



Beyond a

Single Quadrant

## Rethinking platform businesses in the digital era.

by Vijaya Sunder M and Rithica Mamidi

**T**echnological advancements have provided new opportunities for entrepreneurs to view the Bottom of the Pyramid (BoP) segment as a potential market to offer products and services to marginalised people by creating new drivers of economic growth, improving the welfare of the poor, and making profits. The BoP market refers to the poorest two-thirds of the economic human pyramid, a group of more than four billion people, living mainly in the developing world, with an average income of less than US\$4 per day.<sup>1</sup> In such regions, there is a significant demand for essential products and services related to education, healthcare, financial services, Internet access, and sanitation, which remains largely unfulfilled. This presents a significant opportunity for platform businesses to rethink what and how they sell in these markets.

Entrepreneurial ventures targeted at the BoP segment require a creative, resourceful, and adaptive approach, as this market has inherent unique challenges including a lack of awareness, affordability, availability, and accessibility to goods and services. This demands strategies beyond conventional thinking, and platform business models could help bridge the supply-demand gaps in this segment if firms could strategically overcome such challenges.<sup>2</sup>

Using the case of Logy.AI, a business-to-business (B2B) healthcare platform, we explore the critical dimensions of platform business in a sample BoP setting. Our analysis will be conducted along two dimensions: first, the platform mode, and second, the type of product and/or service. We then incorporate our learnings into a four-quadrant framework for platform businesses and entrepreneurs to adopt, enabling them to gain a competitive advantage in the market. We also emphasise the importance of developing enabling and reinforcing strategies to demonstrate agility among the four quadrants of our framework. This article serves as a resource for organisational leaders and entrepreneurs to break the

traditional thinking of myopically positioning their business models and associated strategies within a single quadrant.

### KEY DIMENSIONS FOR PLATFORM BUSINESSES

Most people believe that platform businesses are typically associated with digital technologies. Indeed, Amazon, Airbnb, Netflix, and Uber are key examples of digital platforms that rely on digital modes to connect different parties, facilitate transactions, and create network effects.<sup>3</sup> However, it is also true that platforms existed before the digital era. Historically, platforms have been a business model that facilitates interactions among multiple groups or individuals, often to exchange goods or services. These platforms could take many forms and might operate in several industries, ranging from transportation and hospitality to finance and healthcare.

For platform firms, the first dimension concerns what matters most for their business model—is their platform mode digital or non-digital? The second dimension is related to what they sell on these platforms—are they digital or non-digital products or services? Platform-based business organisations can consciously strategise their efforts and investments using these two key dimensions for competitive advantage.

Consider the traditional non-digital platform of the New York Stock Exchange (NYSE), founded in the 1790s. The NYSE is a platform that facilitates trading by connecting buyers and sellers of stocks. In this sense, it is a marketplace for investors to exchange shares in publicly traded companies. Similarly, the shipping industry has long relied on platforms, such as shipping ports and container terminals, to facilitate the movement of goods from one place to another. Newspapers are also used as a platform to offer classified advertisements which promote goods and services. These examples exemplify the non-digitally-enabled platform mode offering non-digital services.

Non-digital platform modes could also be used to offer digital products or services. For instance, Internet cafés provide users with physical access to the Internet, a digital service. Similarly, airport and hotel lounges offer travellers and remote workers high-speed Internet access, and co-working spaces provide cloud-based services.

At the same time, some platform businesses offer non-digital products and/or services on their digital modes. Flipkart, Uber, Airbnb, and Amazon are excellent examples of such adaptation. Specifically, as digital platforms that sell non-digital products including furniture, apparel, and home appliances, Flipkart and Amazon have leveraged digital technology to offer a seamless online purchasing experience for their physical products.

And finally, digitally-enabled platforms like Netflix, Facebook and Instagram sell digital products or services to their customers.

In sum, by conceptualising the above arguments, we cross-fertilise the two dimensions of platform businesses to depict

a managerial framework in four quadrants (refer to Figure 1), which will help organisational leaders and entrepreneurs to better understand this concept while providing strategies for future development.

