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GAMIFICATION OF E-WALLETS WITH THE USE OF DeFi TECHNOLOGY-A REVISIT TO DIGITIZATION IN FINTECH

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ABSTRACT

Digital and mobile payment systems have greatly simplified and streamlined monetary transactions and administration. However, despite the ease of use provided by these resources, issues must be fixed before they can be fully utilized. One such difficulty is the fact that electronic wallets are increasingly being used as game pieces. As a result, many specialists in the financial sector are looking for decentralized finance (DeFi) solutions to establish safer and more effective means of handling money. This article examines the problems that gamified e-wallets face and the solutions that DeFi offers. DeFi's mission is to make banking accessible to anyone with a smartphone and an internet connection. Apps like Compound, Aave, Curve, or Yearn that operate on the block-chain and have smart contracts that enable sophisticated financial operations between users now offer users the option of locking funds in such contracts. They can then engage in various financial activities with their money, including lending, borrowing, and letting it earn interest. Annual percentage yields (APYs) can vary from about 5% to about 50% on the sites one finds if one looks closely enough, and this is entirely dependent on the assets only to invest in. DeFi's future must be on several block-chains, and in this rapidly evolving landscape, the most easily adaptable projects will succeed. Like computer operating systems' interoperability, decentralized financial systems should work together. Companies may reach the most audience possible by creating apps for all the major operating systems, including Mac OS X, Microsoft Windows, Apple iOS, Google Android, and Linux. There may be an increase in total development costs, but spending that extra money is well worth it..

Keywords: ***Gamification, block-chain, E-wallets, DeFi technology, Fintech.***

1. Introduction

Decentralized finance is an initiative to introduce innovative financial solutions based on public block-chain technology. By enabling direct human interaction on decentralized, secure, and transparent protocols, DeFi is altering conventional centralized financial institutions **[1]**. By design, the movement eliminates the need for trust between individuals and instead relies on the underlying code to provide complete safety. Since transactions are recorded quickly and distributed across thousands of nodes in a block-chain, single points of failure are removed, and malicious attacks or data tampering are greatly reduced. The use of gamification to enhance the user experience of financial services is becoming increasingly popular among fintech companies. With the emergence of decentralized finance (DeFi) technology, the possibilities for gamifying e-wallets and other digital financial services have grown even further. By taking advantage of DeFi technology, fintech companies can offer users a much more engaging and rewarding experience with their e-wallet **[2].** The article will explore how DeFi technology can be used to gamify e-wallets and discuss the implications of such a move for the digitization of fintech.

2. Literature Review

2.1 What is Gamification?

Gamification is the concept of applying game mechanics and game design techniques to non-game contexts in order to engage users and motivate desired behaviors. Gamification has been widely used to increase user engagement, motivation, and loyalty in various online activities, such as online shopping, online learning, and social media. It has also been applied to the financial services industry, in particular to the use of e-wallets. E-wallets are digital payment platforms that allow users to store, transfer and manage their money without relying on traditional banking services. By using gamification elements such as points, badges, leader-boards, rewards, and challenges, e-wallet providers can make the experience of using their service more enjoyable and engaging for their customers. These gamification elements can also be used to motivate customers to use the e-wallet more often and to increase the usage of certain features **[3].**

In addition to increasing customer engagement and loyalty, gamification can also be used to drive innovation in the fintech industry. By incorporating gaming elements into their platforms, e-wallet providers can create more engaging experiences for their users and push the boundaries of what's possible in terms of financial technology. This can lead to more efficient and cost-effective solutions that can benefit both businesses and individuals. For example, DeFi (Decentralized Finance) is a new form of financial technology that leverages block-chain technology to enable users to access decentralized financial services such as lending, borrowing, trading, and payments. By integrating DeFi technologies into gamified e-wallets, users can access these services in a more engaging way while providing a secure environment for financial transactions **[2].**

2.2 The Evolution of Payment Methods

The evolution of payment methods has been rapid in the last few decades. From cash and cheques to digital wallets and mobile payments, technology has allowed us to make faster, more secure transactions. The introduction of cryptocurrencies and block-chain technology has only further enabled us to increase the speed and security of our financial transactions. Cryptocurrencies are digital assets that are secured by cryptography and traded on decentralized exchanges. Cryptocurrencies have enabled us to make international payments within a few minutes with minimal fees. In addition, using smart contracts has opened up new avenues for businesses to raise capital, manage funds, and carry out other functions securely and quickly **[4].** The emergence of decentralized finance (DeFi) has revolutionized the world of financial services even further. By allowing users to access financial services such as lending, borrowing, and trading through a decentralized network, DeFi has made it easier for people to access financial services without relying on a centralized authority. This has opened up new opportunities for businesses to leverage the advantages of DeFi to offer innovative financial products and services. The combination of cryptocurrencies, block-chain technology, and DeFi has given people unprecedented access to financial services that were unavailable before. This has enabled businesses to offer unique payment solutions that are more secure and faster than ever before. With the Gamification

of e-wallets, businesses can take advantage of this technological revolution to create engaging and rewarding experiences for their users **[3].**

