

Bridging gaps and seizing opportunities: The establishment of the Cebu Doctors' University Innovation Hub

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Article History

Date Submitted: October 15, 2024

Date Accepted: November 31, 2024

Date Published:

How to Cite: Cutamora, E. B., Denney, B. M., Paloma, H. B., Arañas, J. R. R., Michael, R. R., Apas, M. L. R., Bacalso, K. A., Nacua, C. R. V., & Capangpangan, H. M. P. (2024). Bridging gaps and seizing opportunities: The establishment of the Cebu Doctors' University Innovation Hub. *Journal of Scientific Investigations*, 3(1), 1–8.

Abstract

The paper discusses the establishment of the Cebu Doctors' University (CDU) WISE Innovation Hub, aimed at fostering healthcare innovation through strategic partnerships and comprehensive advisory services. Its primary objective is to enhance healthcare delivery by bridging the gap between academia and industry through the following: conducting a thorough assessment of existing health innovations and technologies of CDU and its key partners, establishing a range of services to support startups and innovators, including intellectual property counseling, product registration advisory, health technology assessment, funding opportunities, mentorship, and infrastructure. To ensure its long-term viability, the hub will develop a sustainability plan based on benchmarking and strategic collaborations. Ultimately, the success of the hub will be measured by its ability to increase the number of health innovations and startups through a series of information dissemination and advisory services, introduction to commercializing new technologies, and forming partnerships with industry and research institutions. With the directive from academia to industry, the hub seeks to empower researchers and entrepreneurs, ensuring that novel health technologies and products are effectively developed and introduced to the market. The initiative is positioned to enhance the healthcare landscape, improve patient outcomes, and contribute to the sustainable growth of the healthcare sector.

Keywords: Cebu Doctors' University Innovation Hub, CDU-WISE Innovation Hub, Intellectual Property, Health Technology Assessment, Product Registration

Introduction

As technology advances and healthcare needs change, health services are transforming. Innovation is now a key factor in improving the quality, accessibility, and efficiency of healthcare worldwide (Koisol et al., 2024). In recent years, the healthcare sector has seen incredible advancements driven by technology, the push for personalized care, and the challenges posed by global health crises. Healthcare has been transformed by innovations such as Artificial Intelligence (AI) diagnostics, telemedicine, and personalized medicine (Matcha, 2023). Healthcare innovation combines new technology, research, and evolving delivery systems to transform patient care and health management by integrating the latest scientific discoveries and digital breakthroughs (Barlow, 2016). The main goals are to improve patient outcomes, increase access to quality care, and make healthcare systems more efficient (Valentine, 2017). Innovation tackles complex health issues and meets individual needs using new medical devices, AI, and fresh delivery models (Barlow, 2016; Valentine, 2017).

Even though healthcare innovation involves technology, research, and changes in how care is delivered, there isn't a clear, single definition of what healthcare innovation means in the literature (Biemans et al., 2016; Koisol et al., 2024). The lack of a clear definition, influenced by different fields like business, health, product development, and entrepreneurship, shows we need a common understanding that focuses on efficiency, health outcomes, cost-effectiveness, and user experiences specific to health and social care (Koisol et al., 2024). The World Health Organization defines "health innovation" as the ability to create and implement novel solutions that address pressing health challenges and improve the quality and accessibility of healthcare (WHO, 2023). This perspective on innovation is about introducing new technologies and fundamentally rethinking and enhancing how health systems operate. It is about finding creative ways to solve complex problems and making a tangible difference in people's lives.

Health innovation has the potential to improve healthcare and outcomes, but it is not easy to put into practice due to various challenges. Strong leadership is needed to encourage new ideas and creativity (Storey, 2020). Research often looks at individual factors like organizational culture, finances, and sustainability (Gold, 2021; Mak et al., 2021), but it is also important to understand how these factors work together in healthcare settings to support successful and lasting innovation (Mak et al., 2021).

