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APPLYING GAMIFICATION IN AN EDUCATIONAL WEBSITE: AN OPEN INNOVATION CASE

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ABSTRACT

Purpose: The aim of this research paper is to propose the use of open innovation to the government-owned organisation, Education New Zealand (NZ) to boost the engagement among users, promote communication and interaction among, educational institutions and partners.

Design/methodology/approach: The research is utilising a semi-radical innovation approach and a Play-To-Win strategy as a means of competitive advantage for the organisation in such a competitive industry.

Findings: The research provides a new layer of software (with principles of gamification) to be utilised by the Education NZ through their current website. This software will resolve existing problems that are hindering international students from accessing information on the website with ease.

Originality/value: Delivering innovative software to assist an educational organisation in providing Fast Experimentation and Fast Learning Process (collecting and analysing data) to get increasingly a more successful product, service and business model.

Keywords: open innovation; semi-radical innovation approach; play-to-win strategy; education NZ and gamification.

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INTRODUCTION

This research paper discuss the concept of open innovation and how it could be utilised to resolve organisational needs and increase its competitiveness in the educational sector. This is achieved by offering a new system of innovation process to the website 'Think New' owned by Education New Zealand (NZ) (2015), with focus on the concept of looping build-measure-learn.

The organisation chosen for this research is a governmental organisation, Education NZ. The purpose is to develop a new software to be added to the organisation's existing website: 'Think New' which can be accessed on www.studyinnewzealand.com. This website is one of the best digital platforms for international students looking through study options in NZ. However, as there are too many content in the platform, sometimes it is hard to find the right information or to follow an understandable pathway.

The research proposes a solution to empower the current website by creating a gamification layer over the content of the current platform. The gamification layer will assist in boosting engagement among users (students national or international), the website content, and increases social networking among educational institutions and other partners.

WHY INNOVATION?

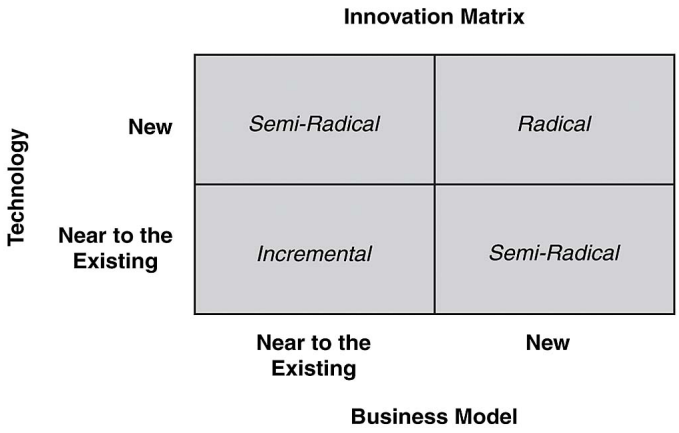
Innovation is different from invention as it's to do with the commercialisation (i.e. implementing an invention and taking it to the marker) of a new idea. John Seely Brown (in Chesbrough, 2006) explained that the significant innovations happening to our phones, photocopier machines, automobiles, personal computers and Internet are considered disruptive innovation due to the fact that they impact on our social practices and the way we live, work and learn. Furthermore, Maital and Seshadri (2012) stressed the importance of innovation process to be infused through the organisation's value chain to be able to drive behaviour throughout the whole organisation starting from the early stages of research and development through to the various stages of assembly line, customer service delivery, inventory and finally transportation.

The authors believe that innovation is vital for organisation's survival in this globalised era where change is constant. For this research, the authors chose to demonstrate the importance of open innovation through the utilisation of technology to enhance the practices of an educational institute and help sustain its competitive advantage in a highly competitive field of practice.

THE USE OF OPEN INNOVATION APPROACH

This research utilises Davila et al. (2013) semi-radical innovation approach (refer to Figure 1) as a solution to the organisation under study, because it will promote big changes in the technological side and only few changes in the business side. Accordingly, the use of Play to Win Strategy would be the most appropriate, which aims to generate a high level of competitive advantage that cannot be matched by any of the organisation's competitors.

