Radiology based Artificial Intelligence system: Addressing the gap between service providers and AI integrators

E.Prasanna Venkatesh

MBBS, DEM

MBA Student

Sri Ramachandra Faculty of Management Sciences

Sri Ramachandra Institute of Higher Education and Research, Chennai

prasannaapoorva@gmail.com

S.Srinivasan

Assistant Professor

Sri Ramachandra Faculty of Management Sciences

Sri Ramachandra Institute of Higher Education and Research, Chennai

ssrinivasanphd87@gmail.com

Abstract:

Neos Health Tech aims to integrate technology and healthcare to provide exceptional patient care. It addresses the issue of misdiagnosis in the radiological diagnostic services industry by creating an AI-powered SaaS platform. This platform will assist radiologists in reporting scans by detecting abnormalities, quantifying their severity, and generating a report. Flow is a web application which acts as an overlay on the existing radiology infrastructure. Neos connects directly to the machines and take all crucial information to the cloud. On the cloud, by leveraging the power of AI, actionable insights are given to the radiologists.

Objective: The objective of the research is to study the process of traditional Picture Archiving and Communication System (PACS) and FLOW (a new product by Neos) through identifying the gaps involved in FLOW. Also, to investigate the expected process improvements in the FLOW – CT Abdomen and forecast the revenue expected.

Design: This study is qualitative in nature adopting literature review, observations, interview with the founder of NEOS, front office personnel of the diagnostic centre, doctors, radiology technicians as the key instrument of data collection.

Findings: The three key findings of the study is that AI enhances patient satisfaction by automating image uploads to secure portals, and streamlining workflows across hospitals. Automation of image sorting and prioritization reduces result turnaround time. AI detects abnormalities, freeing radiologists for complex cases and enables teleconsultation, enhancing access to radiology in rural areas, transforming healthcare delivery.

Implications: The study implies that AI integration in radiology brings transformative clinical and managerial benefits, including enhanced workflows, reduced wait times, error prevention, early diagnosis, and streamlined processes. Expected revenues will be achieved by the successful collaboration of AI providers. Addressing challenges through strategic initiatives can revolutionize radiology, advancing patient care.

Originality: The study identifies a critical gap in understanding the requirement of large amounts of training data and the potential for bias in AI models, contributing new perspectives to the discourse on the gap between service providers and AI integrators. Our findings provide valuable insights for healthcare providers and offer a foundation for future research in Radiology based Artificial Intelligence system.

Keywords:

PACS, FLOW, Artificial Intelligence in healthcare, Image upload automation, CT abdomen, Imaging Technology

Introduction:

Radiology is essential to the dynamic and ever-changing field of healthcare because it provides vital diagnostic data for patient care. However, there are frequent issues with the efficiency, accuracy, and accessibility of the conventional workflow and Picture Archiving and Communication System (PACS) processes. The integration of Artificial Intelligence (AI) is a transformative solution that bridges the gap between service providers and AI integrators to completely change the way healthcare is delivered. This research delves into the intricacies of AI integration in radiology, exploring its potential to enhance patient satisfaction, improve turnaround times, and optimize resource utilization.

Artificial Intelligence

The technique of imitating the intelligence of humans in computer systems is known as artificial intelligence, or AI. It entails creating algorithms and software that let computers carry out operations like learning, reasoning, solving problems, comprehending natural language, and adapting to novel circumstances—tasks that ordinarily call for human intelligence.Artificial intelligence (AI) systems are made to mimic cognitive processes including perception, logic, problem-solving, and judgment. They may have general intelligence or be task-specifically trained. Machine learning, neural networks, computer vision, natural language processing, and other methods are examples of AI approaches.

Many industries use artificial intelligence (AI), including healthcare (for diagnosis and treatment recommendations), finance (for algorithmic trading), autonomous cars, and recommendation systems (like Netflix and Amazon).

Artificial Intelligence in Radiology

Radiology has benefited greatly from artificial intelligence's increased speed, accuracy, and efficiency in image analysis and interpretation. The following are some ways AI benefits radiology:

- **Faster Image Analysis**: Compared to humans, AI systems can process images like X-rays, CT scans, and MRIs quickly. When a prompt diagnosis is required in an emergency, this speed might be extremely important.

