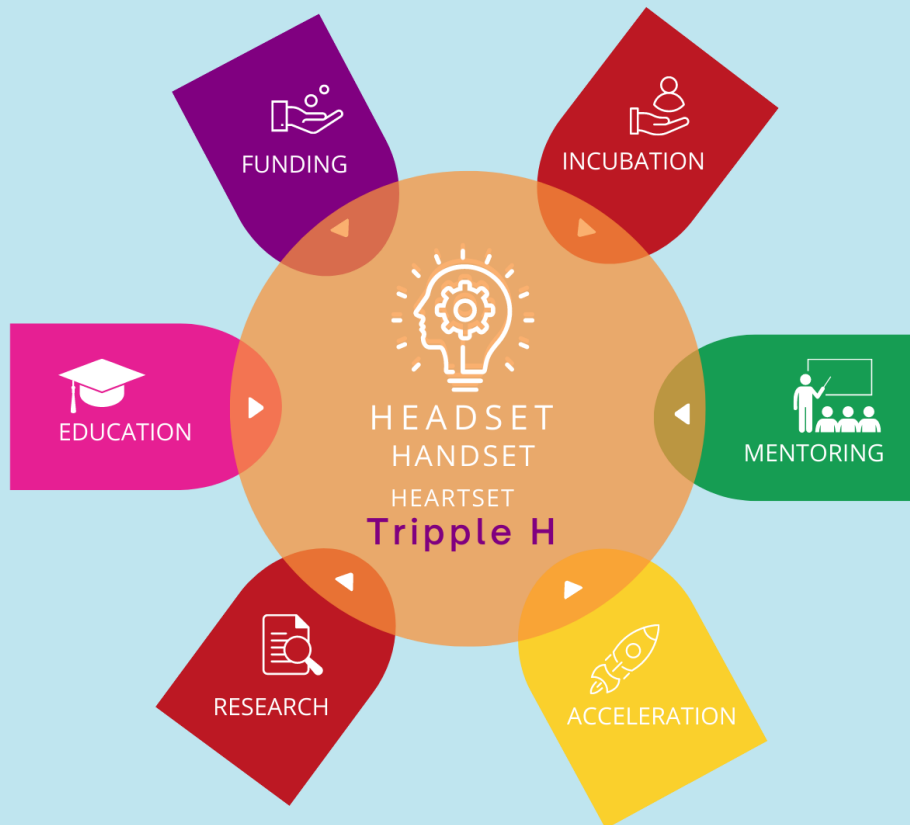




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Tawi Digital Health: Bridging Gaps in Remote Healthcare Access

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Abstract

Victor, a 24-year-old medical student, shares the inspiring story of Tawi Digital Health, a software company he co-founded to revolutionize healthcare accessibility. Born out of his struggles during the COVID-19 pandemic, Tawi Digital Health focuses on providing seamless access to healthcare services through digital tools. The journey from ideation to execution has been challenging, involving the intricate process of naming the company (Tawi, inspired by a biblical story), assembling a skilled team of directors and engineers, and navigating the complexities of the healthcare ecosystem. Victor emphasizes the importance of partnerships and stakeholder involvement in realizing their mission. The company's pivotal moments include overcoming the initial financial strain and achieving recognition and support from prestigious institutions like Harvard and Queens University.

Key Words: *Digital health tools, Remote healthcare access, Incubation opportunities, Iterative nature*

Victor Baraza Wandera, a 24-year-old medical student, is the founder of Tawi Digital Health. Hailing from Mombasa, Victor's inspiration for this venture arose from the challenges people faced in accessing healthcare during the COVID-19 pandemic, especially his personal experiences as an asthmatic.