While several organisations fit well into one or two of the aforementioned quadrants, can the business model of platform businesses tap into all four quadrants for the sake of competitiveness? To address this question, this article discusses how Logy.AI tapped into all four quadrants of the framework for business value creation. We derive managerial implications from Logy.AI’s case to present how platform businesses can reap a competitive harvest by leveraging strategies across all four quadrants per changing market demands and evolving needs of their customers. We argue that platform businesses should avoid getting trapped in a specific quadrant, broaden their range, and penetrate both digital and non-digital modes and offerings to gain a competitive edge.

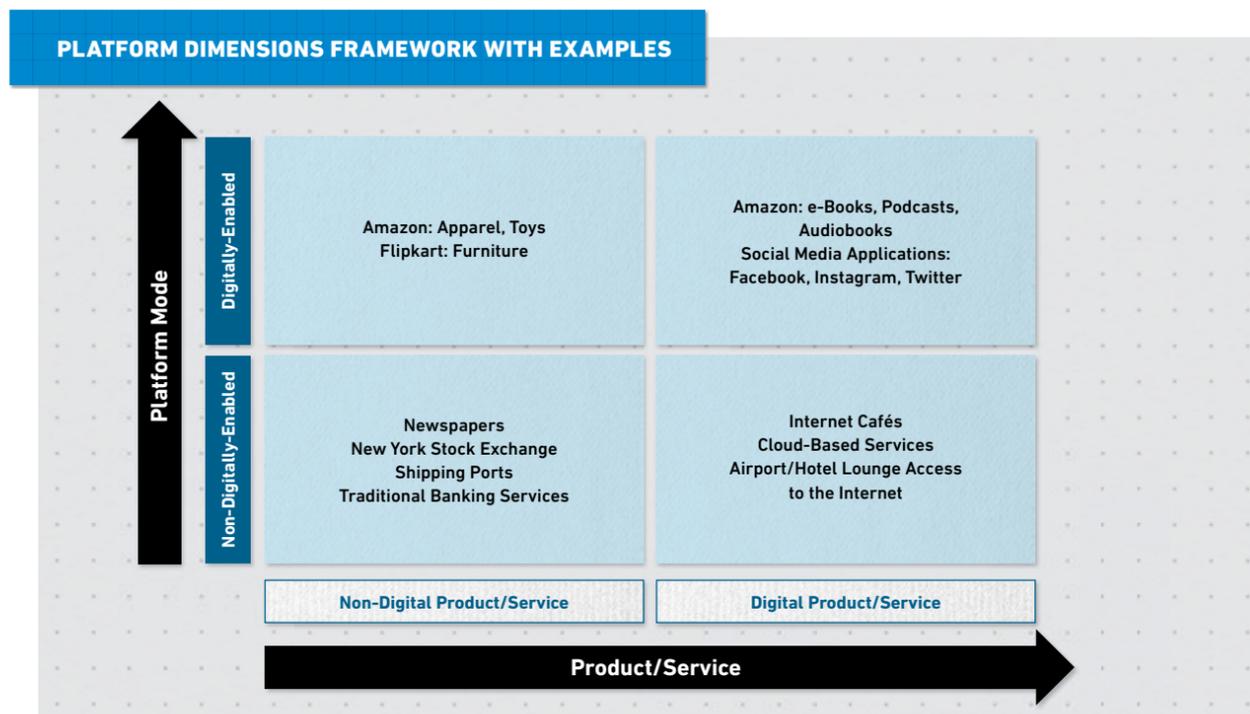


FIGURE 1

As digital platforms that sell non-digital products including furniture, apparel, and home appliances, Flipkart and Amazon have leveraged digital technology to offer a seamless online purchasing experience for their physical products.

**Logy.AI**

Logy.AI is an Artificial Intelligence (AI)-based B2B healthcare platform business. It was officially launched in India in September 2021. The idea was conceived in mid-2020 during the COVID-19 pandemic when the need for contactless solutions became essential. The lack of digital communication in dentistry and accessibility issues further reinforced the decision.