- **Assisting Radiologists:** AI systems can act as a valuable tool for radiologists, helping them detect and highlight abnormalities in images, reducing the chance of human error, and improving the diagnostic process. Radiologists can use AI as a "second opinion."
- **Automated Detection:** AI can automatically detect and identify abnormalities or potential areas of concern in medical images. For example, AI algorithms can identify tumours, fractures, or other anomalies, enabling early detection and intervention.
- **Quantitative Analysis:** Patient examination data based on numbers such as the progress rate of tumour size and growth, which is very difficult to arrive at manually, can be calculated using AI. This information will be helpful in assessment planning and monitoring treatment for patients.
- **Enhanced Image visualization:** The detailed image diagnosis of patients is feasible through AI which is easier to interpret the findings of images to provide timely intervention and improve patient outcomes**.** This will also enhance the process and improve patient safety.
- **Workflow Optimisation:** AI can help streamline radiology workflows by prioritizing urgent cases, automatically routing images to the appropriate specialist, and reducing administrative tasks.
- **Predictive Analytics:** With the help of historical patient data, AI can be used to understand the progression of the disease, plan for improvements in patient outcomes, and reduce any likely complications for the patients. AI helps in aiding personalized treatment planning for patients.
- **Population Health Management:** The medical images data of large volume can be analyzed with the help of AI to know the pattern and progression which will be a very useful tool for hospitals in planning and allocation of resources.
- **Training and Education:** AI systems can serve as educational tools for medical students and radiologists in training, providing access to a vast database of annotated images and assisting in the learning process.
- **Remote Diagnosis:** AI can enable remote radiology services by allowing images to be analyzed and interpreted by experts from anywhere in the world, potentially improving access to specialized care in underserved areas.

Neos Health Tech has brought all radiological tools into one user-friendly software by integrating artificial intelligence assistance. Gold standard data storage methods are used to secure patient information. Artificial Intelligence suite of NEOS features 5 powerful artificial intelligence algorithms. It quickly analyses over 70% of scans at any site. Within 5 minutes, the abnormalities could be detected, findings could be quantified, and radiologists could make efficient and precise decisions. Neos takes note of and analyses important metrics of the radiologist to improve the prioritization of scans. This facilitates the redistribution and reassignment of scans, revolutionizing teleradiology. Neos Health Tech has built a web application known as FLOW that acts as an overlay on the existing radiology infrastructure. It is connected directly to the machines and takes all information to the cloud. On the cloud, leveraging the power of artificial intelligence, actionable insights are given to the radiologist.

The study takes a qualitative approach and uses an extensive methodology that includes observations, interviews with key stakeholders, and a review of the literature. These stakeholders include the founder of NEOS, front desk staff at diagnostic centers, physicians, radiology technicians, and AI providers. By analyzing the perspectives of these individuals, the research sheds light on the current challenges and opportunities in AI integration, paving the way for strategic initiatives that can revolutionize radiology and advance patient care.

To overcome potential obstacles, AI suppliers and service providers must strategically collaborate for AI to be successfully integrated into radiology. Regulatory obstacles, worries about data privacy, and the requirement for continuous training and education for healthcare personnel are a few examples of these difficulties. Through targeted initiatives to address these difficulties, the healthcare sector can leverage artificial intelligence (AI) to revolutionize radiology and achieve previously unheard-of levels of patient care.

Statement of the Problem

Computed Tomography is a non-invasive diagnostic imaging method that creates horizontal, or axial, images of the body—often referred to as slices. A CT scan provides fine-grained images of every bodily part, including the blood arteries, muscles, organs, fat, and bones. Standard X-rays lack some of the detail found in CT scans. The placement of needles during aspiration (extraction) of fluid from the abdomen or biopsies of abdominal organs or tumors can also be seen on CT scans of the abdomen. Abdominal CT scans are helpful in the pre- and post-treatment monitoring of cancers and other disorders. (*Computed Tomography (CT or CAT) Scan of the Abdomen*, 2019)

The number of start-up AI integrators for diagnostics is increasing in the market and the following gives major players of AI Integrators.**a) SigTuple**: SigTuple is a start-up based in Bengaluru that utilizes AI to analyze medical images and lab reports. Their main product, Manthana, is a diagnostic intelligence platform that aids pathologists and radiologists in efficiently and accurately diagnosing diseases. **b) Niramai** is a start-up based in Bengaluru that utilizes AI to enhance the early detection of breast cancer. Their platform, Thermalytix, is powered by AI and employs thermography to identify breast cancer in its initial stages. This makes it a non-invasive alternative to mammography. **c)Qure.ai**: Qure.ai is a start-up based in Mumbai that utilizes AI to aid radiologists in diagnosing and interpreting medical images. Their main product, qXR, employs deep learning algorithms to analyse X-ray images and detect possible abnormalities. The AI integrators can help the diagnostic centres in early detection of abnormalities which would increase the outcome of the intervention and saves the life of the patients. There are approximately 500 diagnostic centres in Chennai and more than 100 AI Integrators. As a start up, with increasing competition, gaining market share is a challenging task as this would affect the cost and revenue sharing negotiation difficulties between AI Integrators and the Diagnostic centers. Currently, Neos serves around 40 diagnostic centers in and around Chennai. The findings of the study would help any start up AI Integrators in scaling up their business and achieve significant market share.