2.3 The E-Wallet 2.0

The digitization of money has been a long-standing dream of many tech innovators. The idea of being able to store and use money in the digital world was initially met with skepticism, but it has since gained traction. Digital wallets, or e-wallets, have become increasingly popular in recent years as they provide customers with a convenient way to pay and manage their finances. E-wallet technology has also been evolving over time. One of the most recent innovations is the idea of gamifying e-wallets. This involves incorporating game elements into the e-wallet experience, such as rewards, badges, leader-boards, and other engaging features. Gamification encourages users to keep using the e-wallet and can help attract new customers as well. In addition to gamification, the rise of DeFi (decentralized finance) has also opened up a world of possibilities for e-wallets.

By utilizing block chain technology, users can now make financial transactions with greater speed, security, and privacy than ever before **[2].** DeFi also allows users to take advantage of yield farming and other decentralized finance protocols that offer potential rewards. E-wallets powered by gamification and DeFi technologies offer an entirely new way of managing money and making payments. This "E wallet 2.0" not only offers convenience, but also allows users to earn rewards and enjoy an engaging experience when using their digital wallets. This combination of features is helping to revolutionize the way people interact with their finances and could be a major factor in further digitizing the global economy.

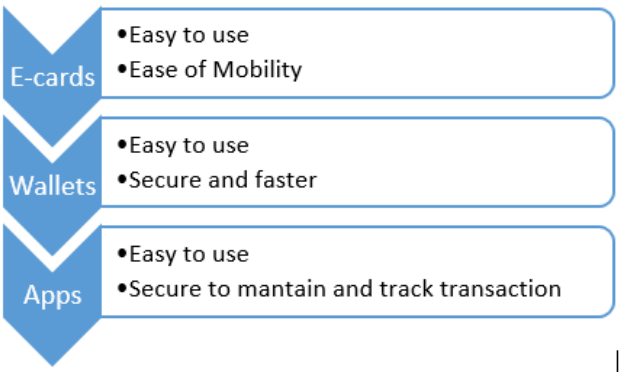

Figure 1: E-Wallet Advantages & Disadvantages

2.4 The New Wave of Finance – Decentralized Finance

Decentralized Finance (DeFi) is changing how financial services are delivered in many ways. It is no longer enough to offer a payment platform or loan service; now, customers can take advantage of much more creative and interactive experiences. Using the power of block-chain, developers are creating financial tools that can gamify their services, making them more engaging and rewarding for users. For example, decentralized exchanges can be used to create interactive games that allow users to earn rewards for taking part in different activities. DeFi applications also allow users to trade digital assets

without trusting a centralized entity while earning rewards for trading and other activities. This gives users more control over their finances and opens up more opportunities for creativity and personalization. As the technology behind DeFi continues to mature, individuals and businesses will see an ever-expanding array of possibilities, including new ways to utilize gamification as part of our digital wallets.

2.5 How can Gamification be used in E-wallets

Gamification is the process of incorporating elements of gaming into non-gaming situations. It has become increasingly popular in a wide variety of industries, including finance. In the case of e-wallets, it is used to create an engaging user experience and make the service more attractive to users.

There are several ways that gamification can be implemented into an e-wallet service. These include:

- Creating rewards for users who reach certain milestones or accomplish specific tasks. For example, a user might earn bonus points for every successful transaction they complete or for every referral they bring in. These bonus points could then be exchanged for rewards such as discounts or vouchers.
- Introducing levels and leader boards, where users can compete against each other to get to the top. This encourages users to use the service more frequently and strive to achieve higher levels **[5].**
- Creating badges and achievements that recognize users' progress while using the e-wallet service. Badges can also be used as a form of status symbol, creating a sense of pride among users who have achieved certain levels or performed certain tasks.
- Offering games within the service itself. This allows users to stay engaged with the service and helps break up the monotony of regular use. It also allows users to gain more rewards or unlock more features. A gamification is a powerful tool that can be used to improve user engagement and retention for e-wallet services. By introducing fun elements into the service, users are encouraged to use it more often and develop a strong bond with the brand **[5].**

2.6 Benefits of using Gamification In E-wallets?

Gamification of e-wallets can provide users with many benefits, such as increased engagement, loyalty, and user satisfaction. By providing an engaging and interactive experience, users are more likely to use the wallet regularly and even recommend it to others.

