

Modelling Digital Blended Engineering Entrepreneurship



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ABSTRACT

This paper aims to provide a unique model of digital blended engineering entrepreneurship. A configuration of digital technology, digital engineering, and co-operative intelligence are working in synergy to influence modern digital entrepreneurial environment. This paper offers a snapshot modelling of digital blended engineering entrepreneur. It inclines on the logic that the entry, survival, innovation, and growth of modern entrepreneur is entrenched within a coalesced platform of digital awareness, competence, and adroitness in digital manipulation. Therefore, the paper contributes by developing a novel seven-concept model of digital blended engineering entrepreneurship. The underlying concepts of the seven model are digital awareness, Digital influence, digital competence, digital sorting and sieving, digital product choice, digital engineering innovation, and digital engineering entrepreneurship. This model provides an agenda for further research in digital entrepreneurship literature.

Key words: digital entrepreneur; engineering entrepreneur; social media; entrepreneurship; digital technology; digital competence

1. INTRODUCTION

The entire configuration of digital technology, digital engineering, and co-operative intelligence operate in symbiotically to influence modern digital entrepreneurial environment [1]. In this paper, the authors provide a snapshot modelling of digital blended engineering entrepreneur. It is reliant on the logic that the entry, survival, innovation, and growth of modern entrepreneur is entrenched within digital awareness, competence, and adroitness in digital manipulation. Therefore, the objective of this paper is to contribute to the burgeoning literature on the effect of social and digital media on entrepreneurship by providing a unique model of digital blended engineering entrepreneurship. It thus adds to extant research such as [2].

Much of the existing research on entrepreneurial ecosystem and the connecting digitalisation has inclined more on descriptions and reviews. This paper thus breaks a new ground by initiating this theoretical model to stimulate further research and academic debate on digital

entrepreneurship. Digital entrepreneurship is yet an emerging area in entrepreneurial literature and the attendant literature is embryonic. The ecosystem for digital entrepreneurship appear to be receiving more attention. In their research on digital start-ups, [2] theorises that the ecosystem of an entrepreneur should be a blend of distinct cluster, which should catalyse business start-ups that leverage digital usability to dis-equilibrate innovation in business model. Accordingly, [2] suggested a structured digital related entrepreneurship by integrating four elements namely the community, dynamic resource, spill over knowledge, and conditions of framework in general.

In their study of ecosystem for digital entrepreneurship, [3] develops a new conceptual framework for researching entrepreneurship within the digital era through the instilling of two phenomena namely the entrepreneur ecosystem and the digital ecosystem. They trust that these two concepts work in tandem to hoist a digital entrepreneur because the blending of the two concepts assists in understanding the salient interaction that subsists between users and the agents, which thus brings to bare the individualisation of the consumers and their digital social behaviour. In building their framework, [3] opines there are four pillars that hold the ecosystem of digital entrepreneur, namely the governance of digital infrastructure, digital market place, digital user citizenship and digital entrepreneurship. Building on the above-mentioned four concepts, [3] proposed a multisided framework for digital entrepreneurship. This paper reasons in a slightly different direction to propose a seven-concept model of digital engineering entrepreneurship – the maiden approach thus far.

2. METHOD

The main approach in this brief conceptual paper is the creation of a conceptual model for envisioning a digital engineering entrepreneurship. The Proposed Model of Digital Blended Engineering Entrepreneurship appears in Figure 1. The authors' configuration is that the starting point for a digital entrepreneur ambition should begin at the level of digital awareness; thereafter, the potential digital entrepreneur develops through an influence stage – the digital influence and progresses towards digital competence. Before selecting a choice, the entrepreneur would engage in digital sorting and sieving which yields a choice selecting.

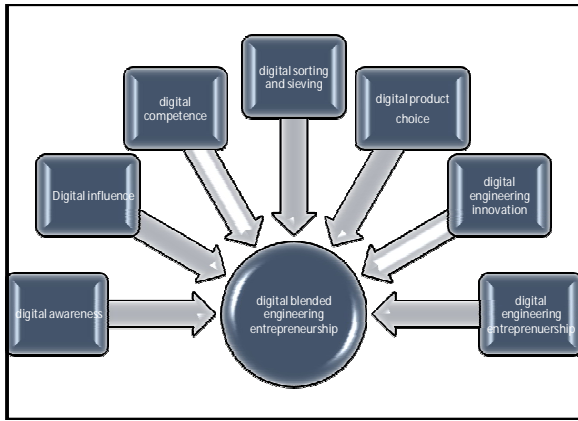


Figure 1: A Seven-Concept Model of DigitalBlended Engineering Entrepreneurship
Source: Authors

2.1 Digital Awareness

The first point of digital entrepreneurship is being aware of digital products or services and this depends on how the entrepreneur socialises through digital products or digital market opportunities [11]. In their study on digital literacy, [12] observed that digital literacy and/or awareness is the vital force that catalyse entrepreneur’s ability to embrace technology in boosting the level of entrepreneurship business.