From Table 1 on the forecasted number of CT scans per day and total revenue expected from Process Improvement**,** there is an increasing trend in the number of CT scans performed per day from 40 in September 2023 to 750 in August 2024 and the total revenue generated. The average revenue per scan has also increased considerably. This suggests that there is a growing demand for CT scans, and NEOS can capture the demand and generate increasing revenue.NEOS focusses on CT KUB (Kidney Ureter and Bladder) which detects only kidney and ureteral stones and does not detect other abnormalities associated with kidney. However, the AI does not reveal the abnormalities of various other organs and can be detected using traditional CT abdomen. Certain abnormalities like cyst, tumours, and bleeding that cannot be identified by Radiologists, could be identified by artificial intelligence. Thus, artificial intelligence helps in early diagnosis, detection and treatment of various diseases at an early stage improving the life expectancy of the patients.

Objectives of the study:

- To review the process of traditional PACS and FLOW in generating Radiology reports
- To identify the gaps involved in FLOW
- To investigate the expected process improvements in the FLOW – CT Abdomen
- To forecast the revenue expected in the FLOW – CT Abdomen

Research Methodology:

Research design: Descriptive Research

Data Source: The present study relied on the observation and the review of current process literature review, interaction with the Radiologists, the Technicians and the CEO of Neos Health Tech.

Sample Size: The sample selected for interview consisted of seven Radiologists, and 15 Radiology technicians. The radiologists and technicians were interviewed from four hospitals and three radiology diagnostic centres across Chennai. The data has been collected from different hospitals to understand the stakeholder's perspective from different healthcare delivery system. Also, the patient's perspective is captured to improve satisfaction and advance clinical outcomes.

Review of Literature:

In order to work together more successfully, healthcare service providers and AI integrators must overcome both opportunities and challenges. Examining biases in healthcare decision-making, addressing the mistrust of AI, and resolving adoption concerns are some of the hurdles **(Gautam et al., 2022)**. Further research is also required on the dynamic and ever-changing nature of healthcare collaboration, the complementary roles of AI and humans, and the long-term effects on patients and healthcare institutions. However, there are also opportunities to increase patient involvement, increase the number of clinical staff, and improve the efficiency of healthcare delivery by utilizing AI-enabled technology **(Vaibhav et al.,2022)**. AI can help overworked medical practitioners, alleviate the scarcity of skilled healthcare personnel, and improve commercial decisions related to health **(Yi-Shao Lai et al., 2021)**. However, to fully benefit, the healthcare system must be transformed, and effective AI integration must be ensured by rigorous planning and strategy.

AI algorithms have the potential to increase diagnostic accuracy in the identification of lung masses and nodules, decrease the number of missed abnormalities, and discover overlooked diseases. The application of AI technologies can expedite the right therapeutic treatment of thoracic malignancies by enabling early diagnostic evaluation of malignant lung nodules. Furthermore, radiologists' reading times can be shortened by using AI software to analyze chest radiographs, which will increase workflow efficiency. Moreover, AI can be helpful in the unintentional identification of early, treatable lung cancer, which emphasizes its value in chest radiography. With radiologists in limited numbers, artificial intelligence (AI) presents a promising solution for enhancing the evaluation and management of nodules on uninterpreted chest radiographs. **(Kishenboim Zehavit et al., 2024)**.

Bajaj et al 2023, titled "Potential Applications and impact of Chat gpt in Radiology" found that artificial intelligence can contribute to process improvements in radiology from registration to diagnosis.The findings of the research article by **Nair et al, 2022** provide an eye opener to radiologists who use Artificial Intelligence for practice. The results provide warning signs of security threats, privacy of patient data, concerns related to ethical, and regulatory aspects, biases in the interpretation of findings.Digital medicine, which involves using digital tools to upgrade the practice of medicine, has the potential to revolutionize healthcare by enabling personalized and precise care. It encompasses the use of biosensors, algorithms, cloud computing, and artificial intelligence to digitize human beings and process vast amounts of data. This technology has the potential to democratize medicine, allowing individuals to generate their own real-world data and be more engaged with their health. Additionally, digital medicine can improve drug development and treatment outcomes by enabling the dynamic modulation of interventions and individualizing care. Furthermore, digital tools can enhance medical imaging by capturing and analysing physical attributes, leading to improved diagnosis and treatment. Deep learning-based image super-resolution methods, such as the cross-layer information refining network, have shown promising results in improving image acquisition and resolution. **(Harvey et al., 2020).**