Helmed by entrepreneurs Priyanjit Ghosh, Anand Panchbhai, Dr Nivedita Tiwari, and Vinay Khobragade, Logy.AI offers quality clinical AI services for the rapid assessment of various eye and oral-related conditions, thus preventing chronic oral diseases like caries, periodontitis, and cancers.

The firm aims to enhance healthcare services by bringing in AI-based oral screening, using the smartphone as a tool, along with care co-ordination integration practices for society as a whole. Having grown up in India, where he witnessed several instances of inadequate health infrastructure, Ghosh, CEO of Logy.AI, wanted to devise a patient-centric, affordable, and easily accessible healthcare solution catering to the BoP segment. With experience as a digital start-up entrepreneur, his interests were inclined towards digital health innovation.

During the development process, Logy.AI underwent several trials to improve the accuracy of its diagnostic services. For instance, in February 2021, the global oral care products brand Colgate engaged Logy.AI to conduct three pilots, starting with initial datasets from India and modifying them

using African datasets. The first was an internal trial, followed by two other trials that involved collecting data from about 300 patients over a period of two to three months. From April to May 2022, Colgate engaged Kantar, a third-party global data analytics and insights consulting firm, to conduct the final trial, which involved validating the Logy.AI solution with another 150 patients.

In May 2022, Logy.AI’s oral screening solution was launched in Lagos, Nigeria, in collaboration with Colgate, to address the scarcity of dentists and lack of oral health care awareness by providing AI-based oral health screenings, focusing on caries, periodontitis, pre-cancerous conditions, and other chronic dental complications. Nigeria had an incidence rate of 1.2 lip and oral cancer per 100,000 population,<sup>4</sup> coupled with a low dentist-to-population ratio.<sup>5,6</sup> Logy.AI initiated partnerships and collaborations with leading consumer brands, amplifying its outreach efforts across Africa. Its AI solution was endorsed by the Nigerian Dental Association (NDA), an authoritative national dental organisation, and earned the Advan African Innovation Award 2022, a significant achievement that underscores the effectiveness of Logy.AI’s technology. Furthermore, with rigorous iterations and refinements in its algorithms, a 95-percent model accuracy was achieved, leading it to be endorsed by Kantar. In July 2022, the NDA endorsed the solution, and operations began covering more than 0.25 million oral screenings annually.

**Logy.AI’S BUSINESS MODEL**

Logy.AI’s business model is centred around a digital screening tool that operates through WhatsApp. Users take photos of their mouth and upload them on the platform, after which digital oral health reports with essential parameters such as oral health status, risk assessment, and personalised product recommendations are generated. These reports are sent to the dentists and doctors in the country for a comprehensive assessment, for which they have to access Logy.AI’s telehealth dashboard to conduct their analysis of oral health conditions. Tiwari, Director of Clinical Operations at Logy.AI, commented, “The oral care approach must change from a dentist-centred

system to a community-centred one, which will change the paradigm from curative to preventive dentistry.”

To increase reach and engagement, Logy.AI, in collaboration with its partners, also offers non-digital platforms such as on-site camps and mobile clinics with doctor consultations, and logistical support for surgery and treatment assistance. It has partnered with consumer brands such as Colgate Nigeria to launch the ‘My Tooth Doc’ initiative, which uses an AI-based oral screening app and care coordination practices. The initiative involves community dentists and doctors creating awareness among the masses through on-site camps and interventions.

**Logy.AI'S PLATFORM BUSINESS MODEL FRAMEWORK**

Logy.AI's platform business can be represented as a four-quadrant framework (refer to Figure 2). While each quadrant represents individual value propositions of the platform business independently, they leverage strategies that enable value creation across multiple quadrants, thereby enabling and reinforcing strategies. Enabling strategies involve leveraging one quadrant's outcome to enable the other's functioning, while reinforcing strategies are those where one quadrant's outcome strengthens the other.