- One of the main benefits of using gamification in e-wallets is that it can make transactions faster and easier for users. By incorporating gaming elements into a wallet, it can become more intuitive and user-friendly. This would mean that users could navigate their way around the wallet quickly and effortlessly without needing to learn complex technical details. Furthermore, gamifying an e-wallet can make transactions more engaging, meaning users are more likely to complete them successfully **[6]).**

- Another advantage of gamifying e-wallets is that it can be used to reward users for completing certain actions. For instance, some e-wallets may offer rewards for depositing funds or performing specific tasks. These rewards could include discounts on fees, access to exclusive features, or even points that can be used to purchase items within the app.

- Gamification can also be used to encourage users to save money by providing incentives and goals. For example, a wallet could offer users the ability to set savings goals and track their progress toward them. It could also provide reminders for users to deposit money into their accounts or helpful tips on making the most of their money. □

Finally, by gamifying an e-wallet, users will be more likely to keep their personal information secure. A wallet with gaming elements will typically require users to input secure passwords or other credentials before accessing their funds, which can protect them from potential cyber threat **[5].**

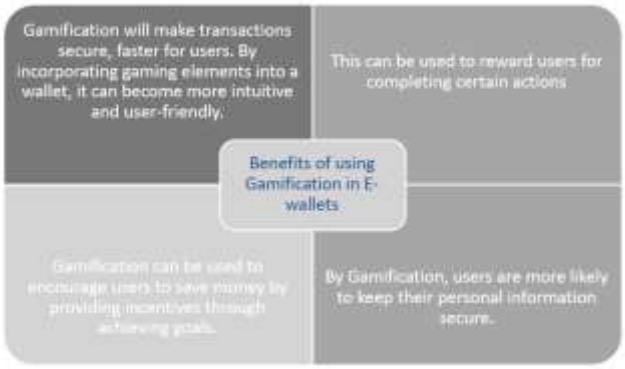

Figure 2: Benefits of Using Gamification in E-Wallets

2.7 The Challenges of Using Gamification In E-wallets

When it comes to making payments and keeping track of your finances, e-wallets are becoming increasingly popular. With the rise of digital technology, it is now possible to gamify your e-wallet and make transactions more fun and engaging. While this may seem like a great way to incentivize people to use e-wallets, some challenges come with this approach.

- Firstly, there is the challenge of ensuring that users are fully engaged with the gamified aspects of the e-wallet. This may prove difficult as gamification can easily become stale and boring after a period of time, so it is important to ensure that there is enough variety in the game elements to keep users entertained. Additionally, if the gamification system fails to properly reward users for their engagement, then they may lose interest and move away from the platform.

- Secondly, there is the challenge of creating a seamless user experience across different platforms. If a user is using an e-wallet on their mobile device, then it is important to ensure that the same game elements are available to them on their desktop or laptop computer. Additionally, there may be challenges in porting existing game mechanics from one platform to another, as some games may be better suited to certain devices or operating systems **[7].**

Finally, there is the challenge of ensuring that the gamification system is inconsistent with existing regulatory frameworks. E-wallets must comply with applicable laws and regulations, so any game elements used must not detract from this. Additionally, certain gamification elements also come with their own set of legal and financial considerations, so it is important to research these thoroughly before introducing them into the e-wallet.

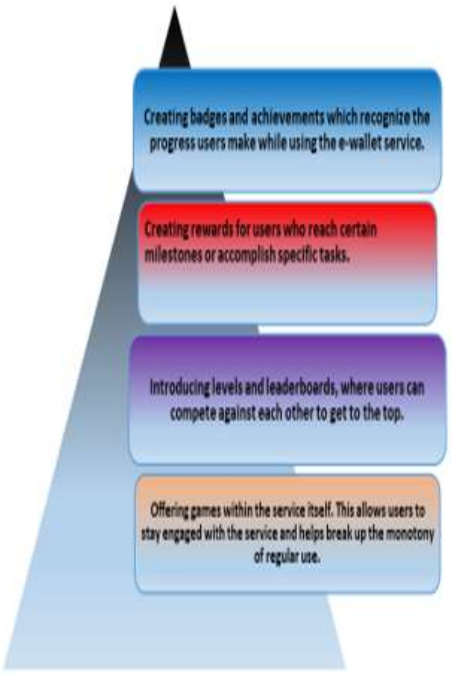

Figure 3: How Can Gamification be Used in E-Wallets

2.8 The Solution to the Challenges: Decentralized Finance (DeFi)

There is no doubting that there are problems in the DeFi world, and that fixing those problems is essential to the technology's continued development and widespread acceptance. It is important remember that this business is still in its infancy, appreciate the numerous openings that have presented themselves, and accept that any problems will be resolved in due time. No matter if DeFi is used in isolation or in concert with more conventional financial structures, it has enormous potential for growth and prosperity **[2].**