“During the COVID-19 pandemic period, everyone was huddled up inside their houses, and there was some social distancing mandate. No contact, and no one was going to school or work. So basically, we were just at home. And getting some key services was a big challenge, especially healthcare services. For myself, I am an asthmatic. I once had an asthmatic attack, and I realized I could not access healthcare services while at home even though I had insurance cover. We had a fuelled vehicle, but still, I could not be able to go out because of the curfew. So, just during this period, I was thinking, how can we be able to increase access to healthcare services? Even while people are still within their houses and trying to secure themselves and follow the mandate? That is when I came up with the idea of digitizing healthcare so that it is accessible even remotely”

Motivated by a desire to address these challenges, Victor conceptualized Tawi Digital Health, a software venture focusing on developing digital health tools that allow patients to be able to access healthcare services seamlessly and also improve the quality of the experience of the patient. The

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naming of the company proved to be a thoughtful process, with Victor drawing inspiration from his mother's biblical suggestion. The name "Tawi" emerged, symbolizing relief akin to the biblical dove and encapsulating the company's mission to overcome healthcare challenges.

In the biblical encounter, Victor and Mum were talking about some stories about the great floods and trying to make a comparison with the COVID pandemic. Coming from a very religious family, the name Leaf was lingering in Victor's mind but it was neither unique nor memorable. Thus, a trial was made in Swahili for "Tawi", which is the first name. A look up at the database revealed that the name Tawi was already taken up and under use and could not apply in this case. Coining the words Tawi Digital Health because of the mission of digitizing healthcare passed the registration tests. The name itself defines what the venture is doing.

Tawi Digital Health is led by four directors: Victor, a medical student; Chepsi, a doctor; Collins, a software engineer; and Juma and Arthur Kennedy, two additional software engineers. This multidisciplinary team collaborates to combine medical expertise with technical proficiency to tackle healthcare challenges.

The company primarily engages in software development, creating and enhancing digital health tools. Collaboration with stakeholders like hospitals, insurance companies, pharmacies, and patients is pivotal to refining solutions and ensuring their effectiveness. Most of the business operations at the moment entail developing the software, managing the code base, and testing and looking for security robustness within the tech infrastructure. Most of the work is around coding by the co-founders and also building partnerships and relations with key stakeholders within the healthcare ecosystem.

"We are in the business of providing value to our users. So, all the time, we are trying to maximize this by getting feedback from all the stakeholders involved. So, most of it is on software development and managing relationships with stakeholders"

Victor acknowledges the importance of legislative developments, particularly recent recommendations by the Kenyan Cabinet Secretary for Health on digital health services. Such regulations are vital for defining boundaries, fostering innovation, and addressing concerns related to patient data confidentiality. As Victor reckons, legislation is a huge step towards increasing access to universal

health coverage. Initially, one of the major challenges Tawi Digital Health faced even while innovating in this space was the fact that most things were not being legislated.

Despite challenges in talent acquisition, team conflict resolution, and the iterative nature of product development, Victor remains resilient. His passion for computers, coupled with self-learning coding during the COVID-19 lockdown, positioned him to lead Tawi Digital Health's technological initiatives.

“But much more needs to be done because the space is still nascent. The solutions that exist at the moment do not solve the problem of universal health access as it is needed. And most of them are fragmented. So, if you can be able to work together to solve this problem, I believe even the legislation will go a long way to make this a success”

If you look after coming up with the idea, you must have a story of where you began and what has been the progress, especially on numbers. Victor opine that innovation and entrepreneurship is not an easy journey, as people make it seem on social media. Most entrepreneurs fail the community and society by not sharing their stories.

Key entrepreneurial traits, ranging from integrity and empathy to grit and continuous learning, shaped the journey. The fusion of medical studies and Android development skills showcased Victor's commitment to addressing healthcare challenges. The journey has been very challenging. Victor had to upskill, learn, and relearn. Learn various skills that he did not have initially. Even push himself beyond the comfort zone and his boundaries so that he can be able to advance this idea to something tangible that people can use.

“And it has not been easy, I would say, because there are many challenges. One which was talent. Initially, I had no software engineering knowledge, so I had to teach myself how to code and how to design user interfaces. I had to learn about user experiences, learn about the business model, canvas, how to create a customer journey, how to build revenue models, how to do a revenue cost analysis, and various financial ratios that show the health of the business. That is just one part of it: learning what you need to know. There is also the execution part”.