Cebu Doctors' University (CDU) envisions a globally recognized health- and service-oriented educational institution with the highest standards of transformative practice. CDU encourages interdisciplinary innovations, intellectual property-protected creative works, and meaningful research outputs among its students, faculty members, and non-teaching personnel. The launching of CDU WISE Innovation Hub (CWIH) aims to establish a cutting-edge innovation hub with a primary focus on healthcare innovation. CWIH will offer specific services to assist innovators, such as IP Counseling, Advisory on Health Technology Assessment, and Advisory on Regulatory Procedures for health product registration.

Furthermore, CWIH will be designed to accelerate healthcare technologies like biotechnology, natural/herbal product making, and drug development. There will be digital health, food/product development, Ready-to-Use Therapeutic feeding/Ready-to-Use Supplemental Feeding made available during disasters and emergencies. These technologies aim to use new health methods and devices and develop better diagnostics and more effective therapies to improve stakeholders' well-being. By Empowering the Application and Management of Beginners in Healthcare Innovation and Technology (E-AMBHIT, in Bisaya "*i-ambit*"), it will build structure, processes, and implement guidelines. "Ambit" is a Cebuano word that means reaching out to accommodate a cropped need. Each *Ambit*, then,

has its own purpose but its essence remains the same – to respond to a need. Therefore, E-AMBHIT is a fitting tagline for the CDU WISE Innovation Hub in carrying out its mandate of being socially accountable and responsive to the needs of its community.

With the initiatives of the hub, CDU can achieve the highest level of accreditation from governing bodies by demonstrating its commitment to innovation and excellence. Further, CDU can contribute to the development of groundbreaking research projects, leading to increased project grants, internal and external multidisciplinary collaborations, publications, and creative works that strengthen its academic reputation. The hub can also facilitate the development of needs-based solutions through health technologies that address the specific challenges ultimately, improving the quality of life for CDU, its partner communities, and eventually, for the Visayas region. Moreover, the CDU WISE Innovation Hub is more than a project; it is a testament to the collective commitment of CDU to a brighter, more inclusive tomorrow.

Review and Discussion

Institutional Track Record in Innovation

At present, CDU is actively proposing initiatives aimed at fostering innovation. However, the institution faces challenges such as limited resources, inadequate training and experience among faculty and students, and insufficient external collaboration, which hinder the establishment of a robust innovation framework. Despite these limitations, research activities conducted by both students and faculty consistently exhibit a strong innovative spirit, particularly in the development of herbal and food-based health products, as well as medical devices and tools. However, current practices indicate numerous completed research papers with significant innovation potential are merely presented at conferences without obtaining proper intellectual property (IP) protection. This lack of IP safeguards exposes these valuable research findings to potential unauthorized use and exploitation. Additionally, the absence of strategic partnerships with industry stakeholders and relevant communities impedes a smooth transition of research innovations concepts to practical applications, thereby limiting their potential societal impact.

The proposed HeaRTNovation Hub, as part of the CWIH, aims to bridge existing gaps in the innovation ecosystem. It will achieve this by fostering a collaborative environment, supporting the complete innovation process, and facilitating the translation of research into commercial products. This initiative reflects a strategic and comprehensive approach to innovation, aligning with the institution's dedication to advancing healthcare, technology, and community well-being.

CDU recognizes the need to enhance its capabilities in translating research outcomes into commercially viable products and services. To address the commercialization gap, plans include establishing interprofessional collaborations, mentorship programs, industry partnerships, and securing access to funding resources. While recognizing the need for a dedicated Intellectual Property (IP) office, CDU emphasizes the importance of protecting intellectual assets. Plans involve developing an IP policy within the CDU WISE Innovation Hub to effectively manage, protect, and leverage intellectual property generated by researchers and innovators.

Plans for Improvement and Identified Gaps

The establishment of a HeaRTNovation Hub, rather than a solely dedicated IP office, reflects a commitment to a comprehensive approach to innovation that extends beyond the management of intellectual property. The HeaRTNovation Hub is designed to function as a holistic ecosystem, facilitating not only IP protection but also the incubation, acceleration, and commercialization of

healthcare and related innovations within the University and its network of partner industries and communities.

