

ПОЛТАВСЬКИЙ УНІВЕРСИТЕТ ЕКОНОМІКИ І ТОРГІВЛІ

Навчально-науковий інститут міжнародної освіти

Форма навчання денна

Кафедра міжнародної економіки та міжнародних економічних відносин

Допускається до захисту

Завідувач кафедри

_____ А. АРТЕМЕНКО

«_____» _____ 2023 р.

КВАЛІФІКАЦІЙНА РОБОТА

на тему «Міжнародні платіжні системи у міжнародному бізнесі»

зі спеціальності 292 Міжнародні економічні відносини

освітня програма «Міжнародний бізнес»

ступеня бакалавра

Виконавець роботи Агбезуге Еммануелла Трейсі Ейрам

(підпис, дата)

Науковий керівник к. е. н., доцент Флегантова Анна Леонідівна

(підпис, дата)

Рецензент Устьян Олександр Юрійович

Полтава 2023

POLTAVA UNIVERSITY OF ECONOMICS AND TRADE

Educational and Scientific Institute of International Education

Full-Time Studies

International Economics and International Economics Relations Department

Approved for defense

Head of Department

_____ A. ARTEMENKO

«_____» _____ 2023

QUALIFYING PAPER

paper topic «International payment systems in international business»

Program Subject Area 292 International Economic Relations

Educational Program «International Business»

Degree bachelor

Qualifying Paper Author Emmanuella Tracy Eyram Agbezuge

(signature, date)

Scientific Advisor PhD in Economics, Associate Professor Anna Flehantova

(signature, date)

Reviewer Ustian Oleksandr

Poltava 2023

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INTRODUCTION

Actuality of the research. International payment systems are a crucial element of the worldwide economy, and current research is being conducted to advance their development and implementation. These discoveries can aid transnational corporations (TNCs) in investing in technological advancements, enhancing payment accessibility, improving cross-border payments, providing various payment methods, and monitoring factors that impact payment to foster better international payment system development. Over time, global payment systems have undergone significant evolution to accommodate the changing demands of international trade and technological advancements. The system, however, encounters various challenges that affect its effectiveness, security, and dependability. Mitigating these challenges necessitates cooperative endeavours among governmental entities, financial establishments, technological vendors, and regulatory agencies. The implementation of technological advancements, standardization of processes, reinforcement of security measures, and facilitation of financial inclusion are fundamental tactics for surmounting the obstacles and enhancing the efficacy of global payment systems.

Analysis of basic research and publications. Implementations and development of payment systems to aid in the advancement of the world's economy, the role of payment systems in modern digital world, ways TNCs can utilise international payments systems to enhance their businesses worldwide. These are covered in the works of researchers such as Kenton, W [7], Adrian, T. and Mancini-Griffoli [10], Bech, M.L. and Hancock, J. [26], Blaney, Brianna [27], Ram, P. [36], Dar, N., Dusek, O. and Tiwari, S.[44], Carstens, A.[45], Derdour, J. [48], J.P Morgan [61].

The purpose of the qualifying work is to analyse of the development of international payment systems on the world market and their implementation in the activities of TNCs. According to the purpose of the research the following **tasks** have been assigned:

- to research the historical development of international payment systems.
- to evaluate modern developments in global payment systems.
- to explain the role of international payment systems and its influence on international commerce.

- to analyze the methods by which transnational corporations (TNCs) execute global payment systems.

- to investigate the economic possibilities and threats posed by global payment systems.

- to explore the progression and refinement of global payment systems.

Research object is the functioning of payment systems, implementations and developments of international payment systems in the activity of TNC's in the global market.

Research subject the advancement of international payment systems to benefit the global market.

Research methods: system analysis; classification method; structural analysis.

Research database includes scientific works of foreign economists and analytical data of the Internet network.

Connection of qualifying paper with scientific programs, plans, topics. Implementation of the qualifying work is related to the plan of scientific research of «Poltava University of Economics and Trade» on the topic «Modern processes of globalization: driving forces, megatrends, contradictions» 5 (0113U006220). The author's contribution consists in defining the main principles of the formation of the automobile company's activity in the conditions of globalization on the global market.

Approbation of the results of qualifying work. The main provisions and research results were presented at Scientific conference of higher education students and young scientists of specialty 292 «International Economic Relations» «Actual issues of theory and practice of international economic relations in the conditions of global transformation» (Poltava, 14 of April, 2023) and on the XLVI International scientific students conference according to the results of the research works of students in 2022 «Actual questions of science development and ensuring the quality of education in XXI century» (25 of April 2023).

Publications: 1) Emmanuella Tracy Eyram Agbezuge, Anna Flehantova Current trends in international payment systems development. *Актуальні проблеми теорії та практики міжнародних економічних відносин в умовах глобальної трансформації: матеріали наукової конференції здобувачів вищої освіти і молодих учених спеціальності 292 Міжнародні економічні відносини* (м. Полтава, 14 квітня 2023 р.) /

за заг. ред. доц. В. Ю. Стрілець – Полтава : ПУЕТ, 2023. С. 73-78. 2) Emmanuella Tracy Eyram Agbezuge, Anna Flehantova The historical development of international payment systems. *Актуальні питання розвитку науки та забезпечення якості освіти у XXI столітті*: матеріали XLVI Міжнародної науково-практичної студентської конференції за підсумками науково-дослідних робіт студентів за 2022 рік (м. Полтава, 25 квітня 2023 р.) – Полтава : ПУЕТ, 2023. С. 258-260.

CHAPTER 1

THEORETICAL FUNDAMENTALS OF INTERNATIONAL PAYMENT SYSTEMS

1.1. Historical development of international payment systems

The underlying technology that makes it possible for people, companies, and financial institutions to transmit money across national borders is known as international payment systems. By offering dependable, efficient, and secure methods for carrying out cross-border transactions, these technologies promote global trade. The foundational concepts of global payment systems are as follows:

correspondent banking: A crucial element of global payment networks is correspondent banking. It is a partnership between two banks in which one bank, known as the correspondent bank, manages deposits and provides financial services on behalf of another bank, known as the responder bank, which is located in a different nation. Through this arrangement, clients of several banks' customers can transfer money and settle transactions.

clearing and settling: Mechanisms for clearing and settling financial transactions make sure that they are completed. While settlement entails the actual transfer of money between parties, clearing describes the procedure of balancing and validating transactional facts. To guarantee that transactions are correctly processed and cleared in a timely way, clearing and settlement processes are incorporated into international payment systems [1].

The Society for Worldwide Interbank Financial Telecommunication, or SWIFT, is a messaging system that banks and other financial organisation use to send information and instructions securely about international payments. It promotes communication between participating financial institutions by offering a uniform framework for transmitting payment instructions [2].

international specifications: To guarantee compatibility and interoperability amongst various participants, international payment systems rely on defined standards. These specifications provide the forms for transaction messages, data components, and secure

communication protocols. Both SWIFT messaging standards and ISO 20022 message formats are often utilised in international payment systems].

foreign currency (FX) Market: In global payment systems, the foreign currency market is essential. It makes it possible to exchange one currency for another, allowing users to settle transactions in many currencies. The worth of currencies in relation to one another is calculated using exchange rates, which are decided by market forces.

regulatory frameworks: International payment systems function within a regulatory environment that guarantees adherence to all applicable rules, laws, and regulations. In order to preserve stability, security, and transparency in cross-border transactions, regulatory authorities, such as central banks and financial regulators, supervise the operation of payment systems and establish standards [3].

Over the course of the past several years, the system of international payments has been subjected to a number of important shifts. The historical evolution of international payment systems has been impacted by a great number of causes over the course of history. These influences include technical improvements, changes in economic conditions, and political events. In the early days of international payment systems, these systems were dependent on conventional techniques such as bartering, the exchange of products, and precious metals, most often gold and silver.

The first known instance of a standardized monetary system may be traced all the way back to ancient China, where cowrie shells were used as a form of currency more than 3,000 years ago. In the decades that followed, new forms of cash were developed, including coins made of precious metals like gold and silver. These precious metal coins were among the varieties of currency that were introduced. On the other hand, in the decades that followed World War II, there was a growing need for an international payment system that was both more modern and united. The Bretton Woods Agreement, which was signed in 1944, was intended to create a stable and standardized global payment system. As part of this agreement, the World Bank and the International Monetary Fund (IMF) were founded. The Bretton Woods system established gold as the worldwide payment standard. With the gold standard serving as the foundation for international payment systems, countries that had trade surpluses stocked up on gold, while countries that had trade deficits experienced substantial shortages. This led to massive inequalities in the global financial system. As a

direct consequence of this, countries started looking at other possible monetary standards than the gold standard. In the early 1970s, the Bretton Woods system began to fall apart under the pressure of various economic forces, and as a result, the fixed exchange rate regime was eventually abandoned. The beginning of a new age was signaled by the birth of a new period characterized by floating exchange rates. During this time period, the value of currencies was determined by the market forces of supply and demand. The floating exchange rate system allowed nations more control over their currencies, but it also brought up new issues, such as unpredictability in exchange rates [4]. In the modern world, payment methods are increasingly employed in place of cash in a wide range of transactions, including those that take place on both the national and international levels. Because of the proliferation of banking systems, international monetary transactions have become more coordinated, which has contributed to an increase in both the simplicity with which they may be completed and the level of safety they provide. It was at this time that banks began offering letters of credit, which allowed international merchants to sell goods without the inherent danger of transporting large quantities of cash. This is an illustration of a significant service that can be obtained from banks and other types of financial institutions, such as the case may be. Drafts (also known as checks) and documentary credits (also known as letters of credit, among other similar cases) are two examples of negotiable instruments that are used in the framework of traditional payment systems. Other types of negotiable instruments include different types of checks and letters of credit. There has been a significant increase in the quantity of new electronic media created as a direct result of the development of computers in addition to other types of electronic communication. When referring to the transfer of funds from one bank account to another, the phrase "electronic payment" refers to a transaction that takes place via the use of electronic means as opposed to via the direct participation of bank workers. This is because electronic methods are faster and more secure than direct human interaction. When used in a broad sense, the phrase "electronic payment" can be used to refer to any sort of electronic money transfer. However, when used in a specific meaning, the term "e-commerce" is used primarily to describe payments made for obtaining and selling things and services over the Internet [5].

The development of international payment systems has been influenced by a broad variety of factors over the course of human history. These factors include the progression of

technology, the occurrence of political events, and variations in economic conditions. Digital currencies and electronic payment systems are relatively new developments that offer an alternative to the conventional means of conducting financial transactions. These developments have place over the course of the last few decades. It will be intriguing to see how the infrastructure of international payment systems develops over the next several years, particularly in light of the continuous growth in the use of digital payment methods. This development is particularly relevant in view of the fact that the use of digital payment methods has continued to rise. Currency alternatives are employed in today's payment methods, in contrast to the traditional payment methods that were used in the past. In the past, conventional payment methods were utilized. This includes internet banking, payment systems for online commerce, debit and credit cards, electronic money transfers, direct credits, direct debits, and direct credits.

There are many different ways to collect payments, and each of these ways has its own unique set of rules and procedures to follow. These procedures and protocols can be physical or technological in nature. Standardization has made it possible for some of these networks and systems to expand to a global level; nevertheless, the bulk of these networks and systems are still country- and product-specific. Standardization has made it possible for some of these systems and networks to spread to a global level. The use of credit cards and networks of automated teller machines, often known as ATMs, are two examples of payment technologies that are now accessible on a worldwide scale. There are a variety of forms that may be utilized in order to simplify the process of moving money between the many institutions that are responsible for providing financial services. In order to accomplish this objective on a national scale in the United States, technological solutions such as the automated clearing house (ACH) and the real-time gross settlement (RTGS) are deployed. This is achieved on a global scale by utilizing the SWIFT network, which is comprised of financial institutions from all over the world.

An automated clearing house, sometimes referred to as an ACH system, is used to process transactions, store information about those transactions, and send out batches of those transactions. Because an ACH is a kind of net settlement, the process of settling a transaction could take a lot longer time than is customary. Real-time gross settlement systems, sometimes abbreviated as RTGS, are methods of money transfer that allow for the

"real-time" and "gross" movement of cash and securities from one bank to another. These systems are also commonly referred to by their longer name, RTGS. The 1990s were a productive decade for the development of these systems. When referring to settlement, the word "real time" denotes that there is no required waiting period for a payment transaction to be completed. This is in contrast to the term "real time" which refers to the moment at which a transaction is actually completed. The settlement of the transactions happens as soon as the transactions themselves have been carried out by the parties involved. The process of settling a single transaction in its entirety, one-to-one, without bunching or netting it with any other transactions is referred to as "gross settlement," and the phrase "gross settlement" is used to characterize the process. Once a payment has been made, it is impossible to cancel it, and it cannot be reversed under any circumstances [6].

In comparison, automated clearinghouse communications systems (ACHs) are often used for low-value and non-time-sensitive transactions, whereas real-time gross settlement systems (RTGS) are typically utilized for high-value and time-sensitive transactions. RTGS stands for real-time gross settlement, and it is commonly used for transactions involving huge amounts of money that must be completed quickly.

A network of financial institutions, service providers, and other types of organizations make up an international payment system. This method not only makes it possible to move money across national boundaries, but it also makes it easier to move money within a country. It can transfer money both internationally and domestically. It makes it easier for individuals, organizations, and governments to conduct monetary transactions among themselves as well as in a number of nations and currencies. Wire transfers, credit and debit card transactions, electronic fund transfers, and online payment platforms are just a few of the many various kinds of overseas payment methods that are accessible. In order to ensure that monetary transactions are carried out in a manner that is both secure and efficient, the aforementioned systems usually make use of a convoluted network of intermediaries and clearinghouses. Both SWIFT (Society for Worldwide Interbank Financial Telecommunication), which is used for transfers between banks, and PayPal, which is used for online transactions between individuals and businesses, are examples of international payment systems. SWIFT is used for bank-to-bank transfers, while PayPal is used for online transactions. International payment systems make it possible for businesses to engage in

cross-border commercial transactions. These systems also make it possible for individuals to send money to friends and family members who live in other countries. Consumers also have the ability to send money to friends and family members who live in other countries thanks to these services.

There has been a significant change in the manner in which foreign payments are processed throughout the course of the years, with each new step reflecting both the development of technology and the fluctuating nature of the economy. The following phrases provide a synopsis of the development of worldwide payment networks throughout time:

1) the barter system: the practice of exchanging products and services directly with one another rather than via the use of monetary instruments is known as the barter system. It predates the invention of money and has been an essential component of human economic activities for thousands of years. Individuals or companies directly trade their goods or services for other commodities or services of equivalent value within the context of a barter system, which results in the formation of a system of reciprocal exchange.

The basis of the barter system is the idea of "double coincidence of wants," which states that in order for a trade to take place, both parties to the transaction need to possess an item that the other party is looking for. For instance, if a farmer has an abundance of wheat and is in need of clothes, they may look for a tailor who has a demand for wheat and is ready to supply clothing in return for the wheat. If there is agreement between both sides on the terms of the deal, then it will be executed.

2) coinage (seventh century B.C.–Middle Ages): Coinage, which refers to the manufacturing and use of standardized metal coins as a medium of exchange, arose in the seventh century B.C. and had a key part in both the construction of economic systems and the facilitation of commerce during the Middle Ages. Coinage was first used as a means of exchange in the Middle Kingdom. Around the seventh century B.C., the ancient kingdom of Lydia, which is located in what is now the country of Turkey, was the first place to start using coins as a form of payment. Electrum, a naturally occurring alloy of gold and silver, was utilized in the production of these first coins. The minting of coins was a process that eventually extended to surrounding civilizations and areas, including those of Greece and Rome. The introduction of coins led to the development of a standardized monetary system.

Gold, silver, and bronze were the most common precious metals used in the production of coins, which were also produced by authorized authority via the minting process. The procedure included of hammering certain images and inscriptions into the metal with a hammer. These designs and inscriptions may include a picture of the ruler, a symbol, or an emblem that symbolized the issuing authority. The introduction of coinage completely changed the dynamics of commercial exchange. Because coins were portable, durable, and generally recognized as a medium of exchange, they made financial transactions more effective and contributed to the expansion of the economy. They allowed people and merchants to engage in commerce across areas and civilizations, overcoming the restrictions of barter and decreasing the need for bulky trade products as a medium of exchange. This was made possible since these commodities could be easily transported.