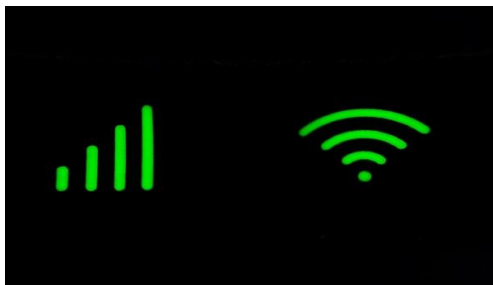


Figure 2: digital awareness
Source: Unsplash [5]

2.2 Digital Influence

Digital influence is very essential as a booster to digital product offering. The entrepreneur’s first stimuli to engage in a digital product or service offering derives from the entrepreneur’s willingness to receive an influence by existing channels of digital offerings. Figure 3 exemplifies few examples of channels of business offering open to the digital entrepreneur.

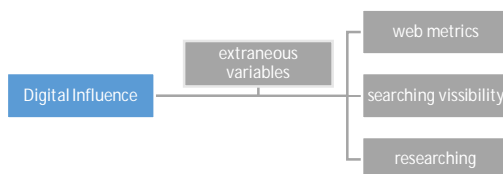


Figure 3 – Channels of Digital Influence
Source: Authors

2.3 Digital Competence

The fulcrum for developing digital competence is that firstly, the entrepreneurial knowledge must exist; reason being that entrepreneurial knowledge facilitates the acquisition and the imbibing of digital intentions and the competence thereof [4]. Accordingly, the presence of digital competence in Figure 1 model suggests that on the one hand, the entrepreneur must through a developed knowledge of relevant entrepreneurship gain a digital competence before deciding the digital product or service to offer. On the other hand the target consumer must also have a certain level of digital competence to patronize digital product, otherwise, the entrepreneur, with his/her digital competence must integrate digital after sales learning for the consumer. (figure 4).

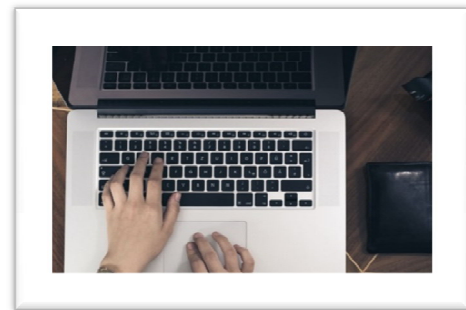


Figure 4 Digital Competence
Source: Unsplash [5]

2.4 Digital Sorting and Sieving – via Social Media

The social media offers a wide range of choice of products and/or services open for the digital entrepreneur to enter into. Skill is in dire need here for the digital entrepreneur to engage in effective sorting and sieving in order to make the most reasonable choice of business. The advantage of social media in business sorting is the availability and willingness of digital entrepreneur mentors in the social media (Figure 5) to guide the aspiring digital entrepreneur. Previous research have empirically provided evidence to the fact that information literacy skills assist in great measure toward entrepreneur’s digital product selection, and that social media does help in shaping the cognitive and behavioural disposition of the digital entrepreneur [8].

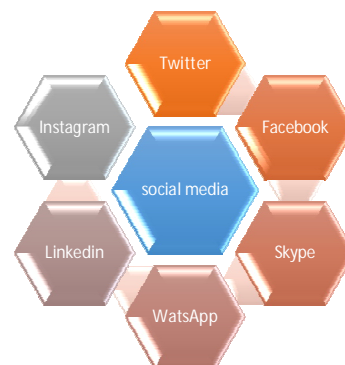


Figure 5: Digital Sorting via Social Media
Source: Authors

2.5 Digital product choice

After the digital sorting and sieving the digital entrepreneur embarks on making the right choice of digital product or service to offer. The choice selection by the entrepreneur can be through the entrepreneur's extensive use of the social media as indicated in the previous concept of sorting and sieving. A careful decision is required here based on what is in vogue today and what will likely stand the test of time tomorrow and in the future. One main area of consideration is what digital product or service the youth is inclining to and what the mature and old population are inclining to. These are elements of digital marketing segmentation tactics that rely on the digital competence and potential penetration strategy of the entrepreneur [6], [7].

