Virtual Learning Environment for Entrepreneurship: a conceptual model

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ABSTRACT

The University of Waterloo has a history as an innovative and entrepreneurial university. With increasing demand for entrepreneurship education and venture development support there has been increasing interest in how to provide this support virtually. To address this need, an entrepreneurship platform consisting of four primary components; entrepreneurial team engagement, mentor engagement, provision of 'just-in-time' learning resources, and social network creation is under development. Engagement and social network creation are built around a series of gamified events that provide structure and feedback for the participants, as well as focal points for mentoring and network development. The 'embedding' of these early-stage ventures into a supportive social network aligns with a belief that one does not simply launch new ventures, but rather launch networks. These event gates are supported by a system of 'just-in-time' learning modules allow the participants to develop their own learning program, and may be drawn upon as needed.
In this paper we discuss the conceptual model as well as progress on development of its key features. We also discuss some of the early results and lessons learned integrating it into several initiatives underway in Canada and Kenya.

Keywords: Entrepreneurship, Incubation, Education

1. INTRODUCTION

Entrepreneurship and its education have been aspects of the University of Waterloo since its founding in 1957. Since that time, increasing demand for entrepreneurship education and venture development support from its students and faculty, as well as within the university community as a whole, has resulted in interest in how to provide this support virtually.
In this paper we discuss a conceptual model for a virtual environment to support entrepreneurship called Jamii. The underlying approach for this system is that incubation systems do not simply launch new ventures; rather they embed new venture concepts into supporting social networks. Based on this, the development challenge for this system is how to create a virtual incubation space which facilitates social interactions leading to network formation and embedding. This leads to questions which are currently being investigated related to the nature of learning in a virtual environment and facilitating the desired interactions.

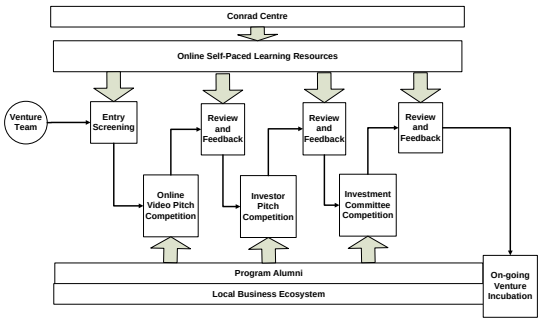
2. THE ROLE OF SOCIAL NETWORKS

As discussed by Ellison and Vitak [1] social networks often play an important role in our ability to successfully function in a wide range of domains, and new venture creation and development are no different e.g. [2], [3]. A key objective of the virtual incubation platform being developed is the embedding of nascent ventures into a strong social network which it can draw upon for future resources, information and guidance. This has led to an approach which integrates social network development into the incubation process and learning environment.
Social networks may be thought of as consisting of two basic types of connections or 'ties' between individuals within the network. Weak ties, those between individuals who have a relatively low level relationship, are very useful for the acquisition and discrimination of information relevant to the nascent venture. However, as a venture team seeks to acquire resources, they will turn to the strong ties within their social network, such as friends and family [3].
The task within the incubation process becomes one of not only reinforcing the venture's existing social networks, continuing to strengthen those existing relationships, but to add and evolve new relationships.

3. THE INCUBATION PROCESS

The Jamii platform is built around three major activities referred to as event-gates, as illustrated in Figure 1. The gates are structured to serve a number of functions, including providing key milestones for progress measurement, and as focal points for venture social network embedding.

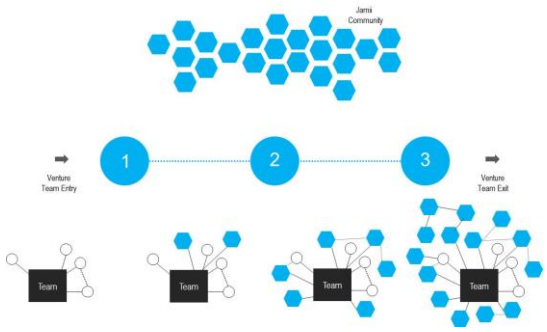
Figure 1: Virtual Incubation Process



Upon passing an online entry screening gate, venture teams have access to online mentoring and self-paced, 'just-in-time' learning resources which are configurable to the needs of the participants. An important feature at this stage, unlike what often happens within course settings, is the inclusion of the team's existing social network. This is valuable from a social network development perspective because this initial network often consists of 'strong ties' that can be most easily leveraged for resources, information and personal support for the team members.