Identified Gaps in the Current Innovation Ecosystem:

1. Absence of a research program integrating inter-professional education between University Colleges/Programs with potential for innovation in health technology and product development.
2. Lack of a centralized platform fostering collaboration among academia, industry, and the community.
3. Limited resources available for startups and innovators to prototype and scale their solutions.
4. Insufficient mechanisms for effective knowledge transfer and technology diffusion.

The HeaRTNovation Hub is strategically positioned to address these gaps and foster a robust innovation ecosystem within the University and its surrounding community.

Clarification on the Role of the IP Unit within the CDU WISE Innovation Hub

The IP Unit's function within the CWIH is explicitly limited to the formulation and drafting of an IP policy pertaining to health technologies and product development. This targeted policy is essential for fostering innovation, research, and equitable access to healthcare advancements within and beyond the university. However, its implementation does not necessitate a separate IP office. The policies and frameworks developed within the hub will effectively manage IP matters within the health technology domain.

Establishment of a Separate CDU IP Office

The creation of a dedicated CDU IP office is a distinct initiative, independent of the innovation hub. This office will address the broader spectrum of IP needs beyond health systems, technology, and development. The CWIH's IP Unit will solely focus on developing the IP health policy, manual, and providing comprehensive IP capacity building and training of the project team.

While the innovation hub promotes a broader culture of entrepreneurship and innovation, the separate CDU IP office will offer specialized expertise in all intellectual property matters, ensuring comprehensive protection and management of the institution's diverse innovation and research outputs. The IP Unit's outputs will ultimately be integrated into the CDU IP Office, targeted for establishment by 2025. The IP Unit's trained team will then expand IP policies to encompass academic and non-academic copyrights and creative works.

The innovation hub's primary objective is to position CDU as a leading innovation center in the Visayas region. Its overarching goal is to cultivate a dynamic ecosystem that fosters creativity, knowledge exchange, and supports startups and innovators. This will ensure the seamless transfer of cutting-edge technologies from academia to industry, ultimately improving healthcare delivery. Through the E-AMBHIT, the hub will establish structured processes and guidelines for its services.

The Emergence of Institutional Innovation Hubs: A Transformative Journey

The establishment of a university innovation hub signifies a paradigm shift in higher education. It embodies a commitment to fostering intellectual curiosity, interdisciplinary collaboration, and entrepreneurial spirit within the academic community. These hubs function as dynamic ecosystems, propelling society toward unprecedented growth and innovation by bridging the chasm between theoretical knowledge and practical, sustainable solutions.

The path to establishing a university innovation hub with robust intellectual property policies is intricate. It necessitates careful navigation of ownership, licensing, and collaboration while nurturing an environment of ingenuity and exploration. The formation of the advisory board on regulatory protocols will serve as a focal and starting point to generate protocols on Advisory Health Technology Assessment and Regulatory Procedures. This initiative directly benefits CDU's students and faculty, who have actively engaged in health research spanning drug development, alternative laboratory methods, educational models, point-of-care testing, and food and natural product development. CDU's trained personnel in diverse fields are well-equipped to supervise and conduct such research.

The two proposed innovation hub services—Advisory on Health Technology Assessment and Advisory on Regulatory Procedures for Health Product Registration—are poised to become indispensable pillars of support. They will empower stakeholders within the institution to conduct impactful health research, bring novel health technologies and products to market, and ensure adherence to stringent regulatory requirements.

The *Advisory on Health Technology Assessment* offers a critical bridge between innovators and the complex landscape of healthcare evaluation. It provides invaluable guidance on how new health technologies, medical devices, diagnostic tools, or pharmaceuticals can be assessed for their clinical efficacy, safety, cost-effectiveness, and overall impact on patient care. In an era where healthcare systems worldwide are tasked with the dual challenge of embracing innovation while optimizing resource allocation, this advisory service plays a pivotal role in helping stakeholders demonstrate the value proposition of their technologies to healthcare decision-makers.

Meanwhile, *Advisory on Regulatory Procedures for Health Product Registration* navigates the intricate maze of regulatory compliance. In a tightly regulated industry, where safety and efficacy are paramount, understanding and successfully navigating the intricacies of product registration processes is non-negotiable. This advisory service offers a lifeline to innovators, demystifying the often complex and geographically variable requirements for product registration, clinical trials, quality assurance, and post-market surveillance. Doing so empowers innovators to streamline their regulatory pathways, minimize roadblocks, and accelerate their product's time-to-market.

