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How Vietnam is Leveraging AI to Reshape Healthcare

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Vietnam has identified Artificial Intelligence (AI) as a key technology to boost its economy and has announced a series of partnerships, investments, and initiatives in this space. The country's focus on AI is having a ripple effect on healthcare and driving significant growth in the sector. According to a report by DealStreetAsia's Data Vantage, healthtech startups in Southeast Asia raised a total of $580 million through 60 deals in 2023. While Singapore and Indonesia led the region in attracting investments, Vietnam ranked third, securing 3.9 per cent of the total funding. Let's explore Vietnam's efforts to become an AI powerhouse and how that's transforming its healthcare sector.

Access Partnership, the world's leading tech advisory firm, recently presented an economic impact report titled 'Driving Digital Growth in Vietnam.' The report highlights the immense economic potential of Artificial Intelligence (AI) for the country. According to the findings, AI could contribute an estimated VN? 1.89 trillion ($79.3 billion) to Vietnam's economy by 2030, representing nearly 12 per cent of its GDP.

Recognising the immense potential of AI, Vietnam has identified it as a key technology for national development. The country has launched the National Strategy on Research, Development, and Application of AI to position Vietnam among the leading nations in AI within ASEAN and globally by 2030. The strategy includes ambitious objectives, such as establishing 10 high-profile AI brands in the region and developing three national centres for big data and high-performance computing, which will be interconnected through a dedicated network. Additionally, Vietnam plans to create approximately 50 open datasets to support AI research, development, and application across various economic sectors.

The Vietnamese government has launched a human resources development programme aimed at strengthening the country's AI capabilities. The goal is to train 5,000 AI engineers by 2030 as part of a broader initiative to integrate AI into various industries. The National Innovation Center (NIC) is collaborating with both domestic and international partners to create a centre for AI research, training, and application. This centre will focus on supporting AI startups, advancing research, and providing specialised training to meet global standards. By 2030, the NIC plans to train 7,000 AI experts and nurture around 500 AI startups.

The Vietnamese government is collaborating with industry leaders like Google to help the country achieve its AI ambitions. Google is focusing on human resource development and enabling Vietnam's growing startup ecosystem to fully embrace AI. Through its partnership with the Vietnam National Innovation Center (NIC), an agency under the Ministry of Planning and

Investment, Google has offered 40,000 Google Career Certificates scholarships across 80 universities and launched a local AI-focused Google for Startups Accelerator programme.

The Google for Startups Accelerator Southeast Asia – Vietnam is a three-month, equity-free initiative supported by the NIC. This programme is designed to accelerate high-potential AI startups in Vietnam by providing access to Google's AI products, expert guidance, and infrastructure. Startups selected for the programme will benefit from AI tools on Google Cloud, including Vertex AI and Gemini Pro, through the Google Startup AI Space, an online sandbox that facilitates the rapid development and prototyping of AI applications.

AI Innovations in Healthcare

"The Vietnamese healthcare system is increasingly integrating AI technologies, such as machine learning and data analytics, to optimise clinical practices and decision-making processes. For instance, AI applications are being utilised to analyse medical data to aid diagnosis and inform choice of treatment, thereby facilitating better patient outcomes and more efficient healthcare services. This particularly relates to the well-resourced and equipped private sector, with the public healthcare system lagging some way behind. This is exemplified by the internationally accredited Vinmec healthcare system, which is owned by Vingroup, the largest conglomerate in Vietnam," said **Dr Andrew Taylor-Robinson, Professor of Microbiology & Immunology, VinUniversity.**

One of the major companies in this space in Vietnam is VinBrain, a health technology firm under the country's largest conglomerate, Vingroup. VinBrain develops a suite of pathology AI solutions called DrAid, which supports early disease detection across the country. Similarly, South Korean medical AI company AITRICS has received clearance from Vietnam's Ministry of Health for its AI software, designed to predict patient deterioration. Japan's Fujifilm launched AI-based health screenings, focusing on cancer in Vietnam. In a related effort, the Vietnam Young Physicians' Association (VYPA) has proposed a volunteer programme aimed at screening one million people for diseases using an AI platform, further advancing the country's healthcare capabilities.