In recent years, the field of artificial intelligence (AI) in radiology has attracted a lot of interest and attention. By facilitating non-interpretive jobs, boosting resident training, and facilitating better image analysis and interpretation, artificial intelligence (AI) technology holds the potential to completely transform the radiology sector. But radiology practices have been hesitant to integrate AI, and there is a persistent conflict between planned and emergent change in the acquisition and application of AI solutions. Radiologists need to redefine their

approach to procurement projects and conceptualize them as evolving change processes. Many radiologists still have limited understanding of AI and its potential applications in radiology. There are also concerns about the value and return on investment of AI, as well as the liabilities of radiologists regarding AI decisions. Radiologists should be familiar with the practical aspects of assessing and deploying AI tools in their practice to ensure proper allocation of resources and enhance patient care. **(Hari Trivedi., 2022)**

RESEARCH GAP

The studies linking AI Integrators and Diagnostic centers are very limited in the literature which gains attention of the present study. The future of diagnostic market will be supported by AI and technology driven and therefore the findings of the present study will help in providing a pathway for AI applications in healthcare business.

CONCEPTUAL FRAMEWORK

Workflow pattern of Traditional PACS

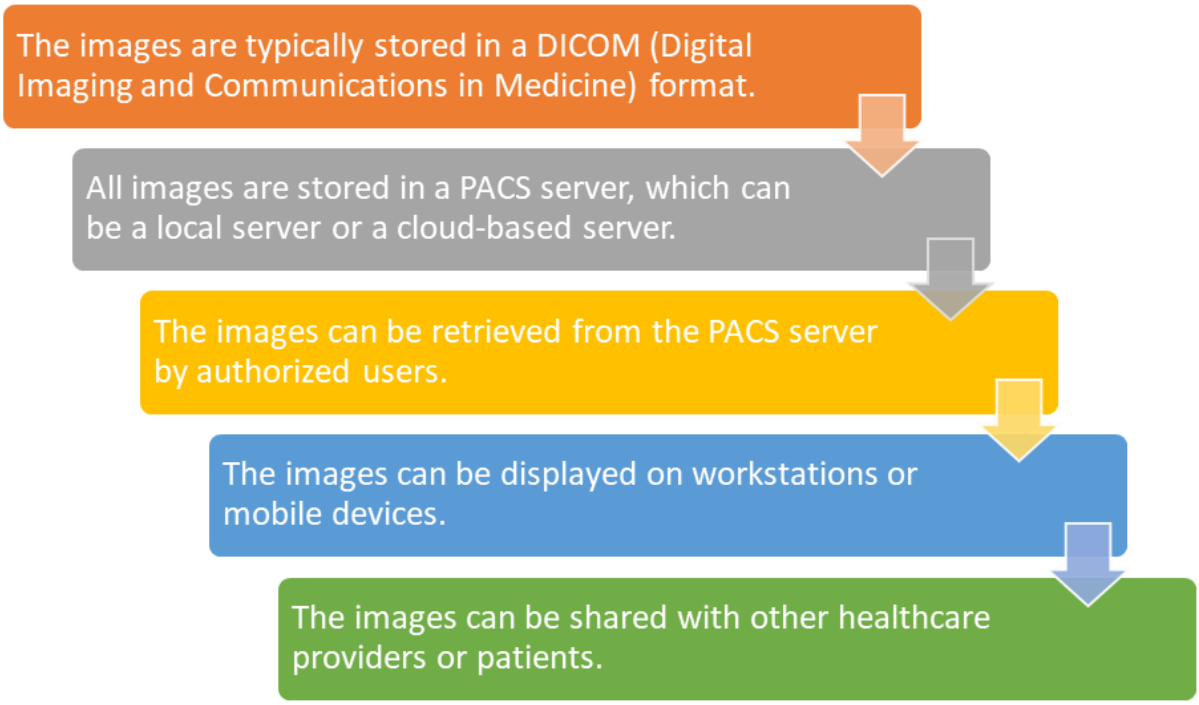
PACS stands for Picture Archiving and Communication System is used to transmit, store, and retrieve reports and images. PACS systems are used in hospitals, clinics, and other healthcare facilities to improve the efficiency and quality of patient care.Here are the main components of a PACS system:

Image acquisition devices: These are the devices that capture medical images, such as X-ray machines, Computed Tomography scanners, and Magnetic Resonance Imaging machines.

