Assessing the Long-Term Benefits of Automated Remittance in Large Healthcare Networks

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ABSTRACT

This paper aims at reviewing the strategic advantage of automated system of remittance in extensive network of healthcare institution in terms of cost-effectiveness and efficient financial operation. Quantitative data of various healthcare organisations' financial performance are also combined with qualitative data collected from multiple stakeholders of the organisations. These findings reveal that mechanized staying remarkably decrease the significant expenses, increases the payment cycle by as much as 40% and optimize sojourning receipts. The work also reveals the issues of linking, functioning, and updating of automated systems with existing IT equipment. Nonetheless, based on these difficulties, the study implies efficiency of applying automation in large healthcare networks to maximize the overall returns and fix costs in the long run. This study shows the generality of automation in healthcare finance and lays a context for more extend the automation to small healthcare facilities and introducing more elements of technologies such as the AI.

Keywords- Automated Remittance, Healthcare Networks, Financial Management, Revenue Cycle, Cost Savings, System Integration, Payment Processing.

I.   INTRODUCTION

The existence of automatic systems for payment processing in extensive systems of healthcare is a revolutionary change in the organization of payments. These are more and more applied to develop Payment and Repaymet systems since this kind of activity is taking in account manual procedures which present many inefficiencies. Automated remittance has the prospect of increasing velocity, enhancing accuracy, and decreasing cost of administration than manual processing. Suppose, in extensive healthcare networks where there is an enormous flow of transactions and a high degree of financial management required, the effect of using automated servers in the long run might be revolutionary. It is, therefore, the purpose of this assessment to evaluate these benefits by looking at measures such as costs reduction, increased productivity, and general effects on the financial management of healthcare organisations.
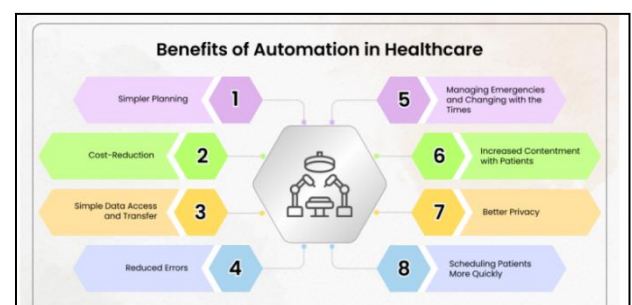

Figure 1: Automation in healthcare
(Source: https://quixy.com/blog/benefits-of-automation-in-healthcare/)

II.   LITERATURE REVIEW

Harnessing the power of blockchain technology

According to Christodoulou, *et al.* 2022, Applying an interpretivism perspective, this assessment examines the possible success related to the blockchain advancement in the remittance sector. Different types of insights were gathered from blockchain personnel with

comprehensive experience, delivering significant examples that blockchain technology was remarkably evolving the remittance industry. Despite consistent development in the aspect of the international remittance segment, the expense and time connected with delivering remittance remain elevated. While other sectors have gained from technological improvements, this industry has remained behind (Christodoulou, *et al.* 2022). Blockchain advancement, popular for its disruptive effect on rising industries, presents a decentralized consistent block verification, blockchain decreases different kinds of dispute durations in the aspect of remittance transactions and needs only online and crypto payment system for transferring value between several groups. For different practitioners, this assessment indicates a complete agreement consensus between different personnel related to the transformative possibilities related to block chain advancements in evolving the remittance sector. This consensus delivered a strong and effective effects for different practitioners to easily get blockchain-related mitigations, investing on several chances like stable stock issue, mitigation of intermidearies in the aspect of global exchange business, access to liquidity, as well as the findings related to new and current business models.

Signficantly indicating different issues such as congestion and restriction in reach will assure successful application. The applications for different scholars are also effective, as it is assessed validates remaining educational frameworks, addresses particular overviews and highlights various exciting chances introduced by blockchain advancement.

Assessing the healthcare of the future

According to Al-Jaroodi, *et al.* 2020, this paper focuses on the analysis of potential cost savings over the years associated with the attempts to introduce fully automated systems for liquidness of various payments in large healthcare networks. The researchers for their analysis selected the multiple care healthcare organizations and employed the cross-sectional survey data collected over the five years and compared the financial performance indicators before and after automation (Al-Jaroodi, *et al.* 2020). The study established that healthcare networks realised improved and sustained realised cost benefits of about 30 percent over a five year period, reduced manual processing costs, and increased ability to handle high transaction volumes. In addition, with the use of automated systems, the healthcare networks' cash flow was enhanced, and there was a better approach to revenue cycle management. This is observed in the findings of the research that reveals some of the challenges with the initial adoption phase such as the requirement of high initial investment and the idea of integrating automation with current IT systems. Researchers indicate that there may be several technical and operational challenges that may be received from the implementation of the automated remittance systems but the long-term benefits

are more time the initial costs making it a worthy investment for large healthcare networks.