3) during the Middle Ages and the renaissance era, foreign debts were handled by using bills of exchange as a means of payment. A bill of exchange is a written order that instructs the recipient to pay a certain sum of money at a specific location and time. Because of the usage of these notes, international trade was facilitated, and entrepreneurs were able to transmit money without having to physically carry large quantities of money from one location to another.

4) the development of the telegraph made it possible to communicate instantly between far-off sites in the 19th century. As a result, telegraphic transfers were created, which made it possible to send money quickly between banks located in different nations.

5) International clearinghouses: At the tail end of the 19th century, clearinghouses were established in order to settle payments that were made between banks on an international scale. These organizations lessened the risk of default and made it easier for cash to flow by acting as intermediaries, which helped to facilitate the movement of currency [8].

6) In the years that followed the conclusion of World War II, the International Monetary Fund (IMF) was founded with the intention of fostering global monetary cooperation and maintaining stable exchange rates. As part of the organizations' efforts to promote better financial stability on a global scale, loans are made accessible to members of the organisations who are facing issues with their balance of payments. This is done in

order to make the loans available to members of the organisations who are experiencing difficulties with their balance of payments [9].

7) Methods of electronic payment, in today's current digital era, the use of electronic payment methods has completely transformed the way that company transactions and business in general are carried out. The development of new technologies and our ever-increasing reliance on digital platforms have resulted in the widespread adoption of electronic payment systems as an essential component of our day-to-day life. The usage of credit cards and debit cards as electronic payment methods has gained widespread popularity. They make it possible for customers to make purchases by electronically transferring money from their bank accounts or credit lines to the account of the merchant. These cards are accepted by a huge network of retailers, both online and offline, which makes them convenient and makes them easy to obtain in a wide variety of settings. The increasing prevalence of smartphones has contributed to the rise in popularity of payment methods that can be completed using a mobile device. Transactions are completed through the utilisation of mobile applications or digital wallets. Some examples of this type of payment system are Apple Pay, Google Pay, Samsung Pay, and more apps in a similar vein. Users are able to make purchases by only touching their mobile devices or scanning QR codes while using these platforms since payment information is stored in a safe location. Individuals now have the ability to perform financial transactions electronically thanks to the rise of online banking, which may be accessed via mobile banking applications or internet banking sites supplied by the individuals' respective financial institutions. Users are able to make purchases, send and receive money transfers, and pay bills and other expenses using their online banking accounts. The use of online banking provides a number of benefits, including ease of access, accessibility, and the ability to monitor transactions in real time. Methods of payment that do not need contact have been gaining popularity, particularly in the past few years. They include employing technology known as near field communication (NFC) or radio frequency identification (RFID) in order to perform secure payments by tapping or waving a contactless-enabled card or mobile device in the vicinity of a payment terminal. In other words, these technologies allow for mobile payments. Payments made with contactless technology offer a high level of convenience, in addition to increased speed and safety. As a decentralised method of carrying out financial transactions online,

cryptocurrencies like Bitcoin and Ethereum have recently come into prominence. Transactions involving these digital currencies are recorded and verified using blockchain technology, which provides a high level of security. It is possible to conduct peer-to-peer transactions using cryptocurrencies with a decreased reliance on middlemen. This makes cryptocurrencies a potentially more private payment mechanism that is also borderless [10].

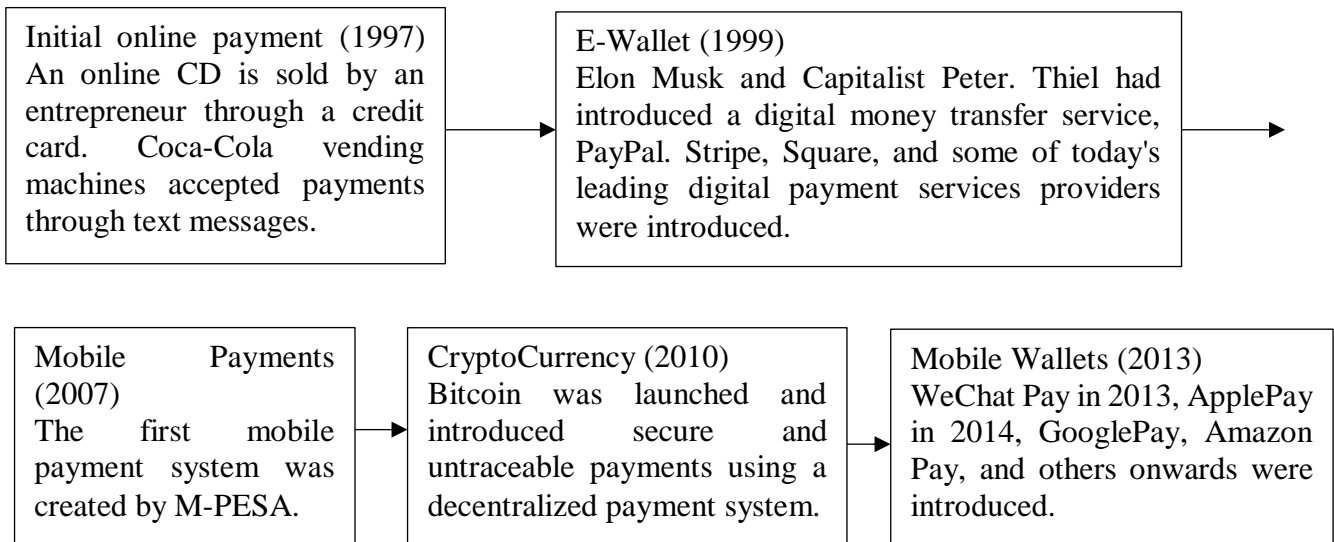


Figure 1.1 – The Evolution of Digital Payment Industry – From Online Payments to E-wallets.

Source: [11]

The simplicity of use, assurance of security, and versatility of digital payment systems have all seen major improvements in recent years. The growth of the industry, from electronic wallets to online payment methods, is driven not only by technology improvements but also by the needs and ambitions of its clients. The increased usage of digital payment systems will have a considerable influence on the kinds of transactions that take place in the future as well as the kinds of financial ties that people have with one another.

It is possible to gain some understanding of international finance and the process of making payments across borders by looking at the history of the system that facilitates international payments. Beginning in ancient times and continuing into the digital era, the capacity to engage in international commerce was made feasible by a variety of techniques, such as bartering, the exchange of commodities, coins and paper money, and wire transfers between banks. Gold and the Bretton Woods agreement both made important contributions

to the development of a more efficient system for the processing of international financial transactions. The relative predictability of currencies, in addition to their capability of being convertible into other currencies, was a major factor that promoted international trade. Following the Bretton Woods agreement, risk management and fluctuating currency rates necessitated the development of increasingly complicated payment systems. As a result of the rise of digitization, the processes involved in processing payments in a foreign currency have been brought into the current era. The usage of credit cards, electronic transfers, and internet banking may make transactions that take place across international boundaries more easier to complete. The conduct of international monetary transactions may be profoundly altered by the development of decentralised and foolproof computer networks that make use of the blockchain technology.

Get yourself familiar with the different payment systems used internationally. The world's payment systems are plagued by high transaction costs, a complex regulatory framework, fraudulent activities, and inadequate levels of security. It is necessary to find solutions that are all-inclusive in order to guarantee the right of persons to privacy and data protection, in addition to the right of individuals to participate in the financial system. The evolution of international monetary systems through time enables more precise projections of how such systems will continue to evolve in the future. The current situation of the global economy is impacted not only by innovations in technology and finance but also by the combined efforts of countries throughout the world.

In conclusion, global banking is a dynamic business that is continuously seeking for ways to make international financial transactions safer, more efficient, and more accessible to a greater number of people. The origins of modern international financial transactions may be traced all the way back to the beginning of recorded history [12].

1.2. Current trends in international payment systems

In recent years, there has been a dramatic movement toward the demand for faster and more efficient ways of payment processing. As a direct consequence of this desire,

significant adjustments have been made to the international payment networks. The following is a list of some of the developments that are currently being observed in international payment systems:

Methods and Protocols Used by Digital Payment Systems: People are moving away from conventional ways of payment such as cash and checks in favour of using digital payment systems, which are gaining popularity. Examples of conventional methods of payment include cash and checks. There is a chance that the traditional financial services sector may undergo a sea change as a direct result of the introduction of digital money. Developing nations and emerging markets with lesser incomes will benefit the most from this dramatic transition because of the magnitude of its effects on their economy. It is estimated that there are 1.7 billion people in the globe who do not have traditional bank accounts but who might benefit from having access to financial services if they had widespread and inexpensive access to digital money and transactions made by phone. As a result of the spread of mobile payment systems, consumers now have the opportunity to pay for products and services using their mobile devices in a manner that is not only quick but also convenient. The use of digital payment methods comes with a variety of extra benefits, including increased convenience, accessibility, and safety over traditional ways of payment. There is a possibility that in the not-too-distant future, nations would become more interconnected with one another. If this were to occur, it would make international trade and market integration much simpler. This has a tremendous impact on the way that individuals conduct their lives in the actual world, and those effects may be seen in a variety of ways.

People who reside on the "other side" of the digital divide may not have the resources available to them in order to successfully transition into this new world. No of the circumstances, there is always a potential that something unfortunate may take place. Additionally, it paves the way for the possibility of unfavourable results such as fragmentation, currency substitution, and a loss in the effectiveness of policy, all of which are outcomes that are undesirable. In order for the transition to be successful, it is imperative that it be effectively managed, coordinated, and regulated in the appropriate fashion.

Payment over the internet: Following the commercial launch of the internet and the beginning of the process of moving company activities online, the creation of online payment systems began in what seemed like an immediate fashion. The picture that can be

found below illustrates the year 1981 as the time when the very first business-to-business (B2B) electronic transaction took place. This deal had two different companies doing business together. After the public access to the internet was made accessible in 1991, the first payment to be made online by a customer did not occur until 1994. This was six years after the public access to the internet was made available. This was over ten years after public access to the internet had been made available to the general public. Following that, companies such as Amazon, Google, and PayPal were established, which made the world of online shopping far more accessible to customers. The process of processing payments online has been made easier to understand, streamlined to make it more user-friendly, and fortified with an additional level of security. The capacity for customers to make online purchases straight from their pockets was not made possible until the introduction of the first smartphone in 2007. Prior to this, clients were obliged to use their own personal computers in order to carry out these kinds of transactions. When it came to the standard operating procedures that are generally followed when processing payments, there was going to be a considerable difference in the way that things are typically done. As a direct outcome of the circumstances, this has led to an increase in the number of rules and regulations that can be applied to payments. This is a direct consequence of the situation [13].

Table 1.1 - Online payment trends from 1981 to 2020

1981	First B2B Electronic transaction
1994	First online payment made
1997	First contactless payment
1998	PayPal was created
2002	PayPal re-invest and create other tech companies
2006	Google checkout was created
2007	First iPhone launched
2008	Global financial crush
2009	Bitcoin was created Starbucks release mobile app
2010	Square and Stripe are both founded
2014	Ethereum-Blockchain allowing for complex financial transactions Android, Google and Samsung Pay are released
2020	90% of mobile phone owners have made an online transaction

Sources:[14]

Blockchain Technology: Blockchain technology is now being implemented in international payment systems in an effort to enhance safety, transparency, and operational effectiveness. The use of blockchain technology enables transactions to take place without the need for a third-party intermediary, such as a bank, making them both quicker and more secure.

Open Banking is a system that enables third-party suppliers to get access to the financial information held by banks and other types of financial organizations. This has resulted in the creation of new payment options and greater competition in the sector, which has led to improved services and cheaper costs for customers.

Real-Time Payments: Real-time payments enable instant payment processing, which significantly cuts down on the amount of time needed to move money from one account to another. Many nations are moving toward the implementation of real-time payment systems because of the numerous benefits that these systems offer, including increased convenience, speed, and safety for both businesses and customers.

Payments Across Borders With the continued expansion of both international trade and e-commerce, payments across borders are becoming an increasingly significant financial service. The development of international payment systems is now taking place with the goal of facilitating international transactions that are both quicker and more efficient, while also lowering transaction fees and increasing levels of security.

In general, the most recent developments in international payment systems are geared on enhancing the systems' speed, security, and overall effectiveness, as well as making payment processing more readily available and user-friendly for both enterprises and individual customers.

In addition to their importance to global commerce and communication, developed countries are dependent on international payment systems for a variety of reasons, and these systems have also evolved into a vital part of global trade. To begin, as a direct consequence of the process of globalisation, it is currently more crucial than ever before for private persons and businesses to make use of international payment methods when doing trade with individuals located in other countries. To facilitate the buying and selling of products and services across international borders, it is vital to have international payment mechanisms in place. In many instances, developed countries play an essential role as

participants in this commerce. Additionally, international payment options are essential for visitors who need to make purchases abroad or utilise ATMs in foreign countries to withdraw cash from their accounts. Because they allow for quick and easy transfers and can be accessed from any place provided there is an internet connection, international payment systems are frequently more practical than traditional payment methods such as cheques or money orders. As a direct consequence of this, the likelihood of fraudulent activity and theft is diminished. Additionally, they make it possible for individuals and businesses to send and receive money securely across international borders. The swift incorporation of foreign payment methods into other financial services, such as banking apps, results in a user experience that is both more streamlined and more effective. This is in addition to the ease and safety that these payment methods provide. Credit cards, which first appeared in circulation in the 1950s and 1960s, swiftly emerged as one of the most preferred methods of payment for transactions made all over the world. As the internet and e-commerce have increased in popularity, online payment systems like PayPal and Google Wallet have emerged as common methods of payment for international purchases.

In conclusion, the origins of international payment systems can be traced all the way back to the middle of the nineteenth century, which was when the first telegraph networks were established. Telegraphic transfers made it possible to make overseas payments that were both quicker and more secure, and clearing houses were established to facilitate the settlement of international payments. The Society for Worldwide Interbank Financial Telecommunication, more often known as SWIFT, was established in 1973 to serve as a worldwide communications network for banks and other financial organizations. The implementation of SWIFT has resulted in a revolution in the processing of international financial transactions by allowing financial institutions to securely transmit electronic messages and transactions.

In conclusion, international payment systems have become essential for facilitating international commerce and communication. Developed countries rely on them for their convenience, security, integration, and efficiency, as well as for facilitating international trade and travel. As the global economy becomes more interconnected, the importance of international payment systems is likely to continue growing [15].

Here are some of the most used international payment systems in developed countries:

1. Visa: Visa Inc. is a global firm that specialises in the provision of financial services and enables electronic payments transfers all over the world. Visa was first introduced in 1958, and since then, it has become the industry standard for offering customers with payment alternatives that are both reliable and easy. Visa runs one of the largest payment networks in the world, linking millions of customers, retailers, and financial institutions all over the world. The network makes it possible to conduct electronic transactions in a safe and efficient manner. These transactions can be carried out using credit cards, debit cards, prepaid cards, and digital payment methods. Credit, debit, and prepaid cards issued by Visa can be used at any one of the millions of places that accept Visa payments throughout the world. Merchants and financial institutions may securely process and authorise transactions made with Visa cards thanks to payment processing services offered by Visa. These services are provided to merchants and financial institutions. Visa has adopted cutting-edge technology to make it easier for customers to make digital payments in response to the growth of online shopping. This involves forming relationships with mobile wallets, contactless payment systems, and safe gateways for making online payments. For the purpose of preventing fraudulent activity and protecting the personal information of cardholders, Visa employs stringent risk management and security procedures. These include more sophisticated forms of encryption, authentication mechanisms, and real-time monitoring systems for fraudulent activity. Visa has operations in more than 200 countries and territories throughout the world, forming strategic alliances with financial institutions, merchants, and technology businesses all over the world. Because of its vast reach, Visa is able to provide streamlined payment solutions for businesses operating across international borders and to facilitate global trade.