- **Image storage:** The images are stored on a PACS server, which can be a local server or a cloud-based server.
- **Retrieval of images:** The authorized users can be permitted to retrieve images from the PACS system
- **Display of images:** The images can be displayed in any devices- mobile, computer (desktop) or laptops.
- **Communication of images:** Using PACS, the radiologist can share any images to other healthcare providers or patients.

The main function of the PACS system is the conversion of medical images into digital format. These digital images are then stored on the PACS server. The authorized user can view and share the image from the server of the PACS

Figure 1 Flowchart showing Workflow pattern of Traditional PACS



Source: Author's compilation

Step 1: The medical images are stored in DICOM format which is a standard format that ensures easy shareability of images between different PACS systems

Step 2: To ensure security, the PACS server can be a local server or cloud-based server preventing unauthorized access

Step 3: As and when required, the authorized users can access the PACS server using the credentials.

Step 4: The users can view and interact with the images which are displayed on work stations or mobile devices

Step 5: The patient or another service provider can view the shared images through a secured network or cloud-based storage server.

When compared to film based system, PACS offers numerous benefits which include:

- **Enhancing Efficiency:** PACS can reduce the turn around time, improving efficiency of patient care and discarding manual storage and retrieval of films.
- **Improved quality of care:** PACS systems allow radiologists to view images more quickly and easily, which can lead to improved diagnoses.
- **Increased collaboration:** PACS systems make it easy to share images with other healthcare providers, which can help to improve the coordination of care.
- **Reduced costs:** PACS systems can help to reduce costs by eliminating the need to purchase and store film.

Workflow pattern of NEOS - FLOW

Step 1: Interface from machine.

Step 2: Data transferred to Cloud.

Step 3: Data stored in Meta Data.

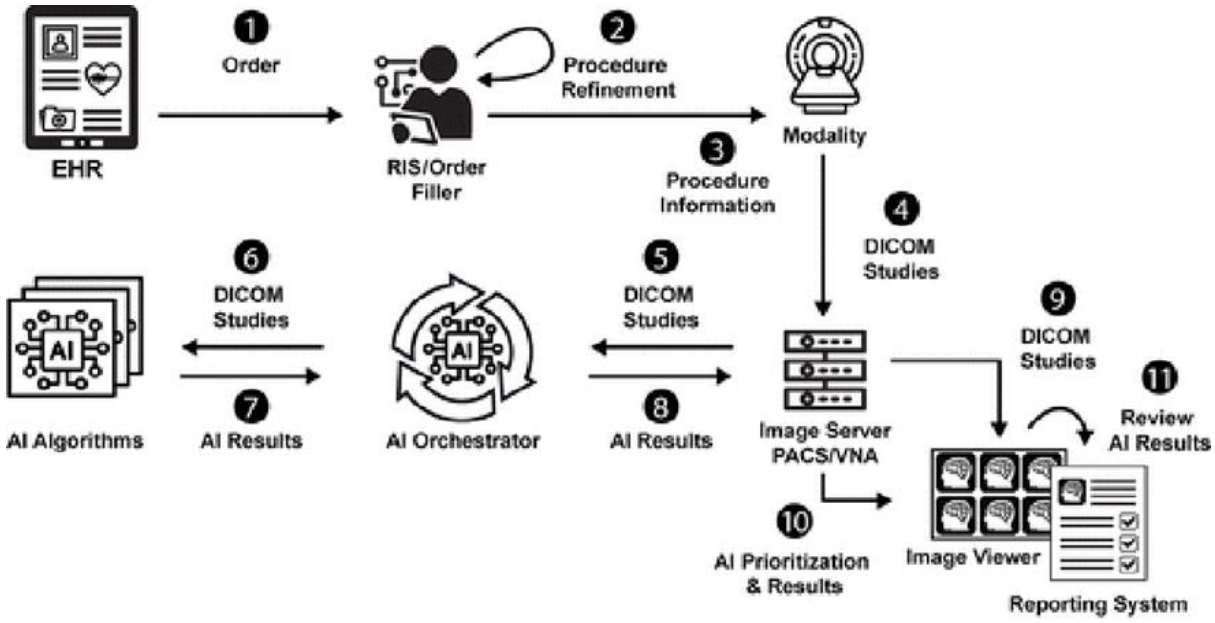
Step 4: Patient images are sent to the concerned AI Provider.

Step 5: Impression created by the AI is sent to Radiologist, Technician can send the images to the concerned Radiologist which also tracks the Turnaround Time

Step 6: DICOM integrates the medical images.

Step7: Reporting of radiology findings.