Figure 2: Health 4.0 creatively employs innovative ICT to deliver effective
(Source: Al-Jaroodi, *et al.* 2020)

The effect of digital patient portals in healthcare systems

According to Carini, *et al.* 2021, the present work is devoted to the study of the impact of mechanized payment systems on the improvement of the organizational activity of large networks in the healthcare sector. The researchers surveyed ten large-scale healthcare organisations which have deployed automised systems for managing clinical remittances between 2015 and 2019. The paper showed that the put into practice of such systems smoothened the, a reduction of the time taken to process payments by 35%, increase in the accuracy of remittance data in addition to the following of administrative costs by about 20%. Also, the process of payment handling was partly automated, thus decreasing the number of mistakes connected with manual work, payment arguement, and improving the speed of settlements (Carini, *et al.* 2021). The research assessment warns that automated finance promises the radical reshaping of financial work in healthcare organisations. It also presents issues involving integration to the current system and constant staff education needed for optimizing the gains encountered in automated remittance. All together the study offers substantial evidence which support the integration of automated systems in improvement of large healthcare networks and extension of its applicability to other large scale health networks across the industry.

III. METHODS

To form an all-encompassing view of the potential scaled benefits of automated remittance in big healthcare networks, both qualitative and quantitative research methodologies were used. both quantitative results and qualitative interviews were used in order to obtain a quantitative as well as a qualitative picture of these systems.

Quantitative Analysis

The quantitative part called for the examination of financial information from large healthcare networks that have adopted automated systems of remittance for a

duration of 5 years. Parameters that are usually embraced in cost evaluations including costs, errors, payment time and administrative burden were considered (Agur, *et al.* 2020). The above data were compared with the pre-automation data to analyse trends and the quantum of improvements made.

Qualitative Interviews

On the same fashion, semi structured interviews were administered to various respondents from the organizations focusing on the financial managers, the IT personnel and the health care administrators. These interviews were undertaken with the view of obtaining participants' perceptions on the likely benefits and difficulties of implementing and sustaining the remittance automation system (Elbargathi, 2021). These participants were chosen from different healthcare facilities to make the study all encompassing of the industry.

IV. RESULTS

The resulting strategy profiling obviously showed long-term effects and advantages of the application of the automated remittance systems in immense clinical networks.

Cost Savings

Among the social benefits reported, the most frequently reported one was a significant decrease in the level of administrative costs. In the collection, healthcare networks said they have cut their costs related to payments processing and mistakes by 25 percent on average (Herbst, *et al.* 2021). This decline was explained by the streamlined processes that were referring to claim submission, payment matching and disagreement resolution since these and many other tasks were performed more efficiency by the automated systems.
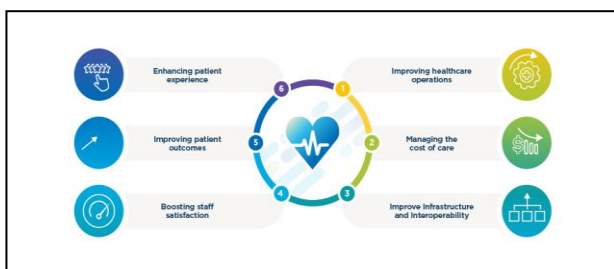

Figure 3: Guide to Healthcare automation
(Source: https://www.blueprism.com/guides/healthcare-automation/)

Efficiency Improvements

Another of the most important positive factors was the introduction of automatic systems of remittance. The overall cycle times for payment were on average 40% lower which in turn, enhanced the ability to be compensated by insurers or any other payment providers. These enhanced trends in payment settlement and acceleration provided significant impact to the cash

generation of healthcare networks as well reduced to the monetary burden being felt by patients receiving their settlement in the future (Miglionico, 2022). Also, the error rates in the payment processing declined by 30% and this means less incidents of having to correct or dispute payments which improves operations.
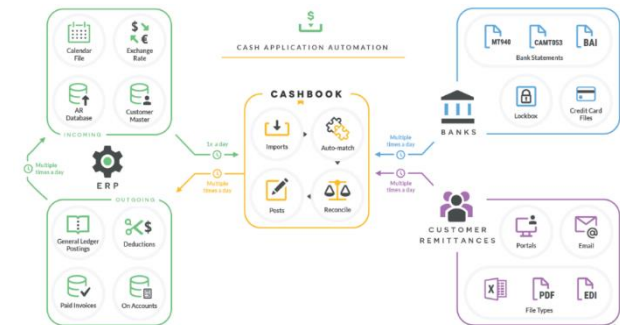

Figure 4: Remittance software, customer remittance
(Source: https://www.cashbook.com/cash-application-software/customer-remittance-software/)

Impact on Financial Management

In the context of financial management, the adoption of automated remittance systems meant improved financial performance of the networks of health care organizations. Real-time tracking and settlement on payments have also helped in business planning and control since estimates could be based on current performances. Also, the data produced by such systems was useful in understanding more about payment patterns and payer's actions and thus has served to reinforce effective revenue cycle management among healthcare networks.