Chesbrough (2003) posited that in an open innovation model, the boundaries between a company and its surrounding environment are spongier, enabling innovation to move easily between the two sides. Thus, in this way, an organisation is more open to commercialise both its own inside ideas as well as ideas of other companies. Moreover, utilising the open innovation way of thinking allows organisations to seek different forms to bring its inside ideas to market by deploying pathways outside its current business. Accordingly, the researchers decided to use



Source: Davila et al. (2013).

Figure 1 Innovation approach

an open innovation model for this research project that is, working together with both strategic partners and users to improve the product.

'THINK NEW' WEBSITE BACKGROUND AND CURRENT STATUS

'Think New' is a website owned and maintained by Education NZ which is a Crown entity funded by the NZ government. The website has the main role of promoting NZ as an educational destination to international students by providing information related to the education system in NZ, living in NZ (e.g. accommodation and cost of living) and working in NZ (e.g. work visas, applying for work and finding a job). It supports and collaborates with NZ's international education industry to develop education business products and services and also sell them to specific markets around the world. 'Think New' website is governed by a six-people board appointed by the Education Minister Steven Joyce. Its head office is in Wellington, however some staff are located in Auckland and Christchurch. Moreover, the website has staff in another 18 overseas locations. These people are responsible for business development, education diplomacy and marketing activities in those overseas countries.

International students check and weigh their options for studying overseas in accordance to their personal preferences, situations and accessibility of information (e.g. ease of obtaining information about their destination country/city, type of study, fields of study, qualifications provided, visa requirements and how to apply for it and possible work opportunities). Such information can be accessed on the Internet through various websites but the key issue here is if all the required content is provided via a user friendly, trusted, precise and accurate website. Unfortunately, international students are faced with challenging websites that seems complicated for them and makes it hard to follow and obtain all the required information in an organised manner.

PROPOSING AN INNOVATIVE SOLUTION FOR 'THINK NEW' WEBSITE

The main target users of this website is young-to-adult people between the ages of 15 to 35 years old, who are looking for educational products overseas. Gamification was chosen as an innovative solution because these target users are familiar with this kind of approach since their childhood.

The research proposes this innovative solution to empower the current website by creating a gamification layer over the content of the current platform. The gamification layer aims at boosting engagement among users with the website content, social networks, educational institutions and other partners. This innovative solution uses a more efficient and interactive way to create engagement between the users with all available content and thus also ensure a better understanding capacity of the content for decision-making process.

Werbach and Hunter (2012) explained gamification as the use of digital game design techniques to non-game contexts, in different areas like business, education, health and also social impact challenges. Thus, more than just reading and browsing through content, users will be able to interact and to engage with all this information as they are playing an explorer game. Furthermore, users will be awarded (get virtual badges, ranking and also real prizes) according to their level of activities inside the platform. For example, what kind of content they have explored, how much knowledge/ideas they have shared with other users through the platform and social network, how many challenges and paths they have started and completed.

Furthermore, Werbach and Hunter (2012), posit that games are a strong tool to motivate behaviour, thus, it can be denominated as one of the main dominant entertainment forms of the modern world. Accordingly, companies and other institutions can apply all these game mechanics to different immersive environments, and in this way they can promote engaging experiences as well as assign rewards and recognition.

The authors believe that through the gamification technique students will be more engaged and able to have a better understanding of all relevant information available to make a well informed decision for their future studies. On the other hand, since 'Think New' website is the current leader of this important educational cluster in NZ, the gamification layer is an opportunity to provide a more profitable platform for different brands, schools, agencies and supplementary companies (i.e. win-win for all parties).

BENEFITS OF GAMIFICATION LAYER FOR 'THINK NEW' WEBSITE

The following are the benefits of the gamification layer for the 'Think New' website:

- improve the presentation and the way users can explore information on the website;
- improve usability and increase the retention of users through gamification techniques;
- boost user engagement with content;
- promote and facilitate conversation between company, users and partners;
- generate new forms of revenue and strengthen partnerships with companies in the educational industry cluster;
- help increase the number of new international students in the country and
- help the company to improve its own system of innovation process.

THE NEW BUSINESS MODEL CANVAS

This research uses the 'Business Model Generation Canvas', a tool developed by Osterwalder and Pigneur (2010), which is ideal to see clearly (intuitively understandable) and also describe, design, challenge, invent and pivot the business model when it is necessary. Currently, this tool is used by most of the innovative companies around the world, such as IBM, Ericsson, Deloitte, the Public Works and Government Services of Canada, and a lot of startups, to understand the current business model and to create new strategic alternatives.