Establishment of the Core Programs and Activities of the H-Hub

Advisory on Regulatory Procedures for Health Product Registration

The initial year of the CDU WISE Innovation Hub will prioritize the establishment of core programs, including advisory services for regulatory procedures related to health product registration. This will specifically focus on Drug Development Technology (DDT) and Food and Product Development Technology (FPDT).

PROCESS:

1. Submission of Application Form
2. Project Review
3. Project Approval/Disapproval
4. IPR/Patent Application and Approval
5. Project Implementation
6. Project Monitoring and Evaluation

Advisory on Health Technology Assessment

The hub will catalyze research projects in collaboration with hospital partners, emphasizing the development of standardized herbal drugs, novel pharmaceuticals, and health-focused food

products. Initiatives will also be directed toward creating point-of-care diagnostics Technology (PCDT) and designing and developing affordable hospital equipment and laboratory devices. Hence, Supply and Laboratory Technology (SLT). Moreover, integrating biotechnological platforms in education and healthcare delivery will be central.

PROCESS:

1. Submission of Application Form
2. Project Review: Define the objectives and scope of the technology; Gather information about the technology, including its purpose, functionality, and intended use; review existing literature, guidelines, and evidence on the technology; clinical effectiveness (if appropriate); and ethical considerations.
3. Project Approval/Disapproval
4. IPR/Patent Application and Approval
5. Project Implementation
6. Project Monitoring and Evaluation

Activities in Partnerships and Ecosystem Development

The hub's success relies on strong partnerships and ecosystem development. Strategic collaborations with hospital partners (CebuDoc Group of Hospitals), industry stakeholders, and other academic institutions (CDU Sister School) will be actively pursued. Initiatives will be launched to engage with local communities, promoting knowledge exchange and fostering innovation. The hub will catalyze interdisciplinary collaborations, linking research endeavors with practical applications. Networking events, workshops, and collaborative projects will be organized to enhance partnerships and create a vibrant innovation ecosystem.

One of the advantages of the extensive networks of CDU is the ease of channeling with these key partners' research projects that have great potential results in the preclinical testing phase to undergo a clinical trial. These partners are adept in conducting clinical testing of medications following proper ethical research protocol. Furthermore, CDU could avail of the different specialty centers in these hospitals, such as the Center for Cancer and Blood Disorder, Center for Sight, Center for Physical and Rehabilitative Medicine, Center for Hyperbaric Medicine, Center for Advanced Nutrition, and other laboratory and medical services centers.

Vision and Goals of the CDU WISE Innovation Hub

The CDU WISE Innovation Hub envisions itself as a catalyst for transformative change within the healthcare landscape. The Hub aims to expand the CDU Health Technologies Portfolio, fostering a culture of innovation through IP training, and securing external funding. It will establish a CDU IP Office to manage intellectual property, develop IP management manuals, and pursue patents and utility models. The hub will also cultivate industry partnerships, offer advisory services, and implement market access initiative. A sustainability plan will ensure the hub's long-term impact and success.

The CDU WISE Innovation Hub is dedicated to significantly expanding the CDU Health Technologies Portfolio, showcasing a diverse range of groundbreaking solutions in medical devices, pharmaceuticals, and healthcare interventions. This enriched portfolio exemplifies CDU's unwavering commitment to advancing healthcare through cutting-edge technologies. Positioned as a hub of intellectual property expertise, the CDU WISE Innovation Hub will provide tailored programs for comprehensive IP training, empowering stakeholders with the knowledge and skills essential for

effective IP management. This initiative aims to cultivate a culture of innovation within the CDU community.