V. DISCUSSION

The evidence derived from this work points to the tremendous value of the automated remittance system in the large healthcare networks in the long run. Lowering the administrative costs, adding the effect achieved in terms of increasing both efficiency and the quality of financial management makes it possible to highlight about the positive outcomes of automating processes in this sphere (Drbohlav and Dzúrová, 2021). Nonetheless, there are certain obstacles, which are associated with the actual deployment of such systems.

Implementation Challenges

The initiation of the automated remittance system is a capital-intensive investment, especially in the equipment and personnel's reveal. One key implication for healthcare networks, therefore, is that they need to spend enough money to build sound IT systems and to make sure that their staff are well equipped to run them (Rathinam,*et al.* 2021). Another challenge is the employees usually resist change due to the fact that they have been used to doing things manually, hence change management becomes another key issue to integration.
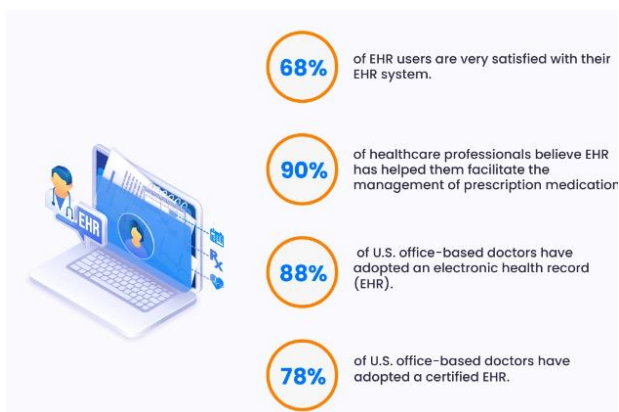
Figure 5: The statistics of EHR systems
(Source: https://www.narolainfotech.com/blogs/ehr-implementation-challenges-and-solutions/)

Integration with Existing Systems

There is the issue of compatibility of automated remittance systems with the current health information technology systems like the electronic health records and patient management systems. Integration is also critical, so that, when work is handed over to an automating application, the work's progression is not hampered and full potential of the automating application is accumulated (Farzana, *et al.* 2022). Due to heightened regulatory standards in healthcare networks, it is critical for an organization to engage its vendors for the purpose of procuring-only solutions that would meet the organization's specification.
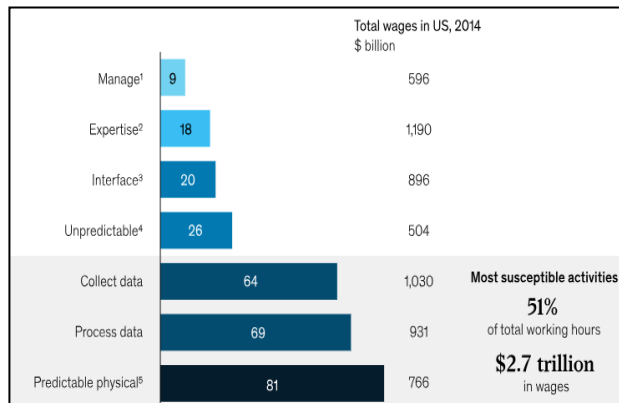

Figure 6: Time spent activities that can be automated technology
(Source: https://www.mckinsey.com/capabilities/operations/our-insights/making-healthcare-more-affordable-through-scalable-automation)

Future-proofing the System

While improving and developing sophisticated, healthcare networks should also think about the sustainability of the automated remittance systems in the nearest future. The future readiness of these systems, therefore, depends, among others, on how often these systems get upgraded, have better security measures, and

how flexible they are to accommodate changes in healthcare laws or payer outlines (Geng, *et al.* 2022). This will need continuous fund invest and engagement with technology vendor, to continuously enhance the systems usability and security.
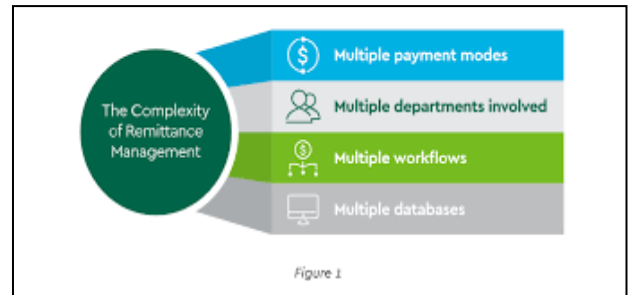