2. Mastercard: Payment processing services, including those for credit, debit, and prepaid card transactions, are offered by the worldwide financial technology business known as Mastercard. Mastercard is a prominent player in the ecosystem of global payments and has a presence in more than 210 countries and territories across the world. Since its founding in 1966, the technology business known as Mastercard has functioned as a middleman for electronic financial transactions involving cardholders, retailers, and financial institutions. It provides a broad variety of payment options, such as payment cards, mobile payments, digital wallets, and other cutting-edge payment technologies. Mastercard

oversees and manages a massive payment network that links millions of businesses and financial institutions all over the world. It facilitates the authorisation, processing, and settlement of payment transactions by providing a secure infrastructure for doing so. The use of Mastercard's network guarantees that diverse players in the payment ecosystem are connected to one another in a smooth manner. Mastercard provides its customers with a wide range of card options, including credit, debit, and prepaid cards. These cards are issued by banking institutions that have partnered together to provide this service, and they may be used for transactions both online and in-person. Cardholders benefit from Mastercard's card products in a number of ways, including ease, security, and worldwide acceptance of their cards. Within the realm of financial transactions, Mastercard is consistently regarded as a leader when it comes to implementing innovative new technologies. Mobile payments, contactless payments, biometric identification, and tokenization are just some of the new solutions that have been developed as a result of consistent investments in research and development by the organisation. Users benefit from increased safety, increased speed, and increased convenience as a result of these technologies.

3. PayPal: PayPal is a popular online payment system that enables individuals and businesses to send and receive payments electronically. PayPal has more than 392 million active users in over 200 markets worldwide.

4. American Express: American Express, more frequently referred to as Amex, is a multinational financial services firm that offers a diverse array of goods and services to consumers, as well as to small and big enterprises and multinational corporations. American Express was established in 1850, and since then, the company has developed into one of the most successful issuers of payment cards and suppliers of travel services in the world. It all started in Buffalo, New York, with an express mail company that would later become known as American Express. Initially, the corporation offered delivery services that were both safe and dependable to customers located throughout the United States. Money orders and traveler's checks were first introduced by American Express in order to better serve the company's clientele as the company gradually expanded its operations into the field of financial services over the course of time. Because of the substantial part that the organisation played in making travel and business transactions easier, it earned a respectable reputation in the banking sector. Cardmembers of American Express's premium cards, such

as the Platinum Card and the Gold Card, have access to a variety of advantages and privileges that are not available to members of other credit card companies. American Express is well-known for its premium card products. American Express works directly with its corporate clients to help them optimise their payment operations, improve their expenditure management, and increase their overall operational efficiency. The banking and finance sector has been profoundly altered as a result of the contributions made by American Express. It has been a significant contributor to the development of cutting-edge payment systems and has been a primary driver of progress within the credit card industry.

5. Apple Pay: Apple Pay is a mobile payment system that enables users to make purchases using their Apple devices. Apple Pay is widely accepted in many developed countries and has partnerships with many financial institutions and merchants.

6. Google Pay: Google Pay is a mobile payment system that enables users to make purchases using their Android devices. Google Pay is widely accepted in many developed countries and has partnerships with many financial institutions and merchants.

International payment systems have become critical for developing-country cross-border commerce. Traditional payment methods, such as checks or money orders, are sometimes problematic or unavailable in these locations, necessitating the use of digital payment systems.

PayPal is one of the most often utilised international payment platforms in poor nations. PayPal is a digital payment network that allows users to send and receive money across boundaries. PayPal, with its low transaction costs and ease of use, has become a popular payment method for freelancers and small enterprises in developing nations.

Skrill is another well-known international payment system in emerging nations. Skrill is similar to PayPal in that it allows users to send and receive money across borders. Skrill, on the other hand, has features such as prepaid Mastercards and the option to make withdrawals to local bank accounts, giving it a more flexible payment mechanism for consumers in developing nations.

Mobile payment systems are also becoming increasingly popular in developing countries. Mobile payment systems such as M-Pesa, which was launched in Kenya in 2007, allow users to make payments and transfer money using their mobile phones. M-Pesa has

become a popular means of payment in Africa and other developing regions, where traditional banking services are often inaccessible [16].

In addition to these digital payment systems, remittance services such as Western Union and MoneyGram are also widely used in developing countries. Remittance services allow migrants to send money back to their home countries, providing a crucial source of income for many families in developing regions.

Overall, international payment networks are critical for enabling cross-border transactions in underdeveloped nations. PayPal, Skrill, mobile payment systems, and remittance services are just a few examples of payment methods that are commonly utilised in these locations. As digital payment systems evolve, they will become increasingly vital for facilitating economic growth and financial inclusion in developing nations.

The current trends in international payment systems are heavily influenced by technological advancements, changing consumer behaviour, and evolving regulatory frameworks. One of the major trends is the increasing use of digital payment methods such as mobile payments, e-wallets, and cryptocurrencies. This trend is driven by the convenience and security offered by digital payments, as well as the growing adoption of smartphones and internet connectivity. Another significant development is the emphasis on enhancing the speed, efficiency, and transparency of cross-border payments. This is being addressed by projects such as the SWIFT global payment innovation (gpi) service, which intends to enhance the speed and traceability of cross-border payments through the use of blockchain technology. Furthermore, there is an increasing emphasis on financial inclusion, with efforts underway to provide access to financial services for underserved and unbanked communities. This is accomplished by utilising cutting-edge payment technologies such as mobile money and other digital financial services.

However, there are issues associated with the data privacy, regulatory compliance, and data security that are presented by multinational payment systems. The emergence of new payment technologies has prompted a number of concerns, including questions regarding the function of well-established financial institutions and the prospect of the status quo's payment systems being altered in some way. Recent developments in international payment systems indicate to a dynamic and rapidly changing environment that is driven by technology and increasing consumer preferences. As a result, a greater emphasis is being

placed on financial inclusion and regulatory compliance. As technological advancements continue to advance and new opportunities present themselves, it is possible that other advances may take place. It is possible that the use of CBDC may increase in the future. Additionally, the utilisation of DLT for international payments and the improvement of payment system interoperability may also see expansion. There is a good chance that prioritising safety and the quality of the experience provided to customers will also continue. The development of international payment systems is a reflection, on a worldwide scale, of the ongoing endeavour to satisfy the changing expectations of consumers and enterprises operating within a globally linked economy. These systems make it possible for cross-border transactions to be completed in a way that is efficient, secure, and uncomplicated [17].

International payment system developments completes global finance and cross-border transactions. Technology's fast expansion has created mobile wallets, online payment gateways, and peer-to-peer payment systems. These changes have streamlined overseas transfers for businesses and individuals. Blockchain and cryptocurrency also affected payments. Blockchain and cryptocurrencies like Bitcoin and Ethereum may make international transactions safer, transparent, and cheaper. Legal regulations and broad use limit this technology. Another trend is global payment system risk management. As cross-border transactions grow, security is vital. Financial institutions and payment service providers are heavily investing in biometrics, encryption, and AI to decrease fraud, protect client data, and ensure international payment integrity. Prioritising financial inclusion and international payment systems. Bridging the gap between developed and developing nations helps impoverished enterprises and individuals trade internationally. Mobile banking and digital wallets enable unbanked and underbanked cross-border transactions. These habits cause problems. Digitalization and innovation are beneficial, but cybersecurity, privacy, and power concentration are concerns. Adapting regulators protect consumers, promote fair competition, and stabilise international payments. International payment system advancements illustrate global finance dynamics. This allows thorough analysis of foreign payment trends. Global payment systems are digital, efficient, secure, and inclusive. Global finance and sustainable payment systems benefit from understanding these tendencies [18].

Conclusion for chapter 1

In this chapter, we will conduct an in-depth investigation of the theoretical foundations, historical development, and contemporary trends that support global payment systems. Significant insights into the evolution of global payment systems and their significance to the economy on a worldwide scale have been uncovered as a result of an exhaustive investigation into the aforementioned elements.

The theoretical underpinnings of international payment systems are the bedrock from which one may build an understanding of the mechanisms and procedures that are integral to the completion of international financial transactions. Fundamental ideas like settlement, clearing, correspondent banking, and foreign currency markets are the bedrock upon which the facilitation of payments between parties located in different nations can be carried out, as well as the subsequent reconciliation of such transactions. These essential principles provide light on the necessity of efficient and secure payment systems in supporting worldwide transactions that are reliable and without hiccups, and they highlight the importance of these features.

An analysis of the historical evolution of international payment systems reveals a journey of invention and adaptation throughout its path of growth. The evolution of payment systems, which began with telegraph transfers and bills of exchange and continued with the formation of international organizations such as the International Monetary Fund (IMF) and the Society for Worldwide Interbank Financial Telecommunication (SWIFT), has resulted in the development of payment systems that are more effective and interconnected. The advances in technology, the evolving geopolitical settings, and the demand for improved openness and expediency in global transactions are the driving drivers underlying historical developments.

The current tendencies that can be seen in global payment systems are illustrative of the ongoing evolution that has occurred as a response to the ever-changing behaviors of consumers, the development of new technologies, and the introduction of new regulations. Users now have access to new levels of ease, speed, and accessibility because to the proliferation of digital payment methods such as mobile payments, e-wallets, and

cryptocurrencies. This has resulted in a paradigm change in the payment industry, which has been brought about by the emergence of digital payment methods. Using blockchain technology, the SWIFT global payment innovation (gpi) service and other similar efforts have been established with the intention of enhancing the effectiveness, accountability, and visibility of international payment transactions. The growing focus placed on financial inclusion has led to the development of innovative payment options, which in turn has extended the accessibility of financial services to populations who have traditionally been on the margins of society.

In conclusion, the purpose of this chapter was to establish the crucial role played by international payment systems in the facilitation of global commerce, investment, and financial integration. The theoretical underpinnings are responsible for laying the groundwork for the conceptual framework, whilst the historical developments give light on the evolution that has taken place over the course of time. The modern tendencies highlight the revolutionary effect of technology and the rising focus on efficacy, clarity, and inclusion in today's society.

Breakthroughs in technology, legal frameworks, and the ever-evolving needs of businesses and consumers are all likely to have an impact on the path that will be taken by global payment systems in the future. The global financial ecosystem may be made more efficient and stable via the optimisation and development of international payment systems. This is an essential step in achieving these goals. This may be accomplished by welcoming newly developed technology, resolving concerns about data privacy and security, and encouraging collaboration among many stakeholders.

CHAPTER 2

ANALYSIS AND IMPLEMENTATION OF INTERNATIONAL PAYMENT SYSTEMS IN MODERN CONDITIONS

2.1. Impact of international payment systems in international trade

The utilisation of worldwide payment networks is a factor that significantly facilitates international commerce, the completion of international transactions, and the establishment of financial connections across national borders. In today's world, marked by rapid technology advancements and increasing levels of globalisation, it is of the utmost importance to do research on and put into place international payment systems that are efficient, secure, and cost-effective. This chapter covers significant aspects of such analysis and implementation, taking into account features such as efficacy, security, standardization, legal compliance, financial inclusion, new technologies, international collaboration, and customer experience.

Transfers of funds across international borders need to be as smooth and hassle-free as possible, which requires that they be as efficient as possible. Real-time payment systems, the SWIFT gpi (Global Payments Innovation), and instant payment networks are examples of recent technological developments that have made it possible to speed up the processing of payment transactions in modern contexts. It also reduces operational expenditures and enhances liquidity management, all of which contribute to a speedier settlement time [19].

Because of the risk of fraud, hacking, and unauthorised access, international payment systems need to have a very high level of security. Encryption, multi-factor authentication, and tokenization are some of the security measures that are implemented to ensure the safe transmission and storage of sensitive information. It is possible to put a halt to illicit activities by implementing stringent anti-money laundering (AML) and "know your customer" (KYC) measures.

Standardization and interoperability are extremely important for ensuring that worldwide transactions go without any hitches. Initiatives such as ISO 20022, which is a

global messaging standard, harmonise payment messages across various systems. This reduces the complexity of the process and increases its efficiency. Clearing and settlement processes that are compatible are made possible thanks to interoperability, which is beneficial for both businesses and customers.

It is absolutely necessary to show proper respect for international regulatory frameworks and norms. Laws pertaining to the prevention of money laundering (AML), the reduction of funds going to terrorist organizations (CTF), and the security of personal information must all be adhered to by international payment systems. Regulatory control ensures transparency, confidence, and the suppression of unlawful financial activities [20]. Regulatory control also ensures that illegal financial activity will not occur.

The use of cutting-edge payment systems has the potential to broaden access to formal financial services. Individuals and companies located in underserved areas now have access to financial services thanks to the proliferation of mobile payment solutions and digital wallets. International payment systems have the potential to overcome the gap in financial resources by delivering payment options that are both accessible and inexpensive.

The implementation of cutting-edge technology presents a number of opportunities for improvement for international monetary exchange systems. When it comes to transaction processing, blockchain and distributed ledger technology (DLT) provide a solution that is secure, open, and very efficient. There are now more choices for making international payments thanks to cryptocurrencies and central bank digital currencies (CBDCs), which may result in reduced fees and a sped-up processing time [21].

It is absolutely essential for efficient international payment systems that financial institutions, payment service providers, governments, and international organizations collaborate with one another. The ability to work together to overcome regulatory obstacles, improve procedures, and encourage innovation is a significant benefit of collaborative initiatives. Partnerships between the public and private sectors as well as worldwide efforts not only make it easier to exchange information but also foster an atmosphere that is beneficial to the development of improved payment methods.

User-friendly interfaces, faster processes, and real-time tracking tools are some of the ways in which international payment systems make the shopping experience better for the end user. Providing solutions that are easy to use and comfortable for users reduces

resistance, helps build trust, and boosts confidence in international commercial transactions. The continuous pursuit of innovation and development is what guarantees the fulfilment of the needs of the customer.

When analysing and putting into practice international payment systems, modern conditions demand that careful attention be given to efficiency, security, standardization, regulatory compliance, financial inclusion, new technologies, cross-border collaboration, and customer experience. It is crucial to adapt and innovate in order to keep up with the rapid advancements in technology and the growing volume of global business transactions in today's globalised society. This is necessary in order to meet the shifting needs of both businesses and customers.

Analysis and implementation of contemporary international payment systems involve careful consideration of a number of important factors, including efficiency, security, standardization, regulatory compliance, financial inclusion, developing technologies, cross-border collaboration, and consumer experience. It is essential to remain flexible and creative in order to fulfil the ever-evolving demands of businesses and customers in a world that is becoming increasingly globalised. The rate of technological advancement and the volume of international business transactions are both expected to continue to rise. It is very necessary to implement cutting-edge international payment systems in order to meet the rising demand for international financial dealings that are completed more quickly, at lower costs, and with increased levels of safety. However, in order for these payment systems to be effectively deployed, there must be collaboration between the many parties involved, advancements in technology, and compliance with the relevant laws. As the financial services industry evolves, it will be essential to handle the challenges posed by new payment methods as well as the opportunities that they present [22]. Only then will it be possible to satisfy the needs of clients throughout the globe and contribute to economic growth.

From the system of bartering goods and services, international monetary exchange had to go quite a way before it could reach its current state, which is dominated by digital payment methods. The international payment systems have become increasingly difficult as a direct result of the proliferation of globalisation and cross-border business, as well as the growing need for payment methods that are simultaneously faster, less costly, and more reliable. In this paper, the challenges and opportunities that the company is presently

confronted with are analysed, and these topics are discussed in conjunction with the current state of the worldwide payment systems. One of the most significant challenges that international payment systems must contend with is the high cost and extended processing time associated with transactions involving multiple countries. As a result of the slow and inefficient characteristics of the older payment channels, such as correspondent banking, there are delays in transaction times and increased expenses associated with those transaction times [23]. On the other hand, if new payment systems like blockchain and distributed ledger technology were to become more widespread, solutions to these concerns may become available. Examples of payment systems based on blockchain technology that offer guarantees of safety and transparency, as addition to providing transactions that are both faster and less costly. A further obstacle that must be overcome by international payment systems is the expanding scope of applicable regulations. New restrictions are being implemented by governments and regulatory authorities in an effort to prevent money laundering, the financing of terrorist organizations, and other types of financial crimes. While these restrictions are very important, it is possible that they may result in an increase in expenses and an additional strain for the payment systems. Because of this, it is absolutely necessary for payment systems to keep up with the latest advancements in regulatory requirements and to guarantee that they are in compliance with them.