Quadrant 1 (Q1) shows the use of its digital AI-based platform to tap a WhatsApp chatbot for oral screening, and Quadrant 2 (Q2) depicts doctors making recommendations during teleconsultations via WhatsApp. To ensure adequate supply (doctor's recommendations) for the demand (oral screening cases), an enabling strategy that feeds Q1 → Q2 is leveraged. Similarly, another enabling strategy from Quadrant 3 to Quadrant 4 (Q3 → Q4) connects non-digital oral products and online service-providing companies like My Tooth Doc during on-site camps and mobile clinics.

It is crucial for platform businesses to avoid becoming fixated on a single quadrant, and they should instead prioritise openness.

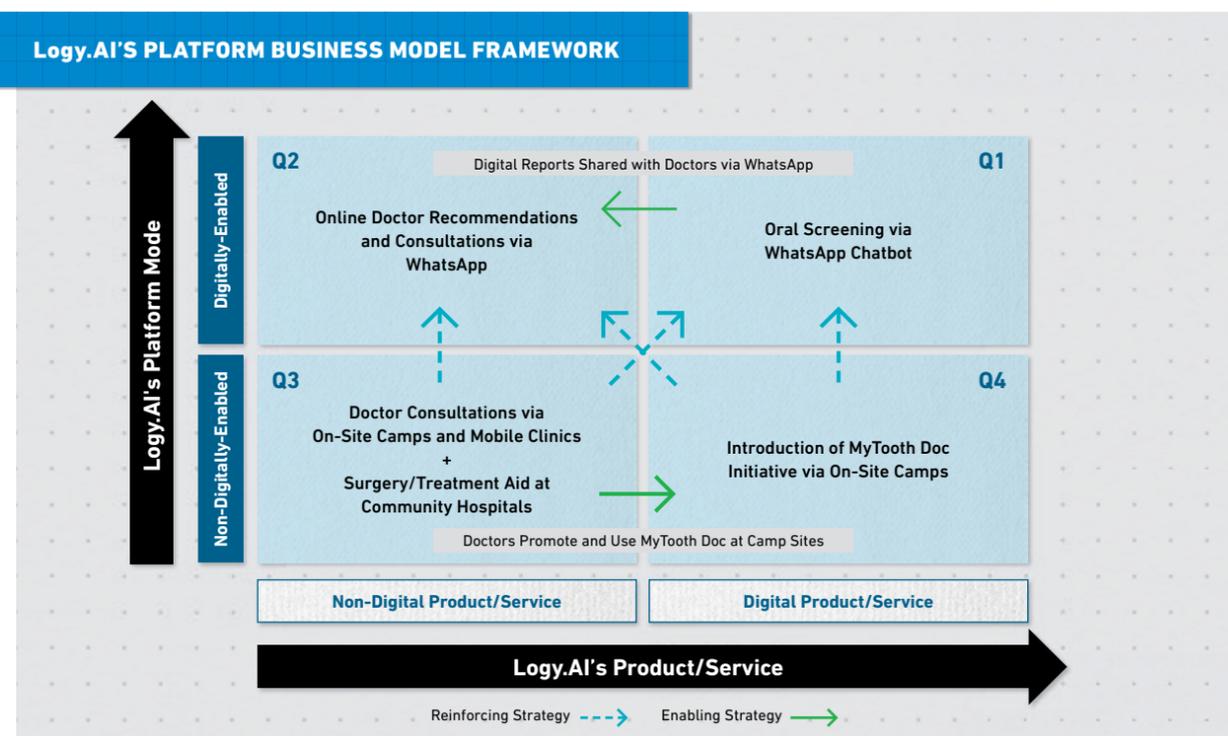


FIGURE 2

To further enhance the user experience, Logy.AI has devised reinforcing strategies, so Q4 → Q2 presents a strategy where users of Logy.AI's mobile application in Q4 are referred to online dental professionals for virtual diagnosis and consultations. Additionally, to gamify user experience, Logy.AI offers cross-selling services such as a seven-day 'Colgate Care Challenge' as a reinforcing strategy (Q4 → Q1). In a similar vein, Q3 → Q1 indicates Logy.AI using on-site doctors promoting WhatsApp chatbots to enable digital behaviours in people, and Q3 → Q2 represents digital follow-ups post on-site consultations.