According to Osterwalder and Pigneur (2010), a business model describes how a company creates, delivers and also captures value. In other words, what a company produces, how this company communicates and distributes its production, and also how this company profits from it. Figure 2 illustrates the nine blocks (i.e. key partnerships, key activities, key resources, value propositions, customer relationships, channels, customer segments, cost structure and revenue streams) of this canvas and how this new business model will create, deliver and capture value to the company, customers and partners.

Source: Authors' figure.

Figure 2 Think New Website – Business Model Canvas

The canvas in Figure 2 is divided two main areas that is, the customers core side and the company core side.

The 'Customer Core Side' consists of five blocks on the right hand side of the figure (i.e. Customer Segments, Customer Relationships, Value Propositions, Channels and Revenue Streams). This side focuses on the customers and how the company will deal with them. The International Students are one of the Customers Segments of the company, while another Educational Firms, such as: Schools, Agencies, Advisers and some of complementary business, are the others. For the sake of ease in identifying the different components in this side, colour coding of the cards was used that is, yellow cards represent international students, blue cards represent educational industry partners and green cards represent both segments. To deliver the possible value propositions to each one of those segments, it is necessary to think about which channel of the website is required and also how to establish a successful relationship with them. As a result, each segment will be provided with the suitable approach catering for its specific needs.

Moreover, it is important for the company to discern how it will get revenue from them for example, the international students will have free access to the platform, in return they will pay by generating new data and content that will be processed and transformed in Competitive Intelligence. On the other hand, educational firms will pay the company through sales commissions, personalised online advertisement, and by purchasing strategic information to get competitive advantage in their industry.

The 'Company Core Side' on the left hand side of the canvas consists of four blocks (i.e. Key Activities, Key Partnerships, Key Resources and Cost Structure) and its main focus is on the company itself. This side indicates what are the core activities, resources, and partnerships that the company needs to build/enhance for running its business successfully. Besides, it is important that the company has a clear understanding about its main costs to keep this new business model operating properly.

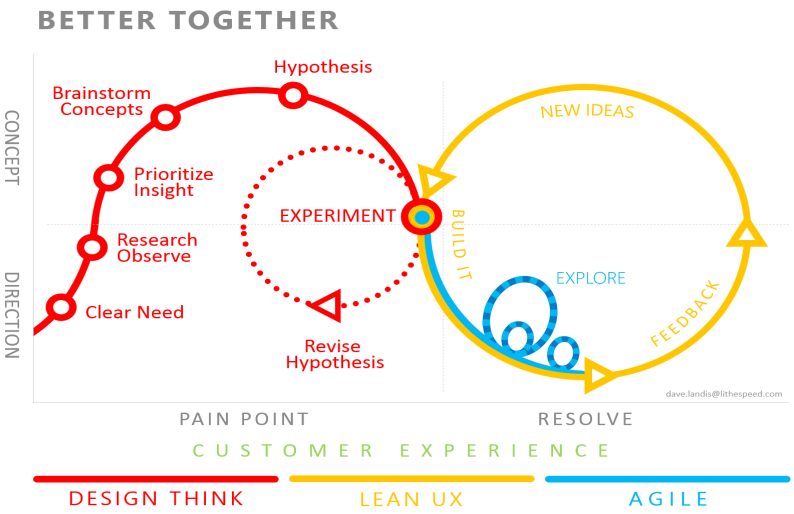
GAMIFICATION LAYER DELIVERABLES

The following are the proposed three stages of deliverables for the new layer of software (with principles of gamification):

1. Planning and discovering (4 to 8 weeks – 2 to 4 iterations).
   During this stage the following will take place:
   a. analyse the problem and possible solutions in conversations with users;
   b. select and organise existing content;
   c. develop partnership strategies and define possible prizes to users and
   d. design logic, rules and dynamics of the game.
2. Development with constant delivering (8 to 16 weeks – 4 to 8 iterations).
   This stage will combine all the tasks below at the same time, according to the development priorities:
   a. create visual elements of the game, such as badges, stickers, cards, stages, etc.
   b. develop application interface;
   c. develop the application, the software;
   d. keep constant integration between interface and logical basis of the application and
   e. data analysis and feedback from the early users (selected testing users).
3. Launching the final release, maintenance and expansion (2 weeks – 1 iteration).
   This stage includes:
   - release of the final beta and
   - maintenance and expansion of the solution according to necessity.