The emergence of digital currencies such as Bitcoin carries with it the possibility of bringing about the collapse of existing payment systems. Digital currencies, which are still in their infancy, offer a peer-to-peer payment method that is both speedy and economical. This mechanism is decentralised, and it allows for payments to be made directly between users. However, in addition to their benefits, they also have risks related to security, regulatory compliance, and price volatility. Because of the critical role that international payment systems play in today's economy, it is imperative that new payment systems be put into place as soon as possible in order to meet the growing demand for cross-border transactions that are more secure, less expensive, and completed in a shorter amount of time [24]. The implementation of these payment systems requires the collaboration of a wide variety of stakeholders, including customers, financial institutions, technology vendors, and regulators, among other parties. The incorporation of contemporary international payment systems is driven by developments in technology such as distributed ledger

technology and blockchain technology, amongst others. These technologies have the ability to usher in a new era in the manner in which international financial dealings are carried out. In particular, the technology behind blockchain can provide a decentralised, foolproof, and open method for processing international financial transactions. This technology allows for settlement to take place in a manner that is nearly immediate, it lowers the cost of transactions, and it does away with the need for middlemen.

Blockchain is not the only contemporary payment system that is being implemented to address the demand for quicker and more efficient international financial dealings. Other modern payment systems are also being deployed. In the field of financial services, for instance, the implementation of application programming interfaces, or APIs, is gaining a lot of traction recently. The use of application programming interfaces (APIs) enables the integration of a variety of payment systems and makes it possible to conduct transactions across international borders with ease. Regulators play a crucial role in the process of putting in place contemporary international payment systems, which is why this work is being done with their assistance. The Financial Action Task Force (FATF) and other regulatory bodies are now working to formulate new rules and regulations in order to guarantee the safety and conformity of these payment systems. Financial institutions are required to go by a set of rules in order to do their business in an atmosphere that is safe and secure [25].

Although international payment systems play an essential part in easing the burdens placed on businesses engaged in international commerce, they are not without the potential to bring about unintended consequences. The development of cutting-edge international payment systems is not without its fair share of challenging roadblocks. The absence of uniformity across the many different payment systems is one of the most major challenges that might be encountered. This lack of uniformity leads to complexity, which, in turn, boosts the chance of mistakes and fraud being committed. Additionally, the compatibility of different payment methods is still a major worry, which can lead to the fragmentation of the market as well as inefficiencies in the functioning of the market. There are many different kinds of intermediaries, many of which are utilised often in international financial systems. Some examples of these intermediaries include payment processors, clearinghouses, and correspondent banks. Fees are frequently required to be paid to each individual intermediary, which can lead to an increase in the total cost of engaging in international financial

transactions. In addition, the challenge of navigating different payment systems, currencies, and regulatory frameworks can increase administrative hassles and enhance transaction costs for businesses who are engaged in worldwide trade. When companies participate in international trade, they frequently find themselves in a position in which they need to convert currencies in order to settle payments. This is because different countries use different currencies. The inability of businesses to properly estimate their expenditures and revenues is a direct result of variations in foreign exchange rates, which can contribute to currency conversion risks. These fluctuations can make it difficult for businesses to accurately forecast their financial outcomes. This uncertainty can lead to volatility, which in turn can have an effect on the profitability of international trade activities.

When dealing with international payment systems, it is possible for there to be a delay in the settlement of transactions. This is especially true when taking into account the various time zones and business hours involved. These delays can impair cash flow management for organisations who are engaged in worldwide commerce, potentially generating interruptions in the supply chain and damaging commercial relationships. Regulations pertaining to anti-money laundering (AML) and know-your-customer (KYC) are only two of the many types of regulatory requirements that apply to international payment systems. For businesses, particularly smaller ones with less resources, complying with these standards may be a costly and time-consuming endeavour, especially if they are newer. The capacity of enterprises to participate in international commerce can be hindered when strict regulatory frameworks are in place. This can result in the creation of barriers to entry. It's possible that enterprises located in underdeveloped nations won't have access to some international payment systems or won't be able to afford their fees. Their capacity to fully engage in global commerce may be hindered as a result of this lack of access, which in turn may restrict their market reach and their potential for growth. Eliminating the digital gap and expanding access to financial services are two of the most important steps that need to be taken in order to guarantee equal participation in international commerce [26].

The development of global payment systems has had a huge impact on the landscape of worldwide commerce since these technologies have made global transactions more straightforward and expedited them. The following is a list of significant developments that have occurred as a direct result of the proliferation of international payment systems:

1) increased productivity: The process of doing business across international borders has become more simplified and less time consuming as a result of the proliferation of international payment systems. In the past, making foreign payments was sometimes a tedious and laborious process that was often subject to the involvement of a number of different intermediaries. As a result of the development of electronic payment systems like SWIFT (Society for Worldwide Interbank Financial Telecommunication), PayPal, and other fintech solutions, it is now possible to carry out financial transactions in a more expedient and risk-free manner.

2) globalisation: International payment systems have played a significant role in supporting globalisation by making it easier for firms and individuals to engage in commerce across boundaries. Because of these systems' ability to ensure a smooth flow of monetary transactions, businesses have been given the opportunity to extend their operations across international borders and enter new consumer markets [27].

3) cost savings: The development of international payment systems has led to a reduction in the prices of goods and services traded across international borders. Traditional means of payment, such as bank drafts or letters of credit, sometimes resulted in considerable fees and administrative costs being expended. These procedures have been greatly simplified because to the introduction of electronic payment systems, which has led to a reduction in the transaction costs incurred by both consumers and enterprises.

4) currency exchange: The process of exchanging currencies has become more easier as a result of international payment networks. They provide methods for converting one currency into another at competitive rates, which makes it easier for businesses to engage in cross-border commerce without the need for multiple currency accounts or foreign exchange middlemen. This makes it simpler for firms to engage in international business [28].

5) risk mitigation: Because foreign payment systems now feature extra safety procedures, the risk of fraudulent activity and payment conflicts arising from international business transactions has decreased. This has resulted in a drop in the likelihood of fraudulent activity and payment disagreements coming from international business transactions. These methods instil more confidence not just in purchasers but also in vendors, which in turn increases trust while simultaneously reducing the likelihood that a vendor would not pay or engage in fraudulent activity. Some of the features that are included in

these systems include encryption, authentication, and monitoring in real time. These are just a few instances of the qualities that are included in these types of systems.

6) access to new markets: As a result of the expansion of international payment systems, businesses now have access to a wider variety of alternatives that were previously unavailable to them in order to penetrate markets that were previously inaccessible to them. As a consequence of the introduction of these systems, which enable secure and efficient ways of money transfer, trade with nations that were historically regarded to be difficult to do business with due to limited banking infrastructure or regulatory constraints has been made simpler. This is due to the fact that these systems have made it possible to send and receive large sums of money in a timely manner [29].

7) e-commerce and other forms of digital trade: E-commerce and other types of digital trade have seen phenomenal growth in recent years, which can be attributed in large part to the emergence of worldwide payment systems that paved the path for this growth. These processes, when combined with advancements in technology and logistics, have led to the emergence of a global marketplace in which it is possible to purchase and sell goods and services online in a manner that is easy. This marketplace allows for cross-border transactions to take place.

8) increased convenience and quickness: Domestic payments are becoming more secure, expedient, and user-friendly as a result of recent breakthroughs in technology. In addition, it is now possible to make domestic payments twenty-four hours a day, seven days a week. Because of this, it is now much simpler for businesses to take part in commercial activities that take place on a global scale, and it is also much simpler for consumers to complete financial transactions.

Overall, the global payment systems that are available today have had a significant impact, leading to a change in the basic manner in which international commerce is conducted. They have increased efficiency, lowered prices, cut risks, and broadened access to global markets. As a direct result of this, they have played a significant part in the development of the current environment of international commerce [30].

The ability of international payment systems to facilitate financial transactions between parties located in different countries in a way that is both safe and efficient is an essential component in the success of international trade. These payment systems supply the

essential infrastructure and methods for companies to engage in international commerce, so making a contribution to the expansion and development of the global economy.

The trading of products and services across international borders, which frequently entails the use of distinct national currencies and economic structures, is known as international commerce. Without reliable payment systems, operating international business would be a difficult task that would take a lot of time and would be fraught with a number of hazards and inefficiencies.

The development of international payment systems has resulted in a number of advantages that encourage and facilitate international commerce. In the first place, they make it possible for buyers and sellers to fulfil their financial commitments in a dependable and hassle-free manner. These systems guarantee that payments are processed promptly, which supports the seamless movement of products and services across international boundaries. They do this by facilitating speedy and secure transfers of monies [31].

International payment methods contribute to the reduction of risks associated with currency conversion. When firms are able to effectively convert currencies, they are better able to handle the risks associated with swings in exchange rates and may engage in international commerce with increased levels of confidence. This helps to build trust and encourages firms to enter new markets, broaden their client base, and form relationships with companies in other countries.

E-commerce and other forms of digital trade have been helped along by the development of international payment systems. Because online platforms bring together customers and sellers from all over the world, it is very necessary to have payment methods that are both safe and effective for the transactions to go off without a hitch. These systems make it possible for consumers and businesses to engage in international e-commerce by offering safe online payment gateways and solutions for mobile payments. This stimulates economic growth and increases the number of options available in the market. The use of digital payment systems in international trade has resulted in greater efficiency, cost savings, worldwide accessibility, enhanced security, cross-currency transaction capabilities, real-time tracking, and integration with e-commerce. These benefits have been brought about by the use of digital payment systems. This has completely changed the way in which companies conduct transactions across international borders, making them much quicker,

more secure, and available to a far greater variety of enterprises and customers all around the world.

Even before COVID-19, there has been a continuous transition to digital payments, which might eventually result in a world without currency. Examples of this trend include the rising usage of texting, QR codes, and tapping mobile phones. From 2020 to 2025, there will be a rise in global cashless payment volumes of more than 80%, from over 1 trillion transactions to approximately 1,9 trillion, and this number will almost treble by 2030.

Africa and Europe will have slower growth than Asia-Pacific, where the number of cashless transactions will increase by 109 percent until 2025 and then by 76 percent from that year through 2030. Digital banking, more broadly, already had been expanding in recent years, of course, and the pandemic only served to put that transition on a fast track as in-person branch visits fell sharply in most countries. Moreover, almost all respondents plan to use digital banking channels in the future. In the US, a sizable share plan to reduce their visits to branches even after the pandemic abates.

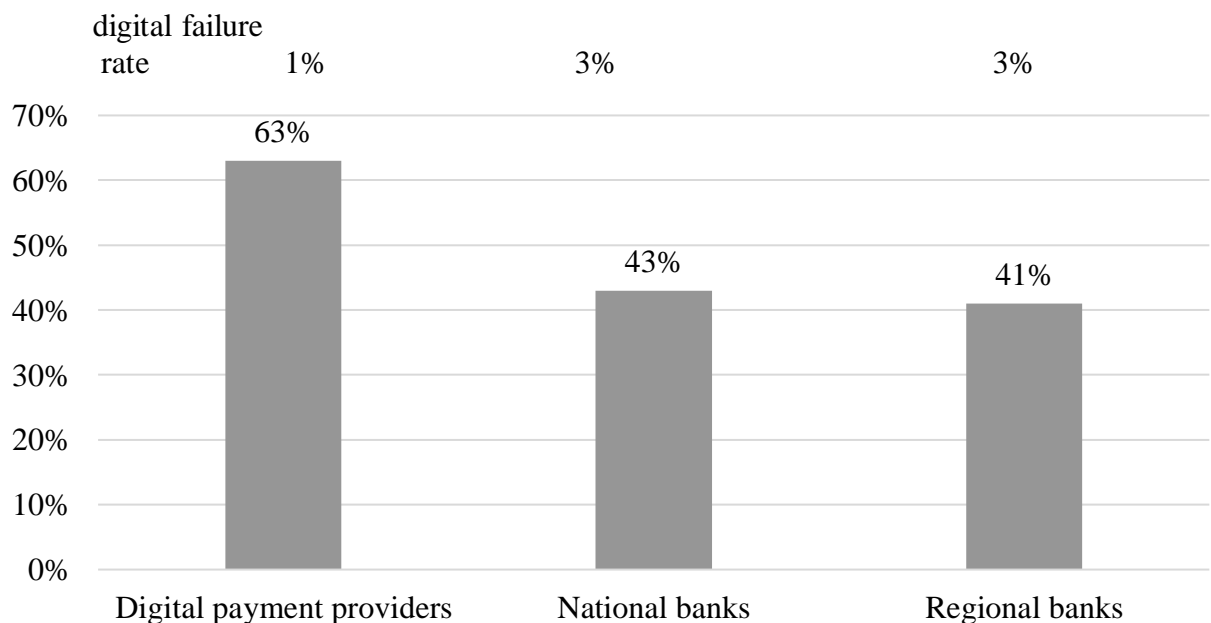


Figure 2.1 – US customers rated digital payment providers more loyally than banks when it came to money transfers

Source: [80]

In addition, international payment methods encourage both the participation of and accessibility to the financial system. They do this by giving individuals and organizations,

regardless of their location or size, with access to the essential payment infrastructure, which enables them to take part in global commerce. Small and medium-sized businesses (also known as SMEs) and entrepreneurs are given the ability to compete on an international scale as a result of this, which helps to stimulate economic growth and the creation of new jobs [32].

2.2. Ways TNCs implement international payment systems

Multinational corporations (MNCs), also referred to as transnational companies or multinational enterprises (MNEs), hold a significant position in the contemporary global economy. Multinational corporations exert a substantial influence on global commerce, capital movements, technological progress, and financial growth due to their cross-border operations. Transnational corporations are distinguished by their capacity to initiate and oversee commercial operations that span international boundaries, utilising their assets, proficiency, and connections to generate worth on a worldwide level. Multinational corporations engage in diverse sectors such as manufacturing, finance, technology, retail, pharmaceuticals, and other domains. Their motivation stems from the desire to achieve growth, expand their market reach, and gain access to resources, with the ultimate goal of leveraging their comparative advantages and penetrating new consumer segments. The capacity to coordinate and integrate activities across a global network is a distinctive feature of transnational corporations. Sophisticated supply chain management systems are implemented to optimise production, sourcing, and distribution processes, with the aim of achieving efficiency, cost-effectiveness, and responsiveness. Transnational corporations aim to attain competitive advantages in the global market by capitalising on economies of scale, sharing knowledge and best practices, and centralising decision-making.

Global economic environment is shaped by transnational corporations, which are dynamic and significant enterprises that cross national boundaries. They are crucial participants in global commerce, investment, and economic growth because to their capacity to operate internationally, make use of resources, and promote innovation.

Transnational corporations are essential to today's globalised economy for promoting commerce and economic prosperity. These businesses traverse international boundaries and carry out transactions in several nations. The existence of reliable global payment systems is one of the main elements that makes it possible for multinational businesses to operate seamlessly [33].

In order to ease financial transactions between entities based in various countries, there are systems in place called international payment systems. In order to facilitate international corporate activities, these systems are crucial for multinational corporations for a number of reasons, including:

Facilitating cross-border transactions: International transactions that transnational corporations participate in include the acquisition of products and services, the payment of employees and suppliers, and the repatriation of profits. To ensure the seamless transfer of money across borders, international payment systems offer a safe and effective way to perform these transactions.

Ensuring currency conversion: Multinational corporations frequently conduct business in several nations, each of which has its own currency. International payment systems offer smooth currency conversion, enabling businesses to accept payments in one currency and convert them into the required currency in accordance with their operational needs. This adaptability lowers the risk of currency fluctuations and improves financial management.

Mitigating transaction risks: International payment systems employ various security measures and protocols to safeguard transactions from fraud and unauthorised access. These systems provide encryption, authentication, and other protective measures to ensure the confidentiality and integrity of financial information. This level of security is crucial for transnational companies dealing with substantial transaction volumes and large sums of money.