**KEY MANAGERIAL INSIGHTS FROM Logy.AI CASE**

Here are four key managerial takeaways that platform businesses and entrepreneurs can draw from Logy.AI's case.

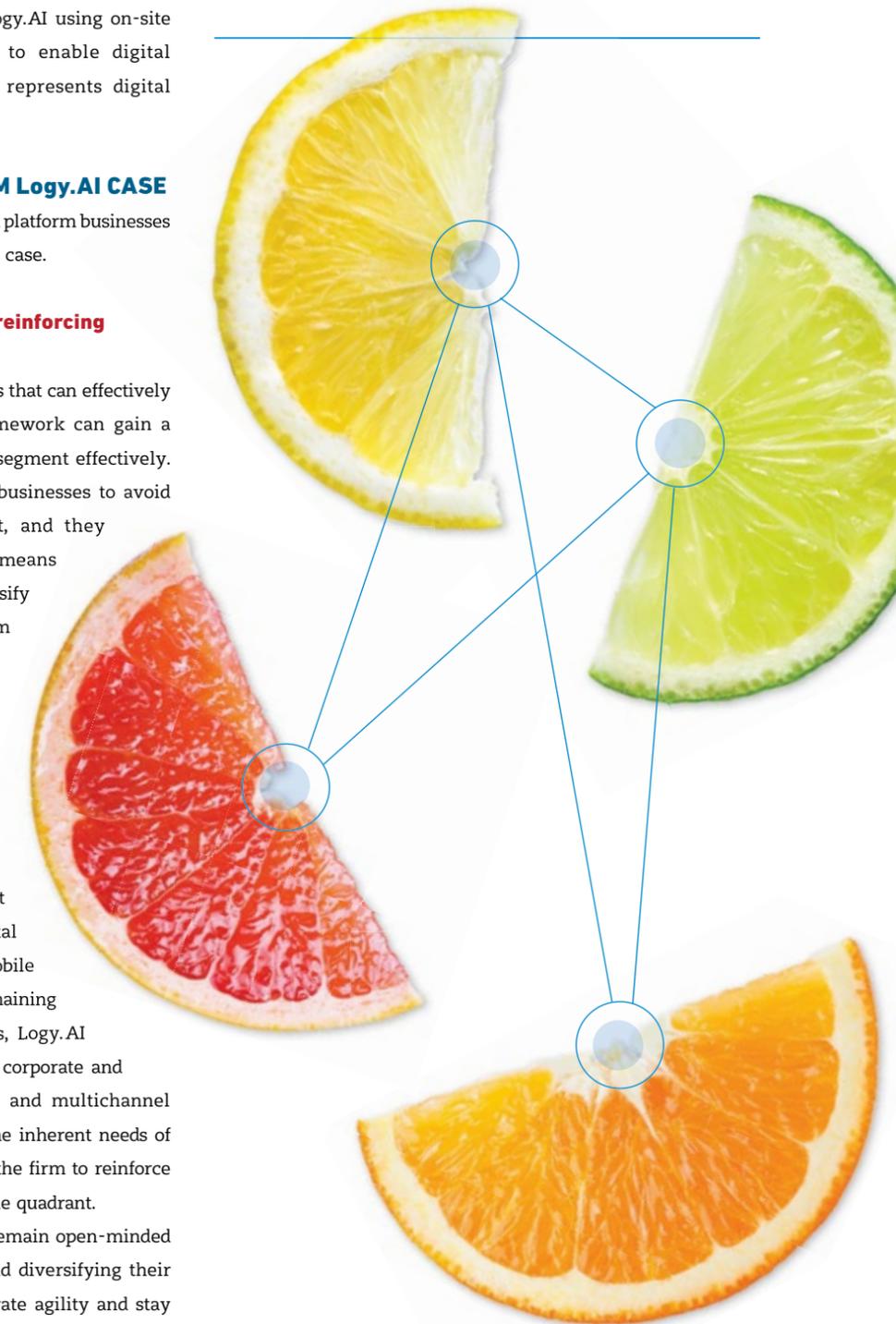
**1. Build a multichannel platform by reinforcing capabilities across all quadrants**