Within the virtual incubation process, teams progress through three event-based gates: an online pitch competition, a virtual investor pitch and a virtual 'investment committee' competition. The first event-gate in the process, the video pitch, is the simplest of the gates, requiring the teams to produce a short video describing the team's venture concept. The second event-gate, the investor pitch, is conducted using web conferencing and requires the team to provide an overview document and a presentation to another assessment panel. The final event gate is the investment committee, conducted via either in a hybrid mode or completely through web conferencing. This is slightly different that the previous event gates in that the assessment panel also has the capability to assist further venture incubation. Prior to this event, the venture must provide a 'short form' business plan which includes financials. As with the previous events, ventures are given feedback after the event. While ventures exit the program at this stage, they may continue to be engaged in the program as alumni, enabling them to continue to build and develop within the network they have become embedded in

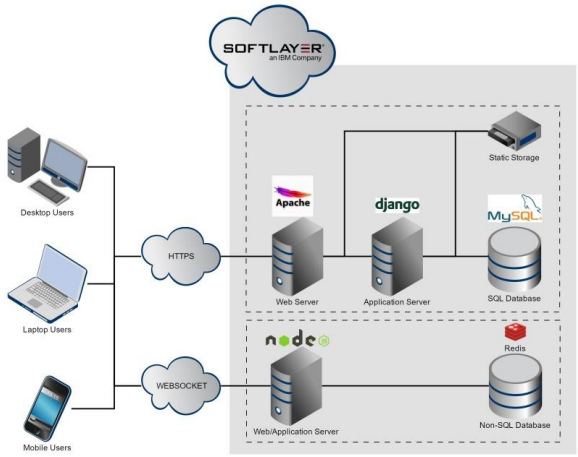
Figure 2: New Venture Network Development



Each of these events serves two important functions. First, it provides constructive feedback to the venture team, helping them strengthen and develop their business concept. To continue to the next event, they must reach an acceptable level of performance based on predefined criteria, with a set number of retries allowed for a venture within a predefined time limit. If the venture fails to progress past a gate after it's allowed number of attempts or time, it exits from the program.

Second, and more importantly, it begins the development of a support network, Figure 2, in which the nascent venture can embed itself. Each event gate is structured to 'raise the bar' for the participating venture, as well as provide increasing exposure to community members. As they proceed between event-gates, they not only have access to learning modules, but also a supporting community providing support, advice, and potential early-stage resources.

Figure 3: System Overview



Implementation of the event-gate system within Jamii is shown in Figure 3. The system is currently being hosted using SoftLayer, with a HTTP web application providing the majority of the platform functionality such as account management, an inbox system, file sharing and a task board system. This built around an, Apache Web Server, Django application server, MySQL database and static storage. A websocket application using NodeJS and a non-SQL database provides real-time response for active users to provide notification, team collaboration and chat room features.

Jamii is a social environment intended to encourage collaboration and network formation; hence the focus on collaboration and real-time response features in its implementation. However, as pointed out by Kreijens et al. [4] expecting social interaction to occur because a system makes it possible and neglecting nature of the desired interactions leads to poor results. As failure in collaborative environments tends to be at the social level rather than being a technical issue, it is important to consider the experience which is being created.

To achieve this, activities and interactions with the mentors and team members are organized in such a way as to develop a sense of community and build trust amongst the participants. While this is facilitated through the platform, it is the process structured around the event-gates that provides the collaboration structure. This structure is key to encouraging and reinforcing the desired social interactions in a virtual environment.

4. A PILOT PROJECT

To explore the application of this technology and aspects of the event-gate approach, the University of Waterloo's Conrad

Centre is collaborating with Strathmore University in Nairobi Kenya, in an entrepreneurship challenge built around the Jamii platform ('Jamii' is Swahili for community). The project consists of two phases. First, teams from across Kenya and East Africa were invited to submit venture concepts based on a challenge question focused on the application of mobile technology to local agricultural problems. The teams were provided with online support and provided a video submission for their concept. These were then assessed, with the top ten submissions being invited to proceed to the next stage of the competition.

For the second phase of the competition, these teams were invited to develop their ideas further at the @iBizAfrica incubator in Nairobi. While there, the teams were provided with local mentoring and workshops as well as mentoring and content from Waterloo through the Jamii platform. The inclusion of local community members was an important aspect of this project, as one of the objectives is to examine how the teams would embed in locally relevant social networks. This would not have been possible to achieve solely through the virtual platform. From a Kenyan perspective, this project provides an opportunity to further develop its infrastructure related to the creation and development of local technology-based ventures. From a platform development perspective this provided us with insights into the nature of mentoring communications in a truly distance scenario as well as how to structure and provide content within the learning environment.

At the end of the competition's second phase, the teams presented their ideas for assessment by a panel of local and virtual mentors, resulting in the selection of, a winning team. At this time several of the teams that have gone through this process are continuing to pursue their venture ideas.

5. DISCUSSION AND FUTURE RESEARCH

The collaboration and pilot program have provided an opportunity to explore the application of a virtual environment to support distance delivery of entrepreneurship education. While assessment of the operational lessons related to the challenge program is ongoing, perhaps the most significant lessons have been around encouraging and maintaining user engagement. As would be anticipated, many of the operational issues revolved around communication and coordination, resulting in further enhancements to the platform. For example, the increased use of video is being explored to improve the interaction between the virtual mentors and participants.

Finally, as we move forward with implementation of the next challenge, further content development based on user feedback and coordination of the activities is underway. Some of these changes are related to cultural and content delivery styles in the virtual and physical spaces. As many of the questions of interest are longitudinal in nature, efforts are underway to collect and evaluate data related to the long term relationships among the individuals involved in this program.

6. ACKNOWLEDGEMENT

We gratefully acknowledge the support of the GMAC MET fund and the MasterCard foundation in this research project.

7. REFERENCES

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