Companies are combining AI and genomics to drive more personalised, efficient, and accessible healthcare solutions throughout the region. One prominent example is Gene Solutions, a pioneering genetic testing company that has become a leader in Asia's precision medicine space. With a focus on reproductive health, clinical oncology, and advanced genomics, Gene Solutions offers services such as Non-invasive Prenatal Testing (NIPT), Multi-cancer Early Detection (MCED), and Comprehensive Genomic Profiling (CGP). The company uses cutting-edge technologies, including circulating tumour DNA (ctDNA) tracking, to provide personalised, data-driven care. With over 1.5 million tests conducted, Gene Solutions is expanding beyond Vietnam, relocating its headquarters to Singapore and forming partnerships with leading hospital groups and cancer institutes across Southeast Asia, including in Indonesia, Thailand, the Philippines, and Malaysia.

Another key player is GeneStory, a startup backed by the Vingroup Corporation, which is pioneering the use of genetic data for personalised healthcare in Vietnam. Drawing on research from the 1,000 Vietnamese Genome Sequencing Project, GeneStory offers genetic reports that cover a wide range of health indicators, such as disease risk, drug response, and nutrition. The company aims to build a proactive healthcare roadmap for individuals, with a strong focus on promoting preventive medicine and national health initiatives.

Genetica Company is another example. In partnership with global leaders like Illumina and Thermo Fisher Scientific, Genetica has developed a proprietary gene-decoding chip tailored specifically to the Asian population. By analysing hundreds of genes, Genetica provides reports that give comprehensive insights into an individual's health risks, genetic potential, and behaviour. The company has recently launched a product that uses AI to detect genetic risks related to respiratory virus infections, further broadening the scope of personalised healthcare.

Vietnam's Thabis, a leader in healthcare innovation, has partnered with U.S.-based Genomate Health Inc. to bring personalised, data-driven cancer treatments to Vietnam. Digosys will distribute Genomate through the Genous service, combining next-gen sequencing and molecular tumour board interpretation to deliver tailored cancer therapies across Southeast Asia.

N2TP offers a unique approach to precision medicine through its SmartDoseAI clinical decision support software. Designed to assist healthcare providers in individualising drug dosing for patients with narrow therapeutic ranges, SmartDoseAI helps optimise treatment outcomes and improve patient safety.

Challenges and Solutions

Despite promising advances, the integration of AI in Vietnam's healthcare sector as a whole faces several challenges. Talking about the problems, Dr Taylor-Robinson said “Although the situation is fast moving, a few years ago it was highlighted that successful AI implementation requires a combination of technical expertise, financial sustainability, and socio-political commitment. Each of these factors is crucial to fostering an environment conducive to AI adoption. For the ambitious private healthcare sector, all these criteria are now met but this cannot be said of the public system that is antiquated and overstretched by comparison. While there is a degree of interest, entrenched culturally conservative attitudes that are frequently reticent to embrace change impede faster uptake at this time. Moreover, the depth of expertise and research in AI applications remains limited compared to high income nations.”

For Vietnam to become a top AI destination, there is a pressing need for a comprehensive legal framework to support AI initiatives. “The framework is essential for addressing ethical concerns, data privacy, and the overall governance of AI technologies in healthcare, which are critical for building public trust and ensuring the safe deployment of AI systems. From a patient perspective, currently there is significant apprehension, justified or not, regarding data security, accuracy of robotic surgery and other safety issues. These concerns highlight the necessity for transparent communication and physician oversight to alleviate fears and foster acceptance among patients,” said Dr Taylor-Robinson.

Of course, anything associated with technology raises concerns regarding the quality and safety of patients' data. Sharing details on this, Dr Taylor-Robinson said “The effectiveness of AI algorithms is heavily dependent on the quality of the data used for training, which can lead to potential biases and inaccuracies in clinical settings. The healthcare professionals within the Vinmec system are highly trained, often with experience gained in and professional accreditation from western countries, so this is less of a concern in the private sector. As there is no referral system in the Vietnamese healthcare system, the public tertiary care centres in the major cities are heavily oversubscribed and thus record keeping is typically still manual. In this context, transitioning to electronic systems is a long-term aspiration rather than an urgent priority and thus is a process still in its infancy.”

To that effect, Vietnam has announced the nationwide expansion of its electronic health record (EHR) system. The government is extending the implementation of the digital health record system, which was initially piloted in Hanoi and Thua Thien-Hue Province, to the entire country.

As the nation takes lead in advancing AI, we can expect to witness groundbreaking innovations that will not only benefit its citizens but also contribute to the progress of healthcare technology in the Southeast Asia region.

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