Decentralized finance, also known as DeFi, is a revolutionary concept that has recently emerged in the fintech sector. It is an innovative financial system built on block-chain technology and is designed to offer more secure, efficient, and transparent services than traditional banking systems. With DeFi, users can store their digital assets in a decentralized ledger, eliminating the need for a third-party service provider. Furthermore, DeFi also eliminates any centralized points of failure, meaning there is no single entity controlling the data

DeFi provides a great solution for the challenges posed by gamified e wallets. It provides users with more secure and transparent services while also allowing them to take full control of their funds. Additionally, DeFi gives users the ability to quickly access liquidity without needing to go through any third-party service providers. This makes it easier for users to manage their funds in a secure and efficient manner **[8].**

In addition to the advantages mentioned above, DeFi also provides users with access to a wide range of new financial products. This includes decentralized exchanges, prediction markets, decentralized lending platforms, and more. With DeFi, users are able to access these products without relying on third-party service providers and without worrying about the security of their funds.

2.9 How DeFi Works

Decentralized finance (DeFi) is a financial technology that allows individuals to take control of their own finances, utilizing a distributed and secure ledger to record transactions. It is based on the block-chain technology, and works by taking advantage of smart contracts, which are essentially computer protocols that facilitate, verify, and enforce the negotiation or performance of a contract **[9].**

DeFi eliminates the need for third-party intermediaries, such as banks or other financial institutions, to take part in financial transactions. This allows users to create secure, self-sovereign accounts and manage their own assets.

DeFi works by connecting users with a peer-to-peer network. Through this network, users can store, transfer, and trade cryptocurrency assets in a secure and transparent manner. For example, users can borrow or lend money from each other without the need for banks or other middlemen. Additionally, through the use of smart contracts, users can automate the entire process, making it simple and safe for all parties involved **[9].**

The applications of DeFi are vast, ranging from decentralized exchanges (DEXs), lending protocols, decentralized derivatives, and more. This technology also enables users to access decentralized applications (dApps) that can be used for everything from insurance to prediction markets. Overall, DeFi offers a revolutionary way to manage finances while offering users complete control over their own funds. As more individuals begin to embrace decentralized solutions, the applications of DeFi will continue to expand and revolutionize how people handle their finances **[9].**

2.10 The Benefits of DeFi

One of the biggest benefits of DeFi is its ability to increase efficiency and provide cost savings. By eliminating intermediaries such as banks, DeFi can reduce the cost of processing payments, transfers, and other financial transactions. Furthermore, decentralized networks are more secure than traditional networks, reducing the risk of fraud or data theft. This can help protect the wallets and their users from malicious actors.

Another key benefit of DeFi is the increased access to financial services it provides. Decentralized protocols can be used to provide loans, insurance, and even trading services to those who lack access to traditional banking systems. In addition, since DeFi is open source, anyone can use it to create innovative new products and services that would not be possible with traditional finance models **[7].** Finally, DeFi allows users to earn passive income through various methods. Using staking, lending, and yield farming protocols, users can passively generate returns on their digital assets. This can help people save up for long-term goals or build wealth relatively quickly **[10].**

Benefits of DeFi	Explanations
Efficiency & Cost Savings	By eliminating intermediaries such as banks, DeFi can reduce the cost of processing payments, transfers, and other financial transactions.
	Furthermore, decentralized networks are more secure than traditional networks, reducing the risk of fraud or data theft.
	This can help protect the wallets and their users from malicious actors.
Increased Access to Financial Services	Decentralized protocols can be used to provide loans, insurance, and even trading services to those who lack access to traditional banking systems. As DeFi is open source, anyone can use it to create innovative new products and services that would not be possible with traditional finance models.
Opportunity to Attain Passive Income	Using staking, lending, and yield farming protocols, users can passively generate returns on their digital assets. This can help people save up for long-term goals or build wealth in a relatively short amount of time.