Despite Victor's academic focus on science, his passion for IT has been a constant driving force in the journey. From his early years in high school, where he aspired to learn about computers but faced limitations, to the transformative experience of unlimited internet access at the University of Nairobi, his fascination with IT persisted. The turning point came when he encountered a Google advert

offering a scholarship for Android development. Despite having no prior experience, he secured a spot and delved into learning Java and Android development during his first year of university. Balancing the demanding School of Medicine curriculum, including anatomy and biochemistry, with coding became a nightly ritual for Victor. The allure of building something substantial out of thin air intrigued him. Rugby briefly became a diversion until an injury redirected him to coding during the COVID-19 pandemic. Enrolling in the Africa Leadership Accelerator, he delved into full-stack software engineering, mastering languages like Python, JavaScript, and various frameworks. Navigating dual roles as a medical student and a burgeoning software engineer, he devoted weekends, free time, and holidays to coding, exemplifying the art of balancing priorities and managing time effectively.

The company faced challenges during its initial year without revenues, leading to unnecessary team conflicts. Victor set out expecting to do most of the tasks by himself. He quickly learnt the hard way that no one can do everything by themselves. So, he had to bring in a team which came along with conflicts that he did not know how to resolve because as an introvert, when he has a conflict, he preferred to avoid. As things turned south, he realized he is the leader and he has to manage all the conflicts. Victor had to go back to the drawing board and learn about leading a team. He thus enrolled for a course on EDX called leading a Team. In the course, he was exposed to conflict management, how to share, how to define own values, and bring in people who share the same values.

With this knowledge and a new team, the team went into product development, which took longer than initially expected. It took more than a year though it was expected to be completed in six months. Victor reckon that he has come to appreciate a paradigm shift in product development and market entry. Contrary to conventional methodologies, the team has learnt the importance of a continuous cycle: build, test, iterate, and ideate. This iterative approach, informed by user feedback, has been instrumental in Tawi digital health evolution. Acknowledging past challenges, especially with products that didn't resonate initially, the team embraced the lesson that listening to customers is paramount.

Tawi Digital Health is actively focusing on its Hospital Management Information System (HMIS) and USSD application, providing services such as appointment booking and symptom management to streamline the triage process and improve the patient experience. Revenue is generated through consultations booked via the application. The company is expanding its offerings with the development of a mobile app for patients and doctors, aiming to include teleconsultations, online drug

orders, doorstep delivery, and emergency care services. While specific user figures are undisclosed, the user base is steadily growing. Tawi Digital Health prioritizes customization, particularly with the HMIS, to accommodate the varied systems used by hospitals. The company's goal is to deliver tailored solutions that align with individual facility needs while adhering to health standards and regulations set by the Ministry of Health, combining standardized care with essential customization for optimal healthcare delivery.

Tawi Digital Health has encountered two pivotal turning points in its entrepreneurial journey. Initially, facing financial challenges during the first year with no revenues, the team of 14, primarily comprising colleagues from the computer science school, dwindled to four after expectations for immediate returns were unmet. This setback, while delaying the mobile app development, marked a reset for the company. The second turning point occurred in late October of the previous year during a pitching competition to the Center for Non-Communicable Diseases. This event provided crucial support, allowing the fine-tuning of key aspects of their solution and garnering exposure that led to incubation opportunities from prestigious institutions such as Harvard and Queens University. This exposure facilitated a positive snowball effect, with referrals leading to subsequent opportunities and underscoring the significance of relationship-building in the entrepreneurial landscape. Tawi Digital Health has since been incubated at Queens University, the Dunning Dushpande Queens Innovation Center, Africa Leadership Health, Anza Village, and Harvard Innovation Labs, highlighting their commitment to continuous growth and development within various supportive ecosystems.

Emphasizing the importance of a robust community, Victor underscores the value of tapping into peer networks, especially within startup ecosystems. Expressing the significance of learning from those who have built, scaled, and exited companies, the budding entrepreneur contrasts the real-world experiences shared at places like Queens Innovation Center, Queens University, and Harvard Innovation Labs with fantastical tales of massive company sales. Stressing that entrepreneurs are made through learning and effort, Victor highlights the accessibility of skills acquisition, reinforcing the role of incubators in facilitating this learning process. The message encourages aspiring entrepreneurs to draw inspiration from real-life experiences, learn from mistakes, and foster a relentless mindset to navigate the challenges of entrepreneurship successfully.