Enhancing speed and efficiency: Timeliness is essential in cross-border commercial dealings. The processing and settlement of cross-border payments are sped up by international payment systems using technical improvements. These technologies eliminate wait times and provide international businesses quicker access to their cash through automated procedures, electronic transfers, and real-time tracking.

Supporting business expansion: Multinational corporations are always looking to broaden their worldwide reach. International payment systems make it possible for businesses to establish and maintain financial ties in multiple nations, which facilitates this expansion. These systems offer the framework required for businesses to create overseas bank accounts, get access to local financial services, and streamline their worldwide financial operations.

Regulation compliance: International businesses are subject to a variety of intricate regulatory systems. To guarantee compliance with anti-money laundering (AML) and know-your-customer (KYC) laws, international payment systems integrate compliance procedures. These solutions aid businesses in carrying out their legal responsibilities and upholding the integrity of their international financial transactions.

Access to global markets: International payment systems act as a gateway to global markets for transnational companies. By providing a seamless and reliable means of conducting cross-border transactions, these systems enable companies to enter new markets, serve international customers, and establish strategic partnerships worldwide. This access to global markets is vital for the growth and sustainability of transnational companies [34].

Transnational corporations adopt a variety of techniques that allow them to adapt to the local conditions while keeping a global view in order to successfully implement their operations across a variety of markets. In the following paragraphs, we shall investigate some implementation tactics that are utilised often by multinational corporations.

Standardization and localisation: When conducting business on a global scale, multinational corporations frequently seek a middle ground between standardization and localisation. Standardization is the practice of preserving consistency in products, procedures, and branding across a variety of markets. This makes it possible to achieve economies of scale and improves worldwide brand awareness. On the other hand, localisation refers to the process of adapting both goods and marketing techniques to local markets in order to satisfy the unique requirements and preferences of those markets. In order to find the optimal middle ground between standardization and localisation, businesses must first do in-depth research on a variety of aspects, including economics, politics, and cultural norms.

Collaboration in the form of joint ventures and strategic alliances: Joint ventures and strategic alliances are common types of partnerships that multinational corporations create with local partners in order to successfully manage the complicated market dynamics that they face. Through these relationships, one can have access to specialised local knowledge, distribution networks, and regulatory experience. Multinational corporations can circumvent obstacles to entrance and obtain a competitive edge in new areas if they form partnerships with organisations that are already well-established in those countries. Additionally beneficial to all parties involved, technology transfer and information exchange can be facilitated through joint ventures, strategic alliances, and other types of business partnerships.

Management of the global supply chain: Multinational corporations rely heavily on effective management of the global supply chain to ensure the seamless movement of goods, services, and information across international borders. They do this so that they may optimise their logistics, lower their expenses, and improve their customer service, and they do this by strategically positioning their manufacturing sites, distribution hubs, and warehouses in different nations. An effective management of the supply chain makes it possible to make deliveries on time, cuts down on the amount of time needed for lead times, and guarantees a consistent supply of products throughout many markets [35].

Acquisition of talent and development of talent: Creating a workforce that is both varied and talented is an absolute necessity for firms that operate on a global scale. They put into action several tactics with the goal of attracting, recruiting, and cultivating talent from a variety of places. In order to accomplish this goal, you may need to implement training programs, leadership development initiatives, and cross-cultural exchange programs. Multinational corporations are better able to manage their operations in a variety of markets, make use of local experience, and foster a diversified corporate culture when they invest in the development of a global talent pool.

Integration of technology: Multinational corporations often make use of various forms of technology in order to improve the efficiency of their business operations and to strengthen their capacity for international communication. They use enterprise resource planning (ERP) systems, cloud computing, and data analytics technologies to facilitate smooth coordination and decision-making. Integration of technology not only enables real-

time monitoring of performance, but also standardization of procedures and information exchange across teams who are located in different geographic locations.

It is essential to keep in mind that the business tactics utilised by multinational corporations are likely to differ not only according to the nature of the company's operations but also the sector in which they operate, as well as the market circumstances in which they operate. The capacity to be flexible and adaptable is essential to the effective execution of strategies in a variety of foreign situations [36].

An example of a TNCs that utilises the implementation of international payment systems in their business is Apple Inc. Apple Inc. is a global technological firm based in the United States that is best known for developing the iPhone, iPad, and Macintosh computer lines, Apple Watch and more. With a market capitalisation of over 2 trillion dollars, Apple is not only one of the largest firms in the world but also one of the greatest enterprises overall. Apple provides a wide range of services, some of which bring in money for the company.

Apple Pay is a digital payment and mobile wallet service that Apple has created and offered as one of its many products. Apple Pay is available on iOS and macOS devices. Apple Pay enables customers to make purchases in a safe and simple manner using their iPhone, Apple Watch, iPad, or Mac computers, as well as other Apple products that are compatible with the service. Apple Pay was first introduced in 2014, and since then, it has amassed a large user base and developed into a well-liked way of payment for millions of people all over the world [37].

To guarantee safe access, the user's device must first be authenticated using techniques like Touch ID, Face ID, or a passcode before they can use Apple Pay.

When a customer makes a purchase at a supported retailer or on an online platform, Apple Pay takes the token that has been saved and securely sends it, together with other transactional information like the cost of the purchase and the merchant's data, to the payment network. The payment network gets the token and transaction information, validates the token's authenticity, and makes sure the user's device is approved for the transaction before approving the token. Additionally, it could carry out additional security checks to thwart fraud. In order for the card issuer to authorise the transaction, the payment network sends the token and transaction data. In addition to confirming the token's validity,

the card issuer also confirms the user's account status, the amount of accessible cash, and any transaction-related risk factors.

The payment network informs Apple Pay if an authorisation has been granted or denied based on the card issuer's answer. A dynamic security code is generated by Apple Pay for enhanced security if the transaction is accepted, and the payment is then completed.

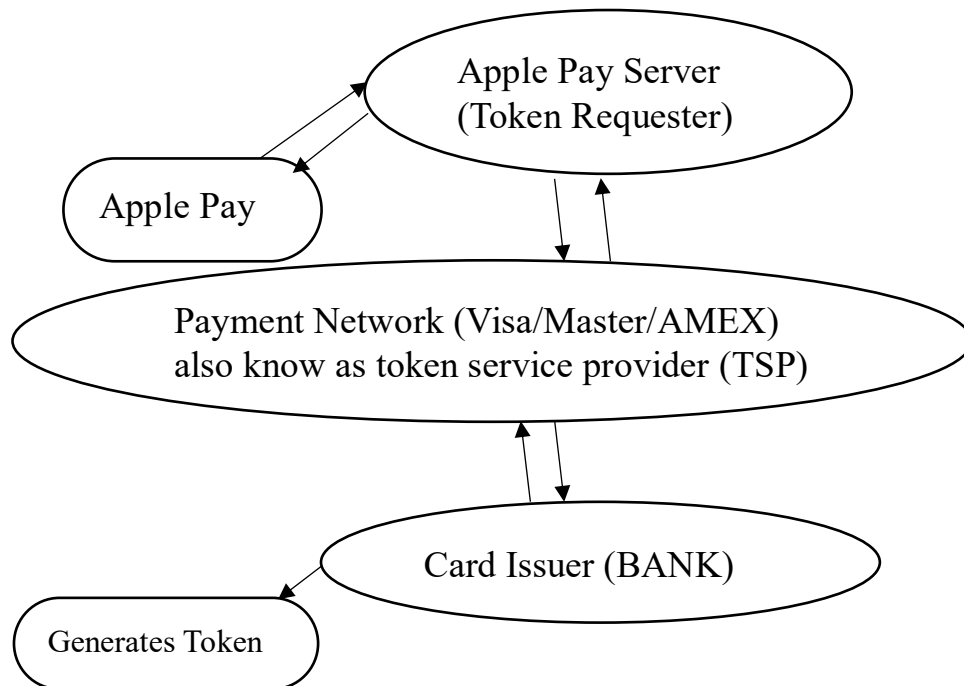


Figure 2.2 – The token requester, payment network, and card issuer all work together to complete Apple Pay in a quick and secure manner.

Source:[79]

Apple Pay makes use of a technology known as near field communication (NFC), which enables users to make contactless payments by merely holding their smartphone in close proximity to a point-of-sale terminal that is compatible with Apple Pay. In addition, Apple Pay allows users to make purchases within apps as well as online, creating a streamlined experience for making payments across a variety of platforms.

Apple Pay requires customers to connect their credit, debit, or prepaid cards that are compatible with the service to their Apple Wallet before they may use the service. The service is compatible with the most popular payment networks and collaborates with a wide variety of financial institutions all around the world. Apple Pay produces a one-of-a-kind token for each transaction when it is used to make a purchase. This ensures that the user's

card data are not shared with the retailer, which improves the system's overall level of security.

The priority that Apple Pay places on protecting users' personal information and financial data is one of its defining characteristics. The user may authenticate themselves with the service using device-specific security features such as Touch ID or Face ID, which are only two of the many levels of protection that are included into the service. The information about the card is not saved on the device or on the servers that are run by Apple, which adds an additional degree of privacy.

Apple Pay now offers a wide variety of extra services in addition to its original purpose of facilitating traditional financial transactions. These include the ability to save and utilise loyalty cards, person-to-person payments through the Messages app, and connectivity with transit systems in some locations, which allows users to pay for public transportation using their Apple Pay accounts.

Apple Pay is gaining popularity rapidly, which has resulted in an increase in the number of retailers, both offline and online, that are willing to accept it as a form of payment. Because of its widespread acceptability, its user-friendliness, and the robust security measures it offers, it has become a popular option for both customers and business owners [38].

There are a number of other mobile payment methods available that are comparable to Apple Pay. The following are some of the more well-known examples:

- 1) One of the most widely used forms of online payment is Google Pay, which was developed by Google. Users are able to conduct transactions on their mobile devices in a way that is safe, quick, and easy thanks to this functionality. The manner in which individuals manage their financial transactions has been fundamentally altered as a result of the advent of Google Pay, which has a rich feature set and is widely available. Google Pay includes a variety of features that improve the overall user experience and simplify financial transactions, including the following: Users can link their bank accounts, credit or debit cards to their Google Pay account, which enables them to make mobile payments in stores, online, or within apps with just a few taps on their smartphones. Additionally, Google Pay enables users to send and receive money instantly to friends, family, or colleagues by using their phone contacts. It makes it easier to divide up expenditures, pay rent, and reimburse

one another for outings and travel costs. Users are able to make contactless payments at NFC-enabled payment terminals by simply tapping their mobile devices with Google Pay, which is made possible by the technology known as Near Field Communication (NFC). In addition, Google Pay connects with a variety of loyalty programs, making it possible for users to earn and redeem points in a streamlined manner. In addition to this, it tailors deals and discounts to the interests of individual users by analysing their purchasing habits and the products they often purchase.

Google Pay is accepted worldwide on millions of Android smartphones. Depends on country and supporting financial institutions.

2) PayPal, founded in 1998, has millions of users and businesses worldwide. Linking bank or credit cards to PayPal creates an account. Users are able to link their bank accounts, credit cards, or debit cards to their PayPal accounts. Users are also able to send and receive money from friends, family, or other contacts via email or mobile phone numbers. PayPal offers a variety of services to both individuals and businesses. Some of these services include the ability for users to make online payments in a secure manner, the ability to link their bank accounts to their PayPal accounts, and the ability to link their bank accounts to their PayPal accounts. This function makes it possible for users to send and receive money in a simple manner, removing the requirement for the use of real currency or cheques. In addition, PayPal provides numerous options for businesses and merchants, such as payment processing, billing, and recurring billing. These services make it possible for companies to accept online payments, monitor transactions, and optimise their financial operations. In addition, PayPal offers a credit service that enables customers who meet certain criteria to make purchases and pay for them over time using interest-free payment choices. The variety of payment choices available to customers is increased by virtue of this functionality.

3) Venmo, a popular peer-to-peer (P2P) mobile payment network, lets users send and receive money using their phones. Users of the popular mobile payment service Venmo are able to electronically transfer and receive money through the usage of the Venmo app. The year 2009 marked the beginning of its establishment, and recent years have seen its rise to prominence across the United States. Users are able to send and receive money using their mobile devices when they sign up for an account with the peer-to-peer payment network Venmo. The United States is Venmo's primary market, with millennials and other younger

groups constituting a significant portion of its user base. Venmo provides its customers with an intuitive graphical user interface and the ability to link their bank accounts, credit or debit cards, and other payment methods in order to expedite financial transactions.

Simply simply providing the recipient's username, email address, or phone number, users are able to quickly and effortlessly transfer money to one another, whether it be to friends, family, or corporations. Venmo encourages users to engage in social interactions by enabling them to like, comment on, and share money transactions with their respective networks [40].

Samsung Pay is a mobile payment and digital wallet service developed by Samsung Electronics. It allows users to make contactless payments using their Samsung mobile devices, including smartphones, smartwatches, and tablets. This feature is available to consumers worldwide. Since its introduction in 2015, Samsung Pay has been made available in a number of countries across the world. It has quickly acquired popularity because to its ease of use, high level of security, and extensive interoperability with a variety of payment terminals. The ability to make contactless payments is made possible by Samsung Pay's utilisation of the Near Field Communication (NFC) and Magnetic Secure Transmission (MST) technologies. This dual technology enables customers to make payments at terminals that support near field communication (NFC) as well as regular magnetic stripe card readers. Because it is compatible with both contactless and contactless magnetic stripe readers, Samsung Pay offers better flexibility and compatibility than other mobile payment systems because it can be used at a larger range of payment terminals.

The convenience of using Samsung Pay is one of the service's most distinguishing characteristics. Users may easily add their payment cards to the Samsung Pay app by scanning or manually inputting the card data. This can be done in a couple of different ways. Because the software saves the card information in a virtual wallet in a safe manner, there is no longer a requirement to carry actual cards. When users want to make a payment, they may pick the card they want to use from inside the app, then verify the transaction with biometric verification (such as their fingerprint or facial recognition), and then finish the transaction by holding their mobile in close proximity to the payment terminal. The services offered by Samsung Pay are now available in a wide variety of nations, such as the United States of America, South Korea, Australia, the United Kingdom, and many more. The firm

is continually forging agreements with financial institutions, payment networks, and retail establishments in order to broaden its customer base and provide users all over the world with a streamlined payment process [41].

Conclusion for chapter 2

The investigation and implementation of global payment systems in the context of modern circumstances have had a considerable impact on the operations of multinational corporations as well as on commerce on a global scale. The developments in payment technology, the growing relevance of digital transactions, and the requirement for smooth cross-border transactions have all contributed to the substantial changes that have taken place in the global financial scene in recent years.

International payment systems, which operate as efficient and trustworthy methods for the conduct of cross-border transactions, play a critical role in the facilitation of international trade. This is one of the systems' most important functions. The development of digital payment systems such as mobile payments and electronic wallets has made it easier for businesses to conduct transactions across international borders by removing the barriers of time, space, and money that previously existed in the process. Because the deployment of these technologies results in enhanced convenience, accelerated processing times, and better transparency, it makes it possible for transportation network companies (TNCs) to take part in global trade in a way that is both more simple and more effective.

Beyond its primary function of speeding up transactions, global payment systems have a far wider range of implications for commercial activity throughout the world. The installation of these technologies has been a big contributor to the growth of international markets since it has opened up new channels via which businesses are able to contact a consumer base that is spread throughout the globe. The establishment of safe and dependable payment infrastructure that encourages trust and confidence among international buyers and sellers has been a significant contributor to the growth of cross-border commerce and

investment. This has been made possible thanks to the important part played by international payment systems in this process.

As a method of improving the efficiency of their worldwide business operations, multinational firms have assumed a leadership position in the development of international payment systems. These systems are utilised by multinational businesses (TNCs) in order to efficiently manage complex supply chains, simplify transactions involving different currencies, and reduce the potential hazards involved with currency conversion. To further strengthen their position as market leaders, transnational corporations (TNCs) must prioritise the optimisation of their working capital, the reduction of their transaction costs, and the improvement of their cash flow management capabilities through the adoption of efficient payment systems. This is an essential aspect in enhancing their competitive advantage in the global marketplace.