Table 1: The Benefits of DeFi Technology

2.11 The Future of DeFi

DeFi is still in its early stages, but the possibilities for what it can do are vast. The decentralized nature of DeFi offers a great deal of potential for creating new ways to interact with money, assets, and other digital goods. As DeFi continues to grow, more use cases and applications are sure to emerge **[11].**

DeFi can be used to create new types of investments, lending opportunities, insurance products, and even crowdfunding platforms. These new methods of interacting with money could allow individuals to access more financial opportunities, while reducing the risk associated with traditional banking systems. This could open up a whole new world of financial freedom for people worldwide **[12].**

At the same time, DeFi could also bring more transparency to traditional financial systems. Smart contracts and other block-chain-based protocols could help provide more accurate record keeping and audit trails for financial transactions, reducing fraud and improving trust in the financial sector. Ultimately, DeFi has the potential to revolutionize the way individuals use and interact with money. People and researchers are just beginning to see the potential of this technology. As it continues to evolve, it could lead to a more secure and reliable financial system for everyone **[13].**

3. Summary

Gamification is the concept of applying game-like elements and principles to non-gaming contexts. It is used as an engagement strategy to make activities more enjoyable, encourage participation, and reward users for completing tasks. Gamification can be found everywhere, from education apps and fitness

trackers to e-commerce platforms and digital wallets. When applied to digital wallets, gamification can be used to enhance the user experience by making the process of sending money more engaging and rewarding. It typically includes features such as points, badges, leader-boards, and rewards, which motivate users to complete tasks and stick with the platform. Gamified wallets also create a sense of community and camaraderie as users compete with each other to earn points and rewards. Using gamification, digital wallet companies can increase user engagement and loyalty, drive up sales, and boost their brand visibility. However, there are certain challenges associated with implementing gamification in e-wallets that must be taken into consideration **[7].**

DeFi (Decentralized Finance) technology is one of the most innovative developments in the fintech space, allowing users to interact with digital assets without relying on third-party custodians or middlemen. By using smart contracts, DeFi applications enable users to borrow and lend cryptocurrencies as well as their own tokens. Integrating DeFi technology with the gamification of e-wallets has the potential to offer an enhanced user experience by providing an incentive for people to use the wallet more often and make more transactions. For example, users could be rewarded with rewards such as virtual points, badges or even discounts for making payments or transferring funds **[14].**

The gamification of e-wallets with DeFi technology could also lead improve literacy since users can be informed about various cryptocurrency assets and products available in the market. Additionally, it could also facilitate the transfer of cryptocurrencies between different wallets, allowing users to make cross-border payments quickly and securely. Finally, integrating DeFi technology with the gamification of e-wallets could also lead to more efficient and secure payments. By leveraging smart contracts, users can complete transactions without needing third penitentiaries, thereby reducing the chances of fraud and eliminating costly fees associated with traditional payment systems. Overall, integrating DeFi technology with the Defi gamification of e-wallets is an exciting development that can provide an improved user experience and open up new possibilities for the digitization of fintech **[15].**

4. Potential Implications Of The Study

Decentralized finance (DeFi) technology offers range of opportunities for innovating with gamified e-wallets. DeFi platforms can be used to create incentives and rewards for users who use the platform. These rewards can come in the form of tokens or virtual points, which can be redeemed for goods and services or even cash. This is a great way to encourage engagement with the platform and reward users for their loyalty. In addition, DeFi can also be used to create automated financial instruments that can be integrated into gamified e-wallets **[16].** These could include decentralized lending, derivatives, and other complex financial products. With these automated tools, users can take advantage of increased liquidity, lower risk, and improved accuracy in managing assets. Moreover, DeFi platforms can also be used to implement automated KYC and AML protocols, allowing users to open accounts quickly and securely without having to provide detailed documentation. This makes it easier for users to access the platform while still keeping their data secure. Overall, DeFi technology opens up many possibilities for gamifying e-wallets. By combining the benefits of both decentralized finance and gamification, users can enjoy the convenience of an e-wallet while taking advantage of new financial products and incentives. It is an exciting new way to bring more users into the world of digital finance **[17].**

5. Conclusion

The gamification of e-wallets using DeFi technology is a great way to improve the user experience while making payments easier and more secure. It provides users with more control over their finances, while also giving them the ability to earn rewards and bonuses. This creates a more engaging and rewarding experience for those who use e-wallets and those looking to invest in cryptocurrencies or take part in other financial services. By utilizing DeFi technology, users can make the most out of their digital wallets and gain access to various financial tools **[18].** At the same time, there are still many challenges associated with gamifying e-wallets, such as ensuring the security and stability of these services. Nevertheless, the potential of using DeFi technology to create a more engaging and secure experience for users is undeniable. As the industry continues to evolve, people can expect to see more innovative applications of gamification and DeFi technology that will open up new opportunities for both consumers and businesses alike **[19] .**

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