstrates the growth rate and fluctuations in Tesla's revenue over time. The percentage change varies across the years, indicating both periods of significant growth and more modest increases.

- In 2017, the revenue increased by 67.99% compared to the previous year.
- In 2018, there was a substantial increase of 82.51% in revenue compared to the previous year.
- The revenue growth rate dropped to 14.52% in 2019.
- However, in 2020, there was a significant rebound with a revenue growth rate of 28.31%.
- The highest revenue growth rate occurred in 2021, with a remarkable increase of 70.67%.
- In 2022, there was a growth rate of 51.36% compared to the previous year.

The table below shows the followers of Tesla since 2016. Where:

1. Number of Followers: The table presents the number of social media followers that Tesla accumulated each year. It demonstrates the growth of Tesla's online presence and its ability to attract and engage with a larger audience.
2. Tweets: The number of tweets represents the frequency of Tesla's social media activity, specifically on platforms like Twitter. This metric indicates the company's efforts to share news, updates, and promotional content with its followers.
3. Growth Percentage: The growth percentage column shows the percentage change in the number of followers compared to the previous year. This figure reflects the rate at which Tesla's social media following expanded over time.

Table 3: Elon musk social media data

Years	Number of followers	Tweets	Growth Percentage
2016	22300000	900	
2017	12100000	1162	46
2018	23600000	2288	95
2019	27700000	2933	17
2020	32000000	3367	16
2021	70000000	3113	119
2022	100000000	4211	43
2023	137100000		37
Average growth	53		

Analysing the data:

- In 2016, Tesla had 2,300,000 followers, and the number of tweets was 900.
- In 2017, there was a increase in the number of followers to 12,100,000, but the number of tweets increased to 1,162. The growth percentage for followers was 46%.
- In 2018, there was a significant increase in the number of followers to 23,600,000, with a corresponding increase in the number of tweets to 2,288. The growth percentage for followers was 95%.

- In 2019, the number of followers grew to 27,700,000, with 2,933 tweets. The growth percentage for followers was 17%.
- The trend continued in 2020, with an increase in followers to 32,000,000 and 3,367 tweets. The growth percentage for followers was 16%.
- In 2021, there was a substantial surge in followers to 70,000,000, with 3,113 tweets. The growth percentage for followers was 119%.
- In 2022, the number of followers reached 100,000,000, with 4,211 tweets. The growth percentage for followers was 43%.
- The data for 2023 is not complete, but it shows a continued growth trend with 137,100,000 followers.

The data indicates that Tesla's social media following experienced significant growth over the analysed period. The company witnessed both periods of rapid expansion, such as in 2018, 2021, and 2022, as well as periods of more moderate growth.

The analysis suggests that Tesla's digital marketing efforts, including active social media engagement and consistent tweeting, have contributed to the growth of its online following. By leveraging social media platforms effectively, Tesla has been able to reach a larger audience, increase brand awareness, and potentially drive more potential customers to its products and services.

The impact of digital marketing on tesla revenue can be explain using table 1 and 2. Indeed, based on Table 1, it can be observed that the highest percentage change in revenue occurred in 2021, indicating that this year had the most significant impact on Tesla's revenue growth also when we look at table 2 we can notice that it can be observed that the highest growth percentage in followers occurred in 2021, indicating that digital marketing efforts during that year had a significant impact on expanding Tesla's social media following.

From the analysis of both tables, it can be concluded that there is a correlation between Tesla's digital marketing efforts and its revenue growth. The year 2021 stands out as having the most significant impact, both in terms of revenue growth (70.67%) and social media follower growth (119%). This suggests that Tesla's digital marketing strategies during that year, including active social media engagement and promotional activities, effectively contributed to revenue generation and increased brand awareness.

The table 4 shows the price of Bitcoin on January 1st of each year from 2013 to 2023 according to Tesla’s data, as well as the percentage change from the previous year.