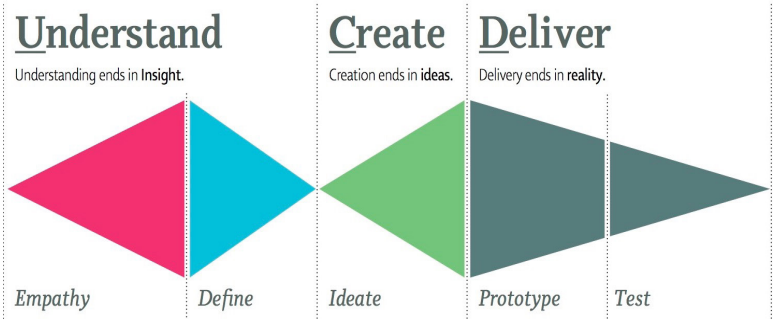
INNOVATIVE SOLUTION APPROACH

As this solution is based on a software project, it is necessary to look forward for what innovative companies in this industry are using to develop and manage their projects. To ensure that this innovative solution will succeed, it is going to use a mix of current techniques used by some of the most innovative companies around the world for the whole project steps: management, design, development and also validation. As an introduction, these techniques are: Design Thinking, Agile Project Management and concepts of Lean Startup, such as Minimum Viable Product (MVP), Pivot and Build-Measure-Learn loop. The following Figure 3 illustrates the combination of the three main innovative techniques proposed for this research, while Figure 4 shows the process of Design Thinking Technique and Figure 5 demonstrates the Agile Project Management Technique.



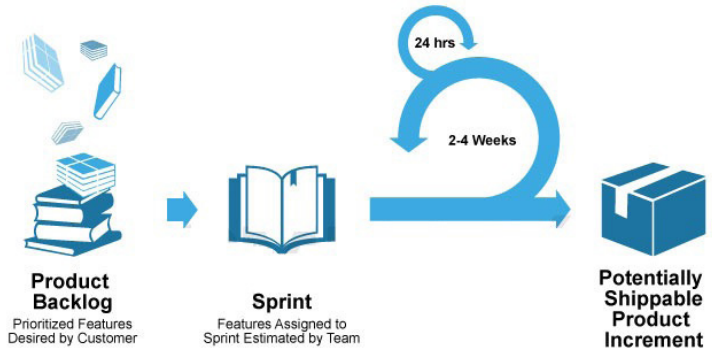
Source: Landis (2014).

Figure 3 Combination of innovative techniques proposed for this research



Source: Empathy Design (2015).

Figure 4 Design thinking technique



Source: QMetry (2015).

Figure 5 Agile project management technique

Those techniques were chosen to improve all the system of the innovation process, and to make sure that the team will be really able to understand and find the best solution for the current company's problem. Besides that, these techniques will encourage more and more the processes of Fast Experimentation and Fast Learning Process (collecting and analysing data) to get increasingly a more successful product, service and business model.

In the first moment, to match the customer's needs with what is technically possible and viable to the business strategy, Design Thinking techniques, will be applied such as: focus on the definition of the real problem, research ways to solve it and ideation. Design thinking is a tool used to help producing innovation by converting needs into demand. According to Brown (2009), it is an approach that focuses on solving problems that explores human-behaviour and allows companies and people to think in a more innovative and creative way. Thus, the focus will be on finding answers to questions like: How and why do customers use the current website? What are the problems that they face? What kind of solution can be created to solve them?

The Agile Approach principles will be used to manage this innovative solution as they have more focus on the processes, customer collaboration, fast responses to changes, and the overall final quality of the product. In other words, Agile is an iterative and incremental method of managing the design and build activities for engineering, information technology, and new product or service development projects in a highly flexible and interactive manner. Furthermore, Highsmith (2009) posits that the Agile Approach offers alternatives to the traditional project management system that is restricted to a series of consecutive stages in the project management process. Agile is typically used in software development to help businesses respond to unpredictability that appears in the middle of the process. The main features of this technique are repetition, short and regular cadences of work. It is also classified as iterations and at the end of each one of them the team have to show a potentially shippable product increment. Thus, the authors classifies the Agile Approach as iterative and incremental.