Diverse approaches are utilised by multinational corporations (TNCs) in order to successfully establish international payment systems. Businesses often develop strategic partnerships with banks, payment service providers, and fintech startups in order to optimise their financial infrastructure. These alliances allow the businesses to use innovative payment solutions and assure a smooth integration. To protect sensitive payment information and reduce the likelihood of fraudulent actions and security breaches, transnational companies (TNCs) place a high priority on the deployment of comprehensive cybersecurity policies.

The investigation and implementation of global payment systems have brought about a dramatic revolution in international commerce and given multinational corporations the capacity to efficiently negotiate the complexities of the global market. This has made it possible for multinational corporations to compete more effectively in global markets. The deployment of these technologies has fundamentally altered the way in which businesses conduct international transactions. As a result, payment procedures have become more streamlined, trustworthy, and transparent as a result. As a result of the fast development of technology, it is anticipated that international payment systems will go through more evolution, which will lead to increased levels of productivity, accessibility, and creativity within the realm of international trade.

CHAPTER 3

DEVELOPMENT OF INTERNATIONAL PAYMENT SYSTEMS IN THE GLOBAL MARKET

3.1. Challenges and opportunities of international payment systems in the world's economy

The growth of global trade and commerce has been significantly aided by the establishment of several international payment systems, which have played an essential part in their facilitation. The development of worldwide payment systems has been propelled forward over the course of time by both the steady march of technological progress and the ever-increasing need for international financial dealings that are both quick and risk-free [42]. The founding of the Society for Worldwide Interbank Financial Telecommunication (SWIFT) in 1973 was a significant event in the progression of this development and is considered to be one of the most important milestones. SWIFT was the company that first standardised the messaging system that banks across the globe use to communicate with one another and safely trade financial information. This set the groundwork for international payment systems, making it possible for banks to transmit payments across borders using a format that was uniform across all of them.

The introduction of new forms of monetary transaction became possible as a direct result of the revolutionary effect that the internet has on the manner in which we carry out commercial transactions as a result of advances in technology. One famous example is the online payment system known as PayPal, which was established in 1998. PayPal initially concentrated on allowing online payments between people; however, the company swiftly expanded its services to appeal to companies and quickly became a popular means for international financial dealings.

The proliferation of online shopping has contributed significantly to the quickening pace at which international payment systems have been developed. Amazon and Alibaba, two of the largest online retailers in the world, each developed their own online payment

system, which they called Amazon Pay and Alipay, respectively, in order to facilitate smoother online transactions and increase their market share throughout the world. These platforms not only supplied safe payment options, but also provided extra services such as buyer protection and loyalty programs.

In recent years, blockchain technology has attracted a great amount of attention because to its potential to change international payment systems. As an alternate means of making financial transactions, the use of blockchain-based cryptocurrencies such as Bitcoin and Ethereum has gained popularity. They provide a number of benefits, including a quicker processing time for transactions, reduced transaction costs, and improved levels of transparency. However, problems with scalability, legal frameworks, and price volatility still need to be solved before broad adoption of this technology can take place.

In addition, the creation of real-time gross settlement systems, sometimes known as RTGS, has facilitated an increase in the speed and effectiveness of transactions involving several countries. Systems such as TARGET2 in the European Union, the Federal Reserve's Fedwire in the United States, and CHAPS in the United Kingdom enable immediate settlement of high-value payments, hence lowering the amount of time and expense involved with international transfers [43].

In addition, there have been developments in the field of mobile payments that have been incorporated into international financial systems. Mobile wallets, which enable users to make payments using their cellphones, have become more popular all over the world. Some examples of mobile wallets are Apple Pay, Google Pay, and Samsung Pay. These systems make use of the technology known as near field communication (NFC) or QR codes in order to make it possible for users to conduct transactions without physically touching the other party. This offers consumers both convenience and security. Regulatory initiatives to prevent money laundering and terrorist funding have also played a role in shaping the evolution of international payment systems. These initiatives have affected the development of international payment systems in a number of other ways as well. Guidelines and standards have been implemented by regulatory agencies such as the Financial Action Task Force (FATF) to protect the honesty of international financial dealings. Compliance standards, such as know-your-customer (KYC) and anti-money laundering (AML) procedures, have evolved into vital aspects of international payment networks. In general,

the growth of international payment systems has been driven by technical improvements, shifting consumer patterns, and the requirements of various regulatory agencies. The manner in which we conduct transactions across international borders has been fundamentally altered as a result of the implementation of these technologies, which has resulted in an increase in convenience, productivity, and safety in international business. As a result of the ongoing development of technology, significant advancements are likely to be made in international payment systems. These developments will pave the way for a global market that is more integrated and streamlined [44].

In today's interconnected global economy, transnational companies face unique challenges and opportunities when it comes to international payment systems. These systems form the backbone of financial transactions across borders, enabling companies to conduct business, facilitate trade, and expand their operations worldwide. However, they also present a range of complexities that must be navigated effectively. Understanding the challenges and opportunities associated with international payment systems is crucial for transnational companies seeking to optimise their cross-border financial operations. In order for multinational firms to successfully navigate the global financial environment, they need to be able to adapt to ever-changing regulatory frameworks, technological developments, and market dynamics. Navigating the global financial landscape requires transnational companies to adapt to evolving technologies, regulatory frameworks, and market dynamics. By addressing these challenges and seizing opportunities, companies can position themselves for success in an increasingly interconnected world challenge:

currency exchange and conversion: Because multinational organisations typically deal with different currencies, they face the difficulty of currency exchange and conversion on a regular basis. Exchange rates that are subject to wide swings can have a significant influence on the costs and profits associated with international business dealings.

restrictions on E-payment services: Restrictions on the international supply, use, and availability of e-payment services are among the challenges to global e-commerce.

compliance with regulations: The regulatory frameworks that regulate international payments differ from country to country due to the fact that different countries have different regulatory frameworks. Companies that operate on a global scale have a responsibility to ensure that they are in compliance with legislation pertaining to anti-money laundering

(AML), Know Your Customer (KYC), and penalties. Trying to satisfy all of these compliance obligations at once may be a challenging and time-consuming endeavour [45].

charges associated with international transactions: The use of international payment systems comes with a variety of associated charges, including fees, exchange rate spreads, and other expenses that can quickly build up, particularly in the case of large-scale financial dealings. In order for businesses to maximise the efficiency of their financial operations, the management of these expenses must be given considerable attention.

security dangers: International payment networks are vulnerable to a variety of cybersecurity dangers, such as fraudulent payments, data breaches, and unauthorised access. It is imperative that multinational corporations put in place stringent security protocols in order to safeguard critical financial information.

transactions that take place across international borders are susceptible to experiencing delays in the processing and settlement of payments as a result of the disparities in the banking systems, time zones, and correspondent banking connections that exist between the many financial institutions involved. These delays can have an impact on both the cash flow and the operations of the organisation [46] opportunities:

expanded access to new markets and countries: International payment systems allow multinational corporations to increase their access to new countries and countries all over the world, therefore enhancing their worldwide reach. They are able to engage in worldwide commerce and get access to foreign consumer bases, both of which can contribute to a rise in income and the expansion of their firm.

IMF and World Bank: The International Monetary Fund (IMF) provides short- and medium-term loans to help countries that are experiencing balance of payments problems and difficulty meeting international financial obligations. The World Bank focuses on long-term economic development and poverty reduction.

IMF loan: The International Monetary Fund (IMF) provides several sorts of loan facilities to countries based on their individual needs, such as immediate balance of payments need/emergency financial assistance, possible moderate short-term balance of payments needs developing owing to capital account pressures, and more [47].

operations that are simplified: Efficient international payment systems have the potential to simplify the financial operations of multi-national corporations. They have the

ability to automate payment procedures, therefore lowering the amount of human labor required and boosting the effectiveness of operations.

management of financial risk: International payment systems provide multinational corporations the opportunity to better control the financial risks that are connected with variations in currency values. They can reduce their exposure to the risks associated with foreign currency exchange by employing hedging measures, such as forward contracts or currency options [48].

Interlinking Payment Systems: The Bank for International Settlements (BIS) has published a paper on the topic of interlinking payment systems and the role of application programming interfaces. This research serves as a foundation for international financial transactions.

improved cash flow management: Effective international payment systems allow companies to manage their cash flows more efficiently. They can optimise liquidity by leveraging features such as real-time monitoring, cash pooling, and automated reconciliation.

Fintech solutions have evolved, which has resulted in the creation of unique payment choices and platforms. Innovation and fintech solutions go hand in hand. These technological breakthroughs, such as digital wallets, blockchain-based solutions, and mobile payment systems, may be utilised by multinational corporations in order to enhance their existing international payment procedures [49].

The precise future developments of international payment systems are difficult to foresee, however the following are some prospective trends and forecasts that may be made based on recent technological improvements and the dynamics of the market:

1) increased adoption of digital currencies: It is anticipated that the use of digital currencies, such as Bitcoin and other cryptocurrencies, will continue to see increased adoption rates. Transactions might be completed more quickly, securely, and cheaply with the use of central bank digital currencies (CBDCs), which is another possibility that could be investigated by central banks. These currencies could have a big influence on international payment systems.

2) integration of blockchain technology: Blockchain technology has the potential to transform international payments by offering transactions that are transparent, secure, and nearly instantaneous. It is possible that as the technology develops and its scalability

improves, there could be a rise in the use of payment systems based on blockchain technology. This would make international transactions easier and reduce the need for middlemen [50].

3) enhanced cross-border payment speed and efficiency: Conventional methods of making cross-border payments are typically time-consuming and costly since they involve many intermediaries and are subject to a variety of complicated regulations. Companies that specialise in financial technology (fintech) are working hard to find solutions to these problems by utilising technologies such as real-time gross settlement (RTGS), immediate payment systems, and open banking APIs. These developments are likely to result in international payment systems that are both quicker and more efficient.

4) application of artificial intelligence and machine learning in risk management: As payment systems continue to advance, there will be a greater focus placed on the prevention of fraud and the management of risk. In the future, artificial intelligence (AI) and machine learning algorithms will play a significant part in the detection and prevention of fraudulent transactions, the improvement of security measures, and the enhancement of compliance with regulatory standards [51].

5) increased collaboration between traditional financial institutions and fintech companies: Traditional financial institutions are becoming more aware of the need to innovate and adapt to the rapidly shifting environment. It is anticipated that the level of collaboration and partnership that exists between traditional financial institutions and fintech startups will expand. This will likely result in the creation of cutting-edge payment solutions that capitalise on the respective advantages of both industries.

6) expansion of mobile and contactless payments: Mobile payments have witnessed tremendous growth over the past several years, and this trend is projected to continue. Contactless payments are also predicted to continue their expansion. It is expected that mobile and contactless transactions will become the norm in international payment systems in the not-too-distant future. This will make it possible to make payments across borders in a way that is both easy and safe. The proliferation of smartphones and the development of technologies that enable contactless payments, such as near field communication, have both contributed to this trend.

7) standardization and interoperability: Efforts to build standardised protocols and frameworks for international payments will gather steam in the future. Interoperability is the capacity of two or more systems to operate together seamlessly. Initiatives such as ISO 20022 and SWIFT's gpi (global payments innovation) aim to provide standardised messaging formats and enhanced tracking capabilities. This will promote interoperability between various payment systems and make it easier to conduct transactions that are conducted across international borders.

It is essential to keep in mind that the rate at which these improvements will take place and the amount to which they will be adopted will be influenced by a variety of factors, such as legislative frameworks, technical breakthroughs, and consumer acceptability [52]. Indeed, the payments sector is experiencing a surge of innovation as a direct result of the emergence of new technology. The following are some of the most important technologies that are behind this innovation:

artificial intelligence (AI) and machine learning: Artificial intelligence (AI) and machine learning are transforming payment systems by making it possible to implement advanced fraud detection and prevention techniques. These technologies can analyse enormous volumes of data to find trends, abnormalities, and suspicious activity. As a result, security can be improved, and the number of fraudulent transactions may be decreased. In addition, chatbots and virtual assistants that are driven by AI are being used in order to give individualised help for customers and simplify the process of making payments.

blockchain and distributed ledger technology (DLT): Blockchain and DLT have the potential to alter payments by enabling secure, transparent, and decentralised transaction networks. This might make it possible for fewer parties to access financial data. They do away with the requirement for middlemen, make it possible for shorter settlement times, lower costs, and improve the ability to trace transactions. In addition, blockchain-based cryptocurrencies and stablecoins are gaining popularity as viable alternatives to conventional means of digital payment [53].

internet of things (IoT): The IoT is the primary force behind innovation in the payments industry since it enables linked devices to begin and complete transactions. For instance, frictionless payments may be made possible through the use of smart devices such as wearables, linked automobiles, and smart home appliances. Internet of Things (IoT)

devices that are equipped with payment capabilities may communicate with one another and begin transactions based on predetermined criteria, so opening up new avenues for payments that are both frictionless and convenient.

authentication via biometric technologies: The use of biometric authentication technologies, such as fingerprint identification, face recognition, and iris scanning, is becoming an increasingly common practice in payment processing systems. These technologies allow authentication that is both safe and easy, doing away with the need for traditional passwords and personal identification numbers (PINs). The usage of biometrics can improve a user's experience while also lowering the possibility of their identity being stolen or being accessed without authorisation [54].

tokenization: Tokenization refers to the process of replacing sensitive payment data, such as credit card information, with tokens that have their own individual identification symbols. Even if hackers manage to intercept these tokens, they will provide no useful information to them; as a result, the danger of data breaches will be considerably reduced. Tokenization improves data security and enables payments to be made in a way that is both smooth and safe across a variety of channels, including e-commerce, mobile payments, and in-store purchases.

payments made without touching a card: Technologies that allow for payments to be made without touching a card, such as Near Field Communication (NFC), are becoming increasingly common across the world. These technologies let users to make purchases by just tapping or waving their mobile devices or contactless cards near a point-of-sale terminal. In some cases, consumers may also pay by inserting their payment information into the device. Contactless payments provide a number of benefits, including expediency, convenience, and improved cleanliness, and they are rapidly being included into a variety of payment methods.

open banking and APIs: Open banking efforts and application programming interfaces (APIs) are encouraging cooperation and innovation within the payments industry. Open banking is a model that enables financial institutions to grant approved third-party providers access to their customers' financial data and enables these providers to start payments on customers' behalf. This model encourages the creation of novel payment solutions and services that bring additional value. APIs make it possible to integrate

disparate computer systems in a smooth manner, which paves the way for real-time money transactions and improves the quality of the user experience overall [55].

The COVID-19 epidemic has had a tremendous effect on worldwide payment networks, hastening the transition toward digital and contactless payment methods. The epidemic has resulted in a decrease in the usage of cash payments and has led to an increase in the use of digital and contactless payment methods. The move away from cash and cards and toward digital credit transfers is presumably being driven by a mix of continuing trends and developments connected to COVID-19. The epidemic has also added to the motives of central banks to establish central bank digital currencies (CBDCs), which stands for central bank digital currencies. Financial inclusion has been boosted as a result of the COVID-19 epidemic, which has led to a significant rise in the use of electronic payment methods along with the spread of formal financial services throughout the world. Around three quarters of individuals have used an account to either send or receive a digital payment, indicating that adoption of digital payment methods is rather widespread. The COVID-19 epidemic has sped up the transition to digital payment systems, which has improved the safety, speed, and cost-effectiveness of domestic financial transactions. As a result of these reforms, international payment systems have become more effective, user-friendly, and secure, which is to the benefit of individuals and economies all around the world [56].

A significant rise in the use of electronic payment methods has been attributed to the COVID-19 epidemic, which has occurred along with the spread of formal financial services throughout the world. Around three quarters of individuals have used an account to either send or receive a digital payment, indicating that adoption of digital payment methods is rather widespread. The move away from cash and cards and toward digital credit transfers is presumably being driven by a mix of continuing trends and developments connected to COVID-19. The epidemic has resulted in a decrease in the usage of cash payments and has led to an increase in the use of digital and contactless payment methods [57].