The hub will actively pursue the development of successful grant proposals, securing external funding to sustain and amplify ongoing and future innovative projects, and fortifying the financial foundation for continuous healthcare advancements. Simultaneously, a fully operational CDU IP Office will be established, serving as a central hub for intellectual property management, playing a pivotal role in safeguarding, commercializing, and transferring intellectual property generated within the CDU community. In alignment with the CDU roadmap, the hub will develop and disseminate comprehensive manuals for intellectual property management, serving as essential guides for researchers, innovators, and industry partners to ensure a standardized and effective approach to IP-related processes. The hub strategically safeguards and potentially monetizes intellectual property assets by actively engaging in the successful patenting and utility modeling of innovative solutions arising from research and development activities. The hub's commitment extends to cultivating and strengthening strategic partnerships with industry stakeholders, facilitating the seamless translation of research into tangible products and services, and contributing significantly to the enrichment and advancement of the healthcare industry.

Offering a comprehensive suite of services, including advisory on regulatory procedures, health technology assessment, and intellectual property management, the hub aims to support researchers, entrepreneurs, and industry partners, providing essential guidance in navigating the complexities of healthcare innovation. Implementing initiatives for effective market services ensures that innovations and solutions developed within the hub are strategically introduced to the market, maximizing the impact of CDU's healthcare innovations on a broader scale. A sustainability plan will be meticulously developed, encompassing strategies for financial stability, resource allocation, and revenue generation, ensuring the enduring impact and success of the CDU WISE Innovation Hub and aligning with the institution's commitment to long-term growth and advancement.

Overall, CDU WISE Innovation Hub is poised to deliver substantial long-term benefits that extend beyond CDU itself, impacting both the local, regional, and global academic landscapes. The hub's success will solidify CDU's position as a regional leader in healthcare innovation, attracting innovators, research collaborators, and investors. Through its contributions to intellectual property management, health product registration advisories, and healthcare technology development among others, CDU can gain international recognition, enhancing its reputation and attracting global partnerships. By disseminating knowledge and best practices through CDU WISE Innovation hub, CDU can contribute to the overall advancement of healthcare innovation and research in the Visayas and beyond.

CONCLUSION

CDU WISE Innovation Hub holds the potential to yield significant and enduring benefits that extend far beyond the confines of CDU itself. The Hub's success will not only solidify CDU's position as a regional leader in healthcare innovation but also contribute to the broader academic landscapes locally, regionally, and globally. By fostering a culture of innovation, attracting talented individuals and organizations, and actively disseminating knowledge, the CDU WISE Innovation Hub is poised to make a substantial and enduring impact on healthcare innovation and research in the Visayas region and beyond.

References

- Barlow, J. (2016). *Managing innovation in healthcare*. World Scientific Publishing
- Biemans, W. G., Griffin, A., & Moenaert, R. K. (2016). Perspective: New service development: How the field developed, its current status, and recommendations for moving the field forward. *Journal of Product Innovation Management*, 33(4), 382–397. <https://doi.org/10.1111/jpim.12283>
- Gold, E. R. (2021). The fall of the innovation empire and its possible rise through open science. *Research Policy*, 50(5), 104226. <https://doi.org/10.1016/j.respol.2021.104226>
- Kosiol, J., Silvester, T., Cooper, H., Alford, S., & Fraser, L. (2024). Revolutionising health and social care: Innovative solutions for a brighter tomorrow - a systematic review of the literature. *BMC Health Services Research*, 24(1), 809. <https://doi.org/10.1186/s12913-024-11099-5>
- Mak, S., Fenwick, K., Myers, B., Shekelle, P., Begashaw, M., Severin, J., & Miake-Lye, I. (2021). Creating a culture of innovation in healthcare settings: A systematic review. <https://www.ncbi.nlm.nih.gov/books/NBK572025/>
- Matcha, A. (2023). Innovations in healthcare: Transforming patient care through technology, personalized medicine, and global health crises. *International Journal of Science and Research*, 12(12), 1668-1672.
- Storey, J., & Holti, R. (2020). *Innovating healthcare: The role of political, managerial and clinical leadership*. Taylor & Francis.
- Valentine, L., Kroll, T. F. B., Lim, C., & Mountain, R. (2017). Design thinking for social innovation in health care. *Design Journal*, 20(6), 755–774.
- World Health Organization. (2025). *WHO Innovation Hub: Scaling innovation for those who need them the most*. <https://www.who.int/teams/digital-health-and-innovation/health-innovation-for-impact>