The research also uses Lean Startup approaches, because they can help reduce risks and failures. The main principle behind these techniques is: fail fast and learn fast. Everything we design are just assumptions, which need to be developed, tested and validated. Thus, Lean Startup Approaches are very important to help create ways to detect any possible failures as soon as possible and decide new solutions for them.

Moreover, the concept of the MVP will be used in this innovative solution. Ries (2011) elucidates that it is the model of a new product or service that enables a company to gather the maximum quantity of validated learning about customer experience feedback with the least effort. The main goal of a MVP is to test business and product hypotheses as soon as possible, to make sure the team is in the right track or not. In the team is not on the right track, they can quickly pivot the ideas and waste less money and time on this process. Accordingly, instead of developing the whole product or prototype to start testing later, the idea is to break this big project in small parts (each one as a MVP) and apply the constant and short loop of Build-Measure-Learn. Ries (2011) explains that this quickly looping process of transforming ideas into products, measuring customers' reactions and behaviours against built products, and then learn from that experiment to improve the product or change it if necessary.

FACTORS DETERMINING THE INNOVATIVE SOLUTION SUCCESS

The use of the above-mentioned techniques during the process of execution will rely heavily on constant customers' feedback and learning. This will enable the team to detect and adopt suitable solutions to the real problem in a timely fashion.

Moreover, the following control system will be utilised to reinforce the factors to determine success of the innovative solution:

- checking efficiency in constant deliveries and software operating in accordance with the provisions in each iteration;
- analysing performance and constant improvement of MVP's and final product;
- checking how users are using the platform;
- checking metrics of user progress inside the game;
- checking metrics of user conversion and sales and
- analysing general data.

CHALLENGES OF IMPLEMENTATION OF THE INNOVATIVE SOLUTION AND RECOMMENDATIONS

The main challenge during the implementation of this innovative solution will be people and how they are resistant to change. The website already exists and under Education NZ in which employees already has their own habits and work processes. Empowerment of the employees and inclusion in the process of execution to engage them would help minimise their resistance to change.

This research follows Davila et al. (2013) suggestion of reducing the antibodies and spreading a new culture of innovation thinking inside the company. For example, reducing barriers among departments and employees by promoting multidisciplinary teams and including creative professionals with business professionals.

As pointed out by Anthony et al. (2014), most executives acknowledge that their innovation engine does not work the way they would like it to. However, they admit that transforming several innovation efforts into a role that works consistently is extremely hard work. In many cases, the only way to align this, is by advocating thinking in new possible organisational structures, new hires and considerable investment. Anthony et al. (2014) who was inspired by Eric Ries' concept of MVP, proposed a new solution to empower the engine of innovation inside a company and called it Minimum Viable Innovation System (MVIS). The MVIS incorporates Agile and Lean Startup approaches. Anthony et al. (2014) explain that

> "it will ensure that good ideas are encouraged, identified, shared, reviewed, prioritized, resourced, developed, rewarded, and celebrated. But it will not require years of work, fundamental changes to the way the organization runs, or a significant reallocation of resources. What it will require is senior management attention — most critically from some member of the top leadership team" (p.2).

With this approach mentioned above, the research aims to adjust the current tools, technologies, organisation process and skills, insofar as possible, and improve these techniques to get a better innovation engine in the future. This solution will not only providing a new experience to the users looking for international education, but also will help to change the innovation system of the company, adopting new techniques and process.

CONCLUSION

This research provides a semi-radical innovative solution for the 'Think New' website by adding a gamification layer to its exciting website. This innovative solution will help international students to

find the right information about schools, courses and related content about visas, rules, with ease and accuracy in a more user friendly environment. This approach of gamification can be helpful and successful, because it will boost engagement and ease in understanding the website content. However, to implement and get success with this new semi-radical innovation, the authors are proposing the use of new techniques such as: Design Thinking, Agile Project Management and Lean Startup.

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BIOGRAPHICAL NOTES

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