As an agile organisation, a platform business that can effectively operate in all four quadrants of the framework can gain a competitive advantage and serve the BoP segment effectively. Put differently, it is crucial for platform businesses to avoid becoming fixated on a single quadrant, and they should instead prioritise openness. This means exploring other quadrants to scale and diversify their operations, which can help platform businesses reinforce their platform modes and offerings.

Once a platform business has determined what to sell and how to interface in one quadrant, it should focus on scaling and expanding into other quadrants. For instance, Logy.AI did not limit itself to its digital platform, but instead opened avenues to start non-digital platforms such as screening camps and mobile clinics across Nigeria. Furthermore, by remaining open to diversifying its platform business, Logy.AI also leveraged strategic partnerships with corporate and healthcare providers to create a holistic and multichannel platform with many offerings to address the inherent needs of its target audience. This approach allowed the firm to reinforce its capabilities in other areas beyond a single quadrant.

Therefore, platform businesses must remain open-minded and explore all possibilities for scaling and diversifying their platform modes and offerings to demonstrate agility and stay competitive and relevant in the market.

While platform businesses need to tap into all four quadrants, they must also identify and distinguish their core quadrant from the other quadrants.



## 2. Identify the core quadrant and enabling strategies

While platform businesses need to tap into all four quadrants, they must also identify and distinguish their core quadrant from the other quadrants. Additionally, leveraging enabling and reinforcing strategies can be effective for achieving growth and expansion.

For platform businesses serving the BoP segment, identifying the quadrant that closely corresponds to its customer-oriented solution is vital. In the case of Logy.AI, it leveraged its core quadrant, Q1, to develop a novel oral screening solution powered by AI technology. This innovative solution allows users to receive at-home screenings through an easy-to-use chatbot platform on WhatsApp. Cutting-edge image processing technology was employed to capture and upload images of mouths submitted by users, which promptly generates an oral health report in their preferred local language. The platform overcame challenges such as low Internet connectivity and slow network speeds by leveraging chatbots and AI image processing. Its user-friendly interface includes instructional videos in local languages to ensure easy comprehension and adoption by Nigerians.

Furthermore, Logy.AI implemented enabling strategies to expand its business and widen its reach by utilising its core quadrant and other quadrants to supplement the core quadrant. To achieve this, the company integrated both digital and non-digital platforms and offerings to complement each other. For instance, in addition to its core services, Logy.AI enabled supplementary services like sending digital reports via WhatsApp to beneficiaries and doctors for comprehensive assessments (Q2). It also organised awareness camps and mobile clinics to support its beneficiaries further (Q3). To connect with a broader audience and increase local engagement, Logy.AI identified potential partner brands and collaborated with them to customise its health messaging and amplify its outreach (Q4).

## 3. Landscape the supply market and leverage the reinforcing strategies

To create sustainable solutions and expand their consumer base, platform businesses must conduct thorough research on the supply market to identify potential partners, local communities, and non-governmental organisations. However, even promising solutions may face challenges. During initial screening trials in Nigeria, most people were unaware and sceptical about Logy.AI's solution. To overcome this, Logy.AI partnered with local community leaders and established consumer brands, hospitals, doctors, and governmental bodies that recognised its offerings. These potential partnerships

became vital to Logy.AI's revenue model, allowing it to digitise patient data, screen for early-stage oral cancers, and provide beneficiaries with hospital recommendations.