Figure 2 Workflow Pattern of NEOS Flow



Source: Authors' compilation

KEY OBSERVATIONS

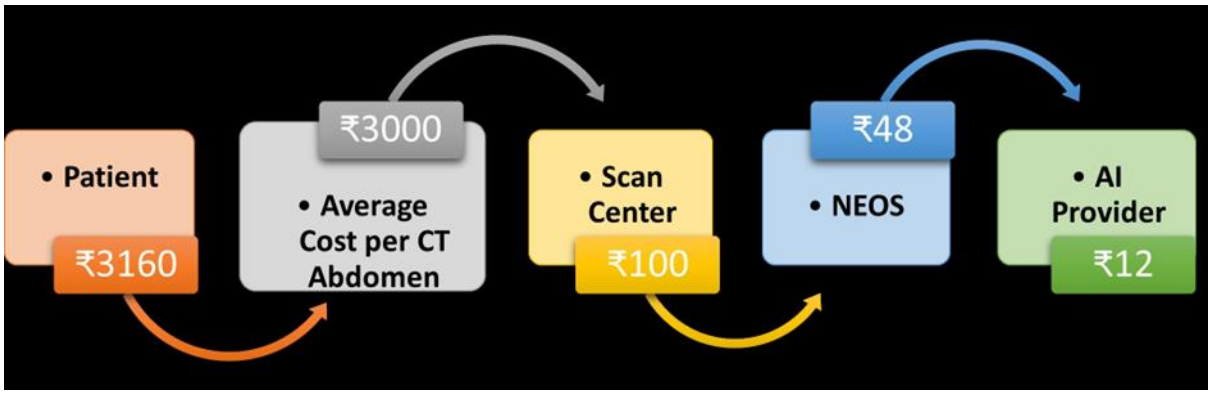
One of the primary limitations of utilizing AI in radiology is the need for professional interpretation by a qualified radiologist. While AI can provide valuable insights and assist in the diagnostic process, it is crucial to have the expertise of a radiologist to ensure accurate and comprehensive interpretations. Another inherent weakness of AI start-ups, such as NEOS, is the lack of sufficient capital. This financial constraint necessitates the acquisition of funds through loans and investments, which can pose challenges in the early stages of development. Additionally, being a relatively new firm in the industry, NEOS may encounter difficulties in persuading established medical chains to adopt and utilize their AI products. Furthermore, the limited number of AI providers may result in incomplete clinical findings, particularly in areas not widely covered by CT Abdomen.

Expanding the services offered by NEOS to new hospitals and diagnostic centers presents a significant opportunity for revenue growth. By forging partnerships and collaborations with these healthcare facilities, NEOS can extend its reach and increase its customer base. Moreover, identifying new AI providers that cater specifically to recently developed clinical conditions, related to diagnosis and therapy, can greatly enhance the quality of services offered by NEOS. By incorporating these cutting-edge AI technologies, NEOS can stay at the

forefront of advancements in the field and provide the most comprehensive and advanced diagnostic solutions. Additionally, it is essential to explore collaborations with AI providers in connected fields to gather a broad range of data, enabling holistic, comprehensive analyses and increase revenue.

Business model of AI based Radiology Investigation

Figure 3 Revenue Sharing Model



Source: Author's compilation

According to the figure 3, a CT abdominal scan in Chennai typically costs ₹3160. The price may vary between ₹3000 to ₹4800 based on the center and the provider. Also, a CT abdomen scan with NEOS AI costs ₹100. NEOS AI makes use of artificial intelligence to raise the standard of CT scans. However, the complexity of the scan can affect how much a CT abdominal scan costs.

Table 1 Forecasted number of CT scans per day and total revenue expected from Process Improvement

Quarter	No.of CT Scans / day	Total Revenue (₹)
Sep-23	40	1920
Jan-24	250	12000
May-24	500	24000
Aug-24	750	36000