The COVID-19 epidemic has hastened the transition toward digital and contactless payment methods, which has led to an increase in the number of transactions that are processed using digital payment systems. During the pandemic, the following are some instances of digital payment methods that have witnessed increasing usage:

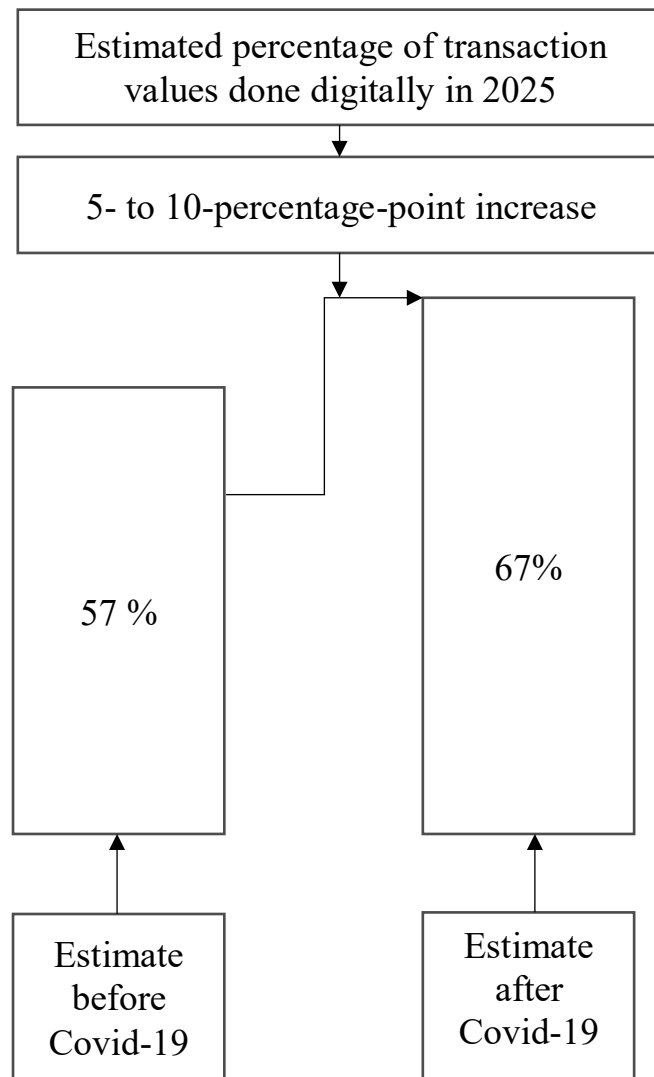


Figure 3.1 – Covid-19 is spurring faster adoption of digital payments.

Source:[58]

mobile banking: The epidemic has been a driving force behind a big growth in mobile banking, which has led to an increase in the number of customers utilising mobile apps to make payments and manage their accounts.

digital wallets: During the epidemic, customers have been searching for contactless payment solutions, which has led to a growth in the use of digital wallets like Apple Pay and Google Pay.

peer-to-peer payments: During the epidemic, customers have been looking for ways to transfer and receive money without having to physically interact with one another. Peer-to-peer payment systems, such as Venmo and Cash App, have experienced a spike in popularity as a result.

QR codes: Quick Response (QR) codes have quickly become a popular way of payment during the epidemic due to the fact that they enable contactless payments and are simple to employ [59].

buy-now-pay-later (BNPL): During the epidemic, consumers have been looking for methods to space out their payments over a longer period of time. BNPL services have witnessed a surge in usage as a result.

In conclusion, the COVID-19 epidemic has been responsible for a considerable increase in the utilisation of digital payment systems. These systems include mobile banking, digital wallets, peer-to-peer payments, QR codes, and BNPL services. These payment systems provide customers payment alternatives that are more easy and secure, while at the same time providing TNCs with the opportunity to profit from the greater efficiency and decreased risk associated with digital payments [60].

3.2. Advancements and improvements in international payment systems

In the context of a global economy that is becoming ever more interdependent on one another, the development and enhancement of international payment systems have attained a position of a position of a position of a position of a position of a position of a position of the utmost relevance. Significant adjustments have been made to the organisational framework of international payment systems as a direct consequence of the rapid development of new technologies, the alteration of the preferences of consumers, and the requirement for effective operations in international company. Because of these advancements, the methods that people and businesses utilise to conduct financial transactions have been completely disrupted and rethought from the ground up. Because of these advancements, it is now feasible to do business in a manner that is more expedient, secure, and risk-free [61].

It is generally acknowledged that the traditional ways of moving funds internationally, such as bank wire transfers, have lengthy processing delays, significant transaction costs, and a lack of transparency in their operations. On the other hand, ever with the introduction

of digital payment solutions, there has been a fundamental drive toward systems that are both more streamlined and inventive. This push has been going on for quite some time. This movement has been going on for a considerable amount of time.

Mobile payments, electronic wallets, and cryptocurrency transactions are just a few examples of the digital payment systems that have gained significant traction in recent years. Other examples include other digital payment methods. Consumers and companies alike now have the ability to easily accept these non-traditional forms of currency because to the widespread availability of smartphones and the convenience of conducting business online. Until recently, only commercial enterprises had access to this capability. These technologies provide a range of benefits, including the capability to complete transactions instantaneously, to do so at a low cost, and to do business across international borders without the need to utilise costly intermediaries [62].

In addition, the emphasis that has been focused on enhancing the speed and transparency of payments that are made across international boundaries has resulted in the creation of projects that will have an effect that can be described as nothing less than revolutionary. For instance, the SWIFT global payment innovation (gpi) service, which incorporates blockchain technology, has radically revolutionised the landscape of the industry of cross-border payments. The incorporation of features that enable real-time tracking, end-to-end transparency, and speedier settlements has assisted in alleviating some of the long-standing issues that have been associated with international financial transactions. As a direct consequence of this, these problems have been resolved successfully.

The significance placed on ensuring that individuals from all walks of life have access to financial services is another significant factor that is increasing the expansion of international payment networks. This is one of the main factors that is speeding the growth of international payment networks. There are a lot of people who don't have easy access to traditional financial services, especially those who live in places that are underserved and don't have any banks at all. This is especially true for those who have to rely on alternative methods to get their money. On the other hand, the development of mobile money and digital financial services has helped to narrow this gap, making it possible for previously excluded groups to engage in the economy of the world as a whole. These inclusive payment

alternatives have the potential to provide individuals more power, to promote economic growth, and to maintain financial stability [63].

These technological breakthroughs have made it possible to open a large number of doors, which have in turn led to the creation of new opportunities; nevertheless, in addition to this, they have also brought about a number of new obstacles. The global payment industry must continue to place a high priority on the safeguarding of sensitive client data, the stringent observance of applicable legislation, and the provision of effective data security. It is of the utmost importance to find a happy medium between the encouragement of innovation and the creation of robust safeguards in order to keep people's faith in the economy as a whole and the integrity of the financial system in particular. Finding this happy medium will help sustain the trust that people have in the economy. It is very necessary to do so in order to preserve the confidence that people have in both of these facets.

The expansion and enhancement of international payment systems have resulted in a paradigm change in the manner in which monetary transactions are carried out all over the world. This shift has been brought about by the globalisation of the economy. This transformation has resulted in a substantial number of positive outcomes. The proliferation of digital payment methods, the increased focus placed on efficiency across borders, and the ongoing push for financial inclusion have all contributed to the emergence of a new landscape. This new landscape was brought about as a result of various things. All of these different elements have had a role in the deterioration of the natural environment. As a direct result of this growth, both consumers and companies are now in a position to take advantage of increased convenience, speed, and accessibility. This is the case regardless of the type of transaction being conducted. It is anticipated that the process of development of international payment systems will continue as a result of the implementation of innovative technological solutions and the conclusion of issues brought about by the appearance of brand-new obstacles. This will lead to the establishment of a global financial ecosystem that is integrated in more ways and functions more effectively [64].

Technology advancements have been a critical contributor to the growth of international payment systems and have been a significant factor in the development of these systems. As a result, the expansion of international payment systems has been significantly aided by these technological advancements. This has been the case for some time now due

to the fact that technical developments have been a significant driving force behind the creation of these systems. The following is a list of instances of technological developments that have contributed to the advancement of international payment systems, along with examples of how these advancements have been put to use:

Technology innovation: The processing of payments is undergoing a transformation as a result of advances in technology, which has the effect of making domestic payments more secure, more expedient, and more convenient. Making payments within one's own nation is becoming a way that is more streamlined, expeditious, and easily accessible. These improvements are available at any time of the day or night [65].

Digital payment systems: Processing payments is now able to be carried out in a manner that is not only exceptionally effective but also rather cost-effective, all thanks to the proliferation of digital payment systems. In addition to this, the processing of payments can now accommodate an increased number of individuals [66].

APIs: Application programming interfaces, often known as APIs, have quickly risen to the top of the pile when it comes to improving workflow in situations that include many currencies without disrupting the procedures that are already in place. Nations are attempting to merge the systems that they already have in place in an effort to speed up the delivery of results. This is being done in an effort to reduce redundancy. The use of application programming interfaces, or APIs, enables real-time foreign exchange rates, which, in turn, makes the movement of money from beginning to end more quick, safe, and transparent. APIs may be used by a variety of different applications [67].

Emergent technologies: These four up-and-coming technologies are igniting a firestorm of creativity in the realm of the modernization of the technology used to process payments. Artificial intelligence (AI), blockchain, biometrics, and the Internet of Things (IoT) are some of the technologies that fall under this category.

To summarise, the spread of technical innovation, as well as digital payment systems, application programming interfaces (APIs), and evolving technologies, have been key contributors to the rise of international payment systems. This is the case with both well-established and emerging trends in the development of technology. As a result of these technological improvements, the processes that are used to make payments in a foreign currency are today safer, more efficient, and easier to use than they have ever been in the

past. This is to the advantage of the people and economies of every location on the world [68].

When it comes to dealings with currencies from other countries, a focus on promptness and effectiveness is of the biggest significance. The following is a list of some of the ways in which international payment systems have improved in terms of both their speed and their efficiency:

extended access: Extended access can enhance efficiency by reducing the length of transaction chains, maximising the use of current payment systems that place an emphasis on speed, and expanding economies of scale [69].

technological innovation: Payments are undergoing a revolution as a result of technological advancement, which is making them safer, quicker, and more convenient on a home level.

fast payments: Because of developments in information and communication technology, several nations have reached a point where the processing time for retail payments is now instantaneous. These improvements have led to the widespread availability of various technologies such as mobile phones and the internet. "Fast payments" is a sort of retail funds transfer "in which the transmission of the payment message and the availability of 'final' funds to the payee occur in real-time or near real-time on as close to a 24/7 basis as is possible," according to the definition provided by the Clearing House Association for Electronic Payments (CHEAP) [70].

Table 3.1 –A brief overview of the many forms of quicker payment transactions

Form	Explanation
Person-to-Person (P2P)	These are payments that people make to friends, family members, or other people for a variety of reasons, such as paying back shared rent or hiring someone to take the dog for a walk.
Consumer-to-Business (C2B)	These payments are paid by a person to a company. For instance, paying a bill, a shopping bill, or a haircut bill at a salon.
Consumer-to-Government (C2G)	These are contributions that a person has made to a governmental body. Paying taxes to the federal, state, or local, purchasing park permits or licenses, are some examples.

Form	Explanation
Government-to-Consumer (G2C)	Included in this are transfers made by the government to individuals, such as tax refunds, social security benefits, and stimulus payments.
Business-to-Consumer (B2C)	These are transfers of money from an organization to a person, such as when an organization reimburses a customer, pays employees' wages, or pays out insurance claims.
Business-to-Business (B2B)	This kind of deal happens between companies. This could be a payment made to vendors in exchange for goods or services.
Business-to-Government (B2G)	This covers contributions made by a company to a public body, such as payments of federal or state taxes.
Account-to-Account (A2A)	This is the act of moving money from one customer's account to another account, usually held by the same person, at the same financial institution or another. For example, you may move money from a bank account to a brokerage account.

Source: [78]

Reforms to payment systems: Over 120 nations' payment systems have been improved with assistance from the World Bank, which also aided in the process of creating and implementing these improvements. These adjustments have been of tremendous assistance in enabling World Bank client states in rapidly adopting modern infrastructures and techniques. Real-time gross settlement is one of the most well-known examples of this phenomenon. The World Bank has contributed to the development of new methods for implementing retail payment systems such as automated clearing houses, and it has also helped shape the product offerings that are now available on the market to include integrated solutions that make it simpler for nations with limited resources to swiftly roll out new payment systems. These contributions have been made in two ways. First, the World Bank has contributed to the development of new methods for implementing retail payment systems such as automated clearing houses.

Developments in payment systems, greater access, technological innovation, and speedier payment methods have all contributed to improvements in the speed and efficiency

of international payment systems. These improvements have been made possible as a consequence of the fact that international payment systems have been more effective as a result of these developments. Because of these innovations, international payment systems are now safer, more effective, and easier to use than they have ever been, which is advantageous to the people and economy of every region on the planet [71].

For the sake of international payment networks, it is imperative to both fortify security and make strides toward better risk management. The following is a summary of some of the ways in which international payment systems have improved their risk management and security during the past several years:

Security concerns: Due to the potentially significant role that security plays in user trust in payment systems, additional attention is paid to security problems, particularly fraudulent behaviour. This is the case because security may play a vital role in fostering user confidence. This is due to the fact that there is a possibility for security measures to discourage theft [72].

Credit risk and liquidity risk inherent in payment systems: The participants in a payment system are responsible for managing both the credit risk and the liquidity risk that are intrinsic to the system. During the clearing and settlement process, financial institutions that exchange payment instructions are vulnerable to two significant risks. Credit risk is when one of the parties is unable to meet its promises, whereas liquidity risk is when one of the parties has an unexpected delay in satisfying its payment obligations [73].

Fraud prevention: The BIS collaborates closely with other groups that are responsible for developing international standards, such as the International Organisation for Standardization (ISO) and the Financial Action Task Force (FATF), in order to develop and promote worldwide standards and recommendations for safe payment systems. The implementation of comprehensive anti-fraud procedures by financial institutions and providers of payment services is made possible by these standards, which give a framework for doing so. The BIS encourages central banks and other financial authorities to collaborate on measures to combat fraud, as well as to share information and information with one another. It provides platforms and venues for talks and knowledge exchange among central banks, which enables them to keep updated about new trends in fraud, share best practices, and together work towards increasing the security of international payment networks. The

Bank for International Settlements (BIS) encourages research and innovation in the field of financial technology (fintech), with the goal of mitigating new threats, such as fraud in payment systems. It works in collaboration with central banks and other stakeholders to investigate emerging technologies like as blockchain, artificial intelligence, and machine learning, all of which have the potential to improve the security of international payment networks and prevent fraud.

Data security: When it comes to recently created methods of retail payment, there are two kinds of worries that stand out from the rest: the risk of data security breaches and the possibility of unlawful usage. When dealing with a scenario such as this one, it is necessary to consider the various methods of payment in terms of their level of security. Encryption is a fundamental method that is used to safeguard data both while it is being transferred and while it is being stored. When encoding payment information, robust encryption techniques are utilised to ensure that the encoded data continues to be unreadable to any third parties that are not permitted to access it. When data are being transmitted between payment processors, financial institutions, and other stakeholders, it is helpful to implement robust encryption protocols, such as SSL/TLS. This helps protect the data. The sensitive information that is stored on a credit card is swapped out for tokens, which are essentially just identifiers that are one of a kind. During the payment transactions, this method prevents the real card data from being saved or communicated, which in turn reduces the likelihood of a data breach occurring. Even if an attacker manages to intercept a token, they will not be able to decipher its meaning, which will increase the safety of the payment system. When it comes to verifying the identity of those who use payment systems, having reliable authentication mechanisms is absolutely necessary. Multi-factor authentication, biometric authentication (such as fingerprint or face recognition), and one-time passwords all give an additional layer of protection that makes it more difficult for unauthorised users to access payment accounts.