As a healthcare technology company, Logy.AI offers innovative solutions to help patients conveniently access healthcare services. On the other hand, Colgate Nigeria is a leading consumer goods company specialising in oral care products. By tapping Q4, Logy.AI capitalised on the supply market's products by forming a coalition with Colgate and using its digital screening tool. This collaboration was driven by a reinforcing strategy between Q4 and Q2 by extending its services to a wider range of potential beneficiaries during their camps, and facilitating the connection of these beneficiaries to doctors via their online platform.

Logy.AI's partnerships were not a planned strategy but an emergent one (underscoring the importance for platform businesses to be agile and spot opportunities to pivot), but when the opportunities emerged, Logy.AI leveraged them for reinforcement. For instance, after dental appointments, Colgate Nigeria supplied beneficiaries with oral care products like toothpaste and mouthwash. In addition, the gamification of the user experience was another fascinating reinforcing strategy. For instance, beneficiaries were motivated to complete a contest in exchange for a prize (Q4 → Q1). The cross-selling of products established a value chain that benefitted both companies, with Colgate Nigeria supplying patients with oral care products and Logy.AI providing an engaging user experience.

Furthermore, endorsement from governmental organisations such as the NDA built credibility and made Logy.AI eligible for government funding programmes, providing the financial resources needed to develop and scale their solutions.

## 4. Demonstrate agility by serving the demand side and encashing through the supply side

For platform businesses, demonstrating the agility to move across all quadrants involves identifying the needs of both the demand and supply markets, and creating value for all parties involved. The Logy.AI case demonstrates how a digital screening tool, associated platforms, and offerings can serve as an interface between the demand market (people in underserved communities who require oral health products or services) and the supply market (organisations and healthcare providers which can provide these products or services).

Logy.AI identified a growing demand and need for oral health services in BoP markets, particularly in Nigeria. Although it does not provide a cure for caries, periodontal diseases and oral cancer, it identifies potential cases that

require medical attention. Without this awareness, high-risk cases that need immediate dental consultations would not have been identified, among other general oral issues.

Additionally, Logy.AI leveraged the supply market's products and services by creating a market for them, resulting in a mutually beneficial partnership that generated revenue for Logy.AI. Commented Khobragade, Technology AI Researcher at Logy.AI, "We believe that our solution has the potential to impact millions of communities and individuals at the BoP substantially."

## CONCLUSION

Logy.AI's unique and holistic platform approach allows it to effectively bridge the gap between demand and supply markets in the BoP segment. Through its four-quadrant platform dimensions framework, the firm has positioned itself effectively in each quadrant, cross-fertilising them for maximum impact and demonstrating agility in the process.

It helps to employ a multi-mode approach by leveraging digital and non-digital capabilities, platforms, and offerings by enabling and reinforcing strategies that cut across the four quadrants. As Ghosh concluded, "Our current focus is on serving 70 percent of the population in Nigeria by providing a simple and innovative solution to replace expensive and inaccessible intraoral scanners. The goal is to deploy our solution across other African nations, such as Kenya and Tanzania, in a scalable and sustainable manner."<sup>10</sup>

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## Endnotes

- <sup>1</sup> Jagtap Santosh and Kandachar Prabhu, "Towards Linking Disruptive Innovations and BoP Markets", International Conference on Engineering Design, 2009.
- <sup>2</sup> Massimo Garbuio and Nidhida Lin, "Artificial Intelligence as a Growth Engine for Health Care Startups: Emerging Business Models", California Management Review, 61(2), 59-83, 2019.
- <sup>3</sup> Karl Täuscher and Sven M. Laudien, "Understanding Platform Business Models: A Mixed Methods Study of Marketplaces", European Management Journal, 36(3), 319-329, 2018.
- <sup>4</sup> World Health Organization, "Oral Health Nigeria 2022 Country Profile", November 18, 2022.
- <sup>5</sup> Nigeria had 0.2 dentists per 10,000 population in 2018. This statistic pales in comparison with that for South Africa, for example, which had 1.12 dentists per 10,000 population in 2018.
- <sup>6</sup> World Health Organization, "The Global Health Observatory: Dentists (Per 10,000 Population)", 2018.