Victor outlines key entrepreneurial traits, starting with the paramount importance of integrity, emphasizing ethical conduct and accountability to customers, investors, and the team. Empathy is

identified as the second crucial trait, with a focus on maintaining a positive team environment, especially during challenging periods, and actively listening to team members' concerns. Grit is highlighted as another essential quality, acknowledging the inevitability of challenges and the need to persevere through difficult tasks. The entrepreneur underscores the significance of continuous learning and innovation in the rapidly evolving entrepreneurial landscape. A positive mindset is identified as the final trait, emphasizing the importance of optimism even in challenging situations.

The genesis of Victor's project stems from his observation of non-communicable diseases during his medical studies, particularly the impact of cancer on a close family member. This personal connection ignited his passion for merging healthcare and technology, leading to the creation of a digital health company. The organization, currently operating virtually, focuses on providing solutions for healthcare facilities, acting as a digital front door. Victor emphasizes the significance of work ethics, integrity, and hard work in building and managing the team.

Regarding the business model, the company sells hospital management information systems to healthcare facilities through annual licenses. Victor envisions expanding services to include partnerships with insurance companies and pharmacies. The current sales and marketing strategy involves a hands-on approach, working door to door and using direct communication methods rather than relying on scalable strategies like social media or SEO.

Victor acknowledges the importance of mentorship from the Africa Leadership Program, where the team receives guidance on financial management and business operations. While they are currently handling financial aspects internally, they aim to hire financial professionals in the future. Patenting solutions has posed a challenge, particularly in Kenya where apps are not patentable, but the company is in the process of obtaining copyrights.

Victor discusses common challenges faced by entrepreneurs, including defining clear problems, securing funding, and acquiring talented individuals. He believes that expanding to other African countries will present regulatory hurdles, but with determination and hard work, success is possible. Despite receiving requests for private investment, Victor is cautious about early-stage offers that may undervalue the company, preferring to wait until they have more traction and can negotiate better terms.

**Learning Activity**

- a) What specific challenges in healthcare access did Victor encounter during the pandemic, leading to the conceptualization of Tawi Digital Health? How did he identify the need for digital tools in healthcare solutions?
- b) The journey to naming the company was intricate. How did Victor and his team arrive at "Tawi Digital Health," and why was it important for the name to reflect the company's mission of digitizing healthcare?
- c) Tawi Digital Health's team comprises medical and software professionals. How did Victor manage the dynamics between these diverse skill sets, and how did he personally navigate the learning curve, especially in acquiring software engineering skills?
- d) The company faced challenges in product development, such as delays and changes in team structure. How did Tawi Digital Health address these challenges, and what lessons did they learn about the iterative nature of product development?
- e) Victor acknowledges the importance of legislation in the healthcare tech space. How has the evolving regulatory landscape impacted Tawi Digital Health's operations, and how do they ensure compliance while innovating?
- f) Tawi Digital Health received incubation opportunities from prestigious institutions. How did these opportunities influence the company's growth, and what role did relationships and networking play in securing support from investors and mentors?
- g) Victor's personal growth during his entrepreneurial journey has been significant. How does he manage the dual responsibilities of being a medical student and an entrepreneur, and what mindset shifts has he undergone to adapt to the challenges of both worlds?
- h) Integrity and empathy are highlighted as crucial entrepreneurial traits. How has Victor integrated these traits into his leadership style, especially in navigating lows and highs within the entrepreneurial journey?
- i) Tawi Digital Health aims to customize solutions for hospitals. How does the company envision achieving this customization while maintaining standardized care, and what impact does this approach have on universal health access?
- j) Victor emphasizes the importance of continuous learning for entrepreneurs. How has his perspective on learning evolved, and what resources and frameworks has he found most valuable in his journey?