Source: Data collected from Neos and calculated using MS-Excel

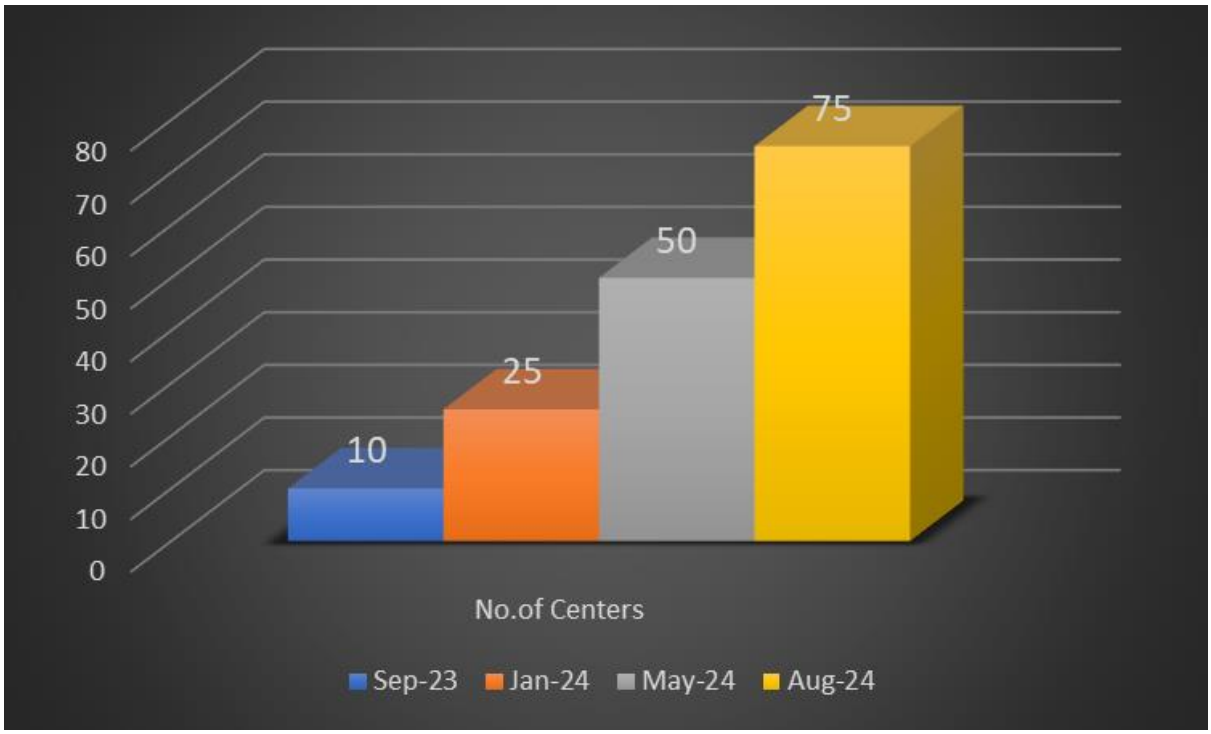
Figure 4 Forecasted number of CT scans per day and total revenue expected from Process Improvement

Total Revenu

No.of CT Scans/ Day

Source: Table 1

Figure 5 Targeted number of scan centers integrating with NEOS



Source: Data collected from Neos and calculated using MS-Excel

DISCUSSIONS

There are certain key challenges of integrating AI specific to the Radiology Unit :

i) AI Acceptance by the Radiologists
ii) Perception about the replacement of AI in place of Radiologists
iii) Mistrust of AI capabilities
iv) Cost associated with the ongoing maintenance, updates, quality assurance for AI
v) Security and Privacy issues related to hacking and manipulation of patients' data
vi) The expertise of Radiologist to ensure accurate and comprehensive interpretation of AI-generated images.
vii) The number of firms that integrates AI in Radiology practice is less in India leading to partial examination and interpretation of the findings
viii) Financial challenges exist for start-ups working on AI integration in Radiology
ix) Awareness and persuasion of medical chains in using AI products.

To address these concerns, the following recommendations are put forth:

a) Ensuring AI as a facilitator to ease the work of the Radiologist for timely intervention and analysis
b) For cost management, utilizing cloud-based platforms for servers can help optimize resources and save money
c) Measures such as encryption of patient data, very strong access control can be initiated to prevent cyber threats
d) The hospitals can be encouraged to provide AI-integrated radiology services. This can help in taking leverage of clinical expertise, infrastructure facilities, and other resources.
e) Evidence-based practices of successful AI integration in radiology can be published and disseminated to gain confidence and trust among providers and users.

FINDINGS RELATED TO NEOS HEALTH TECH

NEOS is currently without a Radiologist who possesses the necessary qualifications to interpret the findings generated by the AI. The in-house Radiologist can serve as a mediator between the AI Providers and the Healthcare Providers at Hospitals to verify the clinical findings and aid in interpretation. By utilizing a pool of data that has been feeded into the

software, FLOW facilitates the acquisition of consistent images, thereby enhancing the trustworthiness and uniformity of the diagnostic outcomes.At present, NEOS only collaborates with 10 Trial scan centers, 4 centers under pilot study, and 12 leading centers. Consequently, the firm's interaction with AI providers is limited in number. To cater to the needs of doctors and other healthcare providers, the user-friendliness of the FLOW software can be enhanced by improving the application's features. Also, the doctors and other healthcare providers who use FLOW could be provided with adequate training or orientation on complete utilization of the application.