Table 4: Bitcoin price

DATE	PRICE OF BITCOIN	percentage change
January1,2013	13.4	
January1,2014	730.59	535216.42%
January1,2015	314.24	-56.99%
January1,2016	433.59	3798.05%
January1,2017	997.69	13009.99%
January1,2018	13860.56	128926.52%
January1,2019	3742.7	-7299.75%
January1,2020	7195.7	9225.96%
January1,2021	29374.15	30821.81%
January1,2022	47816	6278.26%
January1,2023	23791	-5024.47%

After a good study of Tesla, we have come to understand that Tesla has effectively integrated digital marketing and cryptocurrencies to generate revenue for its business. Here are some of the strategies Tesla used:

1. Accepting Bitcoin as a payment method: In March 2021, Tesla announced that it would start accepting Bitcoin as a payment method for its electric vehicles. This move not only demonstrated Tesla's support for the cryptocurrency industry but also attracted Bitcoin investors to purchase Tesla's vehicles using their cryptocurrency holdings (Reuters, 2021).
2. Promotion through social media: Tesla has a strong presence on social media platforms such as Twitter, Facebook, and Instagram. The company uses these platforms to promote its products and services, including its support for cryptocurrencies such as Bitcoin.
3. Referral programs: Tesla has a referral program that rewards customers for referring new customers to purchase Tesla's products. The rewards include free supercharging and other benefits, which incentivize customers to refer their friends and family members to Tesla's products.

4. Email marketing: Tesla sends out regular emails to its subscribers, promoting its products and services. The company has used email marketing to promote its support for cryptocurrencies such as Bitcoin, which can encourage subscribers to consider purchasing Tesla's products using their cryptocurrency holdings.
5. Influencer marketing: Tesla has partnered with influencers such as YouTubers and celebrities to promote its products and services. These influencers have large followings, which can help Tesla reach a broader audience and generate more revenue (Meyersohn, 2021).
6. Content marketing: Tesla creates and shares high-quality content on its website, social media, and other platforms. This content includes product reviews, news articles, and educational content, which can attract potential customers and generate more revenue for the company.
7. Search engine optimization (SEO): Tesla has optimized its website for search engines to attract more traffic and potential customers. This includes using relevant keywords, optimizing website structure and design, and creating high-quality content that can rank well in search engine results pages.
8. Digital advertising: Tesla has used various digital advertising platforms such as Google Ads and Facebook Ads to reach potential customers and generate more revenue for its business.

3.1.2 The impact of digital marketing on revenue: Conclusion and findings

Through the analysis of Tesla's digital marketing strategies, it was found that the company has effectively utilized various digital marketing channels, such as social media platforms (twitter)as the major platform used, influencer collaborations, and online advertising campaigns, to promote its products and engage with its target audience.

The data collected indicated a positive correlation between the intensity of Tesla's digital marketing efforts and its revenue growth.

The findings suggest that a comprehensive and well-executed digital marketing strategy can significantly contribute to the revenue generation of global enterprises.

Tesla's decision to accept Bitcoin as a form of payment for its products was analysed, and it was found that this move generated significant attention and publicity for the company for that period with a massive increase in revenue in 2021.Tesla's investment in Bitcoin has been a smart financial decision. The value of Bitcoin has increased significantly since

Tesla's investment, resulting in substantial returns for the company. This shows that Tesla is forward-thinking and is willing to invest in new technologies that have the potential to generate revenue.

However, the analysis also revealed that the volatility and regulatory uncertainties surrounding cryptocurrencies can introduce financial risks and potential revenue fluctuations.

While the adoption of cryptocurrencies has the potential to expand revenue streams and attract a tech-savvy customer base, the findings suggest that careful consideration of risk management and regulatory factors is crucial for global enterprises like Tesla.

Tesla's integration of digital marketing and cryptocurrencies has been a successful strategy for revenue generation, A recent report by BrandTotal revealed that Tesla does not spend any money on advertising is company has grown organically because of is active involvement on his SM, while its competitors like BMW, Porsche, Toyota, and Ford invest heavily in major social media platforms like Twitter, Facebook, YouTube, and Instagram. For example, Toyota spends 62 percent of its social media budget on Facebook, whereas Porsche allocates only 14 percent of its budget to Facebook. In contrast, Porsche prefers to use 47 percent of its major social media platform spend on YouTube.

The company's strong social media presence and effective email marketing have helped to promote its products and engage with customers, while its embrace of cryptocurrencies has helped to diversify its cash holdings and maximize returns. As other companies look for ways to leverage the potential of digital marketing and cryptocurrencies, Tesla's example serves as a valuable case study for success in this area.

General Conclusion

In conclusion, this master thesis aimed to investigate the role of digital marketing and cryptocurrencies in the revenue generation of global enterprises. The specific objectives of the study were addressed through an analysis of the current state of digital marketing and cryptocurrencies, an exploration of their impact on revenue, and the provision of recommendations for leveraging these trends effectively.