As a consequence of a greater focus on security risks, payment system risk, the mitigation of fraud, and the protection of sensitive data, the security of international payment systems, as well as their management of risk, have been greatly enhanced. This has led to a major improvement in the management of risk for these systems as well. As a direct result of these improvements, international payment systems are currently safer, more secure, and

more reliable, which is to the advantage of individuals and economies all around the world [74].

Some of the most important directions that international payment systems will head in the future include broadening the variety of payment methods that may be used, improving access to financial transactions, increasing the number of transactions that can be done across international boundaries, and embracing developments in technology. The information that is presented in the following paragraphs refers to each of these instructions in further detail:

improving access to payments: There is an issue that arises in a lot of developing economies and emerging markets, and that problem is that individuals do not have proper access to payment choices. This problem is caused by a lack of financial infrastructure in these countries. Extended access can contribute to enhanced productivity by reducing the length of the transaction chains, taking advantage of existing payment systems that place a focus on speed, and expanding the scope of the economies of scale that are available to be taken advantage of. This strategy is one option that may be considered for resolving the issue [75].

improving cross-border payments: The development of international payment systems that are quicker, less expensive, more transparent, and more inclusive would have a significant favourable effect on the economies and populations of many nations all over the world. This would be the case since such systems would allow for more people to participate. This would be the case due to the increased number of possibilities that it would provide for individuals to take part. In order to accomplish this goal, the Bank for International Settlements (BIS) has devised a global road map that consists of fundamental pillars for the enhancement of international financial transactions. This map may be seen here. This map may be viewed in this location.

offering multiple payment methods: It could be beneficial for companies to be able to accept a variety of payment methods so that they can better meet the requirements of the foreign clients and suppliers with whom they do business. Customers have access to a wide variety of various options for making foreign payments. Some of the options available to them are credit cards, PayPal, TransferWise, Payoneer, and Tipalti, amongst others. Because worldwide suppliers are seeking for a flexible payment experience that can be tailored to

their specific requirements, a company has to be able to accept a wide variety of payment methods from locations all over the world [76].

accepting technological innovations: It is essential for the continued development of international payment systems to be open to the various technology developments now available. Accepting new technological developments at the same time as they are being developed at an accelerating rate can bring about a number of advantages for the effectiveness, safety, and convenience of international financial transactions. The processing of payments is now possible to take place at a much higher speed and with more efficiency thanks to technological improvements. The payment process may be streamlined by the use of innovative solutions such as real-time payments, rapid settlement, and automated processes. This helps to reduce the number of manual errors and delays that are connected with traditional payment methods. This increased efficiency is beneficial to both consumers and organizations since it enables speedier access to cash and facilitates the execution of foreign transactions more quickly.

the bank for international settlements: The Bank for International Settlements (BIS) has taken note of the ongoing process of innovation that is taking place inside domestic payment systems. Increasing the number of hours that they are open for business and making themselves more available to financial companies that are not banks are two examples of these sorts of developments.

In the not-too-distant future, it is anticipated that the various systems used for international financial transactions would pursue a variety of distinct strategies. These paths will consist of growing the number of payment methods that are available, increasing the number of payments that are made across borders, increasing the number of payments that are made across borders, expanding the number of payment methods that are available, and implementing technical advancements. These new initiatives will assist to make international payment systems more efficient, user-friendly, and secure, which will be to the benefit of individuals and economies all across the world [77].

Conclusion for chapter 3

Significant advances and improvements have been made in the evolution of international payment systems in the global market, which has given rise to both challenges and opportunities in the economy of the globe. This shift has been brought about in large part by a number of major driving forces, including the development of new technologies, changes in the behaviour of consumers, and efforts to make international commercial transactions more efficient.

The usage of digital payment methods such as mobile payments, e-wallets, and cryptocurrencies has brought about a dramatic shift in the manner in which people and organizations engage in international business dealings. Because of the swiftness, convenience, and cost-effectiveness that are supplied by these strategies, users are allowed the freedom to conduct business in any location across the world without being bound by the limitations of conventional banking systems. The increasing number of individuals who have access to the internet as well as the widespread availability of smartphones have both helped to further drive the acceptability of these alternative payment methods.

Concurrently, there has been a rise in the number of initiatives that are being undertaken with the purpose of enhancing the efficiency and transparency of international financial dealings. The idea of conducting business on a worldwide scale has undergone a full paradigm shift as a result of the introduction of the SWIFT global payment innovation (gpi) service, which employs the distributed ledger technology (blockchain). Real-time tracking, end-to-end transparency, and faster settlements are some of the solutions that have been developed as a consequence of long-standing challenges. These solutions have resulted in significant benefits for both individuals and businesses.

Additionally, as a result of the expansion of international payment networks, chances for financial inclusion have become available. These demographics are now able to engage in the economy on a global scale because they have access to digital financial services that were previously unavailable to them, or they were underserved by traditional financial institutions. Users are now able to receive and transfer payments, save money, and have

access to key financial services as a result of the launch of mobile money solutions, which have closed the gap that previously existed.

However, despite these chances, there are also obstacles that need to be overcome in order to be successful. Important factors to take into account in the context of the global payment ecosystem include compliance with legal requirements, data privacy and security, and the protection of personally identifiable information. The upkeep of trustworthiness and honesty within the framework of the financial system is crucial, and one of the most important phases in the process of accomplishing this goal is finding a balance between the pursuit of creative ideas and the protection of personal information.

To summarise, the proliferation of international payment systems in the global market has significantly altered the manner in which monetary transactions are carried out in every region of the world. This is as a result of the fact that the global market is currently more globalised than at any other time in history. Both the acceptance of digital payment systems and the introduction of measures to promote the efficiency of cross-border transactions have come about as a direct result of technological advances and advancements. In other words, technology has been directly responsible for both of these developments. This is something that has turned out well for everyone concerned in the situation. Because of these advancements, it is now feasible for more people to have access to financial services, which in turn provides individuals and businesses all over the world more power. To guarantee the uninterrupted growth of international payment systems, however, challenges relating to data privacy, data security, and compliance must be surmounted. This step is essential in order to ensure that the new development will be a success. If these obstacles can be overcome and the opportunities that have been offered are utilised to their full potential, then the global economy will stand to gain from payment systems that are more connected, efficient, and inclusive. As a result, this will promote economic expansion and financial stability on a global basis.

CONCLUSIONS

The historical evolution of international payment systems has, over the course of time, experienced considerable alterations. These transformations are a reflection of the shifting requirements of global business as well as developments in technological innovation. The growth of international payment systems has been driven by the need for efficiency, convenience, and security in the conduct of cross-border transactions. This desire has been the driving force behind the development of international payment systems as far back as ancient barter systems and as far forward as the introduction of modern electronic payment techniques. Coins, banknotes, checks, telegraph transfers, and the development of foreign financial organizations are just some of the many ways that have been deployed throughout the course of history to ease international payments. The introduction of electronic payment methods, such as credit cards, debit cards, and online banking, brought about a sea change in the manner in which foreign payments are processed, making it possible to complete transactions in a more expedient and risk-free manner.

The rise of digital payment methods, which were driven by technology advancements and the broad usage of the internet and mobile devices, has further changed international payment networks. Mobile payment applications, digital wallets, and contactless payment solutions have gained popularity in recent years because they enable users to conduct foreign purchases in a method that is both quick and safe. The evolution of international monetary systems throughout history has not been without its fair share of difficulties. The ability to do international business without hitches has been hampered by a number of challenges in recent years, including currency translation, swings in exchange rates, complicated regulatory requirements, and fraud.

However, developments in technology, the introduction of international standards, and collaborative efforts among stakeholders have helped solve these difficulties and improve the efficacy and security of international payment systems. Emerging technologies like blockchain, artificial intelligence, and biometrics are expected to have a significant impact on the future of international payment systems. This is something to keep in mind as we look farther into the future. These technologies have the potential to improve the safety,

speed, and transparency of international payments, further simplifying cross-border transactions, and encouraging global economic integration.

The historical evolution of international payment systems is a reflection of the constant search for solutions that are more efficient, easy, and secure when it comes to transacting across international borders. It is vital for stakeholders to adapt to new technologies, work on industry standards, and handle emerging difficulties in order to ensure the continuing growth and improvement of international payment systems. This is because technology is continually advancing, and it is essential for stakeholders to keep up with these advancements.

Digital payment systems have been quickly growing over the past several years, and the COVID-19 epidemic has hastened the use of these systems. The convenience and safety of digital payments are both being improved by the use of biometric technology, which is projected to see an increase in adoption rates in the coming years. Mobile payments are becoming increasingly common as a result of the vast user base of mobile phones. Additionally, the usage of digital wallets is growing increasingly widespread, and it is anticipated that there will be around 4.4 billion users by the year 2025.

The use of contactless payment methods, which are both quick and convenient, is gaining more and more favour, and online payment services help make the process of purchasing online more streamlined. In light of these recent developments, it is abundantly clear that international monetary systems are undergoing a continual process of development in order to accommodate the requirements of a global economy that is increasingly based on digital technology and interdependence. In order for companies and financial institutions to maintain their competitive edge and continue to deliver smooth and effective international payment services, it will be essential for them to embrace technology improvements, place a priority on security measures, adapt to shifting customer expectations, and successfully navigate shifting regulatory environments.

International payment systems have had a significant influence on international trade. These systems have also revolutionised the way in which individuals and corporations engage in transactions across international borders. They have contributed to an increase in overall efficiency by hastening the processing of transactions and lowering the amount of time wasted waiting. Trust has been established, and fraudulent activity has been reduced,

as a direct result of the implementation of various security measures, including encryption and tokenization. These technologies have broadened enterprises' access to the market, enabling them to sell their products and services to people all over the world. As a result of giving access to digital payment infrastructure, they also assist reduce the risks associated with currency fluctuations and advance the cause of financial inclusion. Documentation and compliance procedures for international payment systems have been significantly reduced, and these systems also continue to develop with newly emerging technology. In general, they have had a transformative effect on international commerce by increasing efficiencies, levels of security, levels of market access, and levels of financial inclusion.

The deployment of international payment systems by transnational firms (TNCs) plays a vital role in enabling worldwide transactions and driving international business operations. This is because TNCs are the ones most likely to implement such systems. Transnational corporations make use of a wide variety of strategies and technology in order to set up payment systems that are both effective and safe across international borders. The use of digital payment solutions, such as mobile payment applications, digital wallets, and online payment gateways, is one important strategy that should be utilised. These technologies provide ease of use, swiftness, and greater security, enabling TNCs to simplify their financial processes and better respond to the changing tastes of clients in a variety of nations.

TNCs also make use of partnerships and collaborations with various financial institutions and service providers of payment systems in order to set up a solid payment infrastructure. Transnational corporations are able to traverse complicated regulatory frameworks, overcome issues with currency translation, and assure compliance with local legislation when they leverage the experience and worldwide networks of these partners. In addition, multinational corporations have highly developed risk management and fraud prevention strategies to ensure the integrity of international payment networks. TNCs are able to safeguard sensitive data, detect fraudulent activity, and limit financial risks by utilising modern technology such as encryption, tokenization, and real-time fraud monitoring. In order for multinational corporations (TNCs) to successfully deploy international payment systems, they are needed to take into consideration a variety of issues, including the preferences of local markets, cultural variations, and legal requirements.

Increasing customer happiness and driving revenue development may be accomplished by tailoring payment systems and user experiences to the needs of particular locations. In order to maintain their position as market leaders, transnational corporations (TNCs) will need to continue to adopt new forms of technology and innovative payment solutions in the years to come. The implementation of technologies such as blockchain, artificial intelligence, and the Internet of Things (IoT) has the potential to significantly improve the effectiveness, transparency, and safety of international payment systems.

Through the utilisation of digital payment solutions, the formation of partnerships, the implementation of risk management measures, and the adaptation to the dynamics of local markets, multinational corporations play a critical part in the implementation of international payment systems. TNCs can build efficient, safe, and seamless payment systems that promote global commerce and drive the success of international business if they embrace innovation and place the requirements of their customers at the forefront of their priorities.

International payment systems play a significant role in supporting global commerce and economic activity. This importance was highlighted in the previous paragraph. However, in addition to that, they pose a variety of difficulties and open up a number of potential avenues for development. The complexity of legal frameworks, the necessity to comply with anti-money laundering and counter-terrorism funding measures, and the requirement to solve inefficiencies in cross-border payment processing and high transaction costs are some of the issues faced by international payment systems. In addition, preserving the safety of one's data and guarding against fraudulent activity are still very important considerations.

In order to effectively address these difficulties, governments, financial institutions, and suppliers of technological solutions will need to work together to adopt uniform procedures, increase transparency, and establish stringent security precautions. In spite of these obstacles, international payment systems provide tremendous prospects for innovation and expansion. Transactions that take place across international borders have the potential to benefit from technological developments such as mobile payments, blockchain, and artificial intelligence. These developments have the potential to make international commerce more efficient, less expensive, and more secure. Companies in the financial technology and digital platform industries are helping to drive financial inclusion and extend

access to financial services, particularly in areas that have been historically underserved. In addition, businesses have the opportunity to broaden their client bases and improve the efficiency of their operations as a result of the growing use of digital payment systems and the trend toward cashless economies. In order for stakeholders to make the most of the benefits and handle the problems, they will need to work together to create international collaboration, standardise regulatory frameworks, and promote interoperability among payment systems.

Creating a global payment ecosystem that is more accessible to a wider range of people and operates more effectively requires taking a number of important first actions, including increasing financial literacy, boosting the capacity of international payment networks, and investing in resilient infrastructure. In addition, consistent innovation, research, and development are essential in order to maintain a competitive edge in the face of shifting customer tastes, developing technology, and shifting regulatory environments. Building confidence in international payment systems and protecting sensitive information will require enhancing data security measures, implementing advanced fraud prevention methods, and guaranteeing conformity with global standards. These are all very necessary steps.

Despite the fact that international payment systems are fraught with difficulties, they do, on the other hand, provide prospects for economic expansion and technological advancement. International payment systems have the potential to make the world's economy more streamlined, safe, and productive if they face the problems that lie ahead of them, embrace the technical breakthroughs that are ahead of them, and encourage collaboration among the many players.

Developments and enhancements made to international payment systems have substantially reshaped the manner in which we carry out financial transactions across international boundaries. These systems have grown more effective, safe, and convenient as a result of the incorporation of technology. As a result, they are better able to meet the ever-changing requirements of businesses and customers in a globalised world. The proliferation of digital payment systems including mobile payment applications, digital wallets, and online payment gateways has fundamentally altered the ways in which we transfer and receive money, make purchases, and engage in international commerce. since a result of

these developments, cross-border transactions may now be completed with greater ease, since processing times have been shortened, transaction fees have been cut, and other payment methods have been made available. In addition, the prevention of fraud and the protection of sensitive customer information have become the primary focuses of attention in international financial systems.

The protection of sensitive information and the prevention of illegal access have been ensured by the use of mechanisms like strong encryption, tokenization, and secure authentication. These systems' level of safety has been further improved as a result of the company's strict adherence to the regulatory standards and its ongoing surveillance of fraudulent activity. Innovations in information technology, including as distributed ledgers, artificial intelligence, and the internet of things, offer a great deal of promise for the ongoing development of international monetary transactions. Transactions may be made in a decentralised and transparent manner using blockchain technology, fraud detection can be improved using AI-powered systems, and the Internet of Things enables devices and payment systems to communicate with one another in a seamless manner. Despite the fact that developments in international payment systems have brought forth a multitude of benefits, difficulties nevertheless persist. Interoperability, regulatory compliance across borders, and bridging the digital gap are all aspects of the global payment ecosystem that need to be addressed before it can be considered fully inclusive and smooth.

Global trade has been spurred by advancements and improvements in international payment systems, which have also helped to increase financial inclusion and created routes that are both safe and efficient for performing transactions across international borders. The adoption of new technologies, the strengthening of security precautions, and the promotion of collaboration among stakeholders are all things that will continue to drive the growth of international payment systems. This will provide people and companies all over the globe the ability to participate in the global economy with confidence and ease.

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