2.6 Digital Engineering Innovation

Digital engineering innovation involves the entrepreneur's ability to leverage digital technology to enhance restructuring in existing engineering products or services to offer a new unique set of digitally engineered product to situate the new digital entrepreneur solidly in existing market environmental but with a new niche that can enable seamless penetration [9].

2.7 Digital Engineering Entrepreneur

The digital engineering entrepreneur is the entrepreneur's ability to venture into the modern application of digital technology and digital media to formulate a unique set of services and products by re-configuring existing services or products. This involves refashioning the products toward offering an improved technical handling of the product with a fusion of aesthetics and user-friendly operation for the consumer. This concept refers to the ability of an entrepreneur to infuse a disruption to existing digital products by taking the risk to launch a brand that upsets the status quo [13].

3. CONCLUSION

The main aim of this paper is to contribute a unique model of digital blended engineering entrepreneurship (Figure 1). In a moderate approach the foregoing sections provides this snapshot model. Consequently, the paper contributes by creating a novel seven-concept model of digital blended engineering entrepreneurship. The fundamental concepts of the seven model are digital awareness, Digital influence, digital competence, digital sorting, digital engineering innovation, and digital engineering entrepreneurship. This model provides a first step towards conceptualising a digital-engineering entrepreneurship and is by no means exhaustive; rather the paper hopes that this model helps in galvanising further conceptual inquisition in digital entrepreneurship and in entrepreneurial education discussions.

REFERENCES

1. Elia, G., Margherita, A., & Passiante, G. (2020). Digital entrepreneurship ecosystem: How digital technologies and collective intelligence are reshaping the entrepreneurial process. *Technological Forecasting and*

Social Change, 150,

<https://doi.org/10.1016/j.techfore.2019.119791>

2. Autio, E., & Cao, Z. (2019). Fostering digital start-ups: Structural model of entrepreneurial ecosystems. <https://scholarspace.manoa.hawaii.edu/bitstream/10125/59979/0539.pdf>
3. Sussan, F., & Acs, Z. J. (2017). The digital entrepreneurial ecosystem. *Small Business Economics*, 49(1), 55-73.
4. Farani, A. Y., Karimi, S., & Motaghd, M. (2017). The role of entrepreneurial knowledge as a competence in shaping Iranian students' career intentions to start a new digital business. *European Journal of Training and Development*.
5. Unsplash (2021) Computer, <https://unsplash.com/s/photos/computer>
6. Moorthy, K. S. (1984). Market segmentation, self-selection, and product line design. *Marketing Science*, 3(4), 288-307.
7. Szalavetz, A. (2020). Digital transformation—enabling factory economy actors' entrepreneurial integration in global value chains?. *Post-Communist Economies*, 32(6), 771-792.
8. Nikou, S., Brännback, M. E., Orrensalo, T. P., & Widén, G. (2020). Social media and entrepreneurship: exploring the role of digital source selection and information literacy. In *Understanding Social Media and Entrepreneurship* (pp. 29-46). Springer, Cham.
9. Huang, J., Gheorghe, A., Handley, H., Pazos, P., Pinto, A., Kovacic, S., ... & Daniels, C. (2020). Towards digital engineering: the advent of digital systems engineering. *International Journal of System of Systems Engineering*, 10(3), 234-261.
10. Troxler, Peter, and Patricia Wolf. "Digital maker-entrepreneurs in open design: What activities make up their business model?." *Business horizons* 60.6 (2017): 807-817.
11. Hull, C. E. K., Hung, Y. T. C., Hair, N., Perotti, V., & DeMartino, R. (2007). Taking advantage of digital opportunities: a typology of digital entrepreneurship. *International Journal of Networking and Virtual Organisations*, 4(3), 290-303.
12. Revathi, S., & Sathya, M. (2020). A Study on Awareness towards Digital Literacy Among Women Entrepreneur in Virudhunagar, Tamilnadu. *Journal of Critical Reviews*, 7(14), 3241-3247.
13. Forbes (2015) the 25 most disruptive brands of 2015, <https://tinyurl.com/nbx3pxx4>