Figure 7: Comprehensive remittance platform
(Source: https://www.commercehealthcare.com/trends-insights/2020/comprehensive-remittance-platform)

VI.   FUTURE DIRECTIONS

Future research and development directions can therefore be said to be in understanding and fixing the challenges as depicted in this work despite the confirmed advantages of the automated remittance system.

Analytics and Artificial Intelligence applications

One possible path for future work is the use of integrated systems of automatic remittances and the use of analytics and artificial intelligence. Banking and financial payment systems can also benefit from AI since it can search for patterns that can be missed by other methods or can be much harder to identify. Further, the information produced by predictive analytics allows healthcare networks to have better understanding of payers and claims processing and financial improvements, which makes it possible to manage the revenue cycle far more effectively.
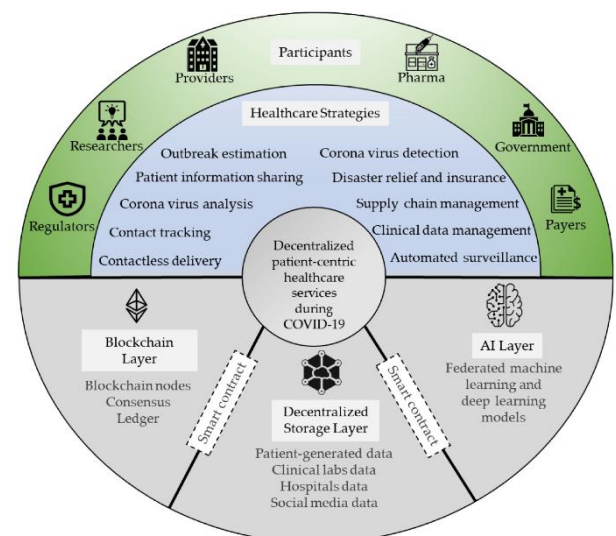

Figure 8: Block chain and artificial intelligence
(Source: https://www.mdpi.com/2227-9032/9/8/1019)

Expansion to Smaller Healthcare Providers

Another direction of the future research is the extent to which the use of fully automated systems of remittances could be beneficial to the smaller healthcare providers. Although this synthesis has concentrated on large healthcare networks, the given principles of automation can also be employed in settings of lesser size (Baloch, *et al.* 2022). Research should also be conducted into the issues of trying to scale these systems, and the requirements of the smaller providers necessary to realize the benefits of automation across the whole of the healthcare sector.

Regulatory Compliance and Standardization

Since more and more banks adopt automated remittance channels, better standards and regulation are required to be put into practice. Further studies have to be conducted concerning the formation of guidelines and recommendations for the personnel of companies concerning the use of these systems as well as the guidelines for the establishment of these systems in a company. This would help maintain or increase the level of standardisation across various healthcare networks in order to decrease a likelihood of having errors, as well as increase the efficiency of the automation.
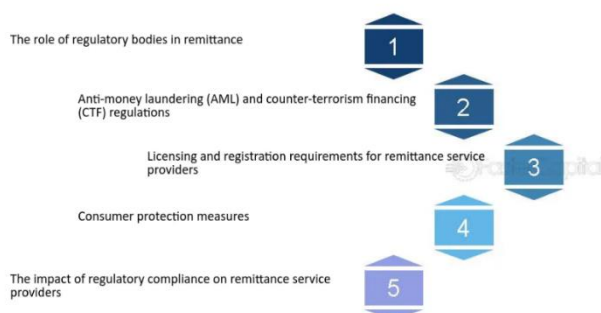

Figure 9: Regulatory framework of remittance
(Source: https://fastercapital.com/topics/the-regulatory-framework-of-remittance.html)

VII. CONCLUSION

The use of remote e-payments in large healthcare systems has long-term advantages such as optimization of the costs sustained, optimization of the time taken to perform tasks and better methods of payment processing. But, these advantages come with adherence with the implementation issues, integration issues, and long-term planning. When healthcare networks continue to adopt more automation, constant development in fighting these issues will be crucial as well as the optimization of automated remittance systems. Future works will have to build upon these technologies to integrative and further enhance the ability of healthcare financial powerhouses to change how they operate and deliver value to relating patients and stakeholders.

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