NEOS to ensure the recruitment of a highly competent Radiologist with an extensive understanding and expertise in the field of Radiology, who possesses the ability to effectively interpret AI recommendations whilst simultaneously acting as a crucial intermediary between NEOS and its partnered Hospitals. To enhance the overall usability and accessibility of the software, significant improvements must be made, particularly in relation to doctors and other health care providers, thus allowing for a seamless and efficient user experience. Moreover, it is essential that the existing software is upgraded with the latest advancements in healthcare technology, as this will not only serve to enhance its overall functionality but will also enable NEOS to expand its network of scan centers by securing additional funds from potential investors and capitalists. By capitalizing on this opportunity, NEOS has the potential to significantly increase the number of scan centers it collaborates with, from 10 in 2023 to an impressive 45 in 2024. This can be achieved by implementing strategic measures to improve the number of AI Providers, thereby ensuring a broad spectrum of clinical conditions can be adequately catered to. Consequently, this expansion in the number of AI providers will undoubtedly lead to a substantial improvement in the accuracy and precision of diagnosing various clinical conditions. As such, it is highly recommended that NEOS invests in the comprehensive training and education of Radiologists, specifically in their utilization of AI-powered tools, as this will undoubtedly contribute to a significant enhancement in patient outcomes and overall healthcare delivery.

LIMITATIONS

The study involves relatively a smaller sample size of 7 Radiologists and 15 Radiology technicians due to time constraints. Also, the findings of the study are related to NEOS health tech, and the generalizability of the findings is limited. The heterogeneity in the doctor's

experience characteristics may impact the results of the study, as the experience may have different effects on the clinical outcomes.

CONCLUSION

The utilization of Artificial Intelligence (AI) in the field of radiology significantly enhances the precision and accuracy of diagnoses by providing valuable additional insights into medical images. This improvement in accuracy can be attributed to the ability of AI solutions to analyze and interpret images in a consistent and standardized manner, thereby reducing the variability that may arise from human interpretation. By doing so, AI technology plays a pivotal role in improving the overall reliability of diagnostic outcomes. Additionally, scalable AI solutions help in analyzing large volume of images which can minimize the turn around time and improve patient satisfaction. A thorough analysis of the findings reveal two notable advantages of AI integration in Radiology:

- Assisting Radiologist in diagnosis and interpretation
- Abnormalities detection by AI and tele consultation helps in reaching underserved rural areas.
- Enhanced value for the patients by maximizing the outcomes

This, coupled with the potential for increased patient volume and improved diagnostic accuracy, contributes to enhanced revenue generation for healthcare providers. The process involved in carrying out a CT abdominal procedure using traditional PACS and innovative FLOW have been thoroughly studied and the gaps in the process have been identified. The potential areas to improve the process of FLOW have been determined and the revenue prospects for flow were forecasted. The recommendations provided on hiring qualified radiologists, enhancing software accessibility, upgrading technology, increasing collaboration and investment in training would help NEOS in maximizing the potential of FLOW – CT Abdomen. Thereby, the precision of healthcare diagnostics could be improved and the expansion goal of NEOS could be achieved. Also, NEOS could position itself as a niche player in radiological diagnostic sector by ensuring high quality of patient care. Currently 10 scan centers, 4 pilot centers and 12 lead centers are being operated by the organization. The plans for expanding its activities to 30 hospitals and 45 scan centers by September 2024 will help them to have a market share in the field of Artificial Intelligence.

IMPLICATIONS

Clinically, AI can lead to shorter waiting times for patients by automating tasks like CT scan analysis, freeing up radiologists to focus on more complex cases. With the help of AI, earlier detection of abnormalities is possible which facilitates timely intervention for better patient outcomes. The accuracy of interpretation of diagnostic images is feasible which also helps in minimizing the errors.Through automation and streamlining of the process, AI enhances productivity through optimum use of resources, quick diagnoses, avoids unnecessary follow-up scan which ultimately reduces the cost. The patient experience is enhanced through reduced turn around time, flexible access to reports and ensuring accurate diagnosis.

DIRECTIONS OF FUTURE RESEARCH

The findings of the present study provided a path direction for future research related to the following areas:

a) Exploring the feasibility of service providers (hospitals. Diagnostic centres) becoming AI integrators for radiology

b) The reports generated by AI for different functionalities can be used for examining the accuracy of the findings by the Radiologists

c) Probability of failed assessment/wrong interpretation by AI can be analyzed.

d) The feasibility of detailed assessment of integrated information from various imaging methods can be explored.

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