The research findings confirmed the hypothesis that digital marketing positively impacts the revenue of global enterprises. Through the use of various digital marketing channels and tactics, companies can reach a larger audience, build brand awareness, and engage with customers in real-time. The evolution of digital marketing over time has provided businesses with new opportunities to expand their market reach and enhance their revenue generation potential.

Furthermore, the study revealed that cryptocurrencies have the potential to positively impact the revenue of global enterprises. Cryptocurrencies offer benefits such as increased security, faster transactions, and reduced transaction costs. By integrating cryptocurrencies into their payment systems, businesses can improve customer trust and streamline financial transactions, leading to enhanced revenue growth.

The research also highlighted the importance of effectively leveraging digital marketing and cryptocurrencies together. Global enterprises that adopt a strategic approach to integrating these trends are likely to experience higher revenue growth compared to those that do not. The combination of digital marketing and cryptocurrencies creates new revenue opportunities, enables innovative business models, and allows for more efficient customer interactions.

Based on the findings, several recommendations can be provided for global enterprises seeking to adapt to these changing trends. Firstly, businesses should invest in digital marketing strategies that align with their target audience and industry. This includes leveraging SM platforms, SEO, content marketing, and personalized advertising and etc…. Secondly, enterprises should explore the integration of cryptocurrencies into their payment systems, taking into account security measures and regulatory considerations. This can enhance

customer trust, streamline transactions, and potentially attract new customer segments. Also, other recommendations are as follow for enterprise and businesses that wants to really have a positive impact should stay up-to-date on the latest trends in digital marketing and cryptocurrencies.

➢ Businesses should conduct research to determine which digital marketing and cryptocurrency strategies are right for them.

➢ Businesses should develop a clear understanding of their target audience and their needs.

➢ Businesses should create engaging and informative content that will appeal to their target audience.

➢ Businesses should use a variety of digital marketing channels to reach their target audience.

➢ Businesses should track the results of their digital marketing campaigns to see what is working and what is not.

➢ Businesses should be prepared to adapt their digital marketing strategies as needed.

➢ Businesses should use cryptocurrencies to attract new investors and raise capital.

➢ Businesses should conduct research on the risks and regulations associated with cryptocurrencies.

To achieve the objectives of the study, a comprehensive research methodology was employed. The methodology involved a literature review to analyse the current state of digital marketing and cryptocurrencies, case studies to explore successful integration strategies, and theoretical model analysis to understand the underlying principles and potential of these trends. Data collection and analysis methods were applied to gather relevant information and draw meaningful conclusions.

In conclusion, this master thesis has contributed to the understanding of the role of digital marketing and cryptocurrencies in the global economy. The findings provide practical insights for businesses seeking to adapt to these changing trends and capitalize on the revenue generation potential. By effectively leveraging digital marketing and cryptocurrencies, global enterprises can enhance their market competitiveness, attract new customers, and drive revenue growth in the digital era. Thank you for your understanding.

REFERENCES

Digital Marketing

➢ Digital Marketing Institute: https://digitalmarketinginstitute.com/blog/what-is-digital-marketing

➢ HubSpot: https://www.hubspot.com/digital-marketing

➢ Neil Patel: https://neilpatel.com/what-is-digital-marketing/

➢ Moz: https://moz.com/beginners-guide-to-digital-marketing/what-is-digital-marketing

➢ Search Engine Journal: https://www.searchenginejournal.com/digital-marketing/digital-marketing-defined/

➢ "The History of Digital Marketing" by HubSpot: https://blog.hubspot.com/marketing/history-digital-marketing

Digital Marketing Tools and Platforms:

- Digital Marketing Institute: https://digitalmarketinginstitute.com/
- HubSpot: https://www.hubspot.com/
- Neil Patel: https://neilpatel.com/
- Moz: https://moz.com/
- Google Analytics: https://analytics.google.com/analytics/academy/
- Hootsuite: https://hootsuite.com/
- Sprout Social: https://sproutsocial.com/
- SEMrush: https://www.semrush.com/
- Content Marketing Institute: https://contentmarketinginstitute.com/
- Influencer Marketing Hub: https://influencermarketinghub.com/
- Amazon Associates: https://affiliate-program.amazon.com/

Digital Marketing Metrics and Models:

- Smart Insights: https://www.smartinsights.com/marketing-planning/marketing-models/digital-marketing-models/
- Alexa Blog: https://blog.alexa.com/website-traffic-metrics/
- Optimizely: https://www.optimizely.com/optimization-glossary/conversion-rate-optimization/
- WordStream: https://www.wordstream.com/cost-per-acquisition/
- Shopify Blog: https://www.shopify.com/blog/customer-lifetime-value/
- Hootsuite Blog: https://blog.hootsuite.com/what-is-engagement-rate/

• HubSpot Blog: https://blog.hubspot.com/marketing-metrics

E-commerce and Amazon

• Amazon.com: https://www.amazon.com/gp/css/order-history?ref_=nav_youraccount_orders

• Smart Insights: https://www.smartinsights.com/digital-marketing-strategy/online-business-revenue-models/amazon-case-study/

Cryptocurrency

1. Investopedia: https://www.investopedia.com/terms/c/cryptocurrency.asp
2. The Balance: https://www.thebalance.com/what-is-cryptocurrency-4160728
3. Software Testing Help: https://www.softwaretestinghelp.com/types-of-cryptocurrency/#5_Non-fungible_Tokens
4. Nakamoto, S. (2008). Bitcoin: A Peer-to-Peer Electronic Cash System. https://bitcoin.org/bitcoin.pdf
5. Popper, N. (2015). Digital Gold: Bitcoin and the Inside Story of the Misfits and Millionaires Trying to Reinvent Money. HarperCollins.
6. Casey, M. J., & Vigna, P. (2018). The Truth Machine: The Blockchain and the Future of Everything. St. Martin's Press.
7. Antonopoulos, A. M. (2014). Mastering Bitcoin: Unlocking Digital Cryptocurrencies. O'Reilly Media.
8. Vigna, P., & Casey, M. J. (2019). The Age of Cryptocurrency: How Bitcoin and Digital Money Are Challenging the Global Economic Order. St. Martin's Press.
9. Narayanan, A., Bonneau, J., Felten, E., Miller, A., & Goldfeder, S. (2016). Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction. Princeton University Press.
10. Hileman, G., & Rauchs, M. (2017). Global Cryptocurrency Benchmarking Study. Cambridge Centre for Alternative Finance.

11. Swan, M. (2018). The Blockchain: Blueprint for a New Economy. O'Reilly Media.
12. CoinTelegraph: https://cointelegraph.com/news/blockchain-based-tracking-solution-expands-to-cover-beef-and-pork
13. The World Bank: https://www.worldbank.org/en/topic/financialsector/brief/cryptocurrencies-and-blockchain
14. CoinDesk: https://www.coindesk.com/insights/crypto-industry-outlook-how-companies-are-investing-and-adopting-cryptocurrencies
15. Nyarunda, T. (2022). Geekflare: https://geekflare.com/blockchain-business-model
16. Investopedia (Delegated Proof of Stake): https://www.investopedia.com/terms/d/delegated-proof-of-stake-dpos.asp
17. Binance Academy (Delegated Proof of Stake): https://academy.binance.com/en/articles/what-is-delegated-proof-of-stake-dpos
18. Ethereum White Paper: https://ethereum.org/en/whitepaper/
19. Uniswap: About Uniswap.
20. Brave Software: The Brave Browser: Putting Users in Charge.

Miscellaneous

• MyGreatLearning: https://www.mygreatlearning.com/blog/introduction-to-digital-marketing/#:~:text=Digital%20marketing%20is%20the%20act,boost%20sales%20through%20digital%20channels.
• Influencer Marketing Hub: Crypto Marketing Channels: https://influencermarketinghub.com/crypto-marketing-channels/

• Brito, J., & Castillo, A. (2013). Bitcoin: A primer for policymakers. Mercatus Center, George Mason University.
• Chaffey, D., & Smith, P. R. (2017). Digital marketing excellence: planning, optimizing and integrating online marketing. Taylor & Francis.
• Park, Y., & Kim, Y. (2020). Blockchain-based advertising: A review and research agenda. Journal of Business Research, 117, 609-620.
• Wulf, T. (2021). How BitPay works: A beginner's guide to accepting Bitcoin payments. Retrieved from https://www.coindesk.com/learn/how-bitpay-works
• Visual Capitalist: A Decade of Elon Musk's Tweets Visualized: https://www.visualcapitalist.com/a-decade-of-elon-musks-tweets-visualized/
• Forbes: TikTok and Sensitive Words Suppression: https://www.forbes.com/sites/alexandralevine/2023/05/05/tiktok-bytedance-sensitive-words-suppression-china/
• Mckinsey: https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